



# A GUIDE FOR MULTIPLE USE WATERWAY MANAGEMENT

Third Edition

*Provides current direction for effective waterway management, including policy development, communication for public understanding, acceptance, and compliance, enhancing enjoyment of the waterways balanced with use.*



"Produced under a grant from the Sport Fish Restoration and Boating Trust Fund administered by the U.S. Coast Guard".







## A GUIDE FOR MULTIPLE USE

# WATERWAY MANAGEMENT

Third Edition

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*Produced under a grant from the Sport Fish Restoration and Boating Trust Fund, administered by the U.S. Coast Guard.*

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Project Director, Writer: Pamela Dillon, NASBLA Project Specialist, Ohio DNR - Boating Law Administrator (retired)  
Project Technical Consultant, Project Writer: Risa Shimoda, The Shimoda Group, Executive Director – River Management Society  
Project Consultant/Advisor: Deb Gona, Ph.D., NASBLA Research Consultant  
Layout and Design: Taylor Matsko, NASBLA Communications & Marketing Manager  
Project Web Design: Ron Sarver, NASBLA Chief, Knowledge & Learning Management Systems  
Editorial and content providers: Alex Otte, NASBLA Research Associate; Project Steering Committee Member  
Deeper Dive Contributors: Lt. Jesse Collins - USCG; David C. Brezina - Chicago Harbor Safety Committee; Robin Pope, Ph.D. – ACA; Eleanor Mariani – Connecticut Boating Law Administrator (retired)  
508 Compliance Review: Digital Echo, John Mulvey, CPACC

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## 2020-21 WATERWAY MANAGEMENT PROJECT STEERING COMMITTEE<sup>1</sup>

### **American Canoe Association**

Robin Pope, Board President  
Kelsey Bracewell, Safety, Education, Instruction  
and Outreach (SEIC)

### **American Waterways Operators**

Thomas Allegratti, Senior Executive Officer

### **Chicago Harbor Safety Committee**

David Brezina, J.D., Secretary

### **Florida Fish and Wildlife Conservation Commission**

Gary Klein, Boating Law Administrator

### **Passenger Vessel Association**

Terri Bernstein, Vice President of Operations, BB  
Riverboats, Inc.  
Chris Gallup, Director of Operations, Hornblower  
Cruises and Events  
Steve Jones, Captain, Gateway Clipper Fleet

### **Public Member**

Eleanor Mariani, Connecticut Boating Law  
Administrator (Retired)

### **River Management Society**

David Cernicek, Wild & Scenic Rivers/River Ranger  
Forest Service Bridger-Teton National Forest

### **States Organization for Boating Access**

Randy Henry, Oregon State Marine Board

### **U.S. Coast Guard**

LCDR John Downing, Office of Waterways &  
Ocean Policy, Waterways Policies & Activities  
Division (CG-WWM-1)  
Tom Dardis, Recreational Boating Safety  
Outreach Coordinator, Boating Safety Division  
(CG-BSX-21), Grant Technical Manager

### **U.S. Army Corps of Engineers**

Pam Doty, National Water Safety Program  
Manager

### **Waterways Association of Pittsburgh**

David Podurgiel of Murray American  
Transportation, WAP Navigation Committee Chair  
Michael Graham of the Gateway Clipper Fleet,  
WAP President

### **NASBLA Project Staff**

Risa Shimoda, Project Technical Consultant, The Shimoda Group, Executive Director – River  
Management Society  
Dr. Deb Gona, Project Consultant/Advisor, NASBLA Research Consultant  
Alex Otte, Project Writer, NASBLA Research Associate  
Taylor Matsko, Layout and Design, NASBLA Communications & Marketing Manager  
Ron Sarver, Project Web Design, NASBLA Chief, Knowledge & Learning Management Systems  
Pamela Dillon, Project Director, NASBLA Project Specialist, Ohio - Boating Law Administrator (Retired)

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*Not everyone using this resource*

*knows or thinks about the subject of waterway management the same way. Therefore, we should use multiple perspectives for structuring information, and building navigational tools for this resource. The sections of this book should be independently useful and relevant; not requiring thorough reading or understanding of other sections.*

*We will never identify and adequately speak to each and every audience within their parameters: we can however outline aspects/contributors of a multi-user conflict and let the user piece together their own puzzle. We can provide case studies and resources to assist – but we want this resource to be useful for groups and users that we can't foresee or understand right now."*

***A Guide for Multiple Use Waterway Management - Steering Committee Notes***

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# FOREWORD

A *Guide for Multiple Use Waterway Management (Third Edition)* (aka “Guide”) is produced under a grant from the Sport Fish Restoration and Boating Trust Fund administered by the U.S. Coast Guard (USCG). The National Association of State Boating Law Administrators (NASBLA) provided project oversight with significant support and guidance from Steering Committee members.

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The project Steering Committee represents a broad range of users, acknowledging that not everyone using this resource thinks about the topics in the same way. To that understanding, the Guide includes multiple, sometimes contradictory, perspectives.

Guide sections are written to stand on their own, not requiring a thorough reading or understanding of other sections. Therefore, some references are posted in multiple locations if relevant.

The Steering Committee understands limits to being able to identify and adequately speak for every audience within its unique parameters. However, it is the hope that this Guide provides a starting point to consider real-life circumstances and situations. The Guide may not address topics not clearly understood at this time. We invite researchers, project managers, and other waterway users to submit additional resources for review and potential posting as references on specific topics to [waterway.management@nasbla.org](mailto:waterway.management@nasbla.org).

## DISCLAIMER

With project direction from the National Association of State Boating Law Administrators (NASBLA), individual participants, acting on behalf of various organizations, collaborated to create the work product presented in this Guide. The observations made, opinions and recommendations expressed result from that collaboration and do not express legal, expert, or professional advice about a reader's specific circumstance. Opinions about general ideas and best practices are not projectable to all fact situations. Facts may differ, and conditions like meteorology, hydrology, public policy, applicable regulations and laws, environment, vessel operations, and traffic can vary rapidly both in a particular location and across locations. The reader of this Guide is responsible for using all available means appropriate in the prevailing circumstances and conditions in determining a course of action.

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## INTRODUCTION

# A GUIDE FOR MULTIPLE USE WATERWAY MANAGEMENT

The project goal of *A Guide for Multiple Use Waterway Management (Third Edition)* is to support the reduction of recreational boating fatalities and injuries through improved understanding of and accessibility to tools needed to implement sound management processes on shared recreational waters, including the intersection of commercial traffic and recreational users. In addition, this Guide provides direction for effective waterway management, including policy development, and communication for public understanding, acceptance, and compliance.

This Guide advances the U.S. Coast Guard's [National Recreational Boating Safety Program \(RBS\) 2017-2021 Strategic Plan](#). A challenge identified in the Strategic Plan reads, *"RBS program management activities need clear direction for the next wave of effective implementation. Improved management of programs, processes, and productivity within the RBS Program can lead to a significant and positive impact on the public's perception of desirable safety behaviors in recreational boating."* It further states, *"Some policy and regulatory interventions and requirements are outdated. Laws and policies must be continuously reviewed and, if necessary, revised to accommodate advances in safety (e.g., technology). These advances must be communicated to the public and other stakeholders in the National RBS Program in a manner that fosters understanding and, more importantly, compliance."*

The [First Edition](#) (1996)<sup>2</sup> and [Second Edition](#) (2004)<sup>3</sup> of this Guide provided the basis for this updated product. Produced by the National Water Safety Congress, Inc., the First Edition stressed the importance of comprehensive and systemic waterway research and analysis with a basic waterway management planning process for use or modification based upon unique situations. The First Edition also introduced waterway management techniques and guidelines for consideration when preparing effective, balanced multiple-use waterway management plans. The Second Edition, produced by the National Water Safety Congress in partnership with the National Association of State Boating Law Administrators, provided a tool for resource managers, planners, regulators, and other waterway stakeholders and professionals trying to make sense of an evolving body of information about multiple-use waterway issues and conflicts and site-appropriate ways for coming to terms with them.

The Third Edition addresses current thinking and planning frameworks for ongoing and future waterway management issues. Third Edition updates include an electronic platform published at [www.waterwaymanagement.org](http://www.waterwaymanagement.org).

As with previous editions, a Steering Committee of recognized subject matter experts guided the project by reviewing, recommending, and providing context or annotations to content in the Guide, incorporating both historical references and up-to-date research and reports of waterway management approaches. In addition, the Steering Committee conducted a nationwide survey to help identify the highest priorities for potential coverage in the Guide.



A powerboat pulls a string of sailing dinghies across the path of a moving tanker in Chicago.

Photo Credit: Kindra Lake Towing

# 2020 WATERWAY MANAGEMENT NATIONWIDE SURVEY: OVERVIEW OF RESULTS<sup>4</sup>

“ The views expressed in quotation boxes throughout this Guide were submitted as comments in the Waterway Management Nationwide Survey conducted during the Guide’s development process. The opinions expressed are those of the indicated survey respondent and are included in this Guide to illustrate the wide variety of stakeholder opinion typically encountered by today’s waterway manager. Views expressed by the individual survey respondent should not be construed as reflecting official viewpoints or as official statements of the U.S. Coast Guard, the National Association of State Boating Law Administrators, or individual members of A Guide for Multiple Use Waterway Management’s Steering Committee or the organizations they represent.”

## Disclaimer About Illustrated Quotes in this Guide

In the late Summer of 2020, the Waterway Management Steering Committee distributed a nationwide survey to capture comments and thoughts to inform the Third Edition of *A Guide for Multiple Use Waterway Management*.

A total of 3,415 responses were received. Of these, 1,787 (52.33%) were "complete." As defined by the SurveyMonkey web tool used for this process, a complete response means the respondent answered all required questions and selected "Done" on the last page. Only complete responses were analyzed and used for calculating percentages.

Out of 1,787 completed responses, 1,445 respondents (80.86%) indicated their primary interest as "Non-government – Waterway User" when asked to self-classify as "Government", "Non-government – Business Interest", or "Non-Government – Waterway User." While this overwhelming response from one out of the three groups does not affect the content contained in the Guide, the priorities indicated by this demographic influenced content priority. Respondents who self-identified as "Government" (210) represented 11.75% of respondents, and those that self-identified as "Non-government – Business Interest" (132) represented 7.39% of respondents.

Respondents who self-identified as "Non-government" (Business Interest or Waterway User) indicated the pursuit of sport, pleasure, and event-based activities as the most important of four answer choices (Pursuit of sport, pleasure, and event-based activities; Property ownership; Retail, rental, mooring facilities, products, services; and Transportation of passengers, commerce-related cargo, infrastructure) and "other."

Respondents identified aspects of waterway management that they think are the most impacted by new and evolving usage trends. Of 10 answer choices, four selections rose to the level of priority for the Guide. These are: "Use of recreational power or sail vessels/activities (e.g., personal watercraft, airboats, surface effect ships, hovercraft/fishing, water or kite-skiing, cruising)"; "Human-powered recreational (e.g., swimming, canoeing, kayaking, standup paddleboarding, surfing)"; "Traffic operations for recreational users"; and "Marinas, mooring, launching, service and maintenance."

Respondents identified the three most significant challenges on their waterway. Of 13 answer choices and the option to select "Other," the seven topics that rose to the level of priority for inclusion in the Guide include: "Large crowds"; "Personal watercraft (PWCs), airboats and similar vessels"; "Motorized boats vs. paddle or rowing craft"; "Wakes"; "Recreational vessels vs. paddlers, swimmers, snorkelers, surfers, divers, etc."; "Derelict and at-risk vessels"; and "Navigation, infrastructure, hazards (e.g., dams, weirs, submerged structures)."

Q6 - "Drivers" of Use Conflicts		
(Ranking based on % of completed SurveyMonkey responses)		
Government	Business	Waterway User*
1. User inexperience, lack of education – 64%	1. User inexperience, lack of education – 71%	1. Reckless watercraft users (e.g. speed, alcohol use) – 76%
2. Reckless watercraft users (e.g. speed, alcohol use) – 60%	2. Reckless watercraft users (e.g. speed, alcohol use) – 57%	2. User inexperience, lack of education – 68%

"Drivers" of Use Conflicts is the only survey question where top comments were somewhat consistent across all respondent self-classifications.

Photo Credit: National Association of State Boating Law Administrators

Respondents identified three primary drivers of use conflicts on their waterway. Question six (Q6) was the only question where the top two selections generally agreed across each group of nine answer choices and the option to select "Other." "User inexperience, lack of education," and "Reckless watercraft users (e.g., speed, alcohol use)" were selected as either number one or two by each group. Of the additional answer choices, "Watercraft rental outfitters who provide no safety, navigation, or awareness information"; and "Access points that are difficult to manage" were also identified as drivers of use conflicts.

The final question asked respondents to identify which aspects of waterway management are most important to meet public needs and minimize user conflict. From six answer choices and the option to select "Other," respondents were asked to select up to three. The five aspects identified as a priority for the Guide include: "Public outreach, information, signage"; "Authorities (who are) easy to find and approachable"; "Authorities (who) encourage and listen to public comments"; "Authorities (who) provide timely updates about regulations and current use"; and "Periodic reviews conducted of regulations to continue or update."

*The Steering Committee thanks all respondents to this survey. Respondent input proved vital in determining the direction and content incorporated into this Third Edition.*

## ENDNOTES

<sup>1</sup> All contributions to this project are to be considered "works made for hire" as one or more of a contribution to a collective work, a supplementary work, a compilation, as an instructional text under 17 USC 101. Steering Committee Members, along with other project contributors, are acknowledged for work contributions, but have no ownership claim to the final Guide or other documents developed under this grant project. To the extent it may be found that works made for hire under 17 USC 101 does not apply, contributions by members of the Project Steering Committee are to be considered assigned to NASBLA for all purposes consistent with publishing the Guide. Members hereby confirm their authority to follow these terms.

<sup>2</sup> A Guide for Multiple Use Waterway Management.

<https://community.nasbla.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=33cd46e8-36cd-7f44-48fc-5edb90585532&forceDialog=0>, National Water Safety Congress.

<sup>3</sup> A Guide for Multiple Use Waterway Management Second Edition.

<https://community.nasbla.org/viewdocument/guide-for-multiple-u>, National Water Safety Congress, National Association of State Boating Law Administrators.

<sup>4</sup> 2020 Waterway Management Nationwide Survey: Overview of Results to inform Waterway Management Project Steering Committee, <https://community.nasbla.org/viewdocument/nationwide-survey-preliminary-revie>, National Association of Boating Law Administrators.

## SECTION 1

# TRENDS & EMERGING ISSUES

## WHAT IS SHAPING WATERWAY USE, DEMANDS, AND RESULTING CONFLICT?

What do we mean by “Waterway Management”? The term has diverse definitions depending on the situation and user. The following definition is used as a basis for development of this Guide:

**Waterway Management:** The integrated use of education, technical assistance, regulation, enforcement, and other policies and programs to govern the waters of the state for navigation, public safety and access in ways that reduce conflicts, enhance the experience for waterway and shoreline users, and minimize risks to natural resources.<sup>1</sup>

Today’s “waterway manager” may not have that title on a business card. Instead, this role may include a local trustee, a state boating law administrator, a site manager for the federal government, or a regional watershed planning association. Waterway management activities may occur within a city agency, park district, committee of industry stakeholders with governmental liaisons, harbor and marina operations, or private entities such as homeowners’ associations. Whatever the individual’s working title, waterway managers face pressure from a wide range of stakeholders, each sharing a unique perspective on how best to protect or utilize the water resource. Many waterway management issues are related to large and growing usage numbers including an expanding diversity of users competing for limited amounts of space both on-water and at shoreline facilities. Managers are often faced with considering use limitations based on evidence that the resources’ physical and/or social carrying capacities are maxed-out (or close to it) while being pressured by business or other interests that “adding a few more boats or people really won’t make a difference.” With a wide diversity of expectations and desired outcomes, today’s waterway manager must focus first on data and policy directives including overall resource mandates and requirements, while considering processes to collect, include, and consider community stakeholders’ input.

**What should managers do to improve and maintain the safe enjoyment of our waterways?**



*Acknowledge our waterways are not just for recreation, national security and transportation of goods and begin to tackle the big issues. Put environmental regulations back on track; prioritize cleansing of waterways in historically black and impoverished areas; be realistic about climate change and sea level rise in planning and permitting; help create funding for more research, education/outreach; and innovation. Just scratching the surface. Everyone who cares enough to write or read this guide can do some of the above.”*

*Nationwide Waterway Management Survey  
Respondent (Q8#599)*

The common starting point is understanding the physical resource as thoroughly as possible (e.g., how much and what kind of use the resource can take before the user experience is soured, conflict and safety margins are compromised, or the resource is harmed through erosion, negative fishery impacts, reduction in water quality, etc.). Once fully studied and documented, the manager is equipped to engage with stakeholders to share data and information while providing a process to capture, document, and understand stakeholder needs and expectations. Armed with both data and stakeholder input, the waterway manager is better informed to manage resource needs while addressing user experience through combinations of solutions that include regulation, well-designed facilities or access, and other services designed to anticipate, address, and minimize potential conflicts of use.

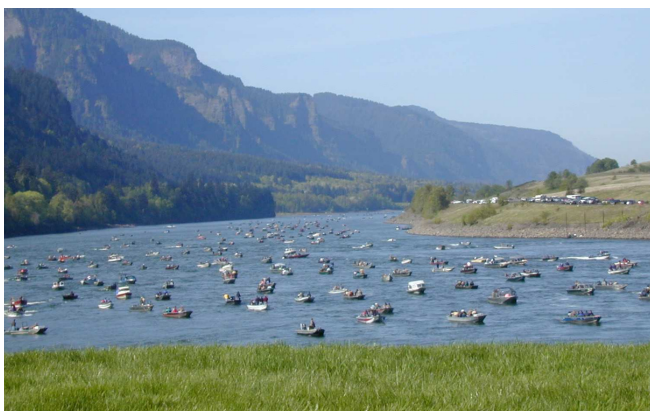


# PARTICIPATION DATA, BOAT SALES, EVENT TRENDS

Let's begin by taking a look at national data. In 2018, The Outdoor Foundation reported that 146.1 million Americans - 49% of the U.S. population ages 6 and over - participated in an outdoor activity at least once, continuing three years of slight growth in outdoor participation.<sup>2</sup>

The National Marine Manufacturers Association<sup>3</sup> recorded \$170.3 billion dollars in annual economic impact from recreational boating in 2018 including manufacturers and suppliers, sales and services, boating activities and business tax revenue. This supported over 690,000 American jobs and over 35,000 businesses. The report further identified 95% of boats sold in the United States (U.S.) were made in the U.S. with \$1.5 billion annual boat exports to other countries.

According to the U.S. Coast Guard's National Recreational Boating Safety Survey Exposure Report,<sup>4</sup> an estimated 25.2 million boats are owned or co-owned by 14.5 million households, about 11.9% of all households in the U.S. These boats were operated on the water nearly 3.42 billion hours. As many boats go underway with multiple occupants, the report documents approximately 10.2 billion "person" hours spent on the water in recreational boats nationwide. During the same year of the Exposure Report (2018), the Coast Guard counted 4,145 recreational boating accidents (incidents) resulting in 633 reported deaths, 2,511 injuries and approximately \$46 million dollars of damage to property. The 2018 fatality rate was calculated at 5.3 deaths per 100,000 registered recreational vessels.<sup>5</sup>



Fishing on the Columbia River.

Photo Credit: U.S. Army Corps of Engineers

**What should managers do to improve and maintain the safe enjoyment of our waterways?**

**“** *It is difficult for managers to provide equitable resources and facilities for all users when all users do not contribute to the funding of facilities or management of waterways.”*

*Nationwide Waterway Management Survey  
Respondent (Q8#399)*

Over the past decade, the trend of boating fatalities has remained within a standard statistical deviation of +/- 55.4. In other words, the U.S. averaged 660.5 deaths per year from 2009 to 2019, plus or minus 55.4. This statistical deviation was calculated before the 2020 worldwide COVID-19 pandemic. Deaths for all boaters increased from 613 in 2019 to 767 in 2020 - about a 25% increase reflecting the significant increase seen in boating participation during the pandemic. The Coast Guard's 2020 Recreational Boating Statistics report is available at <https://uscgboating.org/library/accident-statistics/Recreational-Boating-Statistics-2020.pdf>.

Our waterways are not just shared by a wide and growing variety of recreational boats and boaters. The U.S. Department of Transportation credits modern-day U.S. economic strength and resiliency to the maritime industry, built on a foundation of waterways, canals, locks and barges. The industry remains vital to America's economy, and is still growing in its impact. Waterways are our nation's first mode of transportation, and water-based transportation of cargo and goods is expected to more than double by 2025. With 25,000 miles of navigable channels, 95,000 miles of shoreline, 361 commercial ports, and \$4.6 trillion of annual economic activity, 90% of U.S. imports enter and exit by ship.<sup>6</sup> Not confined to U.S. coasts, almost 60% of U.S. domestic waterborne trade tonnage is moved on the inland waterways, the vast majority carried by barge.



According to the U.S. Army Corps of Engineers' Inland Navigation 2018 National Report, approximately 540 million tons of cargo were moved by vessel along the inland waterways, including the Mississippi River—the nation's busiest waterway. The American Waterway Operators PricewaterhouseCoopers Study, published in 2017, reports about 763 million tons moved annually. The study delineates how water transport uses 75% less energy than trucks and 31% less than rail to haul a ton of freight; the tugboat, towboat and barge industry, in turn, is directly responsible for more than 50,000 U.S. jobs. On a nationwide basis, including direct, indirect, and induced impacts, the industry supported more than 300,000 jobs and \$33.8 billion in Gross Domestic Product.<sup>7</sup>

**What should managers do to improve and maintain the safe enjoyment of our waterways?**

“The current managers can only do so much, the public needs to be more proactive. But again, you can ask ten people and get ten different responses.”

*Nationwide Waterway Management Survey  
Respondent (Q8#632)*

There is no “one size fits all” description for a waterway user. While some take to the waterways for work, others go for rest and relaxation. Some seek quiet and solitude, while others seek excitement and social interaction. Some seek physical exercise and communing with nature, while others seek the sound of powerful engines and speed. All too often, user groups occupy the same waterway in proximity to one another, often with different expectations of how the “right” way to manage diverse needs should be. Add to this mix diverse expectations of shore-based use, including needs of business interests versus wants and desires of private landowners versus a widening demand for public access, and it is no wonder that waterway management is a growing and more complex topic for all involved.

In Section 1, we look at research and report findings about the people, environment, products, and technology shaping today's waterway usage, the potential and real demands made to our nation's waterways, and conflicts which sometimes result.

## SECTION 1A

# AUDIENCES

## WATERWAY USERS

So what trends impact water management? The Waterway Management Nationwide Survey<sup>8</sup> results, conducted while developing this Guide, identified a variety of topics. These topics seem to point to one central and wide-ranging trend: an expanding variety of boats with mixed usage (business versus pleasure versus industrial) carrying more people (some with limited skill and knowledge in boat operation) and creating high density traffic (operating at different speeds, sometimes recklessly, often without compliance to Navigation Rules). This mix is magnified in high population areas or popular access sites during times of heavy use. Further magnify this where facilities and access are limited or inadequate, creating funnel points of mixed, and sometimes conflicting activities and use patterns.

As previously stated, the 2018 National Recreational Boating Safety Survey Exposure Report estimates approximately 25.2 million boats are owned or co-owned by 14.5 million U.S. households. This includes open power boats, cabin power boats, pontoon boats, air boats, houseboats, personal watercraft (PWCs),<sup>9</sup> sailboats, canoes (including inflatable canoes), kayaks (including inflatable kayaks), standup paddleboards (SUPs) and rowed boats (e.g., jon boats, shells, sculls, and inflatable boats, but not inflatable tubes). Approximately 93% of the boats owned in the U.S. were operational in 2018, meaning that a boat was in a condition that allowed it to be operated out on the water either by human, wind, or mechanical power.

Just over one-third (36.3%), 9.15 million, of recreational boats were taken out on the water at least once during 2018 operating an average of 54 days - a “day” being any part of a day on which the boat was taken out on the water under power, including motor/engines, wind/sail, or human power. Almost half (45.3%) of motorized boats were operated on the water at least once during the year compared with 29.5% of human-powered craft. Of boats “taken out at least once,” motorized boats averaged 64 days of use.



Photo Credit: Water Sports Foundation

As reported by The Outdoor Foundation,<sup>10</sup> **motorized** activity is enjoyed by 3.5 million water ski participants, 3 million wakeboarders, and 5.4 million PWC participants. Approximately 3.9 million people participate in **sailing**, 1.3% of the U.S. population. Motorized sailboats are captured under the “motorized” activity. **Human-powered** (includes swimming, surfing, canoeing, kayaking, and standup paddleboarding (SUP)).

Approximately 22.9 million American participate in paddling activities each year with 72% of paddlers owning at least one type of paddle craft:

- 56% own kayak(s) (including recreational, whitewater, coastal, and/or fishing kayaks)
- 36% own canoe(s)
- 28% own raft(s)
- 22% own SUPs

Paddling location and length of activity varies widely as well. The Outdoor Foundation report provides this snapshot of where and how paddling occurs:

- WHERE: 59% Lakes; 45% Rivers; 19% Oceans; 16% Ponds; 15% Streams
- HOW: 77% Day Trips; 11% Multi-day Trips; 9% Overnight Trips

“Coordination (is needed) between regulatory entities (local/state/fed) on waterway issues and waterway management - many counties don't know anything about waterway management and yet want to encourage tourism.”

Nationwide Waterway Management Survey  
Respondent (Q7#177)

Many human-powered activities occur on, in, or near the water. Fishing is a key recreational activity for many.

Over forty-nine (49) million people (16.6% of the U.S. population over 6 years of age) participated in freshwater, saltwater or fly fishing in 2017.<sup>11</sup> Add to the mix 2.8 million SCUBA divers, 8.3 million snorkeling participants, plus 2.6 million surfers and the humanpowered impact of participants in open water recreation is significant and robust.



A GUIDE FOR MULTIPLE USE  
WATERWAY MANAGEMENT  
Third Edition

See Deeper Dive:  
One Impact of Climate Change:  
Navigability on Glacial Lakes  
(page 1-9)

There are almost too many management considerations to list which may influence decision making. Additional insight includes, but is not limited to:

- Mixed usage patterns. For instance, there are wide variations in common operation patterns for PWCs, airboats, surface effect vessels, hovercraft, fishing, water/kite-skiing, cruising, etc. resulting in varying “stresses” to the water resource or the boating community.
- Commercial Marine Transportation, including cargo, commercial fishing/trolling, towing, construction, and work boats. Commercial activity is dominant in many locations often with specific operational needs and restrictions, such as travel limitations due to water depth and maneuverability.
- Service activities, including marinas, mooring, launching, maintenance, retail and rental, often have needs for specific waterway signage, placement of aids to navigation, dredging, safety and law enforcement considerations, and other services.

Developing a comprehensive inventory of all items to consider is vital as part of the process to determine plans of action for responsible waterway management.

“Boat traffic continues to grow and boat speeds have increased; safety for all smaller and slower waterway users and marine life and shoreline is not being properly considered or calculated in current management strategies.”

Nationwide Waterway Management Survey  
Respondent (Q5#33)

## SECTION 1B

# ACCESS

In 2018, about two-thirds (approximately 6 million) of the nation's boats operated during that year were trailered or transported (i.e., on car top, in a truck, etc.). Of that number, approximately 3.32 million were power boats, including open power boats (e.g., bass boats, ski boats), cabin power boats, pontoon boats, air boats, houseboats, and PWCs. Nearly 2.66 million human-powered boats, including canoes, kayaks, paddle boards, and rowed boats, were transported to be launched, each used (and perhaps launched) an average of 40 days.<sup>12</sup>

“Public waterway access is essential for the future of any and all uses. It must be the 1st priority.”

Nationwide Waterway Management Survey  
Respondent (Q7#136)

Access is the gateway for water recreation and is often the first, and arguably one of the most important aspects when discussing waterway management. Access needs vary widely by user group. There are no “one size fits all” solutions – and there should not be. Many on-water challenges can be minimized or eliminated by careful placement and design of access areas. Unfortunately, “disputes over access rights” is identified as a common “driver of use conflicts” in the Waterway Management Nationwide Survey.<sup>13</sup> This is further complicated when adding non-managed access points common in many parts of the country.



Kayak Camp at Bay Model Visitor Center, Sausalito, California.  
Photo Credit: U.S. Army Corps of Engineers

“There are too many overlapping agencies with control over waterways keeps us from gaining access to these locations.”

Nationwide Waterway Management Survey  
Respondent (Q5#47)

Public access planning should begin with careful evaluation by the waterway manager and oversight organization. When and how is the area currently being used? Who are the users? What are their current needs and what level of usage is desired for the future? What is the expected social impact to current and future use? Does the access plan have support of the local community? What impacts will access improvement have on current waterway usage? What are the environmental impacts to land and water resources? Can safety services provide coverage if or when needed? How will improved access areas be managed? Many of these questions are best answered through a public process calling on partners, waterway users, user groups and other stakeholders and sister agencies from beginning to the end of the process.

The public desires a wide range of recreation opportunities. As presented in the widely recognized and cited Water and Land Recreation Opportunity Spectrum, “Research has shown that recreationists not only seek to participate in recreation activities, but also seek specific recreation settings in order to enjoy a special kind of recreation experience and subsequent benefits. These four components (activities, settings, experience, and benefits) constitute a recreation opportunity; that is, the opportunity for a person to participate in a particular recreation activity in a specific setting in order to enjoy a particular recreation experience and the benefits this affords.”<sup>14</sup>

Access needs vary widely by interest group. A paddler may need only a public pathway and a safe place to park a vehicle while a deep draft sailboat needs moorage facilities and water depth. Access areas for a trailerable fishing boat should include parking for tow vehicle with trailer and a properly sloped ramp. Courtesy docks are a plus in many areas but may not be feasible in all locations.



Access communities are as varied as boaters. Opportunities vary from commercial/industrial, urban and suburban, to rural and wilderness areas. Depending on community needs, marinas, harbors, boat ramps, courtesy docks and tie-up facilities may be required or desired while beaches, lake fronts, or river banks may present opportunities for support of informal access.

Many resources exist to guide planning for boating access. Access development and design is outside the scope of this Guide, but careful design and placement can eliminate crowding and areas of conflicting use, providing the option for separation of activities in popular boating areas. Are conflicts for motorized craft resulting from use of boat ramps by car-topping boaters? Perhaps development of a beach or walk-in access apart from the trailer ramp will eliminate these conflicts and improve relations with multiple segments of the boating community.

Funding sources may determine or restrict the types of access that can be accommodated. When designed for a specific use, it is important to consider the specialized needs of that user group. For instance, in the River Access Planning Guide: A Decision Making Framework for Enhancing River Access,<sup>15</sup> core elements for site planning and design for nonmotorized river access include:

- **System and Location** - The location, geomorphology, and physical characteristics of a site within the continuum of a river from the headwaters to the sea.
- **Landscape Setting** - The site-specific features as well as the site conditions characterized as natural, enhanced, or constructed and the site-specific features that define setting.
- **Temporal Dependence** - The seasonal nature and timing of on-site activities and how variability of water levels may affect visitation and user behavior.
- **Frequency** - When and how often activities occur at a site and how that site activity integrates or impacts the biological setting and natural resources.
- **Density** - The number of individuals who will use a site and the site's spatial constraints that define how well desired uses can be accommodated.

- **Use Type and Challenge Level** - The activity types and challenge levels occurring at the site.
- **Management** - The needs and challenges resource managers face and the resources available for operations and maintenance.
  - Urban rivers may have unique issues ranging from private ownership, through congestion, access limitations, novel pedestrian features, event scheduling, and identification of locations for emergency service access.
  - Rural river management challenges include difficulties in gaining access to potential accident sites, barriers (both legal and illegal) including fencing across rivers and low-head dams, and the potential to cross multiple municipal, county, and state boundaries.

Planning resources are available to address site planning considerations, including but not limited to:

- Long range climatic changes. *Also see Deeper Dive: Impact of Climate Change: Navigability on Glacial Lakes.*
- Current availability of access – both public and private.
- Adaptations for special user situations - e.g., ADA (Americans with Disabilities Act) Compliance.
- Diversity – e.g., language and cultural differences and related norms/behaviors.
- Local guidelines, legislation, rules, statutes, ordinances, court decisions.
- Court decisions and environmental concerns - e.g., Aquatic Invasive Species, others.
- Required permits such as those issued by the U.S. Coast Guard, U.S. Army Corps of Engineers, and others.
- Analysis of existing boat traffic such as traffic patterns and federal navigability determinations.
- Security and safety safety, such as proximity to security zones and shipping channels.

## SECTION 1C

# PRODUCTS/ACTIVITIES

Not all challenges to today's waterway management can be solved on the water or at the water's edge. Over the past 20 years, the evolution in watercraft production resulting in increased affordability of plastic rotationally molded boats, coupled with new methods of boating participation such as boat clubs and time-share options, make boating opportunities and equipment increasingly available.

Many affordable, entry-level craft are purchased at non-boating specialty retailers. Boats are available for rent from a number of liveries or outfitters. Liveries, outfitters, and retailers each have an important role to play in alerting and advising participants in the requirements and expectations of recreational boating. Unfortunately, rental outfitters providing no (or limited) safety, navigation or awareness information are identified as key "drivers of use conflicts" in the Waterway Management Nationwide Survey. Additional drivers include "user inexperience, lack of education" and social issues such as "reckless watercraft users (e.g. speed, alcohol use)". "Large Crowds", "Derelict or At-Risk Vessels", "Wakes", and "Recreational vessels versus paddlers, swimmers, snorkelers, etc." are additional challenges identified in the survey.<sup>16</sup>



Paddlers enter a lock on the Mississippi River.

Photo Credit: U.S. Army Corps of Engineers



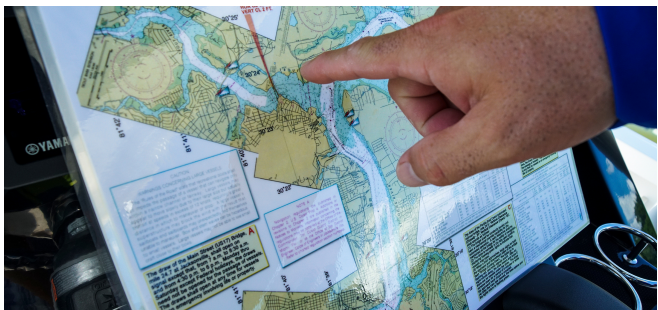
## SECTION 1D

# INFLUENTIAL TECHNOLOGY

To address expanding expectation for data, data collection and analysis, today's waterway manager must consider new, improved, and emerging tools and technology. While not all is applicable or recommended for every situation, the waterway manager should keep apprised of the potential impact and use of each.

- Global Positioning Systems (GPS)/ Geospatial Location Capacity enables users to record locations of features (natural and manmade). Digital photos in the field can be linked to GPS coordinates in Geographical Information System (GIS) software, allowing users to establish visual records of features, precise locations, and activity. By comparing photos of the same location taken at different times, users can document changes and use patterns.
- Solar power and batteries innovations include solar lighted buoys and markers.
- Light Detection and Ranging (LIDAR) Scanners including use of unmanned aerial vehicles (drones) can be used to generate three-dimensional information about surface characteristics. Two types of LIDAR are topographic (used to map the land) and bathymetric (used to measure seafloor and riverbed elevations.)
- Automated Identification System (AIS) is a satellite feed to indicate real-time locations of commercial waterway traffic worldwide, including the Great Lakes and U.S. inland waterways.<sup>17</sup> Also see *A Deeper Dive - AIS Automatic Identification System*.

- **Maps and Charts** - A nautical chart represents hydrographic data, providing very detailed information on water depths, shoreline, tide predictions, obstructions to navigation such as rocks and shipwrecks, and navigational aids. The term “map,” on the other hand, emphasizes landforms and encompasses various geographic and cartographic products. Some examples of maps might be road maps or atlases, or city plans. A map usually represents topographical information. A chart is used by mariners to plot courses through open bodies of water as well as in highly trafficked areas. Because of its critical importance in promoting safe navigation, the nautical chart has a certain level of legal standing and authority. A map, on the other hand, is a reference guide showing predetermined routes like roads and highways. Nautical charts provide detailed information on hidden dangers to navigation. Maps provide no information of the condition of a road.<sup>18</sup>



A chart provides information on hidden dangers to navigation.

Photo Credit: Water Sports Foundation

- **Use of Vessel Traffic System (VTS) by recreational boaters.** VTS provides active monitoring and navigational advice for vessels in particularly confined and busy waterways to prevent vessel collisions. Boaters should review VTS Radio Procedures as a quick reference to covered waterways.<sup>19</sup>
- **Plotwater Cameras** take a picture of a clearing every 5 or 10 seconds. Images are taken from dawn to dusk, can be stored for months and, if properly positioned, count boats and people well. They also work to monitor boat ramps and access for usage and security. These are a simple and inexpensive way to monitor use, evaluate capacity and monitor conflicts without requiring a large investment in personnel.



GPS and other software is used to indicate locations of hazards, both natural and man made.

Photo Credit: National Safe Boating Council

- **Other?** New technology is developing as you read this Guide.

It clearly takes a multi-layered, customized approach to address the full range of issues, expectations, and challenges facing today's waterway manager. Section 2 of this Guide looks more closely at types of issues and conflicts between user groups. Section 3 presents a proven approach to developing plans and solutions for waterway use issues and conflicts. Section 4 provides an overview of various tools and approaches in use today.



Vessel Traffic System provides active monitoring and navigational advice for vessels in confined and busy waterways to prevent collisions.

Photo Credit: U.S. Army Corps of Engineers



## A DEEPER DIVE

# ONE IMPACT OF CLIMATE CHANGE NAVIGABILITY OF GLACIAL LAKES

LT JESSE COLLINS, U.S. COAST GUARD SECTOR JUNEAU, ALASKA

*Disclaimer: The views expressed herein are those of the author and are not to be construed as official or reflecting the views of the Commandant or of the U.S. Coast Guard.*

The Mendenhall Glacier (also known as Sitaantaagu) is a beautiful and easily viewable ice face located approximately twelve miles northwest of Downtown Juneau and four and a half miles north of Juneau International Airport, respectively. Its proximity to the road system makes it a convenient option for visitors who have never seen a glacier and those hoping for a glimpse of it tour the aptly named Mendenhall Glacier Visitor Center, which received 700,000 visitors in 2017. The glacier is prominently featured on many local postcards and most visitors do not consider a trip to Juneau complete until they take a selfie in front of it. A physically fit and adventurous person with more than six hours to burn and a willingness to hike and climb rocky terrain can even touch it.

The majority of the glacier's visitors arrive via cruise ships in Downtown Juneau. Then they are bused to the Visitor Center where they spend a limited time before their ship departs, making hiking to the glacier a risky proposition. As the glacier continues to recede, both visual and physical access to it will become more challenging. Unfortunately, along with the increase in global temperature, the glacier has been receding steadily for over a hundred years due to surface melt and calving where masses of ice shed and form icebergs. According to the United States Forest Service, with the glacier receding at its current rate, visitors will no longer be able to see its terminus from the visitor center by 2050.

The Mendenhall Lake is a waterway just shy of two miles in length and dynamic. Its terminus is the Mendenhall Glacier, and as the glacier recedes, the lake grows. Seasonal snowmelt from the nearby mountains, McGinnis and Bullard, forms cascades that, along with the glacier,



The Mendenhall Glacier  
Photo Credit: Lt Jesse Collins

Nugget Creek, Steep Creek, and a few small tributaries feed the lake. This water is the source of the Mendenhall River, which flows in a southward direction approximately six miles before entering salt water in Fritz Cove adjacent to Favorite Channel.

Due to the increasing number of visitors and the pace of the retreating glacier, the United States Forest Service has devised the Mendenhall Glacier Master Plan to develop the area for visitors. New infrastructure including docks and a remote glacier facility will enable visitors and residents to more easily reach the glacier and will better accommodate the substantial visitor traffic. In addition, the Forest Service intends to provide transportation from one side of Mendenhall Lake to the other by establishing a ferry service, which has raised the serious question of whether the waterway should be considered federally navigable.

The case of *The Daniel Ball*, 77 U.S. (19 Wall.) 557, 563, (1870) established the federal test for determining a waterway's navigability over a hundred years ago. In that case, the Supreme Court declared: "Those rivers must be regarded as public navigable rivers in law which are navigable in fact. And they are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways of commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water." Whether a waterway is federally navigable affects the government's ability to regulate it.

Navigability determinations are largely dependent upon survey data and history of use. Survey data of the waterways is spotty at best by virtue of their history. For instance, the Mendenhall River was surveyed in 1901, and the current lake was mostly glacier at that time.

Since then, kayaking and whitewater rafting companies have operated on the lake, which does not historically constitute interstate commerce. As part of their development efforts, the Forest Service has performed a survey of the lake and provided data that the Coast Guard will analyze and review before sharing a recommendation on navigability for Congress to assess.

On a federally navigable waterway, the carriage of passengers for hire is regulated by Title 46, Code of Federal Regulations, and these regulations set standards for everything from which type of vessel may operate on the lake to what kind of lifesaving equipment must be carried to what certification the vessel masters must have. However, the full extent of Title 46, Code of Federal Regulations does not apply unless the waterway is federally navigable, and one must prove a waterway is subject to interstate commerce before it can be deemed navigable. The question of navigability becomes significant when considering a ferry service that will transport over half a million visitors, i.e. passengers, across a chilled lake and the potential hazards of calving icebergs and glacial lake outburst floods (also known as Jökulhlaup).

The Mendenhall Lake is likely the first of many unusual waterway situations in the coming years. Global warming continues to impact our environment. As the arctic and northern regions

melt and become more accessible, new waterways will form, which will result in more visitors for both commercial and recreational purposes and new activity for longer durations. A world of possibilities awaits, but with it, so does the danger of the unknown and the untested. In the interest of safety, surveys will be necessary to identify hazards to navigation and navigability determinations will prudently follow.

## A DEEPER DIVE

# AUTOMATIC IDENTIFICATION SYSTEM (AIS)

DAVID C. BREZINA, CHICAGO HARBOR SAFETY COMMITTEE

The Automatic Information System (AIS) includes a radio (transponder) that automatically, and constantly, broadcasts location, direction and speed of commercial vessels. For specifics on vessel sizes and types see 33 CFR § 164.46 - Automatic Identification System.

Information is obtained using GPS and ship systems. It is then sent out automatically by VHF radio. It can be received by various receivers, including dedicated receivers, those interconnected with radar displays and also receivers integrated with VHF radios. Any traffic close enough to be of concern should be well within VHF radio range.

In addition to GPS information, vessel description, size, destination should be included. Some is input at initial “registration” and some can be updated.

AIS is only required for commercial vessels. Send and receive (transceiver) is optional on recreational vessels – sail and power. There are two “classes” of AIS, depending on the priority needed. For example, large commercial vessels will be Class A, while a yacht having an optional AIS transceiver will be Class B. Class B can be turned off to reduce clutter on a display.

Receive only, integrated with a required VHF radio that can also include Digital Selective Calling (DSC) can be purchased for several hundred dollars.

Therefore, “send” might not be available on many vessels in number, but “receive” can identify important information on large vessels with important maneuverability limitations (large, taking a long time and distance to change course and difficult to stop because of their size) enabling both other commercial vessels and smaller vessels to avoid trouble. Personal location sending devices can send AIS signals from a person overboard to an onboard AIS receiver. In high traffic areas, AIS information can be used to control traffic flow.

Errors can include failure to update current information (e.g. a 100-foot tug pushing barges should update length to include a 1000-foot barge string), turning off (military vessels) and basics like not every vessel has AIS, and there are limits in receivers.

Clever advantages include availability of information on the Internet, potentially useful for planning on shore but dependent on an Internet connection offshore.

- Several military vessels in recent years have been involved in collisions with large cargo ships. While causes are many, if the military vessels were not using AIS in shipping lanes, it could be a contributing factor.
- A school rowing team on a river used by commercial traffic was surprised by the appearance from around a bend of a tug and barge string. Had there been an AIS receiver on the support motorboat, coaches would have been more aware. Overturned boats could have been avoided. Fortunately, there were no injuries.
- Two commercial tugs and barge strings approaching a blind bend were in an emergency situation because one had not updated the “length” information so the other vessel made incorrect inferences about the oncoming obstruction and its maneuverability. Last minute evasive action failed to prevent damage.
- A person overboard on an overnight, port to port, sailboat race had a personal location device based on AIS but the vessel did not have an operative AIS receiver. A nearby vessel did have an AIS receiver and assisted in the successful recovery, directing the primary vessel close enough to hear the person overboard’s emergency whistle.

An awareness of AIS systems can be important for safety, even if “receive only”. AIS can be an important supplement to other maneuvering and lookout-keeping procedures. As available on the Internet, even shore based planners can see traffic many miles away.

## SECTION 1 ENDNOTES

<sup>1</sup> NASBLA Waterways Management Committee Meeting; Chairperson's Report to the BLA Work Session (Sept. 26) and NASBLA Business Meeting (Sept. 27, 2006), <https://community.nasbla.org/viewdocument/nasbla-waterways-management-committ>, Lucia Francis, Virgin Islands, Chair, Eleanor Mariani, Connecticut, Vice Chair.

<sup>2</sup> 2018 Outdoor Recreation Participation Report. <https://outdoorindustry.org/resource/2018-outdoor-participation-report>, The Outdoor Foundation.

<sup>3</sup> 2018 United States Boating Industry Statistics. <https://www.nmma.org/statistics/publications/economic-impact-infographics>, National Marine Manufacturers Association.

<sup>4</sup> 2018 National Recreational Boating Safety Survey Exposure Report, <https://uscgboating.org/library/recreational-boating-survey/NRBSS-Exposure-Survey-Final-Report-11302020.pdf>, US Coast Guard.

<sup>5</sup> 2018 and 2019 Recreational Boating Statistics. [https://uscgboating.org/statistics/accident\\_statistics.php](https://uscgboating.org/statistics/accident_statistics.php), US Coast Guard.

<sup>6</sup> USCG Maritime Commerce Strategic Outlook-Releasable. <https://media.defense.gov/2018/Oct/05/2002049100/-1/-1/1/USCG%20MARITIME%20COMMERCE%20STRATEGIC%20OUTLOOK-RELEASABLE.PDF>, US Coast Guard.

<sup>7</sup> American Waterways Operators Releases Report Detailing Benefits of Barge Industry, Connections, The Official Blog of the U.S. Department of Transportation, August 7, 2017.

<sup>8</sup> 2020 Waterway Management Nationwide Survey: Overview of results to inform Waterway Management Project Steering Committee, <https://community.nasbla.org/viewdocument/2020-waterway-management-nationwide>, National Association of Boating Law Administrators.

<sup>9</sup> The official definition of a personal watercraft (PWC) varies from state to state, but they are generally recognized as a vessel which uses an inboard motor powering a water jet pump as its primary source of motive power, and which is designed to be operated by a person sitting, standing, or kneeling on the vessel, rather than the conventional manner of sitting or standing in the vessel. PWCs are manufactured by BRP (Sea-Doo®), Honda (AquaTrax®), Kawasaki (JET SKI®), and Yamaha (WaveRunner®). <https://www.discoverboating.com/resources/quick-facts-about-pwcs-or-personal-watercraft>, National Marine Manufacturers Association.

<sup>10</sup> 2019 Special Report on Paddlesports and Safety. [https://cdn.ymaws.com/www.americancanoe.org/resource/resmgr/sei-educational\\_resources/2019\\_Special\\_Report\\_on\\_Paddl.pdf](https://cdn.ymaws.com/www.americancanoe.org/resource/resmgr/sei-educational_resources/2019_Special_Report_on_Paddl.pdf), Outdoor Foundation.

<sup>11</sup> Ibid., 2018 Outdoor Recreation Participation Report.

<sup>12</sup> Ibid., 2018 National Recreational Boating Safety Survey Exposure Report.

<sup>13</sup> Ibid., 2020 Waterway Management Nationwide Survey: Overview of results to inform Waterway Management Project Steering Committee.

<sup>14</sup> Water and Land Recreation Opportunity Spectrum (WALROS) Users' Handbook, Second Edition. [https://www.usbr.gov/recreation/publications/WALROS\\_Handbook\\_2011.pdf](https://www.usbr.gov/recreation/publications/WALROS_Handbook_2011.pdf), U.S. Department of the Interior Bureau of Reclamation.

<sup>15</sup> River Access Planning Guide: A Decision Making Framework for Enhancing River Access, [https://www.river-management.org/assets/RiverAccessGuide/02212020%20Layout\\_RAPG\\_FINAL\\_\\_PRINT\\_v21.1.pdf](https://www.river-management.org/assets/RiverAccessGuide/02212020%20Layout_RAPG_FINAL__PRINT_v21.1.pdf), National Park Service, River Management Society.

<sup>16</sup> Ibid., 2020 Waterway Management Nationwide Survey: Overview of results to inform Waterway Management Project Steering Committee.

<sup>17</sup> What's the difference between a nautical chart and a map? [https://oceanservice.noaa.gov/facts/chart\\_map.html](https://oceanservice.noaa.gov/facts/chart_map.html), National Ocean Service.



## SECTION 1 ENDNOTES

<sup>18</sup>See Live Map at <https://www.marinetraffic.com/en/ais/home/centerx:-75.5/centery:38.8/zoom:4>.

<sup>19</sup>Vessel Traffic Services Radio Procedures, <https://www.navcen.uscg.gov/?pageName=vtsTable>, U.S. Coast Guard.



*Waterway Management* is the integrated use of education, technical assistance, regulation, enforcement, and other policies and programs to govern the waters of the state for navigation, public safety and access in ways that reduce conflicts, enhance the experience for waterway and shoreline users, and minimize risks to natural resources.

Photo Credit: Florida Fish and Wildlife Conservation Commission

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## SECTION 2

# TYPES OF MULTIPLE USE WATERWAY ISSUES & CONFLICTS

This section summarizes common multiple use waterway issues, conflicts, and attitudes of various groupings of waterway users. It is not possible to fully capture the complexity and wide-range of user attitudes and expectations confronting today's multiple use waterway manager in a single section of this Guide. Major categories of users (commercial, motorized, human-propelled, etc.) provide "snapshots" of potential concerns and perspectives. Defining "categories" of user groups is difficult, as one individual may be categorized in many ways. Attitudes, tolerance of the activity patterns of others, and willingness to share a resource vary widely by location, and often reflect patterns of historic use.

Each user has expectations for a waterway experience. They seek activity along an environmental spectrum of wilderness to urban, with the level of access and development of the resource, and expected encounters with other users increasing or decreasing as they move between the two extremes. Descriptions of this basic framework of user expectations are captured in the *Water and Land Recreation Opportunity Spectrum* (WALROS) in use since the early 1980s. As stated in WALROS, *"...recreationists not only seek to participate in recreation activities, but also seek specific recreation settings in order to enjoy a special kind of recreation experience and subsequent benefits. These four components (activities, settings, experience, and benefits) constitute a recreation opportunity; that is, the opportunity for a person to participate in a particular recreation activity in a specific setting in order to enjoy a particular recreation experience and the benefits this affords."*<sup>1</sup> A user's expectations for an activity, when merged with the reality found at the setting selected for that activity, determine if the user is ultimately happy (or fulfilled, etc.) with the experience. When expectations are not met, often finger-pointing and "blaming", "labeling", or other methods expressing dissatisfaction and conflict often arise.

The information in this section builds upon previous insight captured in both the 1996 and 2004 editions of *A Guide for Multiple Use Waterway Management*.



A user's expectations for an activity, when merged with the reality found at the setting selected for that activity, determine if the user is ultimately happy with the experience.

Photo Credit: Florida Fish and Wildlife Commission

## SECTION 2A

# TERMINOLOGY MATTERS

## WHAT ACTIVITY IS CONSIDERED "COMMERCIAL"?

Terminology used by waterway managers must be understood by their stakeholder or community members. While a professional mariner may understand and interpret official communication about an on-water activity, a recreational user or the manager of a shore-based operation may interpret the information differently, or may believe it does not apply to them. Waterway managers must take care to ensure information about a topic is shared, explained in lay terms and received as intended. Often, definitions apply to specific sets of conditions or circumstances.

For example, the common term of "commercial" has numerous applications and definitions. So, when addressing conflict involving commercial vessels, where do we begin? It is vital to first understand the relevance and legal context for use of terminology, and yes, legal guidance is always well-advised for matters of importance.

Title 33 Code of Federal Regulations (CFR) Coast Guard Department of Homeland Security, Subchapter P - Ports and Waterways Safety § 160.310 defines “commercial service” as “...any type of trade or business involving the transportation of goods or individuals, except service performed by a combatant vessel” for “waters subject to the jurisdiction of the United States.” “Waters subject to the jurisdiction of the United States” as defined in Title 33 CFR § 2.38 include “navigable waters of the United States” and several additional categories.<sup>2</sup> Conflicts between commercial vessels on waters subject to the jurisdiction of the United States fall under the direct jurisdiction of the U.S. Coast Guard. This type of conflict falls outside the scope of this Guide, which focuses on interactions involving recreational vessels.



Commercial passenger vessel approaching guided kayak group and other recreational traffic.

Photo Credit: Steve Jones, Passenger Vessel Association

That is not to imply, however, that commercial activity should be ignored or not taken into consideration. The waterway manager must acknowledge the impact and necessity of commercial activity on the vast network of our nation’s waterways, specifically domestic freight transportation. Information from numerous sources, including The National Waterways Foundation,<sup>3</sup> Texas A&M Transportation Institute’s report,<sup>4</sup> the U.S. Coast Guard, and others illustrate the ongoing economic and environmental benefits of conducting commerce by waterway and describe the impact of diverting waterway commerce to highway or rail.

Commercial cargo vessels have vastly different needs for facilities and traffic management than would a tour boat embarking and debarking hourly. When addressing issues on waters subject to the jurisdiction of the United States, the waterway manager should work in partnership with the local U.S. Coast Guard Sector or Captain of the Port.

## COMMERCIAL MARITIME OPERATION VS. RECREATIONAL BUSINESS (RENTAL, EVENT, ETC.)

Commercial vessels aren’t limited to those which bear cargo. The Passenger Vessel Safety Act of 1993,<sup>5</sup> and its guidance document Navigation and Vessel Inspection Circular No. 7-94,<sup>6</sup> identifies a range of requirements for passenger-carrying vessels. Definitions regarding “commercial” or “commercial service” are often defined within the regulation and, as previously indicated, may vary from one regulation to the next. Similarly, definitions of “passenger” vary and are often qualified such as “passenger for hire.” Typically, a “passenger” is anyone “on” the vessel other than master, crew, and owner. This may even be a vessel that is moored and never leaves the dock with the passengers on board.

Three perspectives may be required: (1) the shore side operation; (2) the vessel or vessels; and (3) the operator of the vessel or vessels. Consider any outing with more than 12 paying passengers on navigable waters. It may be a scenic ecological tour, a fishing trip, or a dinner cruise considered as recreation by the passengers, but the vessel and its operation are deemed “commercial” by the U.S. Coast Guard. Each vessel needs Coast Guard inspection and each captain needs a Coast Guard credential.<sup>7</sup> In cases where six or fewer passengers are aboard, vessel inspection is not required and a lesser level of credential is required by the captain. Vessel requirements differ if an individual rents or charters a watercraft assuming full responsibility for its operation (including carrying passengers). If the charterer is fully responsible, the boat remains “recreational” to the Coast Guard, not “commercial” even if they charge up to 12 passengers. The charterer, not the owner, is responsible for arranging for a credentialed “captain” on board if passengers pay. Thus, boat “rentals” might be commercial businesses onshore and recreational when operating on-the-water, depending on who and how many pay for what. If it is wholly in-state, not on navigable waters, even the vessel and captain rules may be different.<sup>8</sup>

# WHO DETERMINES IF A WATERWAY IS “NAVIGABLE”?

The U.S. Coast Guard maintains a list of waterways declared navigable by court rulings or legislation. When determining navigability, the first inquiry should be to the U.S. Coast Guard District Office<sup>9</sup> covering the area in question. There are a huge number of waterways in the United States which are “navigable in fact” but are not listed as navigable by the U.S. Government. According to U.S. law, streams or lakes are referred to as “navigable in fact” when they are used in their ordinary condition as highways for commerce. To qualify as navigable in fact, a waterway must provide practical utility to the public. It must serve as a means of transportation. Rivers that are navigable in fact are considered public navigable rivers. And they are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water.<sup>10</sup>

## What is a driver of use conflicts?

“Personal Watercraft operators who have no respect for obeying no wake/slow motor zones, etc... Also new boat operators that do not know or practice the rules of respectable navigation.”

Nationwide Waterway Management Survey  
Respondent (Q6#97)

While all waterways may not be included in official records, this guidance provides an important starting point to define navigability. If declared as navigable these waterways fall under the jurisdiction of the United States as well as state, territory, or local jurisdictions. Additionally, federal agencies such as the National Park Service, have laws that apply within defined boundaries, while other federal agencies, such as the Bureau of Land Management, U.S. Forest Service, or U.S. Fish and Wildlife Service, may broadly oversee resources or populations and, thus, overlap authority with state, county, local or other federal entities. In these cases of overlapping authority, each agency typically

“Boat traffic continues to grow and boat speeds have increased; safety for all smaller and slower waterway users and marine life and shoreline is not being properly considered or calculated in current management strategies.”

Nationwide Waterway Management Survey  
Respondent (Q3#47)

enforces its own set of (sometimes competing or inconsistent) regulations. In cases when a waterway serves as a border between two states, concurrent jurisdiction may occur based on prior legal agreement, court ruling, or compact between the bordering states. Concurrent jurisdiction may address specific matters such as enforcement of laws and safety.

Waters NOT declared to be navigable and NOT under the jurisdiction of the United States fall typically under state, territory, or tribal laws which also vary widely. Competing or differing regulations are often triggers of user frustrations. Waterway managers must develop an understanding of the various levels of jurisdiction applicable to each waterway, including differences between federal and state law addressing navigation, access, and waterway use, and ensure each agency sharing authority is included at some level in the waterway management planning process.

## What is a driver of use conflicts?

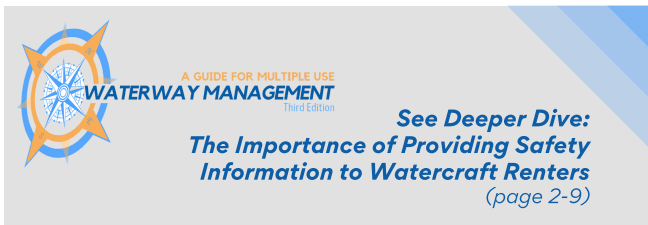
“Inexperienced standup paddlers on navigable waterways with huge volumes of commercial and recreational traffic.”

Nationwide Waterway Management Survey  
Respondent (Q6#72)



# BUSINESS INTERESTS & REQUIREMENTS FOR LIVERIES & RENTALS, OUTFITTERS, GUIDES, ETC.

Individual, experienced kayakers often behave quite differently than a string of inexperienced, paddling sightseers. A large group renting personal watercraft and operating near a launch ramp may raise different concerns than a club of privately-owned personal watercraft operators on an organized outing. Experience and knowledge matters. Common sense and common courtesy provide good guidance!



Many waterway management challenges originate shoreside, during an event such as renting watercraft to a novice operator without providing safety information, operating instruction, or guidance. Confusing the issue, there may be differences in state and local laws for vessels "rented" versus those "privately owned and operated". In cases where the rental facility releases the vessel to an individual through a rental agreement and without a provided guide or instructor, the person renting the vessel assumes full control for its safe and legal operation, similar to renting a car. Some states require operators of rented powerboats to show evidence of prior completion of a state-approved boater education course. Other states have lesser requirements for boat rental, such as completion of a short, on-site quiz if renting a powerboat, or no education requirement if the rental is nonmotorized or under a certain horsepower. At the time of publication of this Guide, no state or U.S. territory (except for the District of Columbia) requires proof of boater education for rental of a nonmotorized vessel such as a canoe, kayak, or SUP.

Additional federal, state, or local requirements or considerations may apply to a rental or outfitter service. For instance, providing a service on National Forest System lands requires proper

**“** *I don't want to blame watercraft rental outfitters, because I know that you can provide all of the training and safety information necessary but if people think they already know everything . . . we have a big problem with people overestimating their own abilities and knowledge and putting others in danger. I think more patrol and enforcement would be helpful.”*

Nationwide Waterway Management Survey  
Respondent (Q6#44)

authorization to comply with 36 CFR § 261.10(c) which prohibits “selling or offering for sale any merchandise or conducting any kind of work activity or service unless authorized by federal law, regulation, or special use authorization.” Examples of outfitted services include guiding a whitewater rafting or kayaking trip, or providing a guided tour in addition to many other types of activities. Guiding is defined as providing services or assistance (such as supervision, protection, education, training, packing, touring, subsistence, interpretation, or other assistance to individuals or groups in their pursuit of a natural resource-based outdoor activity) for monetary reward or other gain.



A customer is provided hands-on orientation during a powerboat rental process.

Photo Credit: National Safe Boating Council

# THE WIDER VIEW

## COMMERCIAL VS. BUSINESS INTERESTS VS. RECREATIONAL PUBLIC

In 2017, the National Transportation Safety Board (NTSB) issued a "Safety Recommendation Report" highlighting an incident involving a guided kayak tour and a ferry boat on the Hudson River in New York City to illustrate the conflicts, and potential dangers, that can occur when commercial and recreational waterway users cross paths.<sup>11</sup> The kayak tour guide attempted to signal the ferry captain by waving his arms, but the captain reported that glare from the setting sun caused him to not see the paddlers in time to avoid colliding with them. Three kayakers, including the guide, were injured in the collision. The NTSB report seeks to capture growing concerns from stakeholders regarding the perceived increase of encounters between commercial and recreational vessels. It reads:

*"The growth in both commercial and recreational vessel traffic on the MTS (Marine Transportation System) over the last several decades can be attributed to a number of factors, including population growth, greater demand for waterborne transportation of passengers and goods, growth in international trade, and an increase in the availability and use of recreational vessels. Although the number of registered recreational vessels has decreased over the last decade, the reduction is not reflective of the trend in the total number of vessels on the waterways. In fact, the number of canoers, kayakers, and standup paddleboarders (SUP) increased by 21.9% between 2008 and 2014, with the vast majority of their vessels being unregistered. Consequently, the number of interactions between these diverse vessels has risen, thereby increasing the safety risk, especially where confined waterways limit the ability of vessels to maneuver safely.*

*"The safety risk is exacerbated not only by the diversity of waterway users but also by differences in their experience, marine knowledge, and boat-handling skills. Moreover, state requirements vary considerably, and in some states, recreational vessel operators may not be required to attend a boating safety course, obtain a license or*

*certificate, be familiar with the navigation rules (commonly called the "Rules of the Road"), or even demonstrate proficiency in watercraft operation. Yet they can legally operate on any waterway regardless of the waterway's size, complexity, or traffic density. According to a Coast Guard estimate, only 28% of motorized recreational vessel operators were required by state laws to complete a boating safety course or pass an examination of boating safety knowledge in 2015.*

*"Adding additional risk, recreational vessel operators may not realize that their vessels' small sizes and nonmetal construction materials make both visual and radar detection more difficult. An officer in charge of the navigation watch on a large cargo or passenger ship positioned 100 feet or more above the water's surface will be challenged to see from the bridge window or detect by radar a paddleboard whose operator is maneuvering in close proximity to the larger vessel. (Because most small vessels are constructed of materials such as fiberglass or other composite materials, which either absorb or poorly reflect an electromagnetic wave, they may be difficult to detect by a ship's radar.) The risk of collision resulting from these potential interactions can lead to injury or, worse, loss of life."<sup>12</sup>*

**“** There seems to be a basic ignorance or a mindset of entitlement that whatever or wherever a paddle boarder or small day boat operator can “do as they wish,” believing that a commercial boat can yield on a whim. That understanding the rules of the water in keeping a safe distance is the responsibility of the small vessel/paddle board operator, too.”

Nationwide Waterway Management Survey  
Respondent (Q8#181)

In summary, the NTSB report highlights the need for boating safety education to alleviate some of these conflicts due to a boater's lack of knowledge, noting that the risk presented by the lack of training compounds when:

1. The waterway is confined by its overall size, channel width, or depth so that there is insufficient room for vessel operators to maneuver around each other;
2. Waterborne events are occurring (whether permitted or not), such as fireworks displays, regattas, or other activities that attract waterborne spectators and increase traffic density; and
3. Stakeholders, through their local HSCs (Harbor Safety Committees), are not effectively addressing safety concerns in their purview.

The NTSB concludes: *"HSCs can substantively improve safety between commercial and recreational vessels if risks are regularly identified, practices are developed and implemented to mitigate these risks, and these practices are shared with stakeholders and other HSCs. Therefore, the NTSB recommends that the Coast Guard establish a process whereby, at regular intervals, all HSCs identify the safety risks posed by the interaction of commercial and recreational vessels in their respective geographic areas; where necessary, develop and implement practices to mitigate those risks; and share successful practices."*<sup>13</sup>



Two commercial vessels meet on a constricted waterway with a full recreational vessel sandwiched between.

Photo Credit: Steve Jones, Passenger Vessel Association

## SECTION 2C

# RECREATIONAL PUBLIC VS. RECREATIONAL PUBLIC

“My home is on the (location removed) River in Florida. Our biggest concerns are the safety of all and particularly floaters that use the river and the negligence of boaters/personal watercraft that pass through the same area. We have watched boaters and PWCs fly by and even through groups of people/families without slowing down! We feel the need for legislation that would require all boat/personal watercraft to be required to idle past floaters and/or swimmers. Expecting people to use common sense and/or courtesy doesn't do enough to ensure the safety of all who use this river.”

Nationwide Waterway Management Survey  
Respondent (Q3#106)

An increase in the number of recreational vessels on the water is not exclusive to a certain type: there has been an increase in both recreational powerboating and human-powered vessels such as kayaks, canoes, and SUPs. Emerging user group conflicts require that we be aware of all vessel types on the waterway, including smaller, human-powered vessels which are typically not as visible to powerboat operators often traveling at higher rates of speed. Wakes from large powerboats can be dangerous to kayaks, canoes and SUPs. Human-powered vessels are slower and often more difficult to maneuver, especially in rough water. As waterway usage and diversity of craft increase, awareness of use patterns, awareness of impacts of behavior, formal and informal education of all user groups, and common courtesy will continue to be challenges for today's waterway manager.



## SECTION 2D

# PRIVATE LANDOWNERS & EVERYONE ELSE

“Shoreline landowners must not have total control of waterway.”

Nationwide Waterway Management Survey  
Respondent (Q7#32)

Private landowners, including individuals, utility companies, homeowner associations and private clubs or organizations on or near the waterway may be a source of conflict for the boating population, whether commercial or recreational. The wake or speed of boats on the waterway can disrupt the condition of the water and erode the land causing frustration, unsafe conditions and possible structural problems.

“I live near the (specific location removed) Boat Ramp Rd. I use the river recreationally on occasion. We've had mobs of folks coming here since the COVID-19 pandemic, especially on weekends. They leave garbage up and down our road, congregate in large groups, clutter the street with parked cars, and in general, dispel serenity. On the river, boats are often clumped together. Occasional motor-powered boats or PWCs speed through, creating dangerous conditions for the paddlers and swimmers, to say nothing of the noise. Use of this boat ramp should be limited to keep the numbers down, perhaps restricted to (specific location removed) residents. Powered boats and PWCs should be completely banned.”

Nationwide Waterway Management Survey  
Respondent (Q3#70)

Private landowners may experience recreational boaters parking or otherwise trespassing on their land, especially if it is near a marina or other

loading facility. Potential conflicts could be triggered by disruptive noise on the waterway or near a landowner's home, litter left by waterway users in the water or on land, or other sources of damage or disruption. Abandoned or derelict vessels cause conflict with private landowners if not removed promptly.

### What is a primary driver of use conflicts?

“Weekend users that have no regard for property owners.”

Nationwide Waterway Management Survey  
Respondent (Q6#59)

Laws regarding private ownership and the impact or control of activities on water flowing through private lands vary from state to state. Many states hold "waters of the state" in the public domain allowing navigation on waterways flowing through private lands so long as a user does not stand or disembark onto the private property (exceptions are often permitted for emergencies or to avoid a hazard). In several states, especially in the western U.S., landowners may have full ownership of water flowing through private property and may strictly prohibit non-authorized use. The waterway manager must research and understand local and state access, navigation rights, and recreational use statutes impacting management areas.

“... regarding dam releases of recreational flows, I have witnessed many scheduled releases cancelled without rescheduling. These are recreational opportunities that are being taken away from the public.”

Nationwide Waterway Management Survey  
Respondent (Q3#36)

### What is a primary driver of use conflicts?

“Watercraft owners/users who have no appreciation for the environmental and social impacts of their activities.”

Nationwide Waterway Management Survey  
Respondent (Q6#2)

It is difficult to address a lack of common courtesy or bad behavior. Public outreach, especially when communicated through local clubs, national organizations, or stakeholders, can greatly influence a user's understanding of the negative impact their activities have on those around them.

Partnering with stakeholder organizations to provide information and insight about the expectations of the waterway community on how new or different use might be understood, accepted, and appreciated should be one of the first approaches for the management of conflict.

### What is a primary driver of use conflicts?

“Any recreational use, waterways are for flood control.”

Nationwide Waterway Management Survey  
Respondent (Q6#137)

“I take issue with fishermen who think the waterway where they are fishing is for their own personal use, rather than being a multi-use waterway; they yell at people who paddle canoes and kayaks in what the fishermen view as ‘their’ waterway.”

Nationwide Waterway Management Survey  
Respondent (Q3#41)

### What is a driver of use conflicts?

“Crowds of PWC's (almost gang-like) that speed all over and around other boaters and don't follow any rules in the water or at ramps.”

“Boaters' (in)ability to navigate waters, on plane, to avoid hitting bottom while ignorant kayakers meander down the channel.”

“Competition for space at access points and on the water, primarily between motorized and nonmotorized vessels.”

Nationwide Waterway Management Survey  
Respondents (Q6#113) (Q6#89) (Q6#74)

The following sections of this Guide present approaches and overviews of a broad range of concepts for responsible multiple use waterway management.



Recreational traffic impeding the channel for all other users.

Photo Credit: Passenger Vessel Association

## A DEEPER DIVE

# THE IMPORTANCE OF PROVIDING SAFETY INFORMATION TO WATERCRAFT RENTERS

ROBIN POPE, AMERICAN CANOE ASSOCIATION (ACA), PRESIDENT

Recreational boaters generally have an enjoyable and safe time on the water. Unfortunately, hundreds die each year due to boating accidents, and thousands more are injured. Common types of accidents include collision with other vessels, collision with fixed objects, grounding, flooding/swamping, and falls overboard. In almost all cases, they result from operator error. It is not surprising that common contributing factors to accidents include inattention, poor lookout, and inexperience. When only fatalities are considered, falling overboard and capsizing are the most common type of accident. Alcohol consumption is the leading contributing factor for fatal accidents.



Photo Credit: U.S. Coast Guard

Rental boats are involved in 10-15% of all boating accidents, injuries, and deaths. However, boaters who rent vessels may have less incentive to complete boat operations and boating safety training than do boat owners. Boat rental facilities must provide appropriate training for renters to reduce their risk of injury or death, as well as to reduce the risk of damage to the rental vessel. Training need not be complicated - but it must address:

- Common types of boating accidents
- Common causes of fatal accidents
- Common contributing factors for accidents and deaths, and how to avoid them.

Life jacket wear and participation in boating education are not considered distinct contributing factors for boating accidents. However, the vast majority of boaters who die on the water are not wearing a life jacket; the vast majority of boat operators involved in accidents received no boating education.

Simple, easily-delivered messages focused on common accidents and ways to prevent them, could prevent many boating injuries and deaths. In some cases, boaters are incentivized to take boating courses that teach these concepts. Boat operators may be required by state law to complete training; boat owners may receive discounted insurance for completing training.

Recreational boating is generally very safe. Simple, safety-oriented education makes boating even safer and more enjoyable for all boaters, including those who rent boats.



Photo Credit: Water Sports Foundation



## SECTION 2 ENDNOTES

<sup>1</sup> Water and Land Recreation Opportunity Spectrum (WALROS) Users' Handbook, Second Edition, [https://www.usbr.gov/recreation/publications/WALROS\\_Handbook\\_2011.pdf](https://www.usbr.gov/recreation/publications/WALROS_Handbook_2011.pdf), U.S. Department of the Interior Bureau of Reclamation.

<sup>2</sup> Navigable waters are defined in Title 33 Code of Federal Regulations (CFR) § 2.36.

<sup>3</sup> Infographic – A Strong Inland Waterways System Delivers a Stronger American Economy, [http://www.nationalwaterwaysfoundation.org/documents/NWF\\_169416\\_OverviewBro\\_Final\\_lowres.pdf%20for%20web.pdf](http://www.nationalwaterwaysfoundation.org/documents/NWF_169416_OverviewBro_Final_lowres.pdf%20for%20web.pdf), National Waterways Foundation.

<sup>4</sup> A Modal Comparison of Domestic Freight Transportation Effects on the General Public: 2001-2014; <http://nationalwaterwaysfoundation.org/documents/Final%20TTI%20Report%202001-2014%20Approved.pdf>; Texas A&M Transportation Institute.

<sup>5</sup> Passenger Vessel Safety Act of 1993, <https://www.congress.gov/bill/103rd-congress/house-bill/1159/text>, H.R. 1159, 103rd U.S. Congress.

<sup>6</sup> Navigation and Vessel Inspection Circular No. 7-94, Guidance on the Passenger Vessel Safety Act of 1993.

<sup>7</sup> Carrying Passengers on Your Boat...Legally?, [http://wow.uscgaux.info/Uploads\\_wowII/P-DEPT/PaxForHire\\_GuideChart.pdf](http://wow.uscgaux.info/Uploads_wowII/P-DEPT/PaxForHire_GuideChart.pdf), U.S. Coast Guard.

<sup>8</sup> Requirements For Uninspected Passenger Vessels, Enclosure (1) to LANT/PACAREAINST 16710.2, <http://www.dem.ri.gov/commissions/documents/pilotage/uscg-rup.pdf>, U.S. Coast Guard.

<sup>9</sup> See U.S. Coast Guard District Boundaries and Contact Information, <https://www.navcen.uscg.gov/?pageName=districtBoundaries>.

<sup>10</sup> Navigable in Fact Law and Legal Definition, <https://definitions.uslegal.com/n/navigable-in-fact/>, Daniel Ball, 77 U.S. 557, 563 (U.S. 1871).

<sup>11</sup> Shared Waterways: Safety of Recreational and Commercial Vessels in the Marine Transportation System, <https://www.nts.gov/investigations/AccidentReports/Reports/MSR1701.pdf>, National Transportation Safety Board.

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

## SECTION 3

# DEVELOPING PLANS & APPROACHES

Effective planning and management for multiple uses of waterways require a well-organized and comprehensive process. This process, in turn, encompasses many factors and considerations. Poor planning or no planning often causes complications, confusion, unnecessary time consumption, and high cost. Take the time to apply a systematic and disciplined approach to all upcoming project plans.

This section of the Guide offers a basic framework for conducting a management planning process. Use this approach for a range of planning efforts whether it is for a discreet project or a comprehensive management plan. It is flexible in its suggested procedures and levels of detail.

Specific steps, procedures, or entire processes may exist and be mandated or prescribed by federal or state legislation programs, such as federal wild and scenic rivers legislation or environmental regulations compliance.

A waterway management planning process contains fundamental components, referred to in this Guide as the Six-Step Basic Planning Process. Here is an overview:

## SIX-STEP BASIC PLANNING PROCESS

### ORGANIZE

#### PLANNING THE PLAN

- Initial assessment of problems, constraints, assets, and opportunities
- Dissemination of purpose
- Identification of participants
- Preparation of work program and budget

### RESEARCH

#### DISCOVERING AND LEARNING – LOOKING OBJECTIVELY AT SITUATIONS

- Inventory of existing information
- Preparation of base and analysis maps
- Analysis of safety, conflict, and quality
- Analysis of economic impact
- Analysis of policies, regulations, and circumstances

#### PLAN – CREATING AND EVALUATING WEIGHING ALTERNATIVE PROPOSALS

- Statement of overall goals
- Statement of preliminary management techniques
- Preparation of evaluation of alternative Solutions and their implications

#### DECIDE – CHOOSING AND DETAILING MAKING SPECIFIC RECOMMENDATIONS

- Statement of overall goals
- Statement of preliminary management techniques
- Preparation of evaluation of alternative solutions and their Implications

### ACTION – PREPARING

- Determination of priorities and scheduling of actions
- Identification of solicitation of funding
- Attraction and coordination of roles and responsibilities
- Monitoring and adjustment for change

### MONITOR- EVALUATING AND UPDATING

- Evaluation of the plan
- Adjustment of the plan
- Communication of success stories

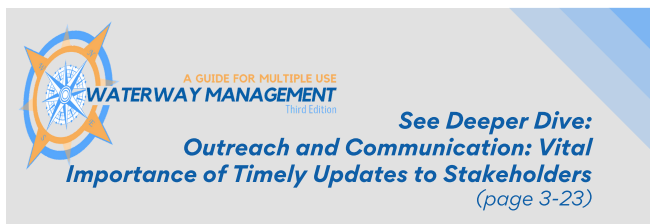


Effective planning requires a well-organized and comprehensive process encompassing stakeholder desires and demands.  
Photo Credit: Meredith Meeks



# FEATURES

The actual value of a planning and management process is its logical, systematic approach. Encourage comprehensive coverage of as many relevant factors in the planning process as practical. Examples of improper, incomplete, and insensitive planning, or no planning, are plentiful: they result from a failure to involve those affected by decisions (stakeholders) and the ignorance of possible decisions. Thoughtful planning helps ensure high-quality, sustainable solutions.



This Six Step Basic Planning Process may not meet every need. Still, it is a sound template whose elements provide a checklist of familiar and relevant steps and considerations. The six-step process offers plenty of flexibility for waterway planners and managers.

If a planning process is not in place, this section can provide helpful basics. If a process is initiated or near completion, many of these planning elements may still help complete the process. If a quick response is needed on one or more issues, use this process to track short-term steps versus others to consider at a later date.

“All activities are important to me, depending on location, site needs, and natural resource limitations. It is most important to me that activities be limited based on natural resource and carrying capacity considerations, determined within a scientifically rigorous methodology. Sustainability is key.”

Nationwide Waterway Management Survey  
Respondent (Q3#156)

## THE SIX STEPS

# STEP 1 - ORGANIZE

Prepare a "plan for planning" to increase the likelihood that the plan is thoroughly developed and desired outcomes more likely to occur. Including key participants, conducting sufficient research, and establishing frequent and transparent communication encourage developing a plan understood by all collaborators and implemented successfully.

State the specific reasons for developing the planning process. This lays the groundwork for determining those involved in preparing detailed work programs, schedules, and budgets.

Since many waterways are managed by more than one jurisdiction, successful management efforts require collaboration among multiple agencies. Developing an environment of cooperation among agencies is a critical element of this initial organizational step.

Take the time necessary to think through and identify important planning process details before proceeding.

## ASSESSMENT OF CONDITIONS

Consider these tasks to begin the planning process with confidence by identifying assets and opportunities, as well as problems and constraints.



Follow a planning framework ensures consideration of diverse points of view.

Photo Credit: J. Gangemi

## **ASSESSMENT 1 - REVIEW EXISTING RELEVANT INFORMATION**

Collect and organize data, studies, plans, surveys, and maps. Understanding the waterway and planning situation at the national and regional levels provides guidance and perspective. Opportunities may exist to manage different waterways for a variety of management objectives.

Plans, economic analyses, environmental studies, and other existing sources help planners develop or update a waterway management plan. Information is available from the state, region, county, or municipalities, in addition to parks, recreation, and open space plans. Maps, aerial photos, and geospatial (utilizing geographic information systems, or GIS) resources may exist offering waterway delineation such as harbors or inland waterways; topographic features, vegetation, and parks; and built elements such as bridges, marinas, and outfitters.

Available tools are often in the public domain, offering an excellent, cost-effective start to the planning process.

## **ASSESSMENT 2 - IDENTIFY CURRENT RULES AND REGULATIONS**

Many waterways are subject to the rules and regulations of more than one level of government, plus the private sector. They may address coastal waterway, deep harbor, or river shoreline regulations, and they may overlap and contradict one another. Local government agencies are good sources of information regarding existing rules and regulations.

Identify and document the rules and regulations, stating who bears or shares enforcement responsibility. Enforcing existing regulations solves many problems. High visibility patrols during peak times reduce safety problems.

## **ASSESSMENT 3 - CONDUCT FIELD RECONNAISSANCE TRIPS**

The best way to learn about a waterway is to experience it firsthand. Take advantage of maps, charts, and aerial photos to record notes and observations.

Use an itinerary to conveniently and completely cover the desired areas. Identify water surface and shoreline characteristics. Learn and understand use patterns including activity conflicts; and safety concerns, including the location and nature of hazardous areas. Conduct at least one trip during known peak use periods and another trip during off-peak periods, if possible. Talk with boaters and other waterway users, area residents, business people, and others during these reconnaissance trips. Discuss findings and opinions with other field reconnaissance participants to develop an understanding of both waterway use characteristics reflective of broad use trends and those specific to your project area.

## **ASSESSMENT 4 - DESCRIBE WATERWAY AND RELATED ACTIVITIES**

Many planners, managers, and waterway users know where activity concentrations, circulation patterns, and conflict situations exist or tend to develop. Their insights should be summarized in a medium for planning and sharing purposes, whether data plotted on maps or stories shared through audio and video recordings. This information helps organize a contextualized planning process.

## **ASSESSMENT 5 - DRAW PLANNING-AREA BOUNDARIES**

Choose the most significant area for research, planning, and action, whether required by a program or simply defined for project purposes. If the plan is an update or utilizes an existing report, reevaluate previously established boundaries related to jurisdiction, waterway linkages, enforcement agency coverage, watershed and shoreline characteristics, water accessibility, and the relationship between water use and land use.

## **ASSESSMENT 6 - SUMMARIZE PROBLEMS AND OPPORTUNITIES**

Summarize findings collected through Assessments 1 through 5 on a table and a map, as appropriate. These provide a starting point that should expand as management planning evolves. On the following page you will find examples of Opportunities and Constraints.

## OPPORTUNITIES

- The waterway is very large and has ample opportunities for new access areas to disperse use.
- Stakeholders are willing to communicate, meet and discuss ways to resolve conflicts.
- The waterway is a major tourist attraction and is important to the area's economy.
- Grant funding is available to design and produce a waterway mobile app.
- The potential exists to share costs with others for waterway management.
- Opportunities exist for zoning certain areas of the waterway for certain activities during periods of peak use.
- Several volunteer groups exist to assist local stewardship efforts (e.g., U.S. Coast Guard Auxiliary, friends group, local paddling club).
- There are very few conflicts between recreational and commercial vessels.
- Potential exists for encouraging recreational boating in other waterways in the region.
- Others

## CONSTRAINTS

- There is limited financial support for waterway patrols and new access area development.
- Narrow areas tend to choke traffic during peak use periods.
- Many different jurisdictions are involved in aspects of waterway management.
- Several shallow areas with rocks exist and are not marked.
- The shoreline is almost fully developed, limiting access to the public.
- Some areas are overcrowded, while other areas are underused.
- Many different activities are competing for use of the waterway.
- Water levels fluctuate dramatically.
- Existing laws preclude use of certain management techniques.
- Municipalities do not have zoning authority they can utilize to control shoreline development.
- Others

The initial Assessment of Conditions defines the purpose of a management approach, which might be to update an existing plan, respond to licensing compliance, address policy management responsibilities, or meet other requirements. The purpose may also be to forecast, correct, or reverse the incidence or effect of a specific safety concern, activity, or environmental threat.

Purposes for planning include a need to accomplish one or more of the following:

- address safety issues and concerns;
- reduce water use activity conflicts (or a specifically identified conflict);
- respond to water user, landowner, or community complaints;
- protect the environment (natural and cultural); and
- maximize water use opportunities.

Clear articulation of the plan's purpose sets the stage for developing guidelines, budgets, funding resources, and stakeholders.

**“** Management of waterways needs to proactively plan and act on predicted impacts of climate change when considering waterway use and changing use patterns. Natural resource protection and conservation must be positioned as one of the highest concerns when considering waterway management. Managers should work with stakeholders to create separation of non-compatible uses.”

*Nationwide Waterway Management Survey Respondent (Q8#10)*

## IDENTIFY AND INVOLVE STAKEHOLDERS

Those who represent the many and varied interests of waterways users should be involved early in the planning process. The participant group should include parties who can offer expertise, insight, and opinions and participants who have the ability, contacts, and financial resources to help implement the management plan. This vital resource group should include representatives of the public and private sectors and members of the general public.

Develop an inclusive, open, and proactive participant group. Review "Community Involvement" in Section 4 of this Guide for approaches to encourage involvement from stakeholders to contribute substantially to the plan and process.

Check governing regulations and administrative procedures to determine any public hearings mandates for the planning and decision-making process. A successful participant involvement process or a best management practice may be available for continuing use or appropriate modifications (e.g., meeting virtually vs. a requirement to meet in person).

### AN ADVISORY GROUP

This group should guide and supplement the technical expertise and day-to-day planning efforts of staff or consultants responsible for research, planning, and management plan preparation. The advisory committee composition should include agency planners and stakeholder representatives and regularly meet during the planning process. While comprehensive in its representation, the group should be small enough to function as a direct participant in the process. An executive committee helps to overcome group-size limitations and facilitate effective decision-making. To provide an appropriate level of heft in the planning process, make the group's role clear to all involved.

## WATERWAY CONSTITUENTS - POTENTIAL STAKEHOLDERS

### PUBLIC - AGENCIES

- Park / parks and recreation managers
- Port authorities
- Federal, state and local agencies
- Water safety organizations and entities
- U.S. Power Squadrons
- Law enforcement agencies
- Federal licensing agencies
- Boating access program administrators and managers
- Military

### PUBLIC - USERS

- Recreational water users
- Volunteers
- Citizens
- YMCA, YWCA, scouts
- Schools
- Non-profit groups
- Waterfront property owners
- Local/nearby property owners

### PRIVATE

- Commercial vessel operators
- Commercial liveries and boat rental agencies
- Marinas and marina trade associations
- Harbor masters
- Marine industry representatives
- Utility companies
- Economic development agencies
- Real estate agencies
- Commercial water park managers
- Chambers of commerce and tourism interests



## CONDUCT INTERVIEWS

One-on-one interviews are valuable methods to obtain unpublished information, discover significant issues and concerns, and expose alternative, creative strategies for water use and shoreline management techniques. These interviews tend to be most productive with people who have technical or specific interests, talents, and concerns.

## USER SURVEYS

Surveys of the people who use the waterway and have firsthand knowledge of water use situations are extremely valuable. Surveys secure input from members of the boating public unable to attend public meetings and who may not identify with an organization or representative.

## SCOPING

Scoping involves sending an information package to appropriate entities, such as individuals or businesses, and requesting written comments.

## PUBLIC MEETINGS

Town hall-style meetings can be held in person or through online meeting platforms. They offer valuable opportunities to share program objectives with the public and learn about issues, questions, and priorities among stakeholders which have not surfaced in surveys and may amplify or introduce a new planning consideration. They can also provide invaluable specific, technical, or nuanced suggestions from those who work or live on or near the waterway.



Specific planning steps may be mandated by federal or state programs.

Photo Credit: Corita Waters

## WORK PROGRAM AND BUDGET

A detailed work program should include written descriptions of all necessary steps and tasks. Be careful not to prepare a scope of work that may be too ambitious for the need or the budget. Consider developing a flow diagram of steps and tasks, a simplified, graphic tool that helps to:

- present each major work item;
- show their relationships;
- illustrate the sequence; and
- schedule of the work.

Identify workshop meeting times, places, and participants. The flow diagram should list interim and final products such as working memoranda, analysis and plan maps, draft and final reports, and deadlines. Planners may have a budget as a guide and may have to prepare a work plan and budget as the basis for seeking funding.

Make a list of expense items in as much detail as possible. Base estimates on general costs, "comparables" from similar projects, several price quotes, and discussions with knowledgeable individuals. If a Request for Proposals (RFP) is issued, the consultant can include a fixed fee cost for the various work items and end products. Although a consultant or contractor may have significant responsibilities for plan preparation, project administration and coordination costs are inevitable. Be realistic about the budget, remembering that it may be preferable to reevaluate work priorities in the interest of maintaining a rational step-by-step process.

Consider various funding sources for plan preparation, including private donations or federal and state planning grants. It might be possible to schedule the work over two years to take advantage of funds available in two budget years.

## STEP 2 - RESEARCH

The research step is the discovery and learning phase of the planning process to look at the characteristics, activities, and users of waterways and adjacent land areas. Research is time-consuming and often expensive: interesting and valuable if done well; frustrating if done poorly. Be cautious about pursuing too much research for its own sake as it could leave little time for consideration of alternative solutions.

### COLLECT RELEVANT INFORMATION

Obtain as much information as possible through readily available source materials and previous contacts. Be sure to check the reliability of the sources and the validity of the methodology and the data. Conduct a field survey to fill informational gaps; validate and update existing information; acquire other information through field observations; and become familiar with the realities of the project's waterway conditions and uses.



Effective planning includes on site research of existing conditions.

Photo Credit: David Cernicek

## BASE MAPS

Prepare a base map showing roads, waterways, and political boundaries as soon as possible. Geographic Information Systems (GIS) data should be the first resource for mapping information. Most relevant surface water information should be searchable on Google Earth, through which geospatial layers can overlap and intersect.

Base maps (or maps used to prepare a base map) may be available from state agencies or regional, county, or municipal planning commissions and helpful for group and public meetings.

Traditional topographic maps are available online from the U.S. Geological Survey (USGS). The 15 minute (1 inch = approximately 1 mile) USGS maps show roads, railroads, utility lines, political boundary lines, and other valuable items to include in the project base map. More detailed 7-minute quadrangles (1 inch = 2000 feet) are also available for many areas.

Two base maps may be necessary, showing the project area and adjacent lands and a smaller scale map showing the regional setting. The regional map helps identify broad-scale factors which may affect planning.



Maps may be available from state, regional or municipal agencies.

Photo Credit: National Safe Boating Council

## ANALYSIS MAPS

Analysis maps should include natural and cultural features and include other essential items for plan preparation and decision-making.

While more than one analysis map is helpful, there are advantages to mapping related information together on one map. Possible analysis layers include:

- natural features,
- cultural features,
- current rules and regulations,
- existing land use,
- existing facilities,
- existing waterway activity and use levels,
- major influences,
- water safety problems, and
- access areas.

## SAFETY SURVEY ANALYSIS

Research surveys and studies that may guide a planning process span a wide variety of forms, from the assembly and evaluation of published activity and accident statistics to personal interviews with boaters and those who investigate accidents and fatalities.

Survey and analysis subjects may include waterway activities, activity patterns, activity conflicts, user characteristics, behavior patterns, accidents, and impacts on natural resources. Primary participants should include boaters, other water-based recreationists, shoreline users, planners, users involved in the business of waterway transportation and commerce, resource managers, and waterway and boating law administrators.

Research in multiple-use planning should focus on safety, conflicts, and the enjoyment of the waterway recreation experience. Before deciding on the type, breadth, and depth of research required, the planner should become familiar with the sources on the following pages.



## WATER USE ACCIDENTS AND NEAR ACCIDENTS

Each year the U.S. Coast Guard publishes Recreational Boating Statistics, including information on recreational boating accidents. The statistics, however, are based only on those incidents whose data is submitted to the U.S. Coast Guard Boating Accident Report Database (BARD) based on federal reporting criteria (see Boating Accident Report (BAR) Regulations sidebar).

Boating accident (or incident) reporting helps to identify the nature of incidents. Near misses are generally not reported unless serious injury or property damage occurs.

Each state and U.S. territory designates a Boating Law Administrator (BLA) responsible for collecting and reporting boat accident information to the U.S. Coast Guard. In addition to federally required data, most states collect additional details regarding boating incidents.

User surveys, key person interviews, and field observations are other methods to identify use patterns or areas of concern.

## HIGH INCIDENT CONDITIONS

Map accident information to help identify high-incident conditions. The agencies which use, manage, patrol, and enforce rules on waterways are vital sources for identifying high-risk areas and situations. The reconnaissance trip taken during Step 1 offers an opportunity to begin articulation of high-risk areas.



A map of high-incident locations is a key resource for the planning process.

Photo Credit: National Safe Boating Council

## BOATING ACCIDENT REPORT (BAR) REGULATIONS:

(a) The operator of a vessel shall submit the casualty or accident report prescribed in 33 CFR §173.57 to the reporting authority prescribed in 33 CFR §173.59 when, as a result of an occurrence that involves the vessel or its equipment:

- (1) A person dies;
- (2) A person is injured and requires medical treatment beyond first aid;
- (3) Damage to vessels and other property totals \$2,000 or more or there is a complete loss of any vessel;
- (4) A person disappears from the vessel under circumstances that indicate death or injury.

(b) A report required by this section must be made:

- (1) Within 48 hours of the occurrence if a person dies within 24 hours of the occurrence;
- (2) Within 48 hours of the occurrence if a person is injured and requires medical treatment beyond first aid, or disappears from a vessel; and
- (3) Within 10 days of the occurrence or death if an earlier report is not required by this paragraph.

(c) When the operator of a vessel cannot submit the casualty or accident report required by paragraph (a) of this section, the owner shall submit the casualty or accident report.<sup>1</sup>



## WATER USE CONFLICTS

The agency staff who use, manage, patrol, and enforce rules on the waterway are good sources for identifying water use activity conflicts. Ask waterway users, waterway managers, and boating law administrators questions such as:

- Do users have a safe, enjoyable recreation experience?
- Which waterway areas are prone to accidents? Why?
- Which situations cause most of the accidents?
- Which boating activities (based on actual exposure time) are causing the most accidents and conflicts?
- When are the conflicts taking place? (Time of day? Day of the week? Season?)
- Which management techniques are in use? Are they working well?
- Which management techniques could reduce accidents and minimize waterway-activity conflicts?

A user survey of knowledgeable people, together with field observations, helps to answer these questions.

## ECONOMIC IMPACT ANALYSIS

Multiple uses of waterways affect local and regional economics. Understand the nature and extent of economic effects on inter-related business and boating interests. The analysis should explore direct benefits such as local jobs, spending at marine retailers and marinas, boat rentals, outfitters, motels, campgrounds, bait and tackle shops, real estate, and other tax revenues. Include indirect purchases at restaurants, gas stations, and grocery stores.

Economic impacts should consider market value increases, real estate assessments, values and resultant property taxes, and sales attributed to residents versus visitors. Economic impacts reports are available, including several listed in this Guide's Reference section. Local and regional planning agencies, marine trade associations, and chambers of commerce are good sources of information and input. Conduct personal interviews to obtain local economic insights. These individuals might include tax assessors, county and local officials, local taxing authorities, school administrators, and state and local tourism and commerce officials. Consider conducting an area business survey.

## RESOURCE IMPACT ANALYSIS

Analyzing the effects of use on the waterway resource is part of this step. Section 4 of this Guide provides information on examining the effects of use, such as determining the resource's carrying capacity.

## FACTORS WHICH CONTRIBUTE TO SAFE BOATING

- Knowledge of waterway
- Knowledge of rules
- Operator skill and experience
- Operator condition and behavior
- Condition of craft
- Speed
- Distance from others
- Weather conditions
- Time of season, week and day
- Other



High speed activities require additional space per boat, and the impact of wakes must be considered.

Photo Credit: U.S. Coast Guard

Review and evaluate existing policies, rules, and regulations. Policies affecting waterway use and management vary from licensing, use and access restrictions to speed controls and waterway area zoning for certain activities. Restrictions may be imposed by a government agency, utility company, or multi-jurisdictional authorities.

Discovering and understanding enabling legislation provides necessary guidance for management plan development and implementation. Prepare a current policy and restrictions map: many policies, rules, and regulations illustrate implemented management techniques such as "skiing zone" or "boat restriction" areas.

Step 3 is the heart of the planning process, yet planners and managers often feel that once Step 2 is complete, they are ready to proceed directly to Step 4. Step 3 establishes clear direction among interests. Solutions receive serious attention with true priorities acknowledged. The planning team makes decisions based on qualitative input about what is right or just. Dedication to goals, to a consideration of a variety of management techniques, and viable plan alternatives at this step pay the team back handsomely later on.



The following are examples of goals:

- Increase waterway recreation opportunities.
- Offer a broader range of water recreation activities.
- Improve safety for waterway users.
- Protect and upgrade environmental conditions.
- Reduce and prevent conflicts and accidents.

## POSSIBLE MANAGEMENT TECHNIQUES

A wide array of management techniques can be called upon to frame and support a waterway management planning process. Techniques include those which inform and educate. They also include rules, regulations, and law enforcement; water use activity controls; access distribution and development controls; resource protection; and others.

This section describes management techniques for consideration in this step of the planning process. Since waterway management environments involve different conditions, characteristics, and circumstances, consider techniques best suited to support stated goals, anticipated effectiveness, ease of implementation, costs, user acceptance, and legal constraints.

## PLAN ALTERNATIVES AND THEIR IMPLICATIONS

Process participants should consider alternative ways of dealing with problems and conflicts, protecting and enhancing assets, and taking advantage of new opportunities. Alternatives may not be in the form of complete and distinctively different plans. Plans can simply apply one specific technique or a selected set of management techniques.

Planners should avoid assuming that they know what the plan should be before preparing and systematically evaluating alternatives. Even if many of the plan recommendations seem apparent, the exercise of reviewing and comparing alternatives ensures consideration of valuable input. There is the danger of projecting too much detail for too many options. However, it is critical to address important issues at this planning point rather than delay discussion until later when potentially contrary decisions have been made.

Three steps suggested for the preparation and evaluation of alternative plans are:

1. Write descriptions and prepare maps of alternatives. Maps can be very informal for use in small professional staff discussions and planning committee workshops. Keep informal notes on the maps and attach additional ideas and comments as discussions proceed. One alternative might be a restatement of an existing plan or modest updates to existing policies and protocols. Other alternatives might pursue new or enhanced consideration of safety, conflict resolution, preservation, environmental protection, or economic development.
2. Determine and evaluate the implications of alternative plans in a systematic, objective way. Consider an evaluation sheet with the criteria and effects of each as a handy, efficient means to compare alternatives. As the list of alternatives narrows, use progressively more refined criteria, such as:
  - Effectiveness in solving the high priority safety problem;
  - Legality or legal risk;
  - Cost to implement;
  - Positive influence on the quality of experience;
  - Positive influence on resource protection;
  - User and public acceptance;
  - Other stakeholder acceptance;
  - Administrative changes required; and
  - Legislative changes required.
3. Select a preferred alternative plan or combinations of alternatives. Alternatives on which there is still uncertainty should be carried forward to Step 4.



**Yosemite National Park**  
National Park Service  
U.S. Department of the Interior

**Merced River Plan**  
Fall Workshops

Join us to start shaping the alternatives for the Merced River.  
While sometimes the path is clear, there is often more than one way to achieve a goal.

Merced River Plan Fall Workshops		
Date	Time	Location
Oct. 27, 2011	5-8 pm	El Portal Community Center El Portal, California
Oct. 28, 2011	1-5 pm	Wawona Community Center Wawona, California
Oct. 29, 2011	10 am - 4 pm	Garden Terrace, Yosemite Lodge Yosemite National Park
Nov. 7, 2011	10 am - 4 pm	Garden Terrace, Yosemite Lodge Yosemite National Park
Nov. 9, 2011	5-8 pm	The Palm Room, San Francisco Film Centre San Francisco, California

\*For directions to this meeting location, visit:  
<http://www.sfilmcntr.com>

Example of a public meeting notice from the National Park Service.

# STEP 4 - DECIDE

Begin with the alternative(s) selected in Step 3 as a basis for the creation of sound management objectives and the preparation of a detailed management plan. The management plan must contain solutions backed by facts that can receive the acceptance and support of waterway users, managers, and other stakeholders. The final task in Step 4 is to determine the "effectiveness and feasibility" of management plan recommendations and state the rationale for balanced decisions.

Decisions are easier with adequate research conducted and if alternative solutions are understood. This step is challenging as the influence of stakeholders, and the administrative and financial actions for implementation, become more realistic and consequential.

## MANAGEMENT OBJECTIVES

Management objectives guide the management plan, which puts forth recommendations to achieve the management objectives. Establish the management objectives with a working knowledge of their possible effects on administration, finances, public relations, education, and legislation.

Management objectives state why and how, taking their cue from the goals and the preferred alternatives established in Step 3. Prepare them with a considerable degree of technical understanding, confident that the results are achievable. The following are examples of management objectives:

- Consider safety as the top priority regardless of the type of activity.
- Preserve and protect unique and environmentally-sensitive natural areas.
- Manage the use of land and water resources in a manner that recognizes and protects the capability of the resources to sustain their designated recreational use.
- Monitor the use, user behavior, development trends, and environmental condition of the waterway and vicinity.
- Make management adjustments necessary to preserve the experience expected by waterway users and protect the natural resources' sustainability.
- Educate boaters and other waterway users about safety, waterway use rules and regulations, courtesy, and etiquette.
- Provide effective enforcement of all existing waterway use regulations.
- Provide a welcome environment for new waterway use experiences along with familiar levels and types of recreational activities.
- Provide and encourage waterway use opportunities in off-peak hours, weekdays versus weekends, and off-season periods.
- Coordinate access, regulation, education, and awareness programs among federal, state, and local agencies, private sector interests, and user groups.
- Integrate the management of diverse natural resource components such as fish, wildlife, forests, wetlands, grasslands, soil, air, and water to provide public recreation opportunities.
- Conserve natural resources and provide public recreation opportunities that contribute to the quality of life.
- Provide safe recreation opportunities for a variety of waterway uses while minimizing use conflict and maintaining a sustained environment.
- Provide safe commercial and recreational use of our waterways by minimizing use conflict while protecting our natural and cultural resources.



## WHY INVOLVE STAKEHOLDERS?

*Excerpt from Getting in Step: Engaging Stakeholders in Your Watershed 2nd edition. May 2013 EPA 841-B-11-001 United States Environmental Protection Agency Office of Water Nonpoint Source Control Branch (4503T) Washington, DC 20460 (p 3, 4).<sup>2</sup>*

If you're responsible for developing and implementing a waterway management program, you need support from relevant stakeholders—those who will make decisions, those who will be affected by them, and those who can stop the process if they disagree.

Over the past 30 years, watershed managers have found a lot to like about involving interested parties in their work. Involving stakeholders:

- Builds trust and support for the process and outcome
- Shares the responsibility for decisions or actions
- Creates solutions more likely to be adopted
- Leads to better, more cost-effective solutions
- Forges stronger working relationships
- Enhances communication and coordination of resources
- Helps to ensure that any environmental justice concerns are identified at an early stage

Public involvement processes can greatly enhance waterway management efforts, but they can't override laws and regulations enacted by elected officials and public agencies. In fact, stakeholder group processes are used most often to support and complement legally required actions such as achieving water quality standards, protecting drinking water supplies, restoring habitat, and increasing the nation's water quality toward being fishable and swimmable.

Another important aspect of stakeholder involvement is utility. If you convene a group and don't somehow include their input in the process or product, they'll likely wonder why they wasted their time. Make sure that stakeholders' contributions are recognized and are used in some manner to achieve the goals of the program, and that stakeholders are informed about how their participation has affected the outcomes.

In addition, a robust stakeholder involvement program can help to identify potential environmental justice concerns that might be present on the waterway. Including representatives from underserved communities in the stakeholder group can help you to identify any such concerns early in the planning process. Then the waterway plan can include addressing situations in which certain groups are disproportionately affected by water quality problems.



Stakeholder input during the planning process helps identify needed facilities.

Photo Credit: National Safe Boating Council

## GETTING STAKEHOLDERS' "INFORMED CONSENT"

To guide diverse audiences through the intricacies of comprehensive public involvement planning, some state and local government agencies and other public organizations use the Systematic Development of Informed Consent (SDIC) process or a modification of it. The intent of SDIC is not only to establish the public agency's "legitimate role" in part by casting its program as one aimed at problem-solving, but also to communicate to the public the very serious nature of the problem.

The premise is that accomplishing these two objectives – in combination with a thorough public involvement process that connects the techniques and methods of involvement to the specific objectives – will allow an agency to achieve "informed consent." This "consent" usually falls short of unanimous support or consensus, but is agreement enough that each interest or individual who holds veto power over a proposed course of action they can live with its consequences.

The SDIC process is rigorous, identifying 15 citizen participation objectives along the way to developing this informed consent. These objectives are grouped into the categories "responsibility," "responsiveness" and "effectiveness" and pose a detailed set of questions to gauge what the agency and agency personnel know about each or still need to do about each.

Responsibility Objectives (how responsible you are and are perceived to be) are to:

1. Establish the legitimacy of your agency and your project
2. Maintain the legitimacy of your agency and your project
3. Establish the legitimacy of your processes
4. Maintain the legitimacy of your processes
5. Establish and maintain the legitimacy of assumptions and earlier decisions
6. Get to know all your potentially affected interests
7. Get to see the project through their eyes
8. Identify all potentially relevant problems
9. Generate solutions
10. Articulate and clarify the key issues

The Effectiveness Objectives (dealing with credibility, effective two-way communication, and de-polarizing polarized interests) are to:

1. Nurture and protect your credibility
2. Have your communications received and understood
3. Receive and understand information communicated to you
4. Search for common ground among polarized potentially affected interests
5. Mediate between polarized interests

So, what's the background behind this intricate process? The developers argue that SDIC is the outcome of years of observing the methods and strategies of public officials who routinely see their proposals implemented, as opposed to sidetracked, stalled or flat-out stopped. The point, they argue, is that these public officials and agencies use citizen participation solely as a "tool" for getting informed consent, not as an end in itself. And while over the years there's been growing mistrust toward public agencies and professionals, the developers say the research shows that it is feasible for them to earn consent provided that they know how to "be brutally honest with all their various publics," "be the harshest critics of their own work," and "look at what they are doing from the points of view of people who have different values and concerns."

*For more information, see *Getting The Public And Other Stakeholders Involved. Processes You Can Use. Information on Systematic Development of Informed Consent (SDIC)*. Also, *Citizen Participation Handbook for Public Officials and Other Professionals Serving the Public*. Hans Bleiker. The Institute for Participatory Management and Planning, Monterey, Calif. <https://consentbuilding.com/sdic-training/>.*

## MANAGEMENT PLAN

The management plan must be as comprehensive and detailed as possible. State the recommendations clearly, justified by research findings and relationships to goals and management objectives. Include updated maps and presentation materials at this stage of the planning process.

A multiple-use waterway management plan should include recommendations relating to:

- Physical element;
- Operational planning;
- Legal considerations;
- Financial planning; and
- Education and outreach.

Add categories and subcategories to reflect the needs of the project and its constituents.

The following categories present examples of items to address when preparing a plan. Preferences and legal mandates may require planners to use other plan formats and to address additional topics.

### RESOURCES WITH HELPFUL PLANNING FRAMEWORKS

#### THE RIVER ACCESS PLANNING GUIDE

(2020) – A Decision-Making Framework for Enhancing River Access<sup>3</sup> This is a document that provides a step-by-step process to planning for river access with recreation users in mind. It is a resource for planners, river managers, and users as they approach site selection and design to establish new river access or improve existing access.

[https://www.river-management.org/assets/RiverAccessGuide/03012020%20Layout\\_RAPG\\_FINAL\\_\\_Tags\\_v22.pdf](https://www.river-management.org/assets/RiverAccessGuide/03012020%20Layout_RAPG_FINAL__Tags_v22.pdf)

#### PREPARE TO LAUNCH!

(2018) – A resource designed to help facility and trail planners and park and recreation project leaders plan and build or update an access site tailored to the needs of canoeists, kayakers, tubers, stand-up paddlers, or small craft sailors.<sup>4</sup>

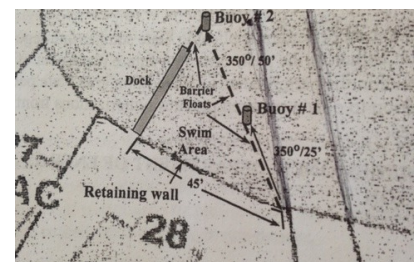
<https://www.river-management.org/prepare-to-launch>

#### VISITOR USE MANAGEMENT FRAMEWORK

The framework offers cohesive guidance for managing visitor use on federally managed lands and waters. The framework situations vary in spatial extent and complexity from site-specific decisions to large-scale, comprehensive management plans and across multiple, tiered planning efforts.<sup>5</sup> <https://visitorusemanagement.nps.gov/VUM/Framework>

## PHYSICAL ELEMENT

The physical element deals principally with the location and use of a waterway and shoreline, including the designation of areas devoted to certain activities, the use of certain areas at designated times, and the identification of areas with imposed wake or speed limits. Other physical recommendations can include the location, number, and size of access points, launching ramps, parking lots, and marinas; the number, location, and types of docks and mooring areas; and watercraft traffic patterns.



Physical elements include designating locations for certain activities in a waterway or along a shoreline.

Photo Credit: Eleanor Mariani

## SURFACE WATER MANAGEMENT

Most physical recommendations are based on the nature and extent of activity conflicts and safety considerations. While activity conflicts are common in heavily used waterways, they can affect the physical characteristics of the waterway and shoreline. Some restrictions may take effect during seasonally high use periods, special events, and other circumstances.

Carrying capacity analysis may help determine the location and size of support facilities and optimum levels of use on the waterway. Unfortunately, there is no single carrying capacity number or magic formula applied across the board. Each waterway possesses a unique set of conditions and characteristics supported by a unique set of goals and management objectives.

Activity conflicts may call for specific physically-oriented management techniques. Match the appropriate techniques developed in previous planning steps with the type and severity of the conflict. Use the system developed to evaluate alternatives to recommend the most effective, feasible, and acceptable solutions.

Recommendations may address support facilities, including launch ramps and other access areas, parking lots, marinas, pump-out facilities and dump stations, and emergency and rescue facilities.

## SHORELINE AND VICINITY MANAGEMENT

Shoreline and vicinity management (e.g., wetlands protection, sewage disposal controls, tree and vegetation removal) deserve careful consideration, especially if use, access, or private land ownership is increasing or changing.

Unplanned and uncontrolled waterfront development is a significant factor in the presence of activity conflict on the water. Improper development destroys the natural appearance of the waterway and degrades riparian and aquatic resources. An excessive presence of docks, slips, floats and mooring buoys reduces water surface access to public water. Holistic shoreline management prevents these and other problems or mitigates their negative impacts.



Improper shoreline development destroys the natural appearance of the waterway.

Photo Credit: U.S. Coast Guard

Management of shorelines occurs in many ways. Federal, state, county, and local governments establish rules and regulations relating to shoreline and vicinity management. Local zoning ordinances may regulate use type and density permitted along the shoreline. They may not regulate the size, spacing, and extension of docks; the number of slips allowed per dwelling; or the number of anchoring buoys, floats, and other features at the water's edge.

Permits may be required to regulate shoreline development. Permittees agree to use regulations and may pay for permit processing, administration, and community outreach information.

## OPERATIONAL PLANNING

The operational planning process introduces pragmatism by articulating how the administering agency or agencies implement policies, rules, and regulations to support additions or enhancements. The operational element of the waterway management plan concentrates on administration, personnel, equipment, maintenance, and enforcement.

Operational recommendations include procedures, full- and part-time staffing needs, volunteer requirements and sources, use of outside contractors, and possible changes in roles and responsibilities for waterway management. Law enforcement, safety, and rescue operations are a vital part of the operational plan.



## LEGAL CONSIDERATIONS

Plan recommendations must acknowledge that the plan can rely on existing legal authority and address unmet legal mandates imposed on the management agency. If legal authority for the recommended management techniques is not in place, new legislation is necessary or the desired approach replaced by other solutions. Considerations include sovereign and local immunity, liability, and liability insurance.

Develop language amending existing regulations and ordinances at this time. Contact representatives and legal counsels of related agencies. The process for amending existing regulations and ordinances typically requires public involvement (hearings) and is often a time-consuming process.



Care should be given to mark known hazards and inform users of requirements.

Photo Credit: Risa Shimoda

## FINANCIAL PLANNING

Identifying financial needs and securing funding are critical to the success of a project. The budget must provide funds to implement the recommendations. Consider sources of government, non-profit and private sector funding, including services-in-kind and volunteer availability. Develop cost estimates for implementation using various methods suggested in the project organization: identify costs for similar projects; obtain price quotes; and conduct discussions with agency staff, consultants, or professional organizations familiar with the project scope.

A variety of public and private funding sources may be available to help pay for plan implementation. Grants, user fees, special assessments, donations, and trust funds may be available to augment traditional capital and operating budgets. Cooperative cost-sharing, various forms of privatization, and public-private partnerships are creative approaches becoming necessary to overcome traditional funding source limitations.

## EDUCATION AND OUTREACH

An education and outreach plan includes these major components:

- Receipt of the final input on the proposed management plan before adoption; and
- Communicating the adopted management plan to the public, waterway users, and those responsible for implementing the management plan.

Communicate the final input of citizen recommendations initiated in Step 1. Consider the effectiveness of the current communication system and, if practical, continue the approach to obtain final input to the management plan. Adjust the current system if required at this time. Consider conducting targeted interest groups, general public meetings or hearings, and online questionnaires or surveys. Share news of the opportunity to learn about and provide input in the planning process via the network of social media outlets used by members of the planning team.

Once final, share recommendations and interest in community inclusion through presentations and distribution of the adopted plan. Reach out to the general public, waterway user groups, administrative and enforcement agencies, private business interests, and waterway planning and management professionals to increase their awareness and knowledge about overall plan recommendations, individual and joint responsibilities, and implementation plan impacts.

Utilize both traditional and social media to share that the plan is available, and consider speakers' bureaus, podcasts, community events, and publications to create additional stakeholder touchpoints.

## MAKING DEFENSIBLE DECISIONS

Good planning helps planners and managers justify and explain their decisions and actions. Factual information, technical expertise, stakeholder participation, proper examination of alternatives, and objective recommendations contribute to the defensibility of solutions. Solutions based on facts and documented evidence ensure objectivity and sound results. Share facts, data, drawings, and the basis for the plan, and remember that political rhetoric may blur factual elements in conversations among specific interest groups.

Objectivity, acknowledging both factual and political rationale, can be supported with a Plan Effectiveness and Feasibility Rating Matrix. This matrix supports a systematic approach to evaluating both the effectiveness and the feasibility of solutions. Effectiveness factors identify how well each recommendation is likely to solve the problems and realize the opportunities. Feasibility factors project chances of successful implementation for each recommendation. Evaluate each recommendation according to its effectiveness and feasibility factor, which can be "weighted" to reflect any differences in their importance. Examples of effectiveness and feasibility factors are:

### Effectiveness Factor Examples

- A. Accident reduction potential
- B. Conflict reduction potential
- C. Quality of user experience improvement potential
- D. Environmental protection and enhancement potential
- E. Overall user satisfaction and acceptance potential
- Others

### Feasibility Factor Examples

- F. Ease of administration and enforcement potential
- G. High benefit to cost potential
- H. Financial-resource availability potential
- I. Human-resource availability potential
- J. Special-user or interest group acceptance potential
- K. Limited new or revised legislation or regulatory potential
- Others

## EFFECTIVENESS AND FEASIBILITY RATING MATRIX SAMPLE

Effectiveness 1-5, 5= Extremely High Feasibility

Factor	A	B	C	D	E	Subtotal	F	G	H	I	J	K	Subtotal	Total

When the effectiveness and feasibility factors are determined, use them in a scoring and evaluation matrix that may be developed by the planner or obtained from other sources. Keep the matrix as simple as possible to help with prudent decisions.

The object of this decision-making system is to have the highest possible score for each recommendation. High-scoring recommendations are the most effective, most feasible, and most defensible. When certain factors score low, the planner may modify the recommendations (as feasible) to improve the plan's overall quality.

A plan effectiveness and feasibility matrix is only one decision-making tool for evaluating the final plan. Recommendations may score low on a systematic evaluation but may be necessary and appropriate from a pure safety, technical, environmental, or political perspective. Defensible decision-making is extremely valuable as planners and managers prepare to explain the rationale behind their decisions. A carefully prepared statement of justification for each recommendation goes far to understanding the genuine need for and value of a recommended solution.

Here are the examples of how a justification statement might begin:

- The facts from our user survey revealed that...
- Field research data show that...
- Aerial flight information shows that...
- Managers of several other waterways with similar conditions solved their problems by...
- The law requires us to...
- The law allows us to...
- Budget and personnel constraints require us to...
- Cutbacks on traditional funding programs limit our ability to...

## STEP 5 - ACTION

The Action step prepares the implementation plan. It identifies and sets priorities for a range of actions necessary to make the plan a reality. Some plan recommendations require detailed and immediate actions. Other recommendations entail more general longer-range, ongoing or periodic actions. The detailed program:

- Describes the specific actions;
- Indicates financial needs;
- Identifies roles and responsibilities of active agents;
- Documents funding sources;
- Provides an implementation schedule; and
- Indicates priorities.

This step includes prioritizing and scheduling actions (with funding) and assigning and coordinating roles and responsibilities.

### PRIORITIZING AND SCHEDULING ACTIONS

An action program often covers a period of three to five years from the time of its approval. Specific actions take place immediately with others scheduled when needed budgetary support is available. Actions are categorized as follows:

- Early actions (immediate actions and actions carried out within a year);
- Short-range actions (1-3 years),
- Longer-range actions (4-5 years),
- Periodic actions (annual review of the plan), and
- Continuous actions (i.e., monitoring of resource, use level).

### ROLES AND RESPONSIBILITIES

The entity with the responsibility to take action implements the management plan. Assigning roles and responsibilities to agencies and organizations avoid misunderstandings about the lead for each activity. Some responsibilities may be legislated or through another authorization. Other responsibilities may relate to the financial strength of an association or a reliable volunteer organization.

Clear assigned roles and responsibilities with the agencies, organizations, and individuals involved before sharing the plan beyond the working group(s).

See *Implementation Program - Multiple Use Waterway Management Plan Example Format* to document components of the action step.

## IMPLEMENTATION PROGRAM

# MULTIPLE USE WATERWAY MANAGEMENT PLAN

## EXAMPLE FORMAT

Waterway Management Recommendation	Actions for Implementation	Responsible Entities	Timetable	Possible Funding Sources
Provide additional patrol boats on weekends and holidays between Memorial Day and Labor Day	Patrol the waterway between 10:00 a.m. and 10:00 pm on Saturdays, Sundays and holidays	Boating law enforcement agencies	(Date)	(Source)
	Patrol the waterway at random times	Boating law enforcement agencies	(Date)	(Source)
	Increase staffing level	Boating law enforcement agencies	(Date)	(Source)
	Identify new or incremental funds for patrols	Boating law enforcement agencies	(Date)	(Source)
Prepare a Boaters' Guide	Identify new or incremental funds for Boaters' Guide and online/digital outreach	Waterway management agency	(Date)	(Source)
	Develop Guide and online outreach tools	Waterway management agency	(Date)	(Source)
Set up a website and social media accounts	Distribute/promote Boaters' Guide and outreach tools	Waterway management agency, others	(Date)	(Source)



# STEP 6 - MONITOR

A management plan is a living document, a tool for directing, responding to, and readjusting the conditions and the forces of change. The monitoring step ensures that plan implementation reflects this approach, evaluated and updated regularly with notable changes shared with interested stakeholders.

## EVALUATION OF THE PLAN

Monitoring enables planners and managers to compare changes of condition and the effects of the plan's actions with the established management objectives. For example, a watershed plan monitoring program may assess the waterway condition, identify resource degradation, describe its level of use, activity conflicts, and other management aspects. For plan evaluation, revisit each management objective and evaluate the status and appropriateness of specific recommendations.

As actions are implemented, update, amend or rewrite the plan to reflect the status of its various activities. Detailed studies may be necessary to monitor and amend the plan appropriately.

## ADJUSTMENT OF THE PLAN

Although monitoring is a continuing activity, a formal annual plan evaluation and adjustment is recommended with major reassessment and update every five to ten years.

## COMMUNICATION OF SUCCESS STORIES

The monitoring step includes the communication of management successes. These successes may relate to the use of specific management techniques, a particular monitoring procedure, an implementation activity, a creative funding approach, or various other items relating to the waterway management plan. Messaging should take place through traditional and social media, as well as through stakeholder partner organizations.

This concludes the Six-Step Basic Planning Process. Section 4 of this Guide looks more closely at multiple-use waterway management approaches and related tools, including those for activity and traffic management.



Good design provides for efficient use of facilities by multiple users.

Photo Credit: Taylor Matsko

## A DEEPER DIVE

# OUTREACH AND COMMUNICATION VITAL IMPORTANCE OF TIMELY UPDATES TO STAKEHOLDERS

**ELEANOR MARIANI, BOATING LAW ADMINISTRATOR – CONNECTICUT (RETIRED)**

Outreach and communication are critical components for successful waterways management. It is incumbent upon regulators to ensure that the using public is aware of new and existing ordinances, regulations, or laws. Typically, state agencies are required to publish laws and updates annually, often through booklets ([https://portal.ct.gov/-/media/DEEP/Boating/boating\\_guide/boaterguidepdf.pdf](https://portal.ct.gov/-/media/DEEP/Boating/boating_guide/boaterguidepdf.pdf)) or online (<https://www.oregon.gov/osmb/Pages/Underway-Newsletter.aspx>). It may be necessary to get media coverage for any significant changes to the boating law. With the approval of the designated state Boating Law Administrator, reminders placed in vessel re-registration packets or with vessel decal deliveries are an excellent way to get important information to a targeted audience.

Waterway managers should keep lines of communication open and work closely with the various agencies and departments that could influence local boating laws, such as those that regulate water quality or control hydropower operations or commercial ports.

Waters of the state have numerous stakeholders, so seeking public input can soon become unwieldy, whether trying to get public access to a new area or maintain use or restrict use for a particular group of boaters. The waterway manager must seek input from the public having various perspectives while finding areas of agreement. Various boating interests, local planning, zoning commissions, municipal agencies, river and lake associations, sporting clubs, and shorefront property owners are a few of the groups that may have differing perspectives for using a waterway or proposed access area. Balancing perspectives while seeking the best remedy for the situation at hand may be learned, and fortunately, there are numerous resources to assist. Hans and Annemarie Bleiker are an excellent resource as they have developed consent building methodology (<https://www.youtube.com/watch?v=6498Gin3Z9s>) geared to government agencies. In addition to providing steps to reach "informed consent," they advocate moving away from public hearings, where possible, which generally come with their own governing rules.

Many states have successfully used "informational meetings" to inform and seek input from the public. When Connecticut, for example, seeks to renovate or create a boat launch area, an informational meeting shares preliminary engineering plans. Before the meeting, tables are set up and labeled for engineering and plan designs, operation, maintenance, law enforcement, education, and water quality. Each table is appropriately staffed. People attending receive three stickers (one red, two blue) to indicate the three most significant concerns with the project, red being the highest. After receiving information about the proposed project from experts at each table, they place their stickers on a pre-filled form categorized by the table labels. There is an additional column labeled "no concerns." Interestingly, this board can ground truth comments from those that insist that "everyone" thinks a certain way. A box provides the opportunity for remaining questions or comments.

Informational meetings generally provide for meaningful dialog. The resulting engineering drawings consider as many of the public comments as possible in efforts to be good neighbors.

**BASHAN LAKE STATE BOAT LAUNCH**  
**Citizens Concerns**

Please place a sticker under the three subjects that concern you the most. The red sticker denotes your highest concern.  
 If your subject is not listed, please let one of the Staff know.  
 Your assistance in this survey is greatly appreciated.

DESIGN	PARKING	ILLEGAL ACTIVITIES	MAINTENANCE	TRAFFIC	SECURITY	ENVIRONMENT	NAVIGATION	DRAINAGE & EROSION	TRASH & DUMPING	NO CONCERNS
Blue, Red	Blue, Blue, Blue, Blue	Blue, Blue	Red, Red, Red, Blue	Blue	Blue, Blue, Red, Blue	Blue, Blue, Blue	Blue	Blue, Blue, Blue	Blue, Blue, Blue, Blue, Blue, Blue	

Each person attending the informational meeting receives three stickers (one red, two blue) to indicate the three most significant concerns with the project, red being the highest.

Photo Credit: Eleanor Mariani

Building and maintaining good lines of communication with recreational boaters is vital. Unless members of an organized club, boaters are an elusive group often losing recreational opportunities due to lack of input. Developing a Boating Advisory Council that incorporates as many boating stakeholder groups as possible is one way to reach out. Helping to advocate for the formation of local recreational advocacy groups is beneficial for all. Participation in local boat shows, interacting with boaters at launches and marinas (with appropriate facility approvals), and hosting boating forums give waterway users a chance for dialog. Providing interesting articles that reinforce agency expertise and explain processes can also be insightful (<https://marineboard.wordpress.com/2016/07/29/the-concrete-truth-about-boating-access-improvements-the-cedaroak-boat-ramp-example/>). Additionally, developing an online customer satisfaction survey is a low-cost way to obtain information and assess current and needed legislation. Utilizing an ad hoc committee to address existing serious problems can establish agency legitimacy and allow for consent building.

Utilizing ramp monitors or safety educators to provide shore-side or targeted on-water boating education is helpful to reach boaters in a non-confrontational manner.

## SECTION 3 ENDNOTES

<sup>1</sup> CGD 72-54R, 37 FR 21399, Oct. 7, 1972, as amended by CGD 76-155, 44 FR 5308, Jan. 25, 1979; CGD 82-015, 54 FR 5610, Feb. 6, 1989; USCG-1999-6094, 66 FR 21675, May 1, 2001; 66 FR 33845, June 26, 2001; USCG-1999-6094, 67 FR 14645, Mar. 27, 2002.

<sup>2</sup> Getting in Step: Engaging Stakeholders in Your Watershed 2nd edition  
May 2013 EPA 841-B-11-001 United States Environmental Protection Agency Office of Water Nonpoint Source Control Branch (4503T) Washington, DC 20460 (p 3, 4).

This publication is an update of the original publication prepared by Tetra Tech, Inc., under contract 68-C99-249 to the U.S. Environmental Protection Agency and printed by Terrene Institute in 2000. It is a companion guide to Getting in Step: A Guide for Conducting Watershed Outreach Campaigns produced by the U.S. Environmental Protection Agency and available through EPA's Nonpoint Source Outreach Toolbox ([www.epa.gov/nps/toolbox](http://www.epa.gov/nps/toolbox)). For copies of this guide, contact: National Service Center for Environmental Publications Phone: 1-800-490-9198 Fax: 513-489-8695

Website: [www.epa.gov/ncepihom](http://www.epa.gov/ncepihom) or visit EPA's Nonpoint Source website at [www.epa.gov/nps](http://www.epa.gov/nps) EPA does not endorse any product, service, or enterprise. Any mention of a product, publication, report, entity, or enterprise is for informational purposes only and does not constitute a recommendation or endorsement by EPA or the U.S. government. <https://cfpub.epa.gov/npstbx/files/stakeholderguide.pdf%20>.

<sup>3</sup> The River Access Planning Guide (2020) – A Decision-Making Framework for Enhancing River Access  
[https://www.river-management.org/assets/RiverAccessGuide/03012020%20Layout\\_RAPG\\_FINAL\\_\\_Tags\\_v22.pdf](https://www.river-management.org/assets/RiverAccessGuide/03012020%20Layout_RAPG_FINAL__Tags_v22.pdf).

<sup>4</sup> PREPARE TO LAUNCH! (2018) <https://www.river-management.org/prepare-to-launch>.

<sup>5</sup> Visitor Use Management Framework - The purpose of the framework is to provide cohesive guidance for managing visitor use on federally managed lands and waters. The framework is a planning process for visitor use management and incorporated into existing agency planning and decision-making processes. It applies to virtually all visitor use management situations and conditions on federally managed lands and waters. The framework is applicable across a broad spectrum of situations that vary in spatial extent and complexity from site-specific decisions to large-scale, comprehensive management plans. It also may be used across multiple, tiered planning efforts. <https://visitorusemanagement.nps.gov/VUM/Framework>.



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## SECTION 4

# MULTIPLE USE WATERWAY MANAGEMENT APPROACHES & RELATED TOOLS

"Waterway" is a generic term for any public body of water, including rivers, streams, lakes, ponds, reservoirs, canals, bays, coastal waters, and harbor and port areas. While this document focuses on managing the surface waters of primarily public waterways, private interests can and do become blended. Management issues involving drinking water, irrigation, agriculture, and groundwater are absent from this Guide; however, these topics may play a significant and dominant role in resource management.

This section inventories and summarizes various waterway management approaches, tools, and techniques. Often, the waterway manager considers combinations of techniques during the planning and public-input stages to gauge the public's support needed to realize the intended result. This inventory builds upon the information in the U.S. Coast Guard's 1983 Report, *A Guide to Managing Recreational Boating Areas*<sup>1</sup>, and previous editions of *A Guide for Multiple Use Waterway Management*.

Some techniques are better than others for various reasons: cost, ease of use and application, effectiveness, user acceptance, restrictions based on local ordinances or local, state, or federal law. Serious consideration of non-regulatory, voluntary, and education-oriented approaches are viable first steps or alternatives to adopting new restrictions and regulations.

## SECTION 4A

# DEFINING SUCCESS

How is success measured? Should the project goal be to balance the needs of various recreation types and find suitable multiple-use management solutions? What determines effectiveness? Who ensures the integration of techniques and tools into longer-term strategies and comprehensive planning and decision-making frameworks? Who is involved in the critical decisions to use, keep and modify techniques over time?

Depending on the agency or stakeholder group, solutions would likely be different. Consider evolving trends, including, but not limited to:

- New and increased uses of public waters;
- Evolution in the kinds and combinations of watercraft and water contact activities;
- The (somewhat) static amount of surface acreage of public waters;
- Increased commercial and residential development along shorelines;
- Expanded boating seasons due to improved gear and equipment;
- Heightened visibility and understanding of environmental issues;
- Increased interest in the resource impact associated with watercraft, increased use, and shoreline development activities;
- Demographic and societal changes, including trends in increasing participation in outdoor activities;
- Variations in operator experience, skill levels, education interests, and consideration or heightened understanding of other user groups;
- Varied attitudes and social perspectives about recreation, water resources, and the environment;
- Changing regulatory environments;
- Increasingly strident involvement of citizens, stakeholders, and various interest groups in public management and policy decisions;
- Heightened concerns about safety and capacities of public waters;
- Wide range of sometimes opposing water user needs and values;
- Intensified demands on management and other vital resources;
- Wide range of interpretations of impacts of demands;
- Need to continuously learn and adapt new knowledge, information and circumstances, while reconsidering fundamentals; and
- Need to proactively mitigate for the effects of climate change.

Stakeholders today expect planning approaches to begin with data. Examples include the physical nature (inventory of the waterway, facilities, boat counts), usage, and accident data. This foundational information should be shared with a wide range of stakeholders to encourage active input and incorporate insight during the earliest stages and throughout the problem identification, analysis, problem-solving, and management decision processes.

## BOATING SAFETY DASHBOARDS

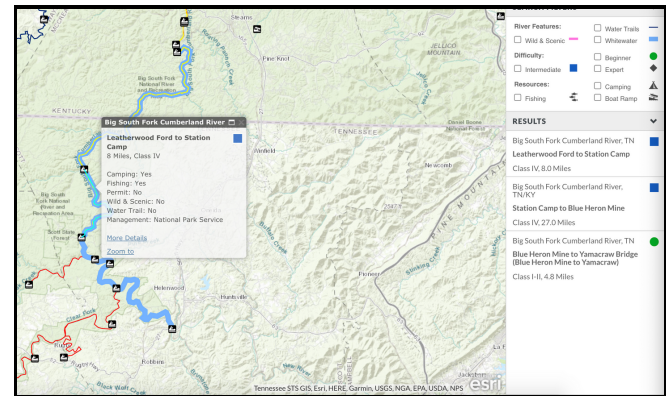
With grant funding from the Sport Fish Restoration and Boating Trust Fund administered by the U.S. Coast Guard (USCG), the National Association of State Boating Law Administrators (NASBLA) developed a series of visual Boating Safety Dashboards. These provide ready access to USCG and state-level recreational boating safety (RBS) data for evidence-based program enhancements. Some Dashboard illustrations use boating accident report database (BARD) information from individual states not published at the national level. Boating Safety Dashboards are available online at <https://www.nasbla.org/nasblamain/nasbla-resources/visual-data>.

The State Performance Data – Federal Reported Dashboard (<https://idash.nasbla.net/idashboards/viewer/?guestuser=guest&dashID=126&c=0>) provides state by state data on boating accident statistics, law enforcement statistics, education statistics, and fiscal statistics as reported to the U.S. Coast Guard. While the majority of data are state-level, some data are at the county level. "Law Enforcement Statistics" includes numbers of citations and warnings issued for required equipment, including life jackets, throwable devices, fire extinguishers, visual distress signals,

“Navigation rules and safety training should be mandatory before anyone can operate a watercraft of any type. Different levels of training may be appropriate for power, sail, or paddle craft.”

Nationwide Waterway Management Survey  
Respondent (Q8#502)

and sound-producing devices. Operation citations include annual numbers for operating under the influence, reckless operation, and violations of navigation rules.



The National River Recreation Database provides a wealth of public information at <http://www.nationalriversproject.com>.

Photo Credit: Risa Shimoda

## ADDITIONAL DATA NEEDS

Several conditions and characteristics influence approaches to consider:

- Waterway type, size, depth, shape
- Existing, or the prospect of shoreline development
- Use patterns of other waterways in the region
- Environmental factors
- Accident and safety records
- Current and historical use patterns
- Compatibility or incompatibility of use

Initial steps to address a management challenge begin with defining the issue and using available means to share information and education approaches. An "impact analysis" helps select the best technique. Impact analyses consist of concepts of how different types of problems can be addressed most effectively by public policy by 1) analyzing how a particular problem developed, 2) identifying the alternative public policy, and 3) evaluating which alternative policies are adequate and equitable. Move through a continuum of progressively more difficult management techniques while evaluating results. For instance, strict enforcement of existing rules and regulations may receive widespread support by the community and successfully address an issue before enacting more direct and restrictive options.

# THE SYSTEMS APPROACH TO MANAGEMENT

A single formula for resolving all waterway issues does not exist. Instead, implementing multi-layered tactics is likely warranted, such as developing a "systems approach."

One example of a systems approach is Safe Systems, an internationally recognized and adopted methodology to reduce trauma. Safe Systems focuses on understanding and countering issues that cause trauma on the water and takes a holistic view of the interacting element, including:

- **Safe People** - Focus on the people in the system, including their choices and the behavior they demonstrate.
- **Safe Vessels** - Consider how vessels, safety equipment, and vessel activity can reduce the risk of serious incidents or how best to support people following an incident.
- **Safe Waterways** - Consider the physical environment and infrastructure to provide safety, access, and storage on and beside waterways.
- **Safe Systems** - Guide system development by four principles:
  - *People make mistakes: some boating incidents are inevitable.*
  - *People are vulnerable: human bodies have a limited ability to withstand crash forces, submersion, and exposure to weather conditions.*
  - *Safety is a shared responsibility: system designers and the maritime public share responsibility for managing boating incidents.*
  - *All parts of the system must be strengthened: vessel design, safety equipment, infrastructure, access points, communication, and aids to navigation. If one part fails, other parts protect the people involved.<sup>2</sup>*

The system is supported by enabling resources such as data, information, and partnerships.

A similar example of a "systems approach" addresses users (through information and education), usage (such as zoning use areas for

specific activities), law enforcement (targeting patrols in problem or high-use areas), regulations (designating anchorage zones, speed limits, or traffic patterns), and enhancing management practices (such as supporting harbor safety committees, friends groups, or other networks for stakeholder involvement, input, and communication).

## COMMUNITY INVOLVEMENT

There are numerous successful models for supporting community input and involvement. At a basic level, establishing a "Friends Group" provides an opportunity to volunteer time, service, and support to a specific waterway or access area by an individual, family, or group of community stakeholders. Friends groups may have a specific focus such as "Adopt-a-Waterway" or "Adopt-an-Access." Other options to build community involvement include partnering with existing groups or promotion through park interpretive programs, community resources, church and youth groups, and schools. The Coast Guard Auxiliary, United States Power Squadrons, local boating, yacht, or paddling clubs provide a ready means for stakeholder involvement.



Perhaps at a more elevated level, formal Harbor Safety Committees bring together vessel and facility operators, waterway users, and other stakeholders to identify potential improvements to the safety, environmental protection, and efficiency of harbor operations via risk-based decision making. These committees provide a proactive forum to identify, assess, plan, communicate and implement beyond regulatory requirements that promote safe, secure, and efficient waterway use.



These forums are effective paths for stakeholder involvement to resolve conflicts of commercial and recreational waterway use. Guidance for the establishment and development of Harbor Safety Committees under the Marine Transportation System (MTS) Initiative is available from the USCG.<sup>3</sup>

An example of a Harbor Safety Committee's work is the Puget Sound Harbor Safety Plan.<sup>4</sup> Evidence of the positive impact of others, including Chicago, San Francisco, Portland, and San Diego harbor safety committees, is referenced in the *National Transportation Safety Report on Shared Waterways*. One of the key findings in this Safety Recommendation Report reads, *"Harbor safety committees can substantively improve safety between commercial and recreational vessels if risks are regularly identified, practices are developed and implemented to mitigate these risks, and these practices are shared with stakeholders and other safety committees."*<sup>5</sup>

## ROLE OF THE U.S. COAST GUARD IN WATERWAYS MANAGEMENT

The USCG has jurisdiction over a broad range of waterway management functions, sharing responsibilities with eighteen federal agencies and departments within the marine transportation system. Coast Guard Waterway Management responsibilities support access to navigable waterways for mariners, facilitate the efficient movement of commerce through ports and waterways and between intermodal connections, ensure compliance with applicable environmental laws (e.g., National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Coastal Zone Management Act (CZMA), collect and retain national boating accident data, and promote a safe, secure and environmentally sound Marine Transportation System within the national transportation system. The USCG accomplishes this through such program components as Aids to Navigation, Ice Operations, Bridge Program, Coastal and Marine Spatial Planning, and a host of Port Management activities and authorities. Commandant Instruction (COMDTINST) 16001.1<sup>6</sup> provides a master list of authorities and guidance for USCG Waterway Management functions.

Organized as the "Waterways Management Reference Guide," the function, description, authorities (U.S. Code and Code of Federal Regulations), and guidance (additional Commandant Instruction, Commandant Publication, Memos of Agreement, Task Team Reports) are provided for each of these areas:

- a. Facilitation of vessel movements, including vessel traffic management, traffic routing measures, icebreaking, marine event permitting, limited access areas, creation and amendment of anchorage grounds, management of navigation rules, coordination of interagency activities to identify and resolve potential obstructions or hazards to navigation, and other efforts to direct or otherwise influence vessel operations.
- b. Management of waterway infrastructure, through oversight of physical infrastructure impacting the navigable waters of the United States, including bridge permitting, installing and maintaining visual and electronic aids to navigation, participation in permitting activities, coordination with the U.S. Army Corps of Engineers (USACE) and other agencies, and coastal and marine spatial planning activities to reduce conflict of waterway use.
- c. The communication of waterway conditions to the public regarding areas safe for navigation, including maintaining a system of aids to navigation, notices to mariners, and the international ice patrol.
- d. Consideration of ocean and waterway environments, supported by marine science and observation to anticipate impacts on maritime activities and maritime activities on the environment, including liaising with the National Oceanic and Atmospheric Administration, National Science Foundation, USACE, other agencies and interagency entities, state and local governments, and tribal governments to collect information on the natural state of the oceans and waterways.



UNITED STATES COAST GUARD  
U.S. DEPARTMENT OF HOMELAND SECURITY

Photo Credit: Used with permission from the USCG

## ROLE OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) IN WATERWAY MANAGEMENT

The mission of the U.S. Army Corps of Engineers (USACE) is to “Deliver vital engineering solutions, in collaboration with our partners, to secure our nation, energize our economy, and reduce disaster risk.”<sup>7</sup> For over 230 years, the USACE has been entrusted with the development and stewardship of much of the nation’s public water resources. The USACE plans for and manages water for transportation, recreation, energy, wildlife habitat, aquatic ecosystems, and water supply needs, while reducing the impacts of flood damages and other natural disasters. The USACE manages its Civil Works mission through nine business lines. They include navigation, flood risk management, environment, hydropower, regulatory program, recreation, emergency management, water storage for water supply, and support for others.

The USACE is one of the nation’s leading federal outdoor recreation providers with more than 400 lake and river projects in 43 states. Ninety percent of USACE recreation areas are within 50 miles of a major metropolitan center. To find a USACE recreational site, visit [www.CorpsLakes.us](http://www.CorpsLakes.us).

The U.S. inland navigation system consists of 8,200 miles of rivers maintained by the USACE in 22 states and includes 276 lock chambers with a total lift of 6,100 feet. The highly adaptable and effective system of barge navigation moves over 625 million tons of commodities annually, including coal, petroleum products, various other raw materials, food and farm products, chemicals, and manufactured goods. Shallow draft waterways have many unique characteristics and difficulties over coastal harbor and ocean navigation; river levels can change by over 30 feet in a seasonal cycle. The navigation channel can shift significantly within the river banks, and shifting yet ever-present river currents pose constant challenges in these confined waterways. Inland electronic navigational charts are available at <http://ienccloud.us/>. Electronic chart systems offer significant benefits to vessels, including the accurate and real-time display of vessel position relative to waterway features, voyage planning

and monitoring, training tools for new personnel, and integrated display of river charts, radar, and Automatic Identification Systems (AIS).



Boaters at Lock and Dam 24 on the Mississippi river.

Photo Credit: U.S. Army Corps of Engineers

Navigation locks and dams are operated and maintained by USACE. The lockmaster has full authority over the movement of boats in the lock and its approaches. It's best to learn as much as you can about a specific lock before you try to navigate through, as lock facilities vary in size and how they operate.

- Learn more about locking through procedures at <https://www.usace.army.mil/Missions/Civil-Works/Navigation-Locks/>.
- USACE Locking Through Brochure <http://cdm16021.contentdm.oclc.org/utills/getfile/collection/p16021coll11/id/1662/filename/1669.pdf>.
- USACE Locking Through: Know Before You Go Video [https://www.youtube.com/watch?v=GC6d\\_YAJ9zg](https://www.youtube.com/watch?v=GC6d_YAJ9zg).
- Rules and Regulations Governing Public Use of Corps of Engineers Water Resources Development Project <https://www.usace.army.mil/Portals/2/docs/EP1165-2-316.pdf>.
- USCG-managed River and Reservoir Reports and USACE River Gage Data are on USACE District websites. Links to those websites are at <https://www.usace.army.mil/Locations/>.



**US Army Corps  
of Engineers®**

Photo Credit: Used with permission from the USACE

USACE permits are necessary for any work, including construction and dredging, in the nation's navigable waters. The USACE balances the reasonably foreseeable benefits and detriments of proposed projects and makes permit decisions that recognize the essential values of the nation's aquatic ecosystems to the general public, as well as the property rights of private citizens who want to use their land. During the permitting process, the USACE considers the views of other federal, state and local agencies, interest groups, and the general public. The results of this careful public interest review are fair and equitable decisions that allow reasonable use of private property, infrastructure development, and growth of the economy while offsetting the authorized impacts to the waters of the U.S. The adverse impacts to the aquatic environment are offset by mitigation requirements to restore, enhance, create and preserve aquatic functions and values. The USACE strives to make its permit decisions promptly to minimize impacts to the regulated public. Individual permit application form, USACE District specific information, and regional information are at

<https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Obtain-a-Permit/>.

Special use permits, including Special Activity and Event permits for group activities and recreation events conducted at USACE lake and river projects, are issued at the local level. Contact information for USACE lake and river projects is at [www.CorpsLakes.us](http://www.CorpsLakes.us).

## SECTION 4C

# ACTIVITY CONTROLS & TRAFFIC MANAGEMENT

The following is an inventory, presented in alphabetical order, of waterway management controls and best practices in use today. It is not an all-inclusive list, as innovative and creative approaches continue to develop in response to specific issues.



Separation of access for various activities helps reduce user conflict.

Photo Credit: David Cernicek

## ACCESS DISTRIBUTION AND DEVELOPMENT CONTROL

Options for waterway access are shrinking in many parts of the country due to pressures of private, commercial, and residential shoreline development and public waterfront activity for other desired uses such as environmental, marine life, and protected wildlife areas. During the planning process, consider the need to balance waterway access policies and practices with longer-term goals. Planners must understand and follow riparian and water access laws.

Planning also involves a comprehensive inventory, survey, analysis of the waterway and stakeholder input. An example of the use of these process elements is "A Recreational Boating Characterization of Sarasota County" by Sea Grant, University of Florida.<sup>8</sup>

The number and size of support facilities have a direct impact on the amount of waterway use. Attempt to distribute them thoughtfully along a waterway. Examine the resulting activity that take place at the locations.



The number and size of support facilities have a direct impact on the amount of waterway use.

Photo Credit: Taylor Matsko



Plan the distribution of launch ramps and access points to disperse use and reduce congestion, understanding that adding distance between facilities typically increases operation and maintenance costs if managed by a single management agency. It is encouraged to work with neighboring jurisdictions to provide a menu of destinations options for a waterway user to travel from "point A to point B," thereby reducing congestion at a single access point, spreading benefits and associated costs across a broader spectrum of users.

*The River Access Planning Guide, A Decision-Making Framework for Enhancing River Access*<sup>9</sup> details elements considered in site planning and design. Elements include the physical location characteristics, landscape setting (natural, enhanced, or constructed), temporal dependence (seasonal nature of activities and variability of water levels), frequency (when and how activities occur), density (number of users and density of use), use type and challenge level, and management needs and challenges.

## CONTROLLING LAND USE AND DEVELOPMENT

The amount of development along a waterway is directly related to its use. Development regulations in zoning ordinances are tools for controlling development within local jurisdictions. Ordinances may regulate the types of uses permitted, the density of development, procedures for submitting development plans, and standards for development.

Improper development along the shoreline can usurp prime waterway access, destroy the natural appearance of a waterway, and cause degradation of the resource. An excessive number of docks, slips, piers, floats or mooring buoys can limit activity space. Proper planning and management, including community and stakeholder involvement, are vital to address and prevent unanticipated impact to the resource. Items to address during planning include, but are not limited to: land use, stormwater drainage, marinas, launch ramps, community access areas, docks (number, size, length, removal), slips (commercial, community use), floats, anchorage

and mooring buoys, vegetation removal, earthmoving, the visual appearance of human-made features (patios, walls, roads, buildings, extensions, other structures), permanent improvements, encroachments, electric wires for shore lighting, utility poles (lights, flags), steps and ramps for those with mobility limitations, fireplaces, fire circles, picnic tables, benches, chairs, roads and paths, grandfathered uses, noise, and prohibited activities (wastewater, gasoline, oil, or fuel disposal).

Planning must also address federal, state, county, and local government regulations for wetlands protection, sewage disposal controls, and tree or vegetation removal.

For public shorelines, zoning ordinances may specify a type and density of use such as size of use areas, the distance between assigned users, the allowable extension of docks, number of allowable slips, anchoring buoys or floats per user, and other features. In private waterways, such as those owned by utility companies, permits may be required to use the shoreline and waters' edge.



Share the Ramp sign with information separating trailer and hand launch.

Photo Credit: Montana FWP



## ACTIVITY AREAS / ACTIVITY NODES

Separating conflicting activity areas increases safety for all participants, such as designating open water swim areas away from other boating activities. In one study examining the association between regulations for designated open water swim sites and open water drowning death rates by state, "States with more types of regulations had lower open water death rates in a dose-response relationship."<sup>10</sup>

When planning access, it is important to consider use patterns such as distance from other access areas, physical suitability of the site and shoreline, road access, and water characteristics (e.g., flooding, tides, and access to services). Locate boat access campsites, transient moorages, temporary tie-ups, and other services to draw traffic away from high-use areas or commercial harbors. Separating conflicting activity areas often supports a higher carrying capacity for activities when users clearly understand the established activity and pattern of use. For example, sailors understand the movement of sailboats based on wind conditions; water-skiers look for fallen skiers; a personal watercraft operator's quick turns and maneuverability occur away from other users who may not expect this type of quick action and response. Rowers, paddlecraft, and other nonmotorized activities launch and recreate in areas free of boat wake and high-speed activity. Dock, launch, and support facilities developed for specialized groups often ease access to the designated activity area. Where activities cannot be separated, regulations may be needed to control speed, such as passing through a narrow or special-use activity area.

Plan to address the potential conflict between the waterway users and private landholders when designating public access to water. Common along many waterways, especially rivers, the public access area should include signage informing the user that privately-owned land along the river or waterway is restricted.



Separation of activity areas are often welcomed by participants.

Photo Credit: National Safe Boating Council

### What is a driver of user conflict?



*(There is a) loss of recreational access/safety due to anchored boats."*

Nationwide Waterway Management Survey  
Respondent (Q6#53)

## ANCHORING AND LANDING LIMITATIONS

Boaters often want to anchor where and when they choose. Designating areas where anchoring or mooring is or is not allowed could prevent obstruction and congestion on heavily used channels and scenic areas. Designations keep traffic flowing, vital in areas such as the approach for locks or narrow channels.



Designate anchorage areas away from lanes of travel provides safe separation of activity.

Photo Credit: National Safe Boating Council

Anchorage and mooring designations protect water quality. They reduce the impact of anchors and the anchoring process in aquatically sensitive areas. They also safe and legal locations for use overnight or for extended periods. In determining anchorage areas, take care to consider issues that may result from designation. In 2009, the Florida Legislature directed a pilot program to explore potential options for regulating the anchoring or mooring of vessels (other than live-aboard vessels) outside the marked boundaries of public mooring fields.<sup>11</sup> The study addresses improperly stored, abandoned, and derelict boats, including homeowner dislikes of vessels anchored near residences for privacy reasons and concern for property damage resulting if vessels break loose during weather events. Designating these areas may provide state, county, or local government a tool to address health and safety through regulation. Areas outside of designated anchorage areas may not offer a legal means to address user conflicts.

## BANS, LIMITS, EXCLUSIONS

Banning watercraft usage is considered to be "heavy-handed." Still, it may be the practical result of using a waterway management tool such as zoning or time restrictions. Any use limitation must be carefully weighed with the input of stakeholders and based on analysis of reliable data to determine it represents the "best solution" for the waterway. Negative environmental or safety impacts from overcrowding sometimes trigger a call for more intensive management approaches and limits on boating use. Carefully analyze any data collected which may target a preferred number or type of craft or limiting a "problematic" type of craft on the waterway. The public process is vital to ensure any resulting bans, limits, or exclusions are justified and defensible in any resulting legal proceedings or the "court of public opinion."



Restricted areas should be clearly marked.  
Photo Credit: National Safe Boating Council

## CARRYING CAPACITIES

Addressing carrying capacity is an important topic. However, there is widespread debate and controversy among researchers and practitioners about the overall merits of the concept, formula estimates, and limits of scientific basis and applicability to different waterways and situations. It may seem easy to understand and assess; however, determining carrying capacity goes beyond just the numbers and must encompass a range of qualities and conditions. A planner must depend on good data, which include sound processes for collection.

*In Steps to Address User Capacities for Wild and Scenic Rivers, the Interagency Wild and Scenic Rivers Coordinating Council provides practical guidance to inform a range of waterway planning efforts, including identifying triggers that initiate one or more management responses. A "trigger" is the predetermined point at which changes in an indicator require a management response to ensure that the threshold for that condition is not crossed.*<sup>12</sup>

Historic guidance on carrying capacity focuses on the importance of the system process as a prelude to discussing desired conditions, user preference, and user perceptions. Recent approaches turn away from preventing and toward identifying and maintaining the desired future resource and social conditions through monitoring and management. Studies that hone in on boater motivations, reasons for selecting destinations, and values and perceptions that these users hold toward the resource are likely to yield more valuable insights into the overall system than traditional counts and censuses. There is risk in assuming too much about data collected with one purpose in mind or collected over too short a period. Combine long-term collections, counts, and measurements with knowledge from the resident and user population in the area.



Without established limits, some activities block the waterway from any other use.

Photo Credit: Comal River - City of New Braunfels, Texas



Consider carrying capacity from several perspectives:

- Physical carrying capacity
  - Define the physical carrying capacity by absolute space standards and the maximum number of craft per acre.
  - Exceed the physical carrying capacity when more boats are in use at a particular time and location.
- Social carrying capacity
  - Effects of use levels and intensity on the quality or recreational experiences form the social carrying capacity.
    - User satisfaction fluctuates based on the number and type of encounters between users. Carrying capacity satisfaction changes with boating activity, the required space to do that activity, and the perceived levels of danger associated with the activity.
    - An "attitude picture" tells why boat use patterns are there and patterns to expect in the future. Understanding individuals' motivations build proactive policies toward longer-term goals.
- Ecological carrying capacity
  - Considers the effect of recreation use on the natural environment.
  - Defines the maximum level of use in terms of numbers and types of activities before an unacceptable or irreversible decline in ecosystem values occurs.

Examples of comprehensive carrying capacity state-level or regional-level reports include Florida's Recreational Carrying Capacity Guidelines,<sup>13</sup> Little Long Lake Recreational, and Environmental Carrying Capacity Study (Michigan),<sup>14</sup> and LaGrange Counts Lakes Council (Indiana).<sup>15</sup>

Regarding the term "Carrying Capacity," it may be more appropriate to use the term "User Capacity" or "Visitor Capacity." Also see *User Capacity/Visitor Capacity*.

### What is a driver of user conflict?



*Vessel storage on public waters."*

Nationwide Waterway Management Survey  
Respondent (Q6#53)

## CROWDS

### LARGE, UNPLANNED

Expectations among waterway activity user groups vary widely. They may compete to share the same limited space simultaneously, resulting in overcrowding at entry points or high use areas. According to one study at Candlewood Lake, Connecticut, "...overcrowding most clearly manifests itself in the form of user conflicts, with the number of user conflicts invariably increasing as the number of users and hence overcrowding grows. These user conflicts reveal themselves in a variety of forms, including noise and disturbance/inappropriate behavior complaints; excessive vessel speeds or speeds inappropriate for the geography and bathymetry of a specific portion of a waterbody; and general congestion that impedes the free and safe movement of vessels. Most importantly, however, user conflicts can escalate to the level of actual boating accidents, potentially resulting in injury or death."<sup>16</sup> This same study offers some specific management approaches based on the study findings, including addressing user perceptions. While acknowledging that lakes with highly visible enforcement patrols and high levels of enforcement can handle higher activity levels, the study indicates, "The way that the lake experience is promoted greatly influences perceptions and expectations of users. Lakes that are promoted as peaceful, rural getaways will attract users seeking that experience and affect their perception of crowding on the lake."<sup>17</sup>

Additional tools to address unplanned crowds may include a range of activity or time zoning, launch permits or use fees, access and dock limitations, or other regulatory options widely unpopular with many users. It is imperative to include user and stakeholder involvement to study all points of view, describe the preferred result, and determine the best management approaches to achieve the desired outcomes. A shoreline boat count may be valuable to show the number of resident boats versus the number of boats allowed onto a waterbody through public or proposed access points (determined by the number of parking spaces).

## DERELICT AND AT-RISK VESSELS

### ABANDONED BOATS

Multiple federal agencies share responsibility with states for responding to the threats posed by abandoned or derelict vessels, including the U.S. Coast Guard (USCG), Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (USACE), National Oceanic and Atmospheric Administration (NOAA), and Federal Emergency Management Agency (FEMA). The U.S. Government Accountability Office published a comprehensive review of the issue in 2017.<sup>18</sup>

The U.S. Coast Guard's Commandant Instruction (COMDTINST) number M16465.43<sup>19</sup> provides policy and guidance to USCG districts and field units on actions to locate, inspect, inventory, and, when necessary, remove abandoned vessels. An example of regional incorporation of this Commandant Instruction is in Section 9330 Derelict Vessel Best Management Practices of the Northwest Area Contingency Plan.<sup>20</sup> Additional guidance is the National Association of State Boating Law Administrator's Best Management Practices for Abandoned Boats.<sup>21</sup>



Boat abandoned at state boat launch in Connecticut.

Photo Credit: Eleanor Mariani

“Remove all derelict vessels anywhere. Streamline the removal process, just like abandoned cars. Slap a sticker on there and remove 30 days later. Resist “elite” landowners trying to shut down public waterway bottoms, to prevent boaters from anchoring in otherwise legal anchorages. At the very most, implement anchorage policies, regarding length of stay without moving, to prevent rusting in place derelicts and dumping sewage but do not close down public waterway bottoms to otherwise responsible and legal boaters.”

Nationwide Waterway Management Survey  
Respondent (Q8#971)

## EDUCATION

Boater education has a long history of federal, state, and local government involvement and stakeholder program development and implementation. The U.S. Coast Guard requires each state to designate a Boating Law Administrator (BLA) charged with overseeing boating education, law enforcement, numbering and titling, and other boating programs in that state. The BLA may reside in a state law enforcement agency, a natural resources department, state parks, or a stand-alone agency. Each BLA office designates an education coordinator. The BLA or the education coordinator should be the first person to contact with questions regarding boating education requirements and programs within each state. For a Boating Law Administrator Directory, visit <https://www.nasbla.org/about-nasbla/boating-contacts>.

As with other planning approaches, data review is a first step to develop and implement a boater education and safety program. According to the USCG, over half (55.3%) of 84 million persons who boated in 2018 operated the boat at least once. Only a third (34.2%) of boat operators reported taking a safety course.<sup>22</sup> It is unknown who offered the courses, how many operators completed the course, whether the course required skills or knowledge examinations, and whether they passed.



“Encourage courtesy and respect at all times by all types of users on the water. Everyone has a right to enjoy waterways and access points as they choose within the limits of the law. We all have a right to do so regardless of boat size, size of tow vehicle, or size of wallet.”

Nationwide Waterway Management Survey  
Respondent (Q8#62)

Many non-profit organizations provide informational programs and training for the boating community. The U.S. Coast Guard Auxiliary, United States Power Squadrons (a.k.a. America's Boating Club), National Safe Boating Council (NSBC), and state boating agencies provide a wealth of information targeted to the recreational boating public. Skills training is available from these groups, the American Canoe Association (ACA), U.S. Sailing, U.S. Powerboating, and local retailers, liveries, and outfitters. A variety of free or low-cost educational resources are available online from the National Safe Boating Council (<https://www.safeboatingcouncil.org/>), Water Sports Foundation (<https://www.watersportsfoundation.com/>), BoatUS Foundation (<https://www.boatus.org/>), America's Boating Club (<https://americasboatingclub.org/>), U.S. Coast Guard Auxiliary (<https://www.cgaux.org/>) and others. Also see *Information; Rules and Regulations*.



Paddle Trail signage along the San Antonio River.

Photo Credit: San Antonio River Authority

## BOAT RENTAL AND LIVERY REQUIREMENTS FOR BOATING EDUCATION

Uninformed and non-compliant operators create user conflicts, especially when they are oblivious to Navigation Rules. Boater education courses focus on these "rules of the road." Some states have specific requirements for boat renters. A state may allow the completion of an on-site "quiz" in place of completing a state-mandated course for personal watercraft (PWC) or powerboat operation. This approach creates a gateway to access boating for the non-boat-owning public. However, with the availability of 24/7 online courses, including free courses meeting the American National Standards for Basic Boating Knowledge,<sup>23</sup> the pros and cons of requiring an on-site quiz instead of a complete course seem misaligned.

## AMERICAN NATIONAL STANDARDS FOR BASIC BOATING KNOWLEDGE

American National Standards (ANS), recognized by the American National Standards Institute (ANSI), guide the development of boater courses. Overseen by the National Boating Education Standards Panel, each of the following Basic Boating Knowledge standards and Technical Reports are subject to regular review and update.

*ANSI/NASBLA 101-2017: Basic Boating Knowledge – Human Propelled* - American National Standard, effective September 28, 2017.<sup>24</sup>

- *ESP TR 101-2018: Technical Report – Basic Boating Knowledge – Human Propelled* - This Technical Report provides information to help design and implement successful recreational human-propelled boater education and training programs based on ANSI/NASBLA 101-2017: Basic Boating Knowledge – Human Propelled (ANS). It was published by the National Education Standards Panel, August 16, 2018.<sup>25</sup>

*ANSI/NASBLA 102-2017: Basic Boating Knowledge - Sail* - American National Standard, effective February 24, 2017.<sup>26</sup>

*ANSI/NASBLA 103-2016: Basic Boating Knowledge - Power* - American National Standard, effective January 1, 2016.<sup>27</sup>

- *ESP TR 103-2018: Technical Report – Basic Boating Knowledge - Power* - The Technical Report provides information to help design and implement successful recreational powerboating education and training programs based on ANSI/NASBLA 103-2016: Basic Boating Knowledge - Power (ANS). It was published by the National Education Standards Panel, June 26, 2018.<sup>28</sup>

*ANSI/NASBLA 103.1-2018: Supplement - Basic Boating Knowledge – Water-Jet Propelled Boats - Supplement*, effective March 3, 2018.<sup>29</sup>

## AMERICAN NATIONAL STANDARDS FOR ON-WATER SKILL STANDARDS

Skill standards serve as a primary source of information used to help raise and standardize the overall level of quality, consistency, and availability of on-water, entry-level boating education across the country and enhance the safety and enjoyment of recreational boaters. U.S. Sailing Association facilitated the process of skill standard development under a U.S. Coast Guard national, non-profit grant.

Four American National Standards (ANS) guide on-water, skills-based instruction. Three address domain-specific skills and the fourth addresses the instructional approach for trainers and training programs. Standards and accompanying Technical Support Documents are available for download at <https://www.usnows.org/>:

- *On-Water Recreational Boating Skills– Power* (EDU-1 On-Water Power Standard), also known as the Powerboating Skills ANS.
- *On-Water Recreational Boating Skills– Human-propelled* (EDU-2 Skill-Based Human-Propelled Standard), also known as the Human-propelled Skills ANS.
- *On-Water Recreational Boating Skills– Sail* (EDU-3 Skills-Based Sailboat Standard), also known as the Sailing Skills ANS.
- *On-Water Recreational Boating Skills– Instructional Approach* (EDU-4 On-Water Instruction Standard), also known as the Instructional Approach Standard (IAS), serves as the 'umbrella' ANS. It identifies the characteristics and qualities of all parts of the system and is applicable across the three skill domains of Power, Human-propelled, and Sail.

## EMERGENCY RESPONSE PLANNING

Development and implementation of a risk management plan to prevent injury and mishap are considered best practices. Use bulletin boards and information kiosks to inform the public of whom to contact for assistance, including names and locations of nearby medical facilities. Signage provides information and warns people of risks and hazards associated with the location, including regulations, safety, and general information. Directional or location signage provides a means to identify a common name for a location for quick response. Identification is essential when a location is called a range of names by the locals. Location names should be shared with the emergency response centers and published in guidebooks, charts, and maps.

For waterways having numerous access points, it is helpful to post the access area name at the dock for view by approaching boaters, especially needed in times of emergency. When possible, provide lighting at boat ramps to guide boaters off the water. Also see *Signage*.



Commercial buses pick up rafters on a public highway slowing emergency response.

Photo Credit: David Cernicek

## ENTRANCE GATES

Entrance gates can control access to waterways which have a single or limited number of entry points. Often unpopular with users, entrance gates provide a successful means to regulate traffic and congestion. Typically, gates are closed when an area fills and may re-open to allow access after others depart. This approach benefits those able to access the waterways earlier in the day.

Entrance gates provide means to collect user fees for facility revenue, often needed to maintain and improve the waterway.

## FEDERAL REGULATIONS

Navigable waters are "waters that are capable of being navigated (as for commerce) and to which federal admiralty jurisdiction and specific environmental regulations apply."<sup>30</sup> Not all waters used for recreation are considered navigable waters of the United States as defined by 33 CFR Part 329. The federal government exercises constitutional authority over navigable waters and tributaries to provide interstate or foreign commerce and transportation. In these cases, the federal government determines waterway use, including altering the waterway by dredging or building structures such as locks and dams.

The Rivers and Harbors Appropriation Act of 1899 forbids building any unauthorized obstruction to navigable waters and gives enforcement powers to the U.S. Army Corps of Engineers. To determine whether specific bodies of water are navigable, the U. S. Supreme Court created four tests. Established in *Kaiser Aetna v. United States*, 444 U.S. 164, 100 S. Ct. 383, 62 L. Ed. 2d 332, the tests ask whether the body of water (1) is subject to the ebb and flow of the tide, (2) connects with a continuous interstate waterway, (3) has navigable capacity, and (4) is actually navigable. Using these tests, courts have held that bodies of water much smaller than lakes and rivers also constitute navigable waters. Even shallow streams that are traversable only by canoe have met the test.<sup>31</sup>

Over the centuries, legal cases have determined numerous questions of navigability. The USCG maintains a list of waterways declared navigable. USCG navigability declarations are critical, especially where dams create recreational reservoirs. Declarations may limit the ability of state or local governments to enact regulations. Contact the Recreational Boating Specialist in the USCG District office covering the waterway's location with questions regarding navigability. A list of contacts is at <https://uscgboating.org/content/District-RBS-Specialists.php>. Also see *Regulated Navigation Areas; Limited Access Areas; and, Section 2A – Who Determines if a Waterway is "Navigable"*.

## US COAST GUARD LICENSING REQUIREMENTS

The Passenger Vessel Safety Act of 1993<sup>32</sup> revised definitions for passengers, passenger vessels, and certain other types of vessels (including offshore supply, sailing school, and submersible vessels). The Act regulates uninspected passenger vessels by: (1) requiring that they carry additional equipment (including life rafts or other lifesaving equipment) or follow additional construction standards; or (2) specifying additional operating standards.

USCG credentials include those for Uninspected Passenger Vessels carrying six or fewer passengers (a.k.a., 6-pack) and credentials and inspection requirements for vessels carrying more than six passengers. Visit the USCG's National Maritime Center at [https://www.dco.uscg.mil/national\\_maritime\\_center/charter\\_boat\\_cap/](https://www.dco.uscg.mil/national_maritime_center/charter_boat_cap/) for details.

## HORSEPOWER LIMITATIONS

Some waterways have limited access based on horsepower or types of craft to control noise, minimize wakes or speed, or preserve wildlife viewing. Careful monitoring of this approach is needed to determine if it produces the desired results. When considering limits, consider the physical features of the waterway and management objectives. The approach may be a successful option for small lakes or lakes managed as primitive areas to preserve natural conditions. Lakes managed as water supply reservoirs may prohibit motorized craft altogether or allow electric motors or motors of limited horsepower (i.e., 10 horsepower or less). This approach limits access to the waterway by boats equipped with higher horsepower unless the larger motor is disabled. For instance, if a boat having a large motor and trolling motor launches, the larger propeller is removed or remains elevated while on the water. Enforcement of this restriction may seem straightforward; however, operators sometimes replace motor covers with those showing lower horsepower.

Banning motorized craft may eliminate Sport Fish Restoration and Boating Trust Fund support for public access projects, an important revenue source.



## INFORMATION

Public information is key to achieving waterway management goals. Safe boating information should address information on using the waterway, including boating rules summaries and where to obtain complete rules and regulations and information on safe boating practices, common courtesies, and safety checklists.

Incorporate graphic depictions of speed direction and zoning regulations, including why the rules and regulations are necessary. Use public information to address ethical concerns (noise, behavior) that may be offensive to others and environmental ethics regarding the resource. Additional information may address how to obtain updated water levels or other river conditions, low-power broadcasts or wind warning systems (e.g., lighting, flags, and small craft advisories).

Share information in hard copy, such as kiosks and bulletin boards, and electronically via websites and social media. Include links to informational brochures and interactive maps, information about wildlife, waterfowl, cultural areas of interest, and stakeholder and user advocacy groups. Also see *Education*.



Graphic use in signage provides information on a number of topics.

Photo Credit: Parks and Recreation, Ann Arbor, MI



Signage can provide more than information. Life jacket loaner stations help keep visitors safe on the water and on land.

Photo Credit: National Safe Boating Council

## LAW ENFORCEMENT

The USCG requires each state to designate a Boating Law Administrator (BLA). Coordination of recreational boating law enforcement efforts begins with contacting this office. For a directory of BLAs by state, visit <https://www.nasbla.org/about-nasbla/boating-contacts>. The list also contains contacts for boating safety education, titling and registration, public information, and other program areas.

Enforcement of boating laws begins with the jurisdiction and authority of the law enforcement agency. Strict enforcement of existing regulations often addresses or prevents user conflict and is generally supported, expected, and accepted by most waterway users who prefer being reminded to comply with existing law over having to respond to new rules and regulations.

Sometimes different, not just more, law enforcement is needed to address an issue. Build a process for interagency cooperation and coordinated schedules, resulting in more coverage over time if multiple agencies patrol a waterway. Different approaches are needed based on use patterns (fishing tournaments vs. holiday activity such as fireworks vs. peak use). Increase patrol during peak use periods – weekends and holidays – in areas currently underserved. Be aware of shifting use periods, leisure time, and opportunities. For instance, the COVID pandemic resulted in increased boating participation in 2021 by new and younger boaters. Law enforcement must be able to monitor and respond to changing usage conditions with both knowledge and wisdom.



"Volunteer" safety patrols, such as those conducted by the Coast Guard Auxiliary, can enhance compliance to rules by providing an "authoritative presence" on the water. Safety patrols offer assistance, impart safety information and support, even though these volunteers do not enforce the law. The presence of marked safety and enforcement vessels results in cautious operators, demonstrating that compliance to rules is monitored and enforced. Non-enforcement safety patrols should provide regular updates to law enforcement on observed activities. Also see *Rules and Regulations*.

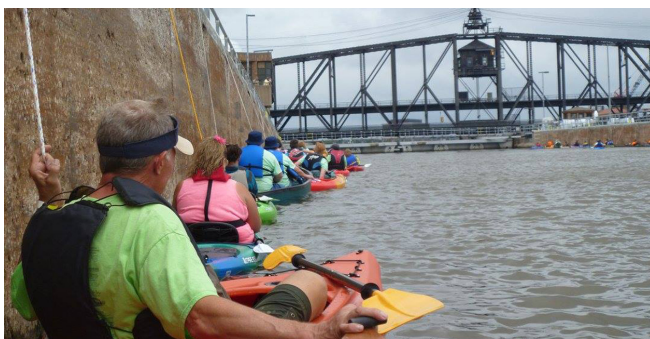


Boaters often prefer strict enforcement of current laws over enactment of new ones.

Photo Credit: National Safe Boating Council

## LOCKS

On navigable rivers, navigation locks provide access to water above or below a falls or artificial structure. In general, locks are available for use by both commercial and recreational vessels. Recreational boaters should be aware of the hierarchy for entry and protocol for entry and use. Post information on signs, electronic media, and other information sources.



Locks may be used by both commercial and private craft. The lock master provides information on when and how to enter and exit. Commercial vessels take priority over recreational boats.

Photo Credit: U.S. Army Corps of Engineers

## NAVIGABLE WATERS

Navigable waters are those subject to federal regulation. As a general rule, federal waters are any waters usable for or which impact interstate commerce – coastwise harbors, rivers, Great Lakes, the Mississippi and its tributaries - are obvious examples of waterways in which federal regulation controls. When there is federal jurisdiction it means the U.S. Coast Guard and U.S. Army Corps of Engineers should not only be consulted, but may already have solutions in place. Also see *Section 2 - Who Determines if a Waterway is Navigable?*

Where it is desired to add navigational aids such as buoys, lights or daymarks in navigable waters, planning should include following the Coast Guard standards and obtaining approval from the applicable Coast Guard office.

## NAVIGATION CHARTS, MAPS, AIDS

Not every waterway has a nautical chart available from the National Oceanic and Atmospheric Administration.<sup>33</sup> If available, they provide a valuable tool for waterway users. They should be one of the first tools to obtain for waterway management efforts.

Navigational charts and aids help reduce conflicts and promote safety. They should include waterway markers and information about local vessel traffic systems that include graphic depictions of rules and regulations, restricted and limited use areas, and potentially hazardous areas.

Both electronic media and printed materials are needed to reach a wide range of boaters. A map suitable for printing both in color or black and white allows for easy online download and printing. Post maps at ramps and provide printed copies when and where possible to publicize information to local and transient users.



Keep maps and charts updated to ensure users have the most complete information available.

Photo Credit: National Safe Boating Council

## NOISE REGULATIONS AND ORDINANCES

Many states and localities set maximum allowable engine noise that can be emitted from watercraft. These limits are typically 75 to 90 decibels. Standards include SAE J-2005 (stationary test) and SAE J-1970 (shoreline test) developed by the Society of Automotive Engineers to measure decibel levels of stationary and moving motorboats, respectively.

Noise levels can be challenging to evaluate, particularly with variations in how sound travels during certain climatic conditions. Specialized equipment is used and must be recalibrated regularly by trained technicians if used for law enforcement purposes.

Noise generated on watercraft from radios and cell phones is a particularly challenging issue. State boating agencies may not have the authority to legislate against noise other than engines. Such offenses would fall back to land-based local ordinances. Unless laws specifically address noise other than from waterway-based law enforcement may be powerless.

Achieve noise mitigation by restricting watercraft hours of operation, zoning noisy activity away from shorelines, or developing quiet use areas such as wildlife sanctuaries.

## PERMIT SYSTEMS - GENERAL ACCESS

Permit requirements control the number of users between designated control points or using a single access point. Permits are used in whitewater areas to prevent overcrowding, and wilderness lakes to maintain the natural state by limiting the impact of general use.

Permits are issued by various means, each with advantages and disadvantages. Examples are:

- First come/first served;
- Allocations split between private vs. commercial use; and
- Lottery, merit, or advanced reservation systems.

## PERMIT SYSTEMS - SPECIAL EVENTS

For activities on waters of the United States, the USCG approves and issues Marine Event Permits under the authority of 33 U.S.C. 1233 and 33 CFR Part 100. Commandant Instruction (COMDTINST) number M16751.3, used by the Captain of the Port, determines when a marine event application (CG-4423) is approved. Not all events require approval. However, events not requiring the issuance of a Marine Event Permit may trigger crowds or other levels of participation that benefit from USCG oversight and involvement.

The USCG may forward a Marine Event Permit Application to the state Boating Law Administrator should it be determined that the event does not require the issuance of a Coast Guard permit. The state Boating Law Administrator may take any action(s) deemed appropriate. The state may also be involved if waivers of any state boating laws are requested, or a state boat launch is the primary entry point for the event.

The event application process identifies responsible parties to contact should problems arise. The tool helps prevent scheduling conflicts, assuming users are informed promptly of the upcoming activity. Events often require permits for 'special use' by the jurisdiction from which water access is provided. This may be a borough, county, state or federal agency.



Event permits help to advise planned activity for a waterway.  
Photo Credit: U.S. Army Corps of Engineers



## PUBLIC OUTREACH

River condition information, including water level information and real-time gauge readings, are posted electronically. Waterway managers may find it helpful to contact local members of the American Canoe Association, American Whitewater,<sup>34</sup> or a local paddling club to interpret the usefulness of this information for the general public. In rivers and systems managed by the U.S. Army Corps of Engineers, water conditions, particularly water levels, may vary considerably and may be available through systematic reporting systems. Lock operations may impact river operations and water levels directly. Similarly, reservoir conditions may be managed by a variety of state or federal agencies.



Public outreach should target the community at multiple levels.

Photo Credit: David Cernicek

## RESOURCE PROTECTION

Plan higher impact activity areas away from environmentally sensitive areas to avoid or minimize resource degradation. Avoid wetlands or areas that are flood-prone or have steep slopes with erosion-prone soils. If sensitive areas are open to the public, consider access for less intense activities, such as nature study or wildlife viewing.

Resource protection may require hardening the resource (bulk heading, riprap). Consider surface hardening carefully. The impact on fish and wildlife feeding and nesting areas may be positive or negative. Adherence to a comprehensive restoration program will result in enhanced recreational benefits in the future.

Although costly, changing surfaces by hardening to reduce resource overuse or reduce compaction and erosion generally increases the site's overall capacity. Many eco-friendly options are available today for controlled water percolation and drainage, including paving options, rain gardens, and landscaping. Shorelines, riverbanks, facilities, and land-based recreation areas may need hardening with wood chips, gravel, wooden platforms, steps, paving, gravel, or concrete slabs. Users often prefer options such as wood and fine pea gravel versus concrete and asphalt. Provide steps or ramps on steep banks to eliminate worn paths, erosion, or trampling of ground cover. Reseed ditches and swales to minimize erosion. Use gravel, riprap, wood, concrete, or asphalt in critical areas around culverts, inlets, or outflow pipes to slow runoff and prevent erosion.

Limiting or dispersing activity can prevent resource overuse and should be determined based on sufficient scientific, social (use patterns) and environmental documentation. Lower use or use that is dispersed by adding access points, distributing access over longer periods in a day provides the opportunity for a site to recover naturally. Rotating use to different areas each recreation season may allow spawning or aquatic reproductive sites to thrive.

Informing and educating waterway users about resource protection and reasoning behind management practices is critical. Information should address the value and conservation of natural, cultural, and recreational waterway resources and provide timely information about the status of the protected area.

Reducing litter is an ongoing challenge for resource managers. Eliminating litter requires a sustained program of public education and awareness. Some sites provide trash containers and dump stations at strategic locations and aggressively enforce litter laws. There are also examples of reducing litter at the resource site by following the "Leave No Trace" principals, which include packing out and disposing of waste properly. Successful models of public education and awareness programs rely on public involvement for resource oversight, including seasonal clean-ups. Examples include "Adopt a Waterway," "Adopt a River," "Adopt a Stream," or "Adopt-a-Shoreline" programs.

## RESTRICTED ACCESS AND REGULATED NAVIGATION AREAS

As described in 33 CFR Part 165 Subpart B, a Regulated Navigation Area (RNA) is a defined boundary with regulations established for vessel navigation within the water area. The USCG District Commander issues an RNA to control vessel traffic in a place determined to have hazardous conditions. RNAs usually prescribe what type or size of vessels may enter an area or the manner they must navigate.

RNAs differ from safety and security zones in two respects. First, only USCG District Commanders are authorized to establish RNAs; Coast Guard Captains of the Port may not. Second, safety and security zones are typically transitory, responsive to a temporary safety or security concern on the water such as a military vessel. RNAs create a more permanent solution to safety or environmental concerns. As a recent example, in 2019, an RNA was enacted in the three rivers area of Pittsburgh, Pennsylvania, to address the operation of recreation and commercial craft in the vicinity of PNC Park and Heinz Field.<sup>35</sup>

## RULES AND REGULATIONS

Before making new rules, gain a thorough understanding of those which are already in place. New laws, rules, and regulations may be needed to address problems not solved with existing policies or other management techniques. Understand the impact of any new enactments on stakeholders and others likely to be significantly affected before adopting or implementing new ones. Avoid overregulation or using an extreme measure based solely on a particular interest group or an isolated incident. Recognize that new regulations may have unexpected results, including limiting enforcement authority by those patrolling the waterways. For example, many state or local marine patrol officers do not have the authority to enforce a federal regulation, and vice-versa. Generally, multiple, parallel policies need developing to provide uniform enforcement by various agencies.

**What if state or local laws or regulations conflict with federal law?** Well-intended state or sub-state laws or regulations to address safety issues could put the policies in conflict with federal law, thus displacing or "preempting" the state or sub-state enactment. This preemption of state law has its basis in the Supremacy Clause of the U.S. Constitution, Article VI, clause 2. In legal terms, the "preemption doctrine" refers to the idea that a higher authority of law displaces a lower power of the law when the two powers come into conflict. As such, federal law supersedes state law when federal law conflicts with state law. State law supersedes that of a lower government, such as a municipality, in conflicts of law.

Particularly noteworthy for recreational boating is Title 46, U.S. Code §4306 Federal Preemption, which supersedes a state's establishment or enforcement of laws or regulations on the performance or safety standards of recreational boats and associated equipment;

*Unless permitted by the Secretary under section 4305 of this title, a State or political subdivision of a State may not establish, continue in effect, or enforce a law or regulation establishing a recreational vessel or associated equipment performance or other safety standard or imposing a requirement for associated equipment (except insofar as the State or political subdivision may, in the absence of the Secretary's disapproval, regulate the carrying or use of marine safety articles to meet uniquely hazardous conditions or circumstances within the State) that is not identical to a regulation prescribed under section 4302 of this title. (Pub. L. 98-99, Aug. 26, 1983, 97 Stat.531)*



A boat throws a wake within a marked No Wake zone. Strict enforcement of existing rules may eliminate conflicts of use.

Photo Credit: National Safe Boating Council



Although this section of the U.S. Code authorizes the U.S. Coast Guard to grant waivers from preemption, the practice is used sparingly since greater uniformity of boating laws and regulations is a goal of the Federal Boat Safety Act. As one intent is to allow boaters to freely operate between jurisdictions without concern about widely varying requirements across borders, there is no guarantee that the state legislation or regulations in question will receive or retain a waiver from preemption.

In drafting new laws or regulations, note that the preemption doctrine has been successfully court-challenged in numerous locations. Review any court rulings in matters of conflict of law. Above all, be proactive in identifying and seeking guidance on federal code or regulatory issues that may put a proposed state or sub-state law or regulation in conflict and require a waiver from preemption.

“Many current issues deal with vessels underway, narrow channels (choose your favorite interpretation), and not being a navigational nuisance. One of our mitigation strategies to not being a navigational nuisance is to require the operator/master to have knowledge of the Navigation Rules. There are federal and state regulations dealing with power-driven vessels... but few states require human-power vessel operators to possess a boat operator certificate. Many states have exemptions to the requirement to possess a boat operator certificate when "operation with a rental or lease agreement from a motorboat rental or leasing business and completion of a dockside safety checklist.”

*So is our issue with the operator or the rental company? The state for allowing a loophole? Does anyone working at a livery have a requirement to be familiar with the Navigation Rules? They are all stakeholders.”*

*Thomas Dardis, USCG Office of Boating Safety, posted May 19, 2020 on Basecamp to Waterway Management Steering Committee*

Exceptions do exist! One notable example is regarding life jackets requirements. Per 33 CFR § 175.5 Exemption from Preemption, states are exempt from preemption by federal regulations within the jurisdictional boundaries of the state when they establish, continue in effect, or enforce state laws and regulations on the wearing or the carriage of personal flotation devices directly related to (a) children on board any vessel; (b) operating a canoe or kayak; (c) operating a sailboard, and (d) operating a personal watercraft.

In some instances where a minimum standard is set by federal regulation, a state can be more restrictive: it may not be less restrictive. Some examples of requirements where state law differs from federal law:

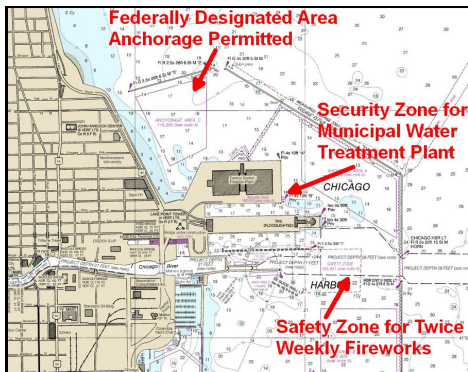
- Age minimums for the operation of certain boats (typically powered craft).
- The lower age limit may fluctuate depending on adult supervision or completion of an approved boater education course.
- Life jacket requirements, including required wear by age and seasonal wear requirements. Examples of seasonal wear requirements are at <https://idash.nasbla.net/idashboards/viewer/?guestuser=guest&dashID=195&c=0>.
- Life jacket usage and age required for the operation of a personal watercraft (PWC).

Further, the federal government does not have authority over boater education, leaving requirements to each state. Most, but not all, states require some level of boater education for motorized boating. However, state requirements differ based on age, phase-in timelines, and application based on horsepower or type of boat (e.g., personal watercraft).

- For information on state education requirements, visit the NASBLA Dashboard at <https://idash.nasbla.net/idashboards/viewer/?guestuser=guest&dashID=199&c=0>.
- Information on boating education card requirements, including which powerboats it applies to, and requirements for adult visiting boaters, is at <https://idash.nasbla.net/idashboards/viewer/?guestuser=guest&dashID=139&c=0>.
- For the number of state-approved boater education certificates issued, visit <https://idash.nasbla.net/idashboards/viewer/?guestuser=guest&dashID=197&c=0>.

## SAFETY ZONES

As defined in 33 CFR Part 165 Subpart C, Safety Zones are generally areas of water or land designated for a specific time for safety or environmental purposes. A safety zone limits public access to the area to protect human safety or the environment. While specific times are often a feature, these may be regularly recurring. Notices of safety zones are often published in Coast Guard bulletins, notices to mariners and the Federal Register.



Regularly established safety zones are typically shown on navigational charts.

Photo Credit: David Brezina, Chicago Harbor Safety Committee

## SECURITY ZONES

Security Zones, described in 33 CFR Part 165 Subpart D, are generally areas of water or land designated for a specific time to protect vessels, harbors, ports, and waterfront facilities from sabotage, damage, or injury due to subversive acts, accidents, or other causes of a similar nature. A security zone surrounds a vessel or a waterfront facility, preventing other vessels from approaching. Security zones limit access to prevent injury or damage to vessels, ports, or waterfront facilities and may surround a vessel in motion.

*“Improve clarity and brevity of signage along waterway. Encourage kayakers to use edges of waterway, not center of channel. Teach how to receive and give a “slow pass”.*

Nationwide Waterway Management Survey  
Respondent (Q8#359)



*Signage is very confusing in some areas.”*

Nationwide Waterway Management Survey  
Respondent (Q7#71)

## SIGNAGE

On-water signage on navigable water must follow Coast Guard standards for navigational aids at [https://www.navcen.uscg.gov/pdf/navRules/US\\_ATON\\_Guide.pdf](https://www.navcen.uscg.gov/pdf/navRules/US_ATON_Guide.pdf). International Standards Organization (ISO) standards relevant to other water safety signage include ISO 20712- Water safety signs and beach safety flags. This standard consists of three parts:

- Part 1: Specifications for water safety signs used in workplaces and public areas;
- Part 2: Specifications for beach safety flags, and
- Part 3: Guidance for use.



Post signage in locations where users will see it.

Photo Credit: National Safe Boating Council

ISO standards, recognized by the American National Standards Institute (ANSI), are available for purchase at <https://webstore.ansi.org>. ISO and ANSI standard use are voluntary, not mandated. Some states and local jurisdictions use agency-developed signage guidelines.



Signage can provide more than information. Life jacket loaner stations help keep visitors safe on the water and on shore.

Photo Credit: National Safe Boating Council

“ (We need) education of signage and what the verbiage of the signage actually means.”

Nationwide Waterway Management Survey  
Respondent (Q7#83)

Post signage in strategic locations, including access areas, restrooms, and bulletin boards. Signs should be well-designed, universally understandable, use positive wording and clear messaging in compliance with local municipal zoning ordinances. Research indicates several factors for the effectiveness of road signs that may be relevant to water safety signage. Factors include size, legibility, comprehension, visibility in the surrounding environment, personal attributes of the person viewing the sign (including age, eyesight, language skills, and experience), and content (e.g., location to the item or hazard).<sup>36</sup>



Public access sign calling for respect of private land.  
Photo Credit: Iowa Department of Natural Resources

## SPECIAL EVENTS

Examples of special events include fishing tournaments, boat races, firework displays, air shows, and boat parades. For events not requiring a U.S. Coast Guard Marine Event Permit, the requirement of a local permit is used to prevent scheduling conflicts, determine accountability for the event, schedule safety resources, and inform the public of the area used or how to participate. When managing a special event, take care to avoid conflict with regular boating activities. When possible, plan and schedule to avoid peak use periods. If an event uses a public boat access area, early notification to the general public is warranted to avoid conflict or frustration. Also see *Permit Systems - Special Events*.

## TRAFFIC MANAGEMENT

"Traffic management" refers to managing the surface and activities of multiple-use waterways. Each approach has a set of requirements and requires an investment of time to educate and inform users. Traffic requirements may require state or federal approval, and restrictions can create confusion and discontent without public support and understanding.

The USCG has a statutory responsibility under the Ports and Waterways Safety Act of 1972 (PWSA), Title 33 USC §1221, to ensure safety and environmental protection. Vessel Traffic Services National Standard Operating Procedure Manual (VTS NSOP), COMDTINST M16630.3 (series) establishes vessel traffic service national standard operating procedures, including policy, guidance, recommended procedures, and general information about vessel traffic service operations, administration, and training. The USCG operates 12 Vessel Traffic Centers across the United States. Additional guidance on requirements and access to Maritime Safety Data, Nav Systems and Services, Maritime Safety Information (including Local Notices to Mariners and Coast Guard Safety Alerts) is available at the U.S. Coast Guard's Navigation Center at <https://www.navcen.uscg.gov/>. For traffic management in passing through locks and facilities operated by the USACE, other specific rules and regulations are established.



Make sure boaters understand the meaning of the signs. Post supporting information at launch areas and online.

Photo Credit: National Safe Boating Council



The Navigation Rules<sup>37</sup> should be used to understand and define vessel operation. For example, Navigation Rule 9 (narrow channels) generally requires a vessel in a narrow channel or fairway to *"keep as near to the outer limit of the channel or fairway which lies on her starboard side as is safe and practical."* Vessels proceeding downbound (downstream) with a following current have right-of-way over an upbound vessel. Vessels less than 20 meters in length, sailing vessels, or vessels engaged in fishing shall not impede the passage of a vessel that can safely navigate only within a narrow channel. Any management decisions involving vessel traffic management, including traffic schemes on waters not under federal jurisdiction (such as sole state waters), should, whenever possible, conform to these nautical traffic schemes.

Safety Areas, including Security Zones near military vessels, should be marked on charts and buoys and other navigational information to reduce potential water conflicts. Designations work most effectively when informed boaters know the dangers of traveling too close, and operators understand the constraints under which larger vessels operate. Also see *Speed Limits and Speed Zones; Zoning*.

## TRAFFIC PATTERNS - ROTATIONAL OR PRE-SET

It may be beneficial to determine a set traffic pattern for recreational boat operations on small or medium-sized lakes or bays. Most effective when used on a lake with a round and regular shoreline, a pre-set direction, typically rotational, creates more uniform traffic flow and helps ease congestion, reduces activity conflicts, and may result in a more leisurely experience. For specific activities such as water-skiing, it may increase the number of boats safely engaged in the activity.

A traffic pattern established for specific activities (such as water-skiing) may apply to all boats within a designated activity area or entire waterway. A counterclockwise pattern is consistent with the requirement in Navigation Rule 9 to *"keep as near to the outer limit of the channel or fairway which lies on her starboard side as is safe and practical."* If established in an isolated area, mark the area with buoys with specific instructions, such as "counterclockwise only."

## SPEED LIMITS AND SPEED ZONES

### MULTIPLE SPEED ZONING

Often a waterway has multiple speed zones such as "No Wake," a specific speed limit such as 15 miles per hour (MPH), or "Unlimited MPH" or "Open Zone." Speed zones work best on larger bodies of water with islands, coves, or channels. Mark the zones with buoys and indicate their locations on a chart or map.

Speed limits are a challenge to enforce due to both the technical difficulty of determining accurate boat speed and the limits of trained personnel required for enforcement. Many traditional types of radar used by law enforcement on the roadways are not accurate when used on the water due to the multiple directions of boats and diverse boat traffic patterns. Recreational watercraft commonly lack speedometers making compliance somewhat subjective on the part of the recreational boater. A more successful designation for enforcement are "No Wake", "Idle Speed" or zoning enforceable by observation by a trained officer. Also see *Traffic Management; Zoning*.

### NO WAKE OR STEERAGE SPEED ZONES

No Wake Zones (also known as "Slow Speed", "Minimum Wake", "Idle Speed", or "Steerage Speed" Zones) identify areas requiring a minimum amount of speed to maintain steerage without producing visible whitewater or wake behind the vessel. No Wake Zones are widely used, especially in proximity to the shoreline (100 to 300 feet from shore and areas with shallow depth or submerged objects). These zones prevent damage and erosion to the shoreline, including structures, and damage to moored or docked craft. No Wake Zones also reduce damage to sensitive wildlife, plant life, or natural areas.



Private land owners' signage reinforcing official signage in a No Wake Zone.

Photo Credit: National Safe Boating Council



Marked No Wake Zones may be used instead of Restricted or No Boats Zones in areas for hazard management such as shallow water or submerged objects, allowing continued access to these areas for fishing, crossing channels, and quiet water activity. Use No Wake Zones where two or more channels converge with blind spots or a history of collision, swamping, or other mishaps.

The slowing of boat traffic generally makes congested areas safer, reduces activity conflict, and reduces noise at the shoreline. If waterway use threatens sensitive wildlife, plant life, streambank or riverbed health, study the area to determine the root cause for resource damage. While natural weather and wave cause erosion, new extremes driven by climate change require additional consideration.

Some areas use 5 to 6 mph speed limits, although this speed may result in stirring up a lake bottom or creating a wake. A uniform speed limit impacts different size boats differently, with some boat hulls creating maximum prop wash between 6-8 mph in water shallower than 6-8 feet, stirring up lake sediments.<sup>38</sup>

For one sampling of multiple speed and no-wake regulations in effect, see Florida Fish and Wildlife Commission's listing of Boating Restricted Areas in Martin County.<sup>39</sup>

## OPEN ZONES

An "Open Zone" may be designated on a waterway with other zones, such as No Wake or Steerage Speed. Open Zones typically mean the designated area is open to all activities. An Open Zone may have a designated maximum speed.

## PASS-THROUGH ZONES

"Pass-Through Zones" provide a designated channel or area to move traffic through waterways. These are typically used along rivers and narrow waterway segments but could be used near private waterfront development to reduce conflicts. A Pass-Through Zone serves solely as a transportation channel, with recreational activities such as swimming or towed watersports prohibited.

## RESTRICTED/ NO BOAT ZONES

No Boat and Restricted Zones may be identified for hazard management. Even when not officially designated through statute or ordinance, manage known risk by keeping boats away from life-threatening hazards. These may include dams, power lines, or spillways. While waterfalls may be considered hazardous for inexperienced boaters, the whitewater paddling community may advocate for access under specific conditions by skilled paddlers.

Mark restricted areas with buoys and warning signs, work with the Coast Guard when on navigable waters, indicate the location on your maps or charts, and have the Coast Guard determine appropriate updates of NOAA charts. If marking the restricted area on moving water, ensure warnings are far enough away to eliminate the chance of being swept into the hazard – both upstream and downstream. If appropriate, establish portage paths around the hazard to allow for re-entry downstream.

One example of a hazard for considering restricted access both upstream and downstream is a "low head dam." Mark the structure upstream to alert those traveling downstream to the approaching human-made hazard and hidden drop. The hazardous, recirculating hydraulic developed by flowing water over the dam may not be evident to those accessing the waterway downstream. Where prudent, restrict access downstream of the hazard. Also see *Bans, Limits, Exclusions*.

## SPEED IN PROXIMITY ZONES

Proximity zones may be appropriate in large open water areas but not feasible for all bank or shoreline situations. A "Speed in Proximity" zone requires a boat to operate at slow speed within a designated distance from another waterway user. For example, a boat must operate at no-wake speed within 100 feet of a stopped vessel, swimmer, angler, water-skier, or the shoreline; or, a boat must operate at no-wake speed when within 200 feet of moored vessels, fixed objects, marinas, docks, or ramps.

Problems with this approach include differences in perceptions of distance by users and law enforcement. The type and size of the waterway may make proximate zones impractical, such as when operating on a narrower river or channel for great distances.

## SPEED LANES FOR HAZARD MANAGEMENT

In suitable channels or water deep enough to employ this technique, designate hazard-free speed lanes where submerged items exist. Reduce speed outside of speed lanes to limit incidents and damage caused by allision with submerged items. Designating a "speed lane" allows a boater to continue to use the entire area, but use outside the designated speed lane is at the user's risk.

## SPEED LIMITS

Although hard to enforce, speed limits help reduce water use conflicts and enhance boating safety. More common on heavily used waterways, establish different speed limits for day and night. Nighttime speed limits may apply between sunset and sunrise year-round.

Impose speed limits at high use times, such as holidays or weekends, and between Memorial and Labor Days. Post speed limits at public and commercial launch ramps, marinas, and other access areas, and include them in electronic public information.

## USER CAPACITY/VISITOR CAPACITY

According to the National Park Service, "User capacity generally refers to the types and extent of visitor and other public use that may be accommodated in parks and protected areas given their management goals and applicable laws and policies. It also addresses the positive and negative impacts associated with this use." The Park Service further simplifies, *"...user capacity has to do with what people do in a park, where they do it, and what impact their activities have on park resources and the experience of other visitors."*<sup>40</sup>

Visitor/Public Use Capacity is a better term when talking about public lands, as these terms may be triggers for conflict. While the Visitor Use Capacity concept was developed with public lands in mind, it can provide a good starting point in the development of a capacity determination on any waterway.

As with all waterway management initiatives, include public involvement in the entire process. Building open, direct, and honest relationships with all involved, even before their input is needed: a common language for communication and education; and share step-by-step documentation on complex concepts.

An advisory or steering committee can help communicate accurately, with a shared understanding of the process and terminology to identify and confront issues right away. Also see *Carrying Capacity*.

## USER FEES

A user fee is any cost charged to gain access to or use a waterway. Fees, in general, discourage use and are unacceptable by some users. Fees restrict use by those who cannot afford them. If collected only during peak use times, user fees encourage waterway use during off-peak times with fees reduced or eliminated. Fee reduction for those meeting specific requirements, such as completing a boater education course or on-water skill training, can be used to encourage and inform boaters of responsible and legal behavior.

User fees, when routinely collected, increase user demands and expectations for services as users assume that fees provide for the upkeep and maintenance of a resource. User fees are sometimes used to offset reductions in other traditional revenue sources. Keep users informed on how fees are expended. Fees used for direct management and maintenance of the resource often generate stakeholder support.



User capacity considers what people do, where they do it, and the impact of their activities on resources and the experience of other visitors.

Photo Credit: National Safe Boating Council

## WAKES

Increased interest in wakeboarding, wake surfing, and other water sports employing the use of wake boats, also referred to as "tow" or "ballast" boats, has given rise to concerns by many users of shared waterways.

Of specific concern may be resulting shoreline erosion and degradation of water quality caused by their extremely high wakes. Shoreline erosion removes sediments of various shapes and sizes, resulting in cloudy water and property destruction. Large and more frequent waves result in higher erosive power onshore. According to the Final Report of the Commission to Study Wake Boats in New Hampshire, "*waves produced by wake boats, when ballast compartments are full, have the potential to be more powerful than other watercraft of the same general size and shape.*"<sup>41</sup> The report provides information on several studies and findings, including a study by Glamore finding wave height and energy when wakeboarding compared to those generated when water-skiing to be double under normal operating conditions. Mercier-Blais and Prairie found that steeper shorelines not adapted to natural wave actions are particularly susceptible to erosion and potential property damage. A study sponsored by the Water Sports Industry Association (WSIA) provides direct investigations of wake boat waves. WSIA addresses wakeboarder behavior by promoting public information on the issue, including wake-specific signage and awareness information to share with local jurisdictions.



Use clearly marked buoys to indicate the start of an Idle Speed/ No Wake zone.

Photo Credit: National Safe Boating Council

## WATER QUALITY

The World Health Organization publishes Guidelines for Safe Recreational Water Environments describing the present state of knowledge regarding the health hazards and risks associated with the recreational use of coastal and freshwater environments. The Guidelines provide international and national approaches, standards, and regulations to control health risks from hazards encountered in recreational water environments, providing a framework for local decision-making.<sup>42</sup>

State and local websites should post appropriate notices with current technical information on toxic microscopic algae which, upon reaching a certain level during the summer, may trigger boating restrictions or exclusions. Where multiple government agencies share responsibilities, information should be coordinated.

## ZONING

Zoning can separate activities and incompatible watercraft and water contact activities. Use different zoning approaches to heighten safety, control congestion, keep traffic moving, or address other desired outcomes. Zoning can generate concerns from user groups about limiting water space as zoning reduces the area that everyone gets to use. Zoning may have unintended results. For example, if zoned as a "boat swim only" area, swimmers and anglers may not use the same spot, even if both are on the same boat. Zoning can be costly as it requires waterway markers, signage, informational materials, and enforcement to be effective. Carefully weigh alternatives before making a zoning determination. As with any regulations, conflict with federal waterway designations should be avoided. Also see *Safety Zones*; *Security Zones*; *Speed Limits and Speed Zones*; *Traffic Management*.



## ZONING AREAS FOR CERTAIN ACTIVITIES

Zones can designate an entire area or sub-area for activities, such as:

- Fishing
  - Create in an upstream or cove area
  - Mark as "No Wake" or speed less than six miles per hour
  - Permit low-speed activities only
- Water-skiing
  - Separate towed sports from sailing, human-powered, fishing, or other competing activity.
  - Mark with buoys and indicate on the maps
- Swimming from shore
  - Mark area with buoys
  - Buffer swim zone by placing no boat buoys beyond the swim zone where neither swimmers nor boaters are allowed.
- Buffer zone
  - Do not use for recreation
  - Use to separate use patterns
- No Boats / Restricted areas
  - Locate upstream and downstream of dams and other human-made hazards
  - Keep users away from outflow areas
  - Prevent unanticipated approach above waterfalls or expert-only rapids
- Mooring
- Camping
- Anchoring

Where navigable waters are involved, conformance with federal regulation should be assessed.



Towed activity well away from the shore prevents shoreline erosion and damage to shore structures.

Photo Credit: U.S. Coast Guard

## ZONING AREAS FOR SPECIAL EVENTS

Some areas require zoning due to the highly specialized needs for the activity. Signage and maps with the marking of any obstacles are vital. Examples are:

- Competitive water-skiing area. Permanent slalom courses and ski jumps should be isolated from other water traffic and activity and boundaries marked.
- Boat races
- Ski tournaments
- Anytime the nature of the activity requires segregation from regular boating activity for safety reasons

## ZONING - TIME OR DAY ZONING

This management approach establishes days or times when specific activities may occur. It applies to areas of high traffic density or where limited space creates conflicts between activities. Strong public awareness and enforcement are essential for this approach to be successful. Separation of activities by time or day of the week effectively reduces activity conflict, increases safety, and enhances the quality of experience for everyone.

Examples of this approach include alternating even/odd calendar days for specific activities (such as allowing water-skiing on "odd" calendar dates and sailing on "even" calendar dates). Create different zones by the time of day (A.M., P.M., or before/after a specific time). For example, quiet activities such as nonmotorized or sailing may be allowed in the mornings and water-skiing and personal watercraft operation in early evenings. Noise ordinances or speed restrictions may take effect at a particular hour.

## CONCLUSION

Section 4 provides an inventory of commonly used approaches and tools used to manage shared waterways. The list is not exhaustive. New and hybrid approaches are in use across the U.S. by a multitude of groups. Section 5 provides an overview of the many agencies and organizations involved in Waterways Management.



## A DEEPER DIVE

# A PRACTICAL PERSPECTIVE ABOUT COMMUNICATING TO THE PUBLIC

DAVID C BREZINA, CHICAGO HARBOR SAFETY COMMITTEE

It may be outside the direct responsibility of a waterway manager to operate programs communicating to the public about events, operations, regulations, and best practices. However, if the public is well informed, management of multiple-use waterways may be significantly enhanced, and problems may be minimized.

Each waterway has its own unique needs and circumstances, but a review of typical issues may identify solutions tried in one place that might work in yours.

## EVENTS AND ATTRACTIONS

### ONE TIME, OR REPEATING OCCASIONAL, EVENTS

Public and private events held on or adjacent waterways enhance the public's enjoyment of their home or destination. These can range from weekly fireworks displays through annual air shows and New Year's celebrations, concerts onshore heard at anchor, to boaters recovering fly balls going over the wall of a shoreside baseball stadium.

### EVENT AND ATTRACTION INTERRELATION WITH NAVIGATION

Shore-based facility and event managers should coordinate with waterway use managers. These could range from shore-connected tourist attractions – questions like whether there are locations for an average boater to dock to visit a restaurant and whether kayak and canoe rentals are operating with adequate permitting and adequate safety for the people they are putting on the water. The jurisdiction over the waterway is of critical importance – the power of shore-based government agencies to restrict use and operation on federal waterways is limited. At the same time, an inland, non-federal lake is primarily state-regulated. Events that create hazards or otherwise restrict navigation on federal waters require sufficient lead time to obtain Coast Guard approval. Events or attractions that have an incidental impact on navigation may not require permits but may still involve operations subject to regulation. Boat or kayak owners, operators, and renters must follow the Navigation Rules (a.k.a, Rules of the Road).

### NON-GOVERNMENT PRESENTED OR PERMIT REQUIRED EVENTS

Boaters gather in radically different groups. Massive collections of anchored boats can be, essentially, arranged among the boaters. Regularly scheduled but highly self-regulated, events like a weekly sailboat or rowing race have been conducted for decades and merely observed at a distance from shore. These examples vary in terms of expected misbehavior while on the water. Sailing and rowing regattas are well known to local law enforcement and concentrated in authorized locations. Awareness of the groups that sponsor these events provide added opportunity to educate boaters.

Major private events present management need but often involve managers with high dedication and skill. A 200 small sailboat national regatta or a 40 offshore sailboat national regatta present their own challenges but can typically be planned and managed by those participating with little impact on the general public. For example, sailing regattas are regulated by a "Notice of Race" providing information,

time, location, and arrangements ashore; the on-the-water part is regulated by narrow right of way rules with ways to challenge a racer who does not comply. A sponsoring club provides supervising officials and private safety boats. The activities are highly self-regulated, and operational needs highly self-contained.

## PUBLIC COMMUNICATION AND EDUCATION

Operations on the water require operators to act with competence and awareness to maximize safety and respect others and the environment commensurate with their vessel. USCG operators' licenses are not generally required for recreational boating. Education may be required, but often for younger operators. Equipment requirements are present at the federal and state levels. The more knowledgeable the operator, the better or easier the management.

### COMMUNICATION ABOUT REGULATION

A professional mariner logs many days at sea and typically spends many classroom hours in series of exams taking days to complete. He or she knows navigation, right of way rules, and regulations used to regulate operations. Recreational boaters do not. However, waterway management would gain advantages from boaters knowing who is in charge of regulations, where they can get information, what they can observe when operating, and where they can learn more.

Federal and state agencies provide a wealth of simplified information for recreational boaters. A brochure on safety does not communicate nuances about operations in your location.

Examples include:

- A boat livery may require local and state licensing for boat rental operations, local business registration, and state and local licensing if serving food or beverages. If launching into a federal waterway, the Coast Guard may need to know. Complaints about wakes may go to local, state, or federal law enforcement, but whom should they call?
- If there is a medical emergency, how will it be handled both on the water and onshore? Offshore, Coast Guard or local helicopter transportation may be available (or may be hours away), but if in a river in a city, where can an ambulance get to shore?
- How are your local first responders handling Maydays on Channel 16 v. 9-1-1 calls? How does cell phone coverage impact the choice? Is the Coast Guard monitoring 9-1-1 in your location? Who are your local first responders? State or local marine police? Fire department? Coast Guard – where?
- To whom are non-emergency observations reported and how? Sanitation overflow? Oil spills? Floating debris? Private aids to navigation like buoys or harbor lights? Infrastructure failures like bridges, pilings, dock facilities?
- When an event is planned, at what stage is a Coast Guard permit required? Is there an easy way to check, especially for traditional events not thought to impact navigation? What Coast Guard office to check?
- Does your location have a Harbor Safety Committee of diverse stakeholders that can provide a forum, ideas, and suggestions?

### FORM OF REGULATION

The examples above illustrate that there may already exist multiple levels of federal, state, and local regulation. Some businesses adjacent to waterways may have particularly unique circumstances. Businesses that serve boaters – drop-in boaters in a restaurant or rental of boats adjacent restaurants – are particular examples of strict regulations for health and safety in food and beverage sales to harmonize with needs for on water safety. Given a high correlation with boating fatalities and alcohol

consumption, plus less familiarity with the regulation of operating under the influence, sensitivity to operator capabilities and passenger behavior may indicate abstention or designated driver regulation. Boat rental businesses should ensure adequate training for boat operators. Regulation might be appropriate – as it is for many state recreational boat operators. Imparting local knowledge could be beneficial to all. A boat livery may require local and state licensing for boat rental operations, local business registration, and state and local licensing if serving food or beverages. As stated previously, if they launch into a federal waterway, the Coast Guard may need to know.

## COMMUNICATION ABOUT THE WATERWAY

Communication about the waterway may interrelate with communication about regulation but may include aspects like more direct warnings. Putting aside things like whistle signals between ships about danger or intentions when approaching a blind turn, directly communicate with signage and aids to navigation. Where appropriate, communication is better with a sign on shore stating "No Wake" than a buoy with potentially less clear visibility. Where danger is not easily charted, private aids to navigation may provide a better warning – reinforcing what the boater already expected after inspecting their chart!

## SIGNAGE

As with regulation, if signs are placed on infrastructure, a first step is to identify the infrastructure owner. Waterways being historical components in transportation, structures like walls, bridges, pilings, breakwaters, piers, docks, and related structures, may be owned and regulated by agencies at the federal, state, and local levels, by private entities like businesses, building owners and individual persons, or quasi-governmental authorities, especially for tourist attractions. Tracking down ownership of structures in place for a century may be challenging.

Messages on signage need to be consistent with proper navigation rules – "keep right" needs to consider vessel draft and overtaking rules given factors like depth and current.

## AIDS TO NAVIGATION

Lights, buoys, and daymarks are essential in navigation. They must be consistent with navigational requirements and typically require Coast Guard approval. The Coast Guard may agree with a need to mark navigational hazards, but the waterway manager wanting to mark needs to know whom to ask and how the procedure works. There may be objective standards required. Additionally, plans should be in place to maintain aids to navigation, particularly lighted marks. A charted light is relied upon to remain lighted yet may involve many agencies for something like a harbor entrance light. Who should the public call when the light is out?

## EDUCATION ABOUT OPERATIONS

Nearly all boating fatalities may be attributed to human performance and behavior. Knowledge and awareness of the primary contributing factors allows us to work towards reducing the frequency and mitigating the consequences of human error. Waterway managers are in a position to mitigate two of the biggest; alcohol consumption and lifejackets.

## PUBLIC SUPPORTED AND NATIONAL EDUCATION PROGRAMS

Many states have boater education programs. Many are mandatory for boaters of particular age groups and particular types of vessels and voluntary for other categories of operators. A waterway manager would benefit from as many knowledgeable boaters as possible. Ease in signing up and encouragement when not mandatory would be advantageous.

Long established private or semi-private groups have provided boater education for years. U.S. Power Squadrons, its successor America's Boating Club, and U.S. Coast Guard Auxiliary sponsored programs all provide valuable information.

Within specific vessel types, educational and skill training is available for sailboats, crew boats, canoes, kayaks, and SUPs. Specific vessel type education can have navigational and safety-related components. Principles in a U.S. Sailing sanctioned Safety At Sea seminars apply to all vessels.

Harbor Safety Committees (HSC) are Coast Guard sanctioned groups of diverse stakeholders such as commercial cargo and passenger vessel operators, boat rental and charter businesses, recreational power and sail interests, human-powered craft, environmental and community organizations, and shore side facility operators. They exist for these groups to share ideas and come up with plans for improved safety. HSC local knowledge education can be a focus that should be encouraged by waterway managers to improve safety on their waterways.

### **LOCAL EDUCATIONAL PROGRAMS**

Most yacht clubs and boat clubs take the safety of their members very seriously. Many offer multiple programs each year in various safety aspects, and many are open to the public.

Whether elite or neighborhood clubs, giving back to the community is an integral part of their missions. A waterway manager could take advantage of dialog with concentrated groups of waterway users, and if they provide education for waterway users, dissemination of that information could be advantageous.



## SECTION 4 ENDNOTES

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- <sup>5</sup> Shared Waterways: Safety of Recreational and Commercial Vessels in the Marine Transportation System, <https://www.nts.gov/investigations/AccidentReports/Reports/MSR1701.pdf>, National Transportation Safety Board.
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- <sup>12</sup> Steps to Address User Capacities for Wild and Scenic Rivers, <https://www.rivers.gov/documents/user-capacities.pdf>, US GOVERNMENT.
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- <sup>31</sup>West's Encyclopedia of American Law, edition 2. S.v. "Navigable Waters." Retrieved December 9 2020 from <https://legal-dictionary.thefreedictionary.com/Navigable+Waters>
- <sup>32</sup>Passenger Vessel Safety Act, <https://www.congress.gov/bill/103rd-congress/house-bill/1159/text>, US GOVERNMENT.
- <sup>33</sup>NOAA Office of Coast Survey - Find Nautical Charts, Chart Locator, <https://nauticalcharts.noaa.gov/>, National Oceanic and Atmospheric Administration.
- <sup>34</sup>American Whitewater's River Index, <https://www.americanwhitewater.org/content/River/view/river-index>.
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- <sup>37</sup>See U.S. Coast Guard Navigation Rules at <https://www.navcen.uscg.gov/>.
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<sup>40</sup> Federal Interagency Task Force on Visitor Capacity - Task Force on Visitor Capacity on Public Lands and Waters, National Park Service.

<sup>41</sup> Final Report of the Commission to Study Wake Boats  
<http://gencourt.state.nh.us/statstudcomm/committees/1434/reports/Commission%20to%20Study%20Wake%20Boats%20-%20Final%20Report.pdf>, State of New Hampshire.

<sup>42</sup> Guidelines for Safe Recreational Water Environments - Volume 1 Coastal and Fresh Waters, World Health Organization, Geneva, Switzerland.

## SECTION 5

# ORGANIZATIONS INVOLVED IN WATERWAY MANAGEMENT<sup>1</sup>

This section identifies government agencies and other organizations that (directly or indirectly) make or influence waterways management decisions. This expanded list of organizations is quite long, including various federal, tribal, state, and local government agencies and other stakeholders previously referenced. While it is not feasible to list every local or regional organization, please forward corrections or modifications that seem necessary to NASBLA at [waterway.management@nasbla.org](mailto:waterway.management@nasbla.org).

As indicated in previous sections of this Guide, several formal definitions exist for "waterway management". Organizations listed in this section include those responsible for or influential in decisions affecting commercial or recreational vessels.

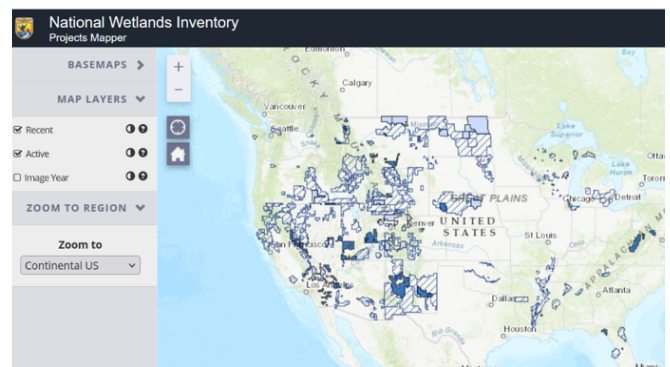
## AGENCY INVOLVEMENT AND OVERSIGHT

Within the Department of Homeland Security, the U.S. Coast Guard (USCG) is directly engaged in Waterways Management Activities and, more broadly, engages in many activities that directly benefit recreational and commercial waterways users. See *"Role of the U.S. Coast Guard" in Section 4B*. As part of its jurisdiction over managing the national Marine Transportation System, while recognizing the value of special local knowledge, the Coast Guard provides guidance on the formation of local *Harbor Safety Committees* (HSC)<sup>2</sup>, with approximately 30 formed since the guidance was published. HSC scope includes ports and waterways safety, security, mobility, and environmental protection. HSCs include diverse stakeholders, from commercial cargo and passenger vessel operators to kayak rental operators and everyone in between. HSCs work with local and state government, U.S. Coast Guard, and U.S. Army Corps of Engineers on nearly every topic of multiple-use waterway management addressed in

the area. Such a local committee is the first stop for waterway management guidance, formed by consensus and already in place.

In addition to the U.S. Coast Guard, many government agencies are directly or indirectly involved with waterways management, or make decisions that affect commercial and recreational uses of our waterways. In principle, decisions made by various government agencies can either facilitate or constrain access to some or all types of vessels. Listed below are a few examples of initiatives, actions, or authorities that manage waterway access or are otherwise involved with users of waterways.

- The *Department of the Interior (DOI) Fish and Wildlife Service (F&WS)* is responsible for developing a framework for public boat access needs assessment to determine the adequacy, number, location, and quality of facilities providing access to recreational waters for all sizes of recreational boats.<sup>3</sup> In addition to many services of interest to waterway managers, F&WS administers the Boating Infrastructure Grant (BIG) Program, which provides funding for the construction of facilities to support recreational boating.<sup>4</sup>



Screenshot of the National Wetlands Inventory Projects Mapper, published by the U.S. Fish and Wildlife Service website at <https://www.fws.gov/wetlands/data/mapper.html>.



- The *U.S. Army Corps of Engineers* (USACE), within the Department of Defense (DoD), has three primary mission areas: engineer regiment, military construction, and civil works. Civil works consist of congressionally authorized business lines, including navigation, flood and storm damage protection, and aquatic ecosystem restoration, including administration of the Clean Water Act section 404 program, recreation, hydropower, and water supply at USACE flood control reservoirs and environmental infrastructure. See "*Role of the U.S. Army Corps of Engineers*" in Section 4B.<sup>5</sup>



The BLM issues use permits for a number of rivers in the West such as the Green River, Desolation Canyon, Utah.

Photo Credit: Bureau of Land Management

- Other federal agencies administer lands through which rivers flow and are used (or capable of being used) by the public for recreation, including viewing and boating. These agencies include the DOI's *Bureau of Land Management* (BLM)<sup>6</sup>, *Bureau of Reclamation* (BOR)<sup>7</sup>, and *National Park Service* (NPS)<sup>8</sup>, the U.S. Dept. of Agriculture's *Forest Service* (USFS)<sup>9</sup>, the *Tennessee Valley Authority* (TVA)<sup>10</sup>; and other agencies.



Employees of the Mogollon Rim Ranger District and Arizona Game and Fish Department at C.C. Cragin (Blue Ridge) Reservoir discuss improvements to the boat dock area.

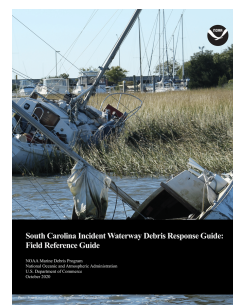
Photo Credit: U.S. Forest Service – Coconino National Forest, Arizona



Scenes from the 112-mile Schuylkill River Sojourn, Schuylkill River Trail, Pennsylvania.

Photo Credit: National Park Service - Schuylkill River National Heritage Area

- Indian Nations have sovereignty over their lands and may permit (or constrain) access to various vessels on specific waters. The *Bureau of Indian Affairs* (BIA) within the Department of the Interior is responsible for administering over 55 million acres of land held in trust by the United States for American Indians, Indian Tribes, and Alaska Natives. It maintains a list of the 578 federally recognized Tribes and 92 Tribal agencies.<sup>11</sup> Individual Nations determine access policies (e.g., types of boats permitted, open areas, speed limits, and fees).
- Federal and state agencies provide funding for studies that directly or indirectly relate to waterways management. For example, the Department of Commerce's *National Oceanographic and Atmospheric Administration* (NOAA) provided grant funds to the University of Florida to develop a regional waterway management system through the *National Sea Grant College Program*,<sup>12</sup> which provides research support to universities to conduct relevant research with coastal communities.<sup>13</sup> In some cases, individual cities or communities<sup>14</sup> have waterways management programs designed to improve access to or utility of waterways.<sup>15</sup>



NOAA's Sea Grant program provides vital research in multiple aspects of waterway management. For example, the SC Debris Response guide at

[https://marinedebris.noaa.gov/sites/default/files/publications-files/South%20Carolina\\_Marine\\_Debris\\_Emergency\\_Response\\_Field\\_Guide\\_Full\\_Update\\_2020.pdf](https://marinedebris.noaa.gov/sites/default/files/publications-files/South%20Carolina_Marine_Debris_Emergency_Response_Field_Guide_Full_Update_2020.pdf).

Photo Credit: National Oceanic and Atmospheric Administration

- The National Academies of Science's *National Research Council* (NRC) has conducted studies relating to various aspects of waterways management. For example, in 2011 the NRC's National Academy of Engineering published a report on the need for coordinated efforts on water policy to address a list of needs, including the impacts of climate change, aging and inadequate maritime infrastructure, inadequate or nonexistent watershed planning, and crumbling, outdated water infrastructure.<sup>16</sup>
- Finally, some public utilities operate reservoirs that are (or can be) open for recreational boating. For example, California's *East Bay Municipal Utility District* (EBMUD)<sup>17</sup> and the *Nebraska Public Power District* (NPPD)<sup>18</sup> provide boating access to their reservoirs. The *Lower Colorado River Authority* (LRCA)<sup>19</sup>, the primary wholesale electricity provider in central Texas, provides boating access on several lakes in its jurisdiction.

Federal, state, local agencies, and sovereign Indian Nations can take actions that constrain various types of boating activities. For example:

- The DOD may elect to place navigational restrictions on certain waterways (even those it does not directly administer) for safety or security purposes. As one specific example, the U.S. Army designated a restricted area in the vicinity of Aberdeen Proving Ground in Maryland. Some areas restrict access entirely, while other areas permit certain activities. Many waterways are subject to various restrictions as a result of military activities in U.S. navigable waters.<sup>20</sup>
- Federal agencies may impose access fees, and place limits on craft permitted or conditions of use (e.g., prohibiting gasoline-driven powerboats or personal watercraft; imposition of no-wake areas or speed limits; limits on the duration of occupancy, or hours of operation). In addition, various federal agencies may impose "overarching" regulations that change the conditions of access. For example, NOAA's *Office of National Marine Sanctuaries* administers regulations intended to protect these areas, limiting certain vessels' activities.<sup>21</sup>
- State and local government agencies have a significant role in waterways management. Every state has boating laws, and many of these laws directly or indirectly address waterways management issues. For example, the *Oregon Department of State Lands* authorizes houseboats, marinas, moorages, docks, floats, and wharves.<sup>22</sup> Likewise, many local government ordinances affect the usage of various types of boats: for example, Yarmouth, Massachusetts, has an extensive set of regulations that apply to various types of boats (e.g., fees, regulations).<sup>23</sup> State and local government agencies may impose anchoring restrictions that limit the types of boats or duration of stay, causing controversy in several states, Florida being one.<sup>24</sup>
- Public utilities often allow boating and fishing within the boundary of their projects, and they may also restrict access for various purposes. For example, one public utility requires boats to pass a two-part inspection – a vessel history survey and subsequent physical inspection<sup>25</sup> to reduce the spread of Quagga and Zebra mussels and other aquatic nuisance species.
- Federal agencies or federal-state partnerships may develop regulations related to environmental impacts that affect certain types of vessels. For example, the U.S. *Environmental Protection Agency* (EPA) works with states to establish no-discharge zones.<sup>26</sup> The EPA teams with other governmental agencies to address waterway management issues. The *Tampa Bay Estuary Program* is one example of 28 National Estuary Programs designated by Congress to restore and protect "estuaries of national significance." The workplan includes public outreach and education products and deliverables, ship wake study reports, and partner action plans.<sup>27</sup>
- Federal and state agencies might be involved in decisions made under the federal or various states' Coastal Zone Management Acts.<sup>28</sup> Although each federal or state agency has unique mandates, it is often the case that these work in cooperation to develop waterways management plans and share information on new initiatives and research.<sup>29</sup>



## OTHER WATERWAY MANAGEMENT AGENCIES, ORGANIZATIONS, & INFLUENCERS

Federal agencies convene advisory groups, boards, and committees which influence waterway management decisions.

The USCG develops partnerships with other governmental agencies and private organizations to investigate or develop policy. For example, the USCG worked with 14 other organizations to develop the *Tongass Narrows Voluntary Waterway Guide in Alaska*.<sup>30</sup> Advisory committees are formed under the Federal Advisory Committees Act (FACA) and are comprised of stakeholders to advise on various matters. Committees include:<sup>31</sup>

- National Boating Safety Advisory Committee
- Towing Safety Advisory Committee
- Great Lakes Pilotage Advisory Committee
- National Maritime Security Advisory Committee
- Merchant Mariner Medical Advisory Committee
- Navigation Safety Advisory Council
- Merchant Marine Personnel Advisory Committee
- Lower Mississippi River Waterway Safety Advisory Committee
- Houston/Galveston Navigation Safety Advisory Committee
- National Offshore Safety Advisory Committee
- Chemical Transportation Advisory Committee
- Commercial Fishery Safety Advisory Committee

## TRIBAL GOVERNMENTS

Tribal governments establish access rules, regulations, and fees for recreational boating activities. Organizational arrangements vary with the Tribe: for instance, regulations for the Blackfeet Nation<sup>32</sup> and the Navajo Nation<sup>33</sup> are set by their respective Fish and Wildlife Departments.



For a list of tribes, agencies, and affiliates, visit the Tribal Leaders Directory at <https://www.bia.gov/bia/ois/tribal-leaders-directory/>.

Photo Credit: US Dept. of the Interior Indian Affairs



Under its watershed plan, this Jefferson County stream is a designated Hellbender Salamander Preserve Area.

Photo Credit: Ohio Dept. of Agriculture, Soil & Water Conservation Program

## STATES

Each state has at least one (and typically several) agency or department that makes decisions that affect waterways management. Responsibility is assigned by each state, and the name of the responsible department varies from state to state. Responsibility may lie with the Department of Environmental Protection, Department of Natural Resources, Department of Law Enforcement, or State Parks. Public utility districts (some of which are state agencies) make waterway management decisions.

State agencies team up with counties or other governmental entities to tackle waterways management issues. For example, a Regional Waterway Management System in Florida is operated by the West Coast Inland Navigation District, including Manatee, Charlotte, Lee, and Sarasota counties in cooperation with the Florida Department of Environmental Protection.

State agencies may partner with Indian Nations on access issues. For example, North Dakota's Game and Fish Department and the Three Affiliated Tribes reached an agreement under which each government would recognize each other's hunting and fishing licenses. As part of this agreement, the Three Affiliated Tribes no longer charge access or conservation fees for boaters who wish to use Tribal lands to launch their craft into two major lakes.<sup>34</sup>

## LOCAL GOVERNMENT

As previously noted, various counties, cities, and towns administer laws and regulations related to waterways management or participate in larger county or state coalitions.

## COMMERCIAL ORGANIZATIONS

Many trade or commercial organizations partner with one another. For example, the Waterways Action Plan is an initiative of the 8th Coast Guard District, the U.S. Army Corps of Engineers, and the marine industry (including the River Industry Executive Task Force of the *American Waterways Operators*).<sup>35</sup> The plan consolidates waterway contingency and crisis action plans of the USCG, U.S. Army Corps of Engineers, and marine industry for high water, high current, low water, ice, or particular circumstances.

Commercial organizations (and others) may interface with various harbor or navigational safety committees that deal with waterways management issues. As previously noted, Harbor Safety Committees usually enjoy the authorization and support of the U.S. Coast Guard. These committees sometimes use other names, such as the federally mandated *Houston/Galveston Navigation Safety Advisory Committee* (HOGANSAC).<sup>36</sup> The California Department of Fish and Wildlife lists meeting details of five active Harbor Safety Committees.<sup>37</sup> These committees, if formed, are the first stop for waterway management guidance.

## ORGANIZATIONS REPRESENTING RECREATIONAL USERS

Several organizations represent recreational users, distribute information on government waterway decisions, and lobby for the interests of their constituents. For example, *BoatU.S.* lobbies for a continued exemption of recreational boats discharge from the Clean Water Act Permit system called "The Clean Boating Act of 2008." Among other member services, *BoatU.S.* has a "Grassroots Advocacy Tool Kit" that offers guidance on working with local government.<sup>38</sup>

Other boating organizations advocating on waterways management issues include the *American Canoe Association* (ACA), *National Boating Federation* (NBF), *National Marine Manufacturers Association* (NMMA), *U.S. Power Squadrons* (*America's Boating Club*), and *U.S. Sailing*. While these organizations take positions on a variety of issues, some far removed from

waterways management, and they do not have regulatory authority, they do influence public policy on waterways management.



Member organizations such as the ACA are active in waterway cleanups, water trail designations, participant training, and advocate on a wide range of management topics.

Photo Credit: American Canoe Association

The number of education and advocacy groups is both substantial and diverse. The struggle for access for various types of craft or various areas is common to many organizations. As with other organizations, some are national, and others local or regional. Some have broad constituencies, and others are more narrowly focused. Here is a short list:

- The *National Recreation Lakes Coalition* is concerned with lake access issues to recreational users, including boaters.
- The *Seaplane Pilots Association* (SPA) is active in maintaining and restoring access to seaplane surface operating locations. This group persuaded the Bureau of Reclamation to revise a regulation, issued initially in 2006, that had discontinued seaplane access to over 400 lakes in 17 western states. The *Aircraft Owners and Pilots Association* (AOPA) also facilitates the management of seaplane access to lakes and rivers.
- The *Professional Association of Parasail Operators* has a variety of concerns, including licensing, availability of insurance, and various government bills that, among other provisions, would place operating restrictions on parasail operators.



- *U.S. Windsurfing* has as one of its objectives the promotion of access.
- The *Personal Watercraft Industry Association* (PWIA) has many purposes, but ensuring access is one key objective.
- *American Whitewater* (AW) is a national non-profit organization with a mission to protect and restore America's whitewater rivers and enhance opportunities to enjoy them safely. AW was a founding member of the *Hydropower Reform Coalition*, which includes over 160 organizations representing the public interest in hydropower relicensing. This coalition has represented a diverse group of the public seeking a voice in managing rivers impacted by hydropower development to benefit their constituents.
- Organizations representing anglers are concerned about boating access, water quality, and other issues related to waterways management in varying degrees. There are many such organizations in the United States.<sup>39</sup>
- The *Alaska Outdoor Access Alliance* is an umbrella organization seeking access to various water bodies in Alaska.
- The *Outdoor Alliance* brings together voices of America's outdoor recreation community to protect the outdoor experience for everyone to enjoy.

## ORGANIZATIONS REPRESENTING GOVERNMENT OFFICIALS & PROFESSIONALS

The *National Association of State Boating Law Administrators* (NASBLA) is active on many recreational boating issues. Its policy committees include:

- Education and Outreach,
- Enforcement and Training,
- Engineering, Reporting, and Analysis,
- Finance and Grants,
- Paddlesports, and
- Vessel Identification, Registration, and Titling.



NASBLA works to develop public policy for recreational boating safety representing authorities of all 50 states and US territories.

Photo Credit: National Association of State Boating Law Administrators

Model acts developed for voluntary state use include a variety of waterway management issues. Among numerous other projects and activities, NASBLA provides project direction for this *Third Edition Guide for Multiple Use Waterway Management* under grant support from the Sport Fish Restoration and Boating Trust Fund administered by the U.S. Coast Guard.

The *Coastal States Organization* (CSO)<sup>40</sup> represents the interests of the Governors of the thirty-five coastal states, commonwealths, and territories. CSO (among other things) is concerned with coastal zone and waterways management, such as establishing no-discharge zones.

The *River Management Society* (RMS) advances the profession of river management by providing a unique variety of forums for sharing information about the appropriate use and management of river resources, including stewardship, an ecosystem approach to recreation, water quality, riparian health, and watershed management.



Engineers explain south Platte River restoration project.

Photo Credit: River Management Society

The *Passenger Vessel Association* (PVA) represents the interests of the U.S. passenger vessel industry. PVA works with federal and state agencies on interests of U.S. passenger vessel owners and operators, while promoting safety and a secure maritime operating environment for passengers, crew and the public at-large.

Many additional professional organizations exist, such as the *International Ship Masters' Association* working to create a safer and more informed waterway system in the Great Lakes and St. Lawrence Seaway.

## ENVIRONMENTAL ORGANIZATIONS

Many environmental organizations connect with or are interested in waterways management, or environmental issues tangentially affecting waterways management. Examples include the *World Wildlife Foundation* (WWF), the *Sierra Club*, *Ocean Advocates* (active in the Seattle area), *Ocean Conservancy* (San Francisco), various organizations in the *Riverkeeper® Network*, *Surfrider Foundation*, *Clean Ocean Action*, *Izaak Walton League*, *Natural Resources Defense Council*, and *Prince William Sound Regional Citizens Advisory Council* to name only a few.

Environmental and other advocacy groups can be influential, not only through their outreach and lobbying activities but also through initiating lawsuits that challenge the decisions or practices of regulatory agencies.

## CONCLUDING COMMENTS

The number of agencies and other organizations concerned (directly or indirectly) with waterways management issues is considerable. Of course, not all agencies or organizations participate in every waterway issue. Still, the number of stakeholders involved in waterways management decisions often means that many agencies or groups are involved.

So where to start? As previously stated, Harbor Safety Committees include a diverse representation of stakeholders such as human powered craft, commercial passenger vessels, tug, barge, and recreational vessels, in addition to shore side facilities and government agencies.

These committees, formed under a variety of names, should be a primary source of initial contact for waterway management issues. If a committee is not formed in your area, an emerging issue may be the catalyst needed to start one. (See Section 4B - *Community Involvement*.)

Acknowledging diverse stakeholder interests is challenging but critical in planning for the administration of our waterways. Communicating with a wide range of stakeholder groups at every level of government and non-government, although time-consuming, will result in project outcomes that are more likely to address the needs of the multiple-use waterway management community with success!



Acknowledging diverse stakeholder interests is challenging but critical in planning for the administration of our waterways.  
Latino Conservation Week - Lake Needmore, MD.

Photo Credit: Risa Shimoda



Communicating with a wide range of stakeholders groups will result in a project more successfully addressing the needs of the multiple-use waterway community.

Photo Credit: Pamela Dillon



## SECTION 5 ENDNOTES

- <sup>1</sup> Content of this section was first completed as a Memorandum to Raynor Tsuneyoshi, Chair, Waterways Management Subcommittee, Governmental Affairs & Administration Committee, National Association of State Boating Law Administrators (NASBLA), From: Jim French and Daniel Maxim, Date: 10 January 2009.
- <sup>2</sup> COMDTPUB PI 6700.4, NVIC 1-00, 25 APRIL 2000, Subj: Guidance for the Establishment and Development of Harbor Safety Committees under the Marine Transportation System (MTS) Initiative.
- <sup>3</sup> Wildlife & Sport Fish Restoration Program, Boating Access – Overview, <https://www.fws.gov/wsfrprograms/Subpages/GrantPrograms/BoatAccess/BA.htm>, U.S. Fish & Wildlife Service.
- <sup>4</sup> About WSFR, <https://www.fws.gov/wsfrprograms/Subpages/AboutUs/AboutUs1.htm>, U.S. Fish & Wildlife Service.
- <sup>5</sup> In Ohio, for example, watershed grants are administered through the Division of Soil and Water Conservation of the Department of Agriculture, <https://agri.ohio.gov/wps/portal/gov/oda/divisions/soil-and-water-conservation/resources/watershed-grants>. The name of the responsible agency may differ in other states.
- <sup>6</sup> The Bureau of Land management manages over 130,000 miles of fishable rivers and streams and provides countless public recreational fishing access opportunities throughout the United States. BLM issues river and use permits on a number of waterways. See <https://www.blm.gov/> and <https://www.blm.gov/programs/recreation/recreation-programs/>.
- <sup>7</sup> See Bureau of Reclamation at <https://www.usbr.gov/>.
- <sup>8</sup> See Boating & Watersports, <https://www.nps.gov/subjects/watersports/index.htm>, National Park Service.
- <sup>9</sup> The Forest Service provides an extensive list of resources, including Accessibility Resources for Outdoor Recreation, <https://www.fs.usda.gov/managing-land/national-forests-grasslands/accessibility/resources>. Also see Research & Development – Outdoor Recreation, <https://www.fs.fed.us/research/outdoor-recreation/>, U.S. Forest Service.
- <sup>10</sup> For details on TVA recreation, see <http://www.tva.gov/river/recreation/index.htm>.
- <sup>11</sup> See Bureau of Indian Affairs, <https://www.bia.gov/bia/ois/tribal-leaders-directory/>, U.S. Department of the Interior.
- <sup>12</sup> Example: The Regional Waterway Management System, <https://www.flseagrant.org/wp-content/uploads/flsgpg05003.pdf>, Florida Sea Grant.
- <sup>13</sup> Environmental stewardship, long-term economic development and responsible use of America’s coastal, ocean and Great Lakes resources are at the heart of Sea Grant’s mission. Sea Grant is a nationwide network (administered through the National Oceanic and Atmospheric Administration [NOAA]), of 34 university-based programs that work with coastal communities. The National Sea Grant College Program engages this network of the nation’s top universities in conducting scientific research, education, training, and extension projects designed to foster science-based decisions about the use and conservation of our aquatic resources. See locations and contacts at <https://seagrant.noaa.gov/About>.
- <sup>14</sup> Example: Regional Waterway Management System For Manatee County: Bishop Harbor, Tidal Braden River, and Lower Reaches of the Upper Manatee River, <https://nsgl.gso.uri.edu/flsgp/flsgpm02002.pdf>, Florida Sea Grant.
- <sup>15</sup> Example: Lake Erie Shore Erosion Management Plan Local Community Needs Assessment, <https://ohioseagrant.osu.edu/products/4a14d/lake-erie-shore-erosion-management-plan-local-community-needs-assessment>, Ohio Sea Grant.
- <sup>16</sup> Galloway, Jr., Gerald E. “A Plea for a Coordinated National Water Policy,” <https://www.nae.edu/File.aspx?id=55285>, National Academy of Engineering, The Bridge, Volume 41, Issue 4.
- <sup>17</sup> Recreation, <https://www.ebmud.com/recreation/>, East Bay Municipal Utility District, Oakland, CA.
- <sup>18</sup> Recreational Facilities, <https://www.nppd.com/in-your-neighborhood/community/recreation-areas>, Nebraska Public Power District, Columbus, NE.

## SECTION 5 ENDNOTES

<sup>19</sup>LCRA Parks and Activities, <https://www.lcra.org/parks/activities/>.

<sup>20</sup>A partial list of these restrictions is provided in the various volumes of the US Coast Pilot, <https://nauticalcharts.noaa.gov/publications/coast-pilot/index.html>, Office of Coast Survey, National Oceanic and Atmospheric Administration.

<sup>21</sup>National Marine Sanctuaries, <https://sanctuaries.noaa.gov/>, National Oceanic and Atmospheric Administration.

<sup>22</sup>Waterway Authorizations: Does your use of a waterway require state authorization? <https://www.oregon.gov/dsl/WW/Documents/39574ODSLAuthorizationBrochure.pdf>, Oregon Department of State Lands.

<sup>23</sup>See Yarmouth Massachusetts, <https://www.yarmouth.ma.us/168/Waterways>.

<sup>24</sup>For a list of such restrictions, see Florida Anchoring Laws, <https://www.florida-guidebook.com/florida-anchoring-laws/>.

<sup>25</sup>See Vessel Inspection Program, <https://www.ebmud.com/recreation/protecting-natural-habitat/invasive-mussel-prevention/>.

<sup>26</sup>These may be fully appropriate, but have the effect of placing restrictions on the required equipment to be carried about boats. For a map of these zones see <https://www.epa.gov/vessels-marinas-and-ports/no-discharge-zones-map>, U.S. Environmental Protection Agency.

<sup>27</sup>See Tampa Bay Estuary Program FY 2021 Work Plan, <https://drive.google.com/file/d/1X3hIXjYRvivkWRMb-6NRf84ncZW2nAIF/view>, for details on management and initiatives of this program.

<sup>28</sup>Congress enacted the Coastal Zone Management Act (CZMA) in 1972 and has amended it several times). The CZMA encourages states to preserve, protect, develop, and, where possible, restore or enhance valuable natural coastal resources such as wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as the fish and wildlife using those habitats. A unique feature of the CZMA is that participation by states is voluntary. To encourage their participation, the act makes federal financial assistance available to any coastal state or territory, including those on the Great Lakes, that is willing to develop and implement a comprehensive coastal management program. The Secretary of Commerce delegated the administration of the CZMA to the National Oceanic and Atmospheric Administration (NOAA). NOAA's Office of Ocean and Coastal Resource Management (OCRM) administers individual state programs. OCRM oversees programs in all 35 coastal states and territories (with the exception of Alaska). The CZMA does not apply to states that are not CZMA participants or whose programs have not received OCRM approval. For state specific information, visit <https://coast.noaa.gov/states/index.html>. The CZMA specifies that coastal states may protect coastal resources and manage coastal development. *A state with an OCRM-approved program can deny or restrict any development that is inconsistent with its coastal zone management program.*

<sup>29</sup>Example conference presentations posted at Stem to Stern II: Boating and Waterway Management in Florida, <https://conference.ifas.ufl.edu/NWWWS/index.html>, National Working Waterfronts and Waterways Symposium, 2015.

<sup>30</sup>Tongass Narrows Voluntary Waterway Guide, <http://seapa.com/waterway/TNVWG.pdf>, Tongass Narrows Work Group.

<sup>31</sup>Partnerships and Stakeholders, <https://www.uscg.mil/About/Partnerships/>, U.S. Coast Guard.

<sup>32</sup>Blackfeet Nation Fish and Wildlife Department, <http://blackfeetfishandwildlife.net/recreational-activity/>, Blackfeet Nation.

<sup>33</sup>Navajo Nation Fish and Wildlife, <https://www.nndfw.org>, Navajo Nation.

<sup>34</sup>"ND and Three Affiliated Tribes reach hunting, fishing agreement," <https://www.indiancountrynews.com/index.php/news/crime-justice-courts-and-lawsuits/3028-nd-and-three-affiliated-tribes-reach-hunting-fishing-agreement>, Wetzel, D, Indian Country News, 09 April 2008.



## SECTION 5 ENDNOTES

<sup>35</sup>See <http://www.uscg.mil/D8/divs/m/D8mwm.htm>.

<sup>36</sup>H.R. 324 Providing for the establishment of a Houston-Galveston Navigation Safety Advisory Committee, <https://www.congress.gov/bill/102nd-congress/house-bill/324/text>, 102d Congress, January 3, 1991.

<sup>37</sup>See <https://wildlife.ca.gov/OSPR/Marine-Safety/Harbor-Safety>.

<sup>38</sup>*"How You Can Get Involved,"* <https://advocacy.boatus.com/boatusv2/toolkit?0>, BoatUS Foundation for Boating Safety and Clean Water.

<sup>39</sup>One website (<https://www.aa-fishing.com/fishing-organizations.html>) lists dozens of such organizations and even this list is incomplete.

<sup>40</sup>Coastal States Organization (CSO), <https://www.coastalstates.org/>.

## SECTION 6

# CASE STUDY #1 – BALLASTED BOATS

## (AKA "WAKE BOATS")

**Background:** States and localities are seeking guidance and assistance to address user conflict surrounding the increasing popularity of wake-related towed watersports. Almost every motorboat can create a wake. Ballasted boats are designed to enhance the size of the wake desired for certain towed watersport activities. The size of the wake, its impact on others on the water, and its negative impact on shore-based facilities are sources of many complaints. Large wakes produced by watercraft can result in various adverse environmental consequences including shoreline erosion and the degraded/degradation of water quality created by the eroded sediment, and loss of vegetation which helps stabilize the shore and provides essential habitat for fish and wildlife. These impacts are more significant when water levels are high, and shorelines are saturated.<sup>1</sup>

In addition to issues caused by large wakes, ballast water may contain, and ultimately transport, aquatic invasive/nuisance species. Unfortunately, filtering technology, currently in development, does not yet exist for the smallest species. Therefore, it is challenging, and often impractical to expect the owner/operator to completely decontaminate the ballast system.



A wakeboarder jumping off the wake from a ballasted boat.

Photo Credit: Water Sports Foundation

**Problem:** It is nearly always the case that guidance for the effects or regulation related to new technology is almost by definition reactive: folks come up with new products and activities, do not consider the impacts and effects of their implementation and popularity, and regulators must both wait to hear from those affected in order to respond holistically and with a sustainable and fair outcome to recreationists, riparian and aquatic environments. What guidance can be provided to address any negative impacts of this new and growing activity while continuing to support growth in the boating industry?

The following are elements in a multi-pronged and evolving effort to establish a common language; study effects to further inform policy makers; try a regulatory approach to see if it produces results; and to educate wake surfing participants. The elements are numbered for ease of reference only. Numbers do not indicate sequential order or priority.

### ELEMENT 1

*Develop a common language:*

#### **Definitions for "Wake Surfing" and "Wake Boat."**

In 2020, NASBLA established a "Wake Related Activity Ad Hoc Committee" with representatives from six state boating agencies and the Water Sports Industry Association (WSIA) to identify the significant new pastime and boat design. In 2021, the following definitions were accepted by the NASBLA membership. (Note: See WSIA comments regarding these definitions in Element 4.)

**Wake Surfing:** The act of using a surfboard, wakeboard, or similar device while being propelled by a boat's wake or while riding on/in a boat's wake directly behind a vessel that is underway.

This definition for Wake Surfing was incorporated into the *NASBLA Model Act for Safe Practices for Boat-Towed Watersports*, adopted September 28, 2021.<sup>2</sup>

In a policy position on wake boats, the NASBLA membership approved the following definition for anyone seeking such:

*Wake Boat: (Also known as wake surf boat or ballasted boat) Any boat equipped with ballast tanks, ballast bags, compartments, containers, or similar devices or mechanical systems designed to alter or enhance the characteristics of the boat's wake. This definition may only be applicable when such devices are being utilized to alter the wake.*<sup>3</sup>

Contact Tim Dunleavy, New Hampshire Boating Law Administrator and 2021 NASBLA Chair:  
[Timothy.C.Dunleavy@DOS.NH.GOV](mailto:Timothy.C.Dunleavy@DOS.NH.GOV).

NASBLA Model Acts of relevance to Towed Watersports include:

- [Motorboat Noise](#)
- [Safe Practices for Boat-Towed Watersports](#)
- [Vessel Speed and Proximity](#)



A wake boarder is towed by a ballasted boat.

Photo Credit: Water Sports Foundation

## ELEMENT 2

*A regulatory approach:*

### **State of Oregon Regulations**

The state of Oregon enacted new regulations and restrictions on wake sports and the use of wake boats in several limited areas where shorelines have significant residential development. Restrictions include areas where wake surfing is entirely prohibited and other areas where wakeboarding and tubing are prohibited within 200 feet of docks.

A summary of new regulations is at Willamette River Rules for Boat Operation:

<https://www.oregon.gov/osmb/boater-info/Pages/Willamette-River-Rules.aspx>.

One of these regulated areas also requires, through statute, the completion of a special Towed Watersports Endorsement education course every two years. Each operator of a boat which tows any device must complete this course before operating in the regulated area, and boats being used to tow devices in this area must be registered for the activity. To register, boats must have a Maximum Loading Weight (dry weight plus factory ballast capacity) of less than 10,000 lbs.

Intense political interest in this activity means that changes to statutes are likely, but difficult to guarantee. Boaters have multiple avenues for information, including signage at access points, QR codes linking to dynamic content on regulations, education opportunities, and GIS map "apps" that show in real-time where an operator is and the area's regulations.

Contact: Josh Mulhollem, Environmental Program Manager, Oregon State Marine Board at  
[Josh.Mulhollem@oregon.gov](mailto:Josh.Mulhollem@oregon.gov), (503) 586-8080.



*It will be easier to come up with restrictions on actions, rather than boats. There are boats that have factory-equipped ballasting systems--but there are many after-market devices available that add wake height. There are also bags of sand, coolers full of beer, and people sitting in the back of the boat that do the same thing. Whatever the regulation may be--it has to be easy for the boaters and the officers to understand/enforce."*

*Chris Edmonston, President, BoatU.S. Foundation for Boating Safety & Clean Water - NASBLA Roundtable Posting, March 22, 2021*

## ELEMENT 3

*Study effects to further inform policy makers:*  
**New Hampshire Legislature's Commission to Study the Effects of Wake Boats (HB 137, Chapter 77, Laws of 2019, RSA 270:133)**

The New Hampshire Legislature's Commission was charged to gather the appropriate data and information on the positive and negative uses of wake boats with regard to:

- The spread of aquatic invasive species,
- The relationship to shoreline erosion and impacts to private property,
- The economic impact of recreational boating and the popularity of water sport among families in New Hampshire, and
- The safety of swimmers and other boaters.

Commission members of who were in favor of recommending restrictions supported:

- Defining Wake or Ballast Boats in statute,
- Regulating specific areas and activities on a case-by-case basis, and
- Passing laws related to safety similar to other towed watersports (such as required Life Jacket wear, observer laws, etc.).

Those in opposition to defining wake boats and creating bans and restrictions supported:

- Preserving the Public Trust (The state safeguards the right to use and enjoy public waters by avoiding piecemeal on-water regulation.),
- Enforcing current "No Wake" laws, applicable to all boats, to protect areas in need of regulation, and
- Educating all boaters of current laws.

The Final Report of the Commission to Study Wake Boats is available at  
<http://gencourt.state.nh.us/statstudcomm/committees/1434/reports.html>.

Contact Tim Dunleavy, New Hampshire Boating Law Administrator at  
[Timothy.C.Dunleavy@DOS.NH.GOV](mailto:Timothy.C.Dunleavy@DOS.NH.GOV).

## ELEMENT 4

*Educate the public:*  
**Water Sports Industry Association (WSIA) Wake Responsibly Educational Campaign**

While the WSIA does not object to defining the wake surfing activity, the Association expresses concern over defining a ballasted boat. "You can wake surf behind any boat," states Larry Meddock, WSIA President. "Those who enjoy wake surfing but whose boats do not have factory ballast, simply add aftermarket "Fat Sacs" (water), lead, or more people. If you try to define the boat, you are opening yourself up to lawsuits for picking on one style of boat versus the other." Regarding concern over the transfer of Aquatic Nuisance Species in ballasted boats, Mr. Meddock stated that a filtration system is being developed and will be "out soon."

WSIA developed an educational campaign to address public concern and advise wake sport participants. The campaign advances three pillars WSIA identified as most important when engaged in towed water sports. These are:

1. Always operate 200 feet or more from shorelines and docks.
2. Play music at reasonable levels.
3. Minimize repetitive passes along residential shorelines.

WSIA believes that if boat operators adhere to these guidelines when participating in towed water sport activities, many concerns of lakefront property owners and other waterway users will decrease or be eliminated.

The Idaho Department of Parks and Recreation customized the *Wake Responsibly Campaign* and created the *Mind Your Wake* campaign. See [https://www.bigcountrynewsconnection.com/idaho/idaho-boaters-encouraged-to-mind-your-wake/article\\_b9747708-d04f-11ea-9e1f-ffd7d14d37fb.html](https://www.bigcountrynewsconnection.com/idaho/idaho-boaters-encouraged-to-mind-your-wake/article_b9747708-d04f-11ea-9e1f-ffd7d14d37fb.html). The Minnesota Department of Natural Resources created an *Own Your Wake* campaign at <https://www.dnr.state.mn.us/safety/boatwater/own-your-wake.html>. These campaigns are based on educating boaters.



To support nationwide education, WSIA provides *Wake Responsibly* collateral without charge to anyone interested in promoting responsible boating. Items include flyers, counter cards, and metal boat ramp signs.



The WSIA *Wake Responsibly* Educational Campaign boat ramp sign.

Photo Credit: Water Sports Foundation

Visit the *Wake Responsibly* web page and educational videos at:

- *Wake Responsibly* web page:  
<https://www.wakeresponsibly.com>
- *Responsible Boating* video:  
<https://vimeo.com/89131129>
- *Driver's Etiquette* video:  
<https://vimeo.com/207361109>
- *Wave Study* video:  
<https://www.youtube.com/watch?v=daa0U56zvwc>

Contact Larry Meddock, WSIA Chairman at [larry@wsia.net](mailto:larry@wsia.net).

## CASE STUDY OUTCOME

Are NASBLA definitions universally implemented? What are the impacts of the Oregon regulations? What action has been taken in response to the New Hampshire report? How well is the WSIA campaign working?

As this is a relatively new and quickly evolving topic, there is no final outcome statement to provide at this time. When available, updates will be posted to the Case Studies link at <http://www.waterwaymanagement.org>.



WSIA believes If boaters adhere to educational guidelines when participating in towed sport activities, many concerns from lakefront property owners and other waterway users will decrease or be eliminated.

Photo Credit: U.S. Coast Guard

## SECTION 6, CASE STUDY #1 ENDNOTES

<sup>1</sup> Minnesota DNR, <https://www.dnr.state.mn.us/safety/boatwater/own-your-wake.html>.

<sup>2</sup> National Association of State Boating Law Administrators, Model Act for Safe Practices for Boat-Towed Watersports, <https://community.nasbla.org/viewdocument/model-act-for-safe-practices-for-bo>, September 28, 2021.

<sup>3</sup> National Association of State Boating Law Administrators, Policy Position on Wake Boats, <https://community.nasbla.org/viewdocument/policy-position-on-wake-boats>, September 28, 2021.

## SECTION 6

# CASE STUDY #2 - JUPITER INLET, FLORIDA

**Background:** For many years, the Florida Fish and Wildlife Conservation Commission (FWC) has received reports of perceived conflicts between swimmers, snorkelers, paddlers and motorized vessels in Jupiter Inlet, Tequesta, Florida, adjacent to Coral Cove Park in Palm Beach County. Complaints centered around the risk to public safety with reports of excessive boat speed, vessel wakes, congestion, and user conflicts in the waterway including interaction between boaters and park patrons. Migrating manatees frequent the area and their protection is also a source of concern for the public.

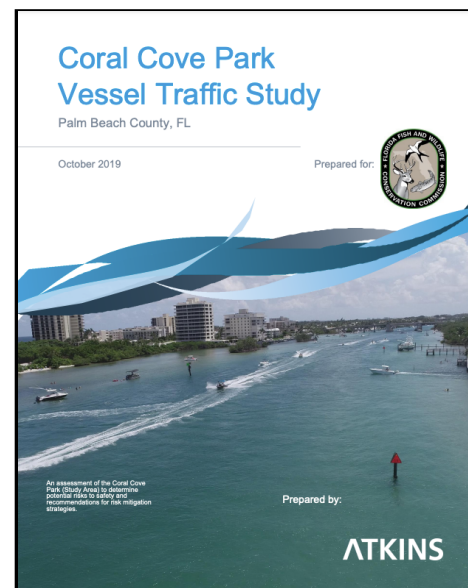
The demand for more shore access for non-motorized craft, resulted in a local municipality providing additional beach access without additional facilities. The municipality then requested a boating restricted area based on the establishment of a “loading or launching facility.” The slow speed boating safety zone would reduce a current speed limit from 25 mph for a segment of approximately 0.8 miles. The municipal councils of Jupiter, Tequesta and Jupiter Inlet passed resolutions in support of the measure.<sup>1</sup>

The action was vigorously opposed by several recreational boating associations and the Florida Inland Navigation District, as this is an area of the Intracoastal Waterway (ICW). Opposition was expressed regarding the length of the restricted area; concerns that the area would be used as an anchorage or “sandbar” creating additional conflicts with residents; and the lack of data to support the restriction.<sup>2</sup>

**Problem:** Jupiter Inlet is an access point located at the northern end of Palm Beach County where the Loxahatchee River, Lake Worth Creek, and Jupiter Sound converge into an entrance to the Atlantic Ocean. The inlet is between 10 and 14 feet in depth, and ranges from 125 to 520 feet across. In a characterization study of recreational boating activity and boater compliance of posted speed zones,<sup>3</sup> there is a significant increase in vessel traffic occurring on weekends versus weekdays in Palm Beach County (4.45 times).

The study notes the largest numbers of vessels in Palm Beach County were consistently observed in proximity to three tidal inlets; Lake Worth Inlet, Boca Raton Inlet, and Jupiter Inlet. These inlets serve as both important travel corridors for ocean access and also as popular boating destinations. The density distribution of stationary vessels indicates that both Lake Worth Inlet (Peanut Island) and Boca Raton Inlet (Lake Boca Raton) are the most popular boating destinations, with very high concentrations of stationary (anchored, beached, or drifting) vessels in those areas. Jupiter Inlet appears to function more as a travel corridor than a boating destination, based upon a higher proportion of transitory vessels and a lower proportion of stationary vessels in the area.

The following “elements” are components of a multi-pronged and evolving effort to address this issue. The elements are numbered for ease of reference only.



The first of two studies assessing potential risks to safety in the Jupiter Narrows area.

Photo Credit: Document by Atkins, Prepared for the Florida Fish and Wildlife Conservation Commission

## ELEMENT 1

### Effort to Establish 'Boating Restricted Areas'

The Village of Tequesta requested FWC establish a state boating restricted area pursuant to 327.46(1)(b)1(a), Florida Statutes (F.S.). 327.46(1)(b), F.S., which allows local governments to establish boating restricted areas for public safety by local ordinance. The FWC Boating and Waterways Section adheres to these same standards for the establishment of new state boating restricted areas in the intracoastal waterway. Specifically, 327.46(1)(b)1(a), F.S., states restricted areas may be established: *Within 500 feet of any boat ramp, hoist, marine railway, or other launching or landing facility available for use by the general boating public on waterways more than 300 feet in width or within 300 feet of any boat ramp, hoist, marine railway, or other launching or landing facility available for use by the general boating public on waterways not exceeding 300 feet in width.*

It was deemed the nonmotorized boat launch area (beach access) approved by Palm Beach County did not qualify as a "launching or landing facility" as required within 327.46(1)(b)1(a), F.S., for the establishment of a state boating safety area. Therefore, the request by the Village of Tequesta was denied. A location qualifies as a launching and landing facility when infrastructure is provided to the public user to directly facilitate the launching and landing of nonmotorized vessels. The presence of a sign and sandy beach area would not by itself meet this requirement.



An aerial view of the ICW, Coral Cove Park, and Jupiter Inlet.  
Photo Credit: Florida Fish and Wildlife Conservation Commission  
(Atkins 2019)

## ELEMENT 2

### Data Analysis

Palm Beach County residents desired to have a large portion of the waterway regulated as Idle Speed No Wake due to a number of concerns, including vessel wakes (which were eroding the shoreline of an adjacent park and causing damage to private docks and seawalls), and the danger from passing vessels to manatees that frequent the area. Residents were informed that shoreline erosion and seawall protection could not be considered as the basis for boating regulation, per state law. They were directed to express concerns for manatee protection to the Florida Fish and Wildlife Conservation Commission's Imperiled Species office. In response to inquiries, the Imperiled Species office found no mortality data for manatees in the Intracoastal Waterway in the vicinity of Jupiter Inlet.

Residents contended that the interaction of motorboats and paddlecraft using the shoal area within the waterway for recreational purposes was a public safety concern. Observational information and concerns were brought to the attention of the Boating and Waterways Section via public petitions and videos produced by residents of the area. The Boating Waterways Section analyzed accident, citation, and warning data for the area finding these results: <sup>4</sup>

#### Accidents 2010 - 2017 (7 years)

- No Fatalities
- 3 Accidents with Injury
- 11 accidents total from Beach Road Bridge to Martin County line from 2010 – Present
  - 1 Equipment Failure
  - 1 No Proper Look out
  - 3 Operator Inattention
  - 4 Careless Operation
  - 2 Excessive Speed

#### Citations 2013 – 2017

- No Boating citations issued from the period of 2013-2017 within the target area. Citation information taken directly from Mobile forms.
  - No citations written for 25 MPH zone violations.



## Warnings 2013 -2017

- 35 warnings written within the target area from 2013-2017.
  - No warnings written for 25 MPH zone violations.
  - 7 warnings written for violation of the Slow Speed Minimum Wake buffer zone.
  - 3 warnings written for careless/reckless.
  - 6 warnings for towing violations.
  - 2 warnings written for PWC operation.
  - 7 warnings written for safety gear violations.
  - 3 warning written for registration violation.
  - 3 warnings written for marine turtle violations.
  - 1 warning written for fishing violation.
  - 1 warning written for federal violation fishing.
  - 2 warnings with no additional information on the violation.

## ELEMENT 3

### Commissioned Traffic Study 1

To further research public concerns, the FWC commissioned a state contract consultant to conduct a third-party vessel traffic study of the area. “The Coral Cove Park Vessel Traffic Study, Palm Beach County, FL,” published in October 2019<sup>5</sup> found a significant lack of data regarding accidents, warnings, and citations required to establish grounds for reducing vessel speeds in the area. The study recommended against the promulgation of new boating restrictions, as slowing boat speeds alone may not result in reducing the risk to public safety. Instead, it may result in the undesired consequences of boater objection and incidences of unintended wake waves resulting from vessels coming on or off plane. Alternatively, the study suggests that increasing educational outreach and law enforcement presence might be more effective than amending the current boating regulations to a more restrictive vessel speed such as idle, slow, or a defined vessel speed (i.e., 5 MPH).

## ELEMENT 4

### Commissioned Traffic Study 2

In response to continuing complaints, FWC commissioned a second traffic study that was completed in October 2020.<sup>6</sup> It focused on weekends around the periods of low tide, relying on stationary cameras that took pictures every 15 minutes. During low tide, the usable waterway shrinks considerably while the usage increases due to the ability to beach vessels and wade around without having to swim. The study confirmed levels of weekend usage, noting: *“There were notable observations of close interactions between motorboats and jet skis documented on the drone video and occurrences of jet skis operating recklessly outside of the marked channel. There were also documented occurrences of individuals on paddleboards operating within the DZ (danger zone) while motorboats and jet skis were traversing the channel limits.”*<sup>7</sup>



Traffic at Jupiter Beach Bridge.

Photo Credit: Florida Fish and Wildlife Conservation Commission (Atkins 2019)

## ELEMENT 5

### A Compromise – Notice of Proposed Rulemaking

After release of the second traffic study (Atkins, 2020), residents continued to push forward the request for creation of a No Wake zone near Coral Cove, Jupiter Island.<sup>8</sup> Continuing requests drove a decision by FWC to implement a weekends and holidays boating restricted area of slow speed, minimum wake. This proposed restriction was less than the most ardent vessel restriction advocates desired (e.g., year-round idle speed); however, FWC deemed this as an appropriate compromise that took all interests into account. FWC continued to monitor the area for new information.



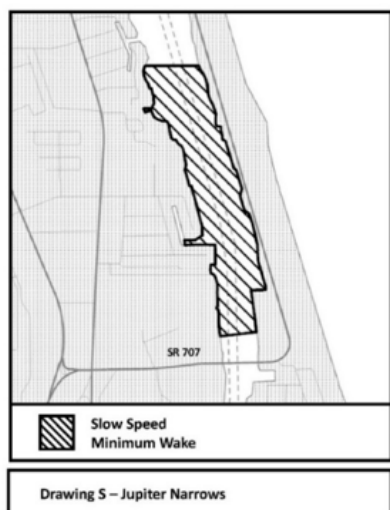
In February 2021, *A Notice of Proposed Rulemaking* was published proposing limited restrictions based on times of projected high use:

#### **68D-24.017 Palm Beach County Boating Restricted Areas.**

(1) The following boating restricted areas were established for the purpose of regulating speed and operation of vessel traffic on the Intracoastal Waterway within Palm Beach County, Florida:

##### *Jupiter Narrows*

*300 feet north of the SR 707 Bridge to 4290 feet north of the SR 707 Bridge. A slow speed, minimum wake zone to be in effect from 7:00 a.m. until 9:00 p.m. on Saturdays, Sundays, and those holidays identified in Rule 68D-23.103, in and adjacent to the Florida Intracoastal Waterway, shoreline to shoreline, bounded on the south by a line drawn perpendicular to the centerline of the waterway 300 feet north of the centerline of the SR 707 (Gomez Road) Bridge, and bounded on the north by a line drawn perpendicular to the centerline of the waterway 4290 feet north of the SR 707 (Gomez Road) Bridge as depicted in drawing S.*



Rulemaking Authority 327.04, 327.302, 327.46 FS. Law Implemented 327.302, 327.46 FS. History—New 10-6-10, \_\_\_\_\_.

NAME OF PERSON ORIGINATING PROPOSED RULE: Major Rob Beaton, Division of Law Enforcement, Boating and Waterways Section, 620 South Meridian Street, Tallahassee, Florida 32399, rob.beaton@myfwc.com.

NAME OF AGENCY HEAD WHO APPROVED THE PROPOSED

RULE: Florida Fish and Wildlife Conservation Commission

DATE PROPOSED RULE APPROVED BY AGENCY HEAD:

February 25, 2021

DATE NOTICE OF PROPOSED RULE DEVELOPMENT

PUBLISHED IN FAR: December 4, 2020

## **ELEMENT 6**

### **Regulation of Human-powered vessels <sup>9</sup>**

FWC deemed that introduction of human-powered craft access into the Intracoastal Waterway (ICW) by the Palm Beach County parks system essentially created a problem in the ICW where it had not previously existed. In response, FWC initiated efforts to keep human-powered craft out of the marked channels of the Florida Intracoastal Waterways as much as possible.



A "Kayak Launching Area" sign designating a beach launching site at Coral Cove Park.

Photo Credit: Florida Fish and Wildlife Conservation Commission (Atkins 2019)

As a result, the following regulation took effect July 1, 2021 restricting operation of human-powered vessels that are within the boundaries of the marked channel of Florida's section of the Intracoastal Waterway:

#### **Ch. 327.371 Human-powered vessels regulated.**

(1) A person may operate a human-powered vessel within the boundaries of the marked channel of the Florida Intracoastal Waterway as defined in s. 327.02:

(a) When the marked channel is the only navigable portion of the waterway available due to vessel congestion or obstructions on the water. The operator of the human-powered vessel shall proceed with diligence to a location where he or she may safely operate the vessel outside the marked channel of the Florida Intracoastal Waterway.

(b) When crossing the marked channel, provided that the crossing is done in the most direct, continuous, and expeditious manner possible and does not interfere with other vessel traffic in the channel.

(c) During an emergency endangering life or limb.

(2) A person may not operate a human-powered vessel in the marked channel of the Florida Intracoastal Waterway except as provided in subsection (1).

(3) A person who violates this section commits a noncriminal infraction, punishable as provided in s. 327.73.

History.—s. 9, ch. 2021-184.

**Case Study Outcome:** On May 12, 2021, the FWC held its final hearing on the proposed Jupiter Narrows rulemaking described in Element 5.

On May 21, 2021, a Petition for Administrative Determination of Invalidity of Proposed Rule 68D-24.017(1)(s), Florida Administrative Code was filed by the Marine Industries Association of Palm Beach County, Inc. alleging (in part) as part of the Florida Intracoastal Waterway, the Jupiter Narrows is part of “a nautical highway and should be regulated as such.”

*(See Ch. 72-55, Laws of Fla.) The Jupiter narrows Slow Speed Rule, however, will negatively impact the use and enjoyment of the Florida Intracoastal Waterway by the Association’s members contrary to its stated purpose as a nautical highway.”*

The filing alleges the proposed Rule constitutes an invalid exercise of delegated legislative authority and should be declared invalid. It also alleges the rule is arbitrary and capricious and disputes several findings in both the 2019 and 2020 vessel traffic studies.

As of October 2021, the proposed rule remains on hold while the state Division of Administrative Hearings considers the petition.

Contact Gary Klein, BLA, Florida Fish and Wildlife Commission at [gary.klein@MyFWC.com](mailto:gary.klein@MyFWC.com).

## SECTION 6, CASE STUDY #2 ENDNOTES

<sup>1</sup> “What’s the delay on the no-wake zone proposal in Jupiter?” <https://www.palmbeachpost.com/news/local/what-the-delay-the-wake-zone-proposal-jupiter/WTNHE1G2os2qH89fOJTUjO/>, Palm Beach Post, December 4, 2017.

<sup>2</sup> Per Florida statutes, measurement of data is necessary to meet the criteria for establishing boating restrictions including physical features, observations of activities and congestion, and the analysis of accidents, citations, and prior studies.

<sup>3</sup> Palm Beach County Department of Environmental Resources Management (Sea to Shore Alliance, 2013).

<sup>4</sup> Jupiter Inlet/Tequesta Palm Beach Accident Breakdown, From Moreau, R., Planning Manager, FWC Division of Law Enforcement and Waterways Section, March 2018.

<sup>5</sup> “Coral Cove Park Vessel Traffic Study, Palm Beach County, FL”, Prepared for Florida Fish and Wildlife Conservation Commission by Atkins, October 2019.

<sup>6</sup> 2020 Jupiter Narrows Vessel Traffic Study, Atkins, Member of the SNC-Lavalin Group, Report to Florida Fish & Wildlife Conservation Commission, Boating & Waterways Section, October 16, 2020.

<sup>7</sup> Ibid., Summary of Monitoring Events, pg.4.

<sup>8</sup> “Should there be a no-wake zone near Coral Cove Park? Years later, these supporters still say yes”, [https://www.palmbeachpost.com/news/20190714/should-there-be-no-wake-zone-near-coral-cove-park-years-later-these-supporters-still-say-yes?utm\\_content=&utm\\_medium=email&utm\\_name=&utm\\_source=govdelivery&utm\\_term=campaign](https://www.palmbeachpost.com/news/20190714/should-there-be-no-wake-zone-near-coral-cove-park-years-later-these-supporters-still-say-yes?utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=campaign); Palm Beach Post, July 15, 2019.

<sup>9</sup> Ch. 327.02 (18) Florida Statutes defines “Human-powered vessel” as a vessel powered only by its occupant or occupants, including, but not limited to, a vessel powered only by the occupants’ hands or feet, oars, or paddles.

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# CASE STUDY #3 - PITTSBURGH, PENNSYLVANIA

**Background:** Pittsburgh, Pennsylvania, was founded at the confluence of the Allegheny and Monongahela Rivers. These rivers join to form the Ohio River at The Point of Pittsburgh. The Allegheny, Monongahela, and Ohio Rivers are nationally significant shipping channels. In 2016, the U.S. Army Corps of Engineers (USACE) ranked the Port of Pittsburgh fourth among inland waterway ports and 31st among ports in the United States for tonnage traffic.

Allegheny County, where Pittsburgh is located, is among the top counties in the country for registered recreational watercraft. The Port of Pittsburgh contains 27 marinas and has 21 public boat landings, and the Pitt Pool,<sup>1</sup> which forms a 24-mile pool around the city, contains 12 marinas and three public boat launches. In addition, the Point of Pittsburgh area contains multiple entertainment venues near the riverfront that include: a National Football League stadium (home of the Steelers), a Major League Baseball stadium (home of the Pirates), casino, a United Soccer League stadium, amphitheater, state park, science center, museums, convention center, and various memorials, monuments, and restaurants.

**Problem:** During the summer months, especially on weekends, large numbers of recreational vessels anchor or drift in the vicinity of The Point of Pittsburgh, which often creates an unsafe navigation situation for larger commercial vessels utilizing the waterway. Many recreational vessel operators on the waterway are not aware of the risk of operating close to commercial vessels, such as barges and passenger-carrying vessels. Motorized and nonmotorized boaters regularly exhibit a lack of understanding of the Navigation Rules when operating and by blocking navigation channels, often rafting, anchoring, swimming and launching inflatable swim devices in mid-channel. Over the years, there were growing concerns about the dangers of recreational vessels anchoring or drifting near the commercial vessel sailing line,<sup>2</sup> maneuvering too close to commercial vessels or crossing in front as they transit and, the dangers of commercial vessel operators expecting recreational vessels to give way as a matter of course.

The Point of Pittsburgh area includes eight highway bridges creating navigation limitations for tows and passenger vessels due to piers and overhead clearance. Bridges reduce sightlines and funnel wind and current into narrow spaces, creating challenges for commercial vessel operators. The height of some commercial vessels requires navigation under bridges at only the highest point of clearance, without room for maneuvering. Large vessels have stopping limitations and limited maneuverability, especially when loaded. In addition, ferry operators need a clear passage to loading and off-loading areas. During times of congestion, commercial vessels often halted transit of their vessels, and passenger vessel cruise lines altered course away from famous sights, resulting in a negative impact on business.

## APPROACH 1

### Formation of the Pittsburgh Congested Waterway Committee

During a Passenger Vessel Association Rivers Region Meeting in November of 2016, participants notified Coast Guard Marine Safety Unit (MSU) Pittsburgh of navigation and safety issues involving vessel congestion near the Point of Pittsburgh during the summer months. As a result, MSU Pittsburgh formed a *Congested Waterways Committee* that began to meet monthly to investigate the congestion issue and discuss concerns regarding the use of the waterway. The committee includes towboat operators, commercial passenger vessel operators, port executives, safe boating council members, industry representatives, members from local recreational boat associations, and representatives of the Coast Guard Auxiliary, U.S. Army Corps of Engineers (USACE), and city and state law enforcement officials. There was ongoing consensus that the three rivers of Pittsburgh should continue to be used by commercial and recreational vessels alike, and that safety of the users of the waterways was the committee's top priority.





A Personal Watercraft (indicated by the arrow) operates ahead of loaded barges moving upriver in Pittsburgh.

Photo Credit: Steve Jones

The group organized National Safe Boating Week and other public education and awareness events. For example, in 2018, a Public Service Announcement (PSA), created in partnership with the Pittsburgh Pirates, began airing on a screen visible to boats anchored near PNC Park. The Pirates ran the PSA throughout the season.

The group created *Lockfest 2018*, an event to educate boaters using the rivers in and around Pittsburgh. The free event focused on the safe use of the waterways, boating regulations, lockage procedures, and understanding other's waterway user needs.



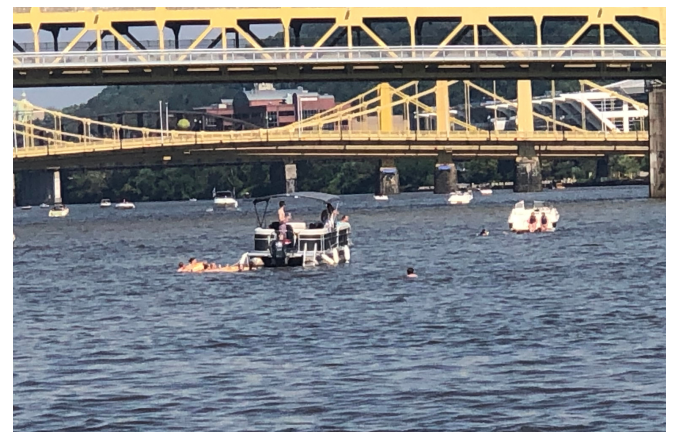
## APPROACH 2

### Temporary Local Area Specific Regulations

The Coast Guard established two special local regulations for parts of the navigable waters of the Allegheny, Monongahela, and Ohio Rivers for two special concert events. Although temporary, these Special Local Regulations *prohibited persons and vessels from loitering, anchoring, stopping, or drifting more than 100 feet from any riverbank or act in a manner that impedes the passage of another vessel to any launching ramp, marina, or fleeting area.*

The Marine Safety Unit (MSU) Pittsburgh conducted outreach/education in advance of the concert weekends. MSU Pittsburgh provided flyers to boaters entering the Pitt Pool via three locks and dams. U.S. Coast Guard and Coast Guard Auxiliary patrols distributed flyers to boaters operating in the Pitt Pool during the concerts. In addition, MSU Pittsburgh personnel conducted news interviews with local TV stations and other news outlets.

According to the U.S. Army Corps of Engineers, 529 recreational and 133 commercial vessels transited the locks of the Pitt Pool throughout the concert weekends. Additionally, 316 passenger vessel trips were completed in proximity to Heinz Field. Despite the concentration of vessels, both recreational and commercial vessels could transit safely throughout the weekend, with positive feedback received from industry, other government agencies, and recreational representatives.



Individuals float and swim from boats anchored in the navigation channel in Pittsburgh.

Photo Credit: Steve Jones

## APPROACH 3

### **Regulation – Enactment of a Regulated Navigation Area for the Monongahela, Allegheny, and Ohio Rivers, Pittsburgh, PA**

While the Special Local Regulations effectively mitigated the hazards of heavy congestion in and around the Pitt Pool during the special events, a more permanent solution was required to handle consistently heavy traffic throughout the peak boating season. The Coast Guard determined a permanent Regulated Navigation Area (RNA) was the most effective solution for mitigating the dangers of heavy congestion, using proven methods, with minimal impacts to vessel traffic operating under normal waterway conditions. On July 1, 2019, the Coast Guard published a notice of proposed rulemaking (NPRM) <sup>3</sup> to establish a RNA using the same waterway controls used in the previous Special Local Regulations.

The NPRM summary reads: “The Coast Guard proposes to establish a regulated navigation area for certain waters of the Monongahela, Allegheny, and Ohio Rivers near Pittsburgh, Pennsylvania. This action is necessary to provide for the safety of persons, vessels, and the marine environment on these navigable waters due to the high volume of vessels navigating the area. This proposed rulemaking would prohibit persons and vessels from loitering, anchoring, stopping, mooring, remaining, or drifting more than 100 feet from any riverbank in the regulated navigation area unless authorized in order to reduce vessel congestion and provide for safe passage of transiting vessels in the center of the rivers. It would also prohibit persons and vessels from loitering, anchoring, stopping, mooring, remaining, or drifting in any manner that impedes the safe passage of another vessel to any launching ramp, marine, or fleeting area unless authorized.”

## SECTION 6, CASE STUDY #3 ENDNOTES

<sup>1</sup> “Pool” is a term used to describe the area between navigation dams of the rivers.

<sup>2</sup> “Sailing line” is defined as the middle of the river as marked on U.S. Army Corps of Engineers river charts.

<sup>3</sup> See Federal Register, <https://www.federalregister.gov/documents/2019/07/01/2019-13932/regulated-navigation-area-monongahela-allegheny-and-ohio-rivers-pittsburgh-pa>, July 1, 2019.

<sup>4</sup> See Electronic Code of Federal Regulations, [https://www.ecfr.gov/cgi-bin/text-idx?SID=9114134e52e2d6173b65a4977b681899&mc=true&node=se33.2.165\\_1823&rgn=div8](https://www.ecfr.gov/cgi-bin/text-idx?SID=9114134e52e2d6173b65a4977b681899&mc=true&node=se33.2.165_1823&rgn=div8).

## CASE STUDY OUTCOME

33 CFR part §165.823 Allegheny River, Monongahela River, and Ohio River, Pittsburgh, Pennsylvania; Regulated Navigation Area <sup>4</sup> became a final rule in July 2020. There were zero public comments during the comment period.

The RNA is credited with cutting down the number of vessels blocking the channel in and around The Point of Pittsburgh. But, of course, there will be boaters who must be reminded. Working together, local, state, and federal authorities inform the public of this regulation. However, while enforceable by the U.S. Coast Guard, local and state authorities do not have the authority to enforce a federal regulation. Discussion continues on how to adopt similar regulations at the state and local levels to provide for consistent enforcement.

The Congested Waterways Committee continues to meet, working together to educate and inform the boating public.

*Contact Captain Steve Jones, Gateway Clipper Fleet, at [sjones@gatewayclipper.com](mailto:sjones@gatewayclipper.com).*

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## SECTION 6

# CASE STUDY #4 - OREGON'S NONMOTORIZED WATERWAY ACCESS PROGRAM

**Background:** In 2010, the Oregon State Marine Board (OSMB) began a comprehensive strategic planning process to determine how it could build upon past accomplishments while responding to current and future changes in recreational boating and emerging environmental issues. Seven focus areas were identified, with the OSMB determining 4 areas (label 1-4 below) to be priorities:

- Education, engagement, and outreach 1
- Environment
- Facilities
- Funding and financing 2
- Law enforcement and safety 3
- Operations and staffing
- Organizational purpose and identity 4

Fifty-two strategies were identified in the four priority areas. One strategy was identified as the *Nonmotorized Project*. The goal of the project was to actively integrate nonmotorized boater needs and participation of the nonmotorized community into OSMB agency operation.

**Problem:** Oregon State Marine Board has historically been funded by motorized boat fees, so the agency has focused programs to motorized groups only. The nonmotorized community wanted “a seat at the table” to provide input on facility and other program development for nonmotorized boating and paddling. Because there was no fee structure in place for nonmotorized boating groups, they were not contributing to funding for these specialized projects desired by their community.

## STEP 1

### Formation of a Nonmotorized External Advisory Committee

A process was developed seeking applications from those willing to provide input by serving on an advisory committee. Sixteen participants were selected representing various locations, backgrounds, and gender identity. The selected advisory committee included participants from whitewater, ocean, drift boating, dragon boat/outrigger canoeing, standup paddleboarding (SUP), outfitters/guides, environmental, wild and scenic rivers, flatwater, rowing, rafting, sailing, livery-rental, law enforcement, and parks.

The Advisory Group engaged in a two-year long process which included nine meetings, a statewide assessment, and a national survey of state programs. The survey of state programs had a 100% response from states on how fees were collected (or not collected) from nonmotorized boaters, including a look at titling and registration fees, sales taxes, permits, launch fees, and other funding processes. The Advisory Group and OSMB shared all findings at a series of seventeen public input meetings, with information captured and posted online during this robust process.



A standup paddleboarder enjoys an Oregon waterway.

Photo Credit: Oregon State Marine Board



## STEP 2

### Legislative Attempt #1

After consideration of public input, in 2017 the Advisory Group recommended legislation, summarized here:

#### 2017 Legislative Attempt

- All sizes of nonmotorized boats purchase a permit
- Transferrable between boats
- Boaters 14-years and older would need a permit
- Life jackets required on all rivers and streams for inner tubes, air mattresses, pool toys
- Establish standards for voluntary boating safety courses for nonmotorized participants
- Combine the nonmotorized fee with the existing Aquatic Invasive Species (AIS) permit

As a result of this legislative proposal, nonmotorized boaters would receive:

- Public access
- Law enforcement
- Grants for instructors and organizations to provide education
- Technical assistance

**Result:** The legislation did not get out of committee. There was much public contention regarding the proposal, especially around the life jacket requirement for inner tubes, air mattresses, and pool toys, and the perceived lack of desired benefits to the nonmotorized participants.

## STEP 3

### Regroup and Legislative Attempt #2

The OSMB looked at the testimony received during the first legislative attempt. Access was identified as the most desirable need of the nonmotorized community. In 2019, with consideration of this additional public input, a second legislative attempt was made with a significantly revised program:

### 2019 Legislative Attempt

- Nonmotorized boats 10 feet in length or longer purchase a permit (this group was already purchasing an AIS permit)
- Transferrable between boats
- Boaters 14 years and older need permit
- Nonmotorized permit combined with AIS permit
- No permit if needed if boating on a permitted Wild/Scenic river section (Rouge, Deschutes, John Day) as permit fees are collected by BLM and others for use.
- No permit is required for Oregon recognized Tribes if engaged in tribal fishing or tribal ceremony.

With this legislative proposal, nonmotorized boaters would receive benefits which were much more clearly defined, with requirements for transparency of program results, including:

- Public access
  - Including leases, easements, property
    - Access improvements include racks, sanitation facilities, site improvements, replacing/renovating existing sites, showers, changing rooms, and other site improvements directly benefitting the nonmotorized community.
  - Whitewater parks and competition courses
- Grants to Underserved Communities
  - Boating safety/ education
  - Opportunities to boat, including grant funding for
    - Transportation to boating sites,
    - Specialized events and equipment, and
    - Signage and information in various languages.
- Technical assistance, needed for facility and access design regarding
  - Endangered species
  - Tribal areas
  - Stormwater management
  - Surveys
  - Feasibility and siting
  - Permit processes
- Free boating days (up to six per year) to be coordinated (when possible) with Free Fishing and Boating days

**Result:** Senate Bill (SB) 47 was approved in the 2019 session of Oregon Legislature. OSMB had approximately eight months to inform the public and to implement the program. Enforcement of permit requirement began in August 2020.

## STEP 4

### Development of the Waterway Access Grant (WAG)

The Waterway Access Grant program was established as part of SB 47 in the 2019 legislative session with \$430,000 appropriated. This was added to already existing grant programs available under OSMB; the Boating Facility Grant (BFG) and Small Grant program. Many boating facility locations provide both motorized and nonmotorized access and applications are split among the three programs, however, not every entity is eligible for funding under each program. For instance, some OSMB grants for access funding are limited to governmental entities in order to provide proper long-term oversight on the use of public funds.

The WAG program includes Technical Assistance including design, engineering, permitting and planning. Funding may be used to hire a project consultant, if needed. After the WAG program was announced, the OSMB had over 200 requests for technical assistance within nine months.

There are approximately 1,500 boating access sites in Oregon. In addition to typical boating facility needs, such as renovation of existing structures and sanitation facilities, gradient, and repairs due to erosion, nonmotorized boating facility needs under WAG provide for storage racks, separation of use, ADA accessibility, parking and specialized docks. Innovative solutions include specialized pulley systems to launch/retrieve boats down steep embankments.



This specialized boat access provides a "skid" to assist movement of nonmotorized boats up and down a steep embankment.

Photo Credit: Oregon State Marine Board

Boating education funded under the WAG program includes videos, signs, behavior messaging, information in non-English languages, equipment, training (including certifications for guides and instructors), and special events.

The WAG program includes a 25% match requirement. This match requirement can be met in a number of ways:

- Cash – applicant, different grant, third party
- Labor – applicant and donated third party
- Materials – applicant and donated third party
- Equipment – applicant and third party
- Administration – applicant and third party

## STEP 5

### Transparency of the Program's Implementation

In order to address skepticism and build trust the program funding is being used for nonmotorized improvements as designed, the WAG program includes a new public comment process. WAG applications are uploaded to [www.boatoregon.com](http://www.boatoregon.com), and the public is given a minimum of 14 days to provide comments about the project. Copies of all comments are provided to the OSMB and the applicant.

During the first review period, 19 WAG applications were posted with approximately 1,500 pages. Sixty-seven comments were submitted providing meaningful public input which helped shape the final determinations for WAG funding.

Grant deadlines, forms, and staff contact information, and legislative reports are posted at <https://www.oregon.gov/osmb/boating-facilities/pages/boating%20Facilities%20Home.aspx>.

### Case Study Outcome:



The following summary is adapted from reports to members of the Oregon Legislative Assembly from Josh Mulhollem, Environmental and Policy Program manager, Oregon State Marine Board, 2020 and 2021.<sup>1</sup>

## Waterway Access Permit Sales and Revenue

SB 47 requires that all operators of nonmotorized boats 10 feet or longer carry a Waterway Access Permit while on Oregon waters, with exceptions. The requirement took effect on January 1, 2020, and the Marine Board began issuing permits in December of the previous year. Through July, the Marine Board and its authorized agents have sold 56,735 Waterway Access Permits resulting in \$891,580 for the Waterway Access Fund.

## Waterway Access Grants

In 2020, the Marine Board accepted Waterway Access Grant proposals for the first time. In August, the agency awarded \$412,082 in grants to ten projects around the state. An additional \$25,448 supported technical assistance to evaluate potential new nonmotorized access opportunities at three other locations. Projects receiving funds ranged from the development of physical access for canoes and kayaks to programs to promote boating opportunities for underserved youth to an initiative to develop boating education materials for non-English speakers.



Effective January 1, 2020

**Waterway Access Permit**

The Waterway Access Permit (WAP) replaces the Aquatic Invasive Species (AIS) permit for non-motorized boats.

- Oregon residents and out-of-state operators of non-motorized boats: canoes, kayaks, stand-up paddleboards, rafts, drift boats and other manually powered boats, which are 10 feet in length or longer and sailboats under 12 feet long, must purchase a one week (\$5), one year (\$17) or a two year (\$30) permit when operating on Oregon waters.
  - One permit is required per boat,
  - is transferable from boat to boat, and
  - is not required for youth 13 and younger.
- Permits are not required on certain stretches of federally designated wild and scenic rivers already requiring permits.
- The permit funds two programs: AIS Prevention Program and non-motorized access. These programs will improve facilities by adding single parking spaces, non-motorized boat launches, restrooms, low-freeboard docks, etc. and will continue to inspect boats for aquatic invasive species at the roadside inspection stations.
- There are four purchasing options:
  - In person at the OSMB office in Salem;
  - In person at ODFW license agents;
  - [OSMB Online System](#) (downloadable PDF to save on mobile device or printed out); or
  - [ODFW Electronic Licensing System](#) to print out permit or display using the ODFW App.

Screen Shot Waterway Access Permit information published in Boat Oregon News.

Photo Credit: Oregon State Marine Board

## Waterway Access Permit Education, Outreach, and Enforcement

The Marine Board used a variety of media and methods to educate nonmotorized boaters on the requirement to carry the Waterway Access Permit when recreating on Oregon waters. Several press releases were disseminated to the media in 2020 and many were picked up by large outlets. The Board's social media channels were also heavily utilized to spread the message. Through its relationships with marine law enforcement across the state, the OSMB was able to have county sheriff's deputies and Oregon State Police officers relay the requirement to the public. To aid on-water enforcement, OSMB provided thousands of rack cards that explained the new legislation. Additionally, new signage was developed and located at boat accesses around the state that advises nonmotorized boaters of what is required when they are on the water, including life jackets, sound-producing devices, and Waterway Access Permits.

During the first year of enforcement in 2020, law enforcement officers focused on educating boaters and not on writing warnings and citations. Additionally, SB 47 stipulated that no citations could be issued for failure to carry a permit until August 1st. By the end of the year, officers had issued 153 citations out of 623 stops. In 2021, as of October 4, officers had stopped 1,807 nonmotorized boats for a Waterway Access violation and cited 134. Based on incoming funds, compliance appears to be better than the previous Aquatic Invasive Species permit for nonmotorized boats, bringing in additional funding to aid in facilities development and education.

Contacts: Janine Belleque, Boating Facilities Manager Oregon State Marine Board at [Janine.belleque@boat.oregon.gov](mailto:Janine.belleque@boat.oregon.gov). Jennifer Peterson, Program Assistant at [Jennifer.peterson@boat.oregon.gov](mailto:Jennifer.peterson@boat.oregon.gov).

## SECTION 6, CASE STUDY #4 ENDNOTES

<sup>1</sup> Oregon State Marine Board, Report to the 2020-2021 Oregon Legislature on Senate Bill 47 – Waterway Access Fund and Waterway Access Permits, <https://www.oregon.gov/osmb/info/Documents/SB%2047%20Legislative%20Report%202020.pdf>, September 15, 2020, and <https://www.oregon.gov/osmb/info/Documents/SB%2047%20Legislative%20Report%202021.pdf>, October 4, 2021.

## SECTION 7

# REFERENCES & SUGGESTED READING

The universe of information applicable to waterway management is vast, and the 'mere' 100-plus documents referenced here are but a selection from the hundreds of reports, presentations, legal references, statements, descriptions, and accounts the Steering Committee and project staff considered to develop *A Guide for Multiple Use Waterway Management (Third Edition)*. Therefore, this is not intended to be an exhaustive list: instead, this sampling serves to provide broadly relevant resources, illustrative case studies and in-depth discussions about perplexing and otherwise deserving topics.

Each reference is available online (links checked in August 2021). Descriptions are adapted (or copied directly) from descriptive content within the document to provide the most accurate, but brief, description possible. We invite readers to forward corrections, recommendations, updates, or new research for consideration in future editions to [waterway.management@nasbla.org](mailto:waterway.management@nasbla.org).

The entire Steering Committee and staff for *A Guide for Multiple Use Waterway Management (Third Edition)* thank you and all others who continue to advance the field of waterway management for valuing the research, stakeholder input, partnering, public service, and daily practice that are so important to us all.

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Alaska Department of Natural Resources (2016), *Prince William Sound Supplement to the Alaska Boater's Handbook*, <http://dnr.alaska.gov/parks/boating/pdf/pwssuppl.pdf>, Division of Parks and Outdoor Recreation, Office of Boating Safety.

A guide to safe and enjoyable boating in Prince William Sound, includes maps, in depth information on the area including safety and hazard considerations.

Alaska Department of Natural Resources (2019), *Alaska Boater's Handbook*, <http://dnr.alaska.gov/parks/boating/pdf/alaskaboaterhandbook032014.pdf>, Division of Parks and Outdoor Recreation, Office of Boating Safety.

The Alaska Boating Safety Program cooperates with the U.S. Coast Guard, U.S. Coast Guard Auxiliary, and other partners to produce educational programs and publications that promote safe and enjoyable boating, including this 2019 edition of the Alaska Boater's Handbook.

Alaska Wilderness Recreation & Tourism Association (2003), *Suggested Guidelines for Safe Operations of Sea Kayaks & Power Vessels in Prince William Sound*, <https://alaskaseakayakers.com/PWS-kayak-brochure.pdf>, Guidelines Developed in partnership with Kayak Outfitters & Transporters for PWS, Chugach National Forest.

Topics Covered in this Guide: What Kayakers Should Know About Power Vessel Operations; What Power Vessel Operators Should Know About Sea Kayakers; Guidelines for Sea Kayakers; Guidelines for Power Vessel Operators; Signals and Communications; Using a VHF Radio; Assistance & Emergency Protocols; and, Local Knowledge.

American Boat and Yacht Council (2016) *EDU-1 ON-Water Skills-Power (American National Standard)*, Download from <https://www.usnows.org/review-standards>, National On Water Standards Team.

Purpose: To establish the national consensus-based standard for use by course providers for course design and student assessment to raise the overall level of quality, availability and consistency of entry level on-water, skill-based instruction in recreational powerboat operation.

American Boat and Yacht Council (2016) *EDU-2 On-Water Human Propelled (American National Standard)*, Download from <https://www.usnows.org/review-standards>, National On Water Standards Team.

Purpose: To establish the national consensus-based standard for use by course providers for course design and student assessment to raise the overall level of quality, availability and consistency of entry level On-Water, skills-based instruction in HUMAN-propelled recreational boat operation.



American Boat and Yacht Council (2017) *EDU-3 Skills-based SAIL Standard (American National Standard)*, Download from <https://www.usnows.org/review-standards>, National On Water Standards Team.

Purpose: To establish the national consensus-based standard for use by course providers for course design and student assessment to raise the overall level of quality, availability and consistency of entry-level on-water, skills-based instruction in recreational sailboat operation. Scope: This is the core voluntary standard designed to apply to entry-level SAIL on-water skills-based courses in the U.S. states and territories and District of Columbia and function within a national system of standards for recreational boat operation.

American Boat and Yacht Council (2018), *EDU-4 On-Water Instruction Standard (American National Standard)*, Download from <https://www.usnows.org/review-standards>, National On Water Standards Team.

Purpose: To establish the national consensus-based standard for use by course providers for approach to design and delivery to raise the overall level of quality, availability and consistency of entry-level instruction in recreational boat operation. This Standard accompanies the National On-Water Standards (NOWS) for recreational boating skills (EDU-1 On-Water Power Standards; EDU-2 Skills-based HUMAN-propelled Boat Standard; EDU-3 Skills-based Sailboat Standard) and assists education providers with developing and implementing programs that produce recreational SAIL, POWER, and HUMAN-propelled boat operators who: Can perform the skills identified by the NOWS; Have the knowledge needed to perform the NOWS skills; and Possess a positive attitude and good judgment toward safe recreational boating.

American Waterways Operators Foundation (1990), *AWO Life Lines Brochure for Recreational Boaters*, <https://community.nasbla.org/viewdocument/awo-life-lines-brochure-for-recreat?LibraryFolderKey=5feb7136-7569-4943-9a51-9c09f2ec3084&DefaultView=folder>, Arlington, Virginia.

Being aware of the constraints under which these commercial vessels operate can arm recreational boaters with the best protection against danger and could save your life!

Aukerman, Haas, and Associates (2011), *Water and Land Recreation Opportunity Spectrum (WALROS) Users' Handbook, Second Edition*, [https://www.usbr.gov/recreation/publications/WALROS\\_Handbook\\_2011.pdf](https://www.usbr.gov/recreation/publications/WALROS_Handbook_2011.pdf), U.S. Department of the Interior Bureau of Reclamation.

Research has shown that recreationists not only seek to participate in recreation activities, but also seek specific recreation settings in order to enjoy a special kind of recreation experience and subsequent benefits. These four components (activities, settings, experience, and benefits) constitute a recreation opportunity; that is, the opportunity for a person to participate in a particular recreation activity in a specific setting in order to enjoy a particular recreation experience and the benefits this affords.

Beal, Donald Michael (2011), *Abstract Factors Contributing to Conflicts and Use Satisfaction at Lake Gaston: Examining Conflict between Personal Watercraft Users and Anglers (Master's Thesis)*, [https://thescholarship.ecu.edu/bitstream/handle/10342/3715/Beal\\_ecu\\_0600M\\_10565.pdf?sequence=1&isAllowed=y](https://thescholarship.ecu.edu/bitstream/handle/10342/3715/Beal_ecu_0600M_10565.pdf?sequence=1&isAllowed=y), A Thesis in Recreation & Park Administration.

For conflict attributed to PWC users, responses centered on themes involving safety and perceptions of inconsiderate behavior. Managerial recommendations include developing 'no wake' zones near shore with appropriate markers and signage, lake safety education, lake patrols, and penalties resulting in limits to lake access points managed by lake authorities. An area that is in need of more research is the experience of conflict between anglers and personal watercraft users. Managers need to understand the experience of conflict between these two groups to implement effective practices that minimize conflict.

Boteler, Franklin B. (1983), *Carrying Capacity as a Framework for Managing Whitewater Use*, <https://js.sagamorepub.com/jpra/article/view/2035>, The Journal of Park and Recreation Administration, Vol 2, No 2.

With increasing numbers of people using whitewater recreation resources, public land management agencies are called upon to set capacity limits. Currently, as a guide in decision making, such limits are often defined within a carrying capacity framework. By placing use limits within this framework, the implicit assumption that recreation resources can sustain specifiable levels of use has the appearance of being justified. Initial efforts to determine a carrying capacity for whitewater resources in West Virginia are reviewed. The impetus for establishing riverine use limits in the state is related to the increasing demand for whitewater resources and recent legislative directives. Descriptive carrying capacity information concerning whitewater use is summarized and the utility of this information for the State's Department of Natural Resources is examined. Working from the Cheat River experience, suggestions are made for public land management agencies which contact carrying capacity research.

California Boating and Waterways (2020), *Surrendered and Abandoned Vessel Exchange (SAVE)*, [http://www.dbw.parks.ca.gov/?page\\_id=28816](http://www.dbw.parks.ca.gov/?page_id=28816).

The state of California's derelict vessel program website.

Chicago Harbor Safety Committee (2016) "*Safety Recommendations and Guide to Rules and Regulations*" [https://721feb76-2b30-4254-87d9-9b3d48e59ec9.filesusr.com/ugd/40c52d\\_dff671dabb65440c963e00d44081ee94.pdf](https://721feb76-2b30-4254-87d9-9b3d48e59ec9.filesusr.com/ugd/40c52d_dff671dabb65440c963e00d44081ee94.pdf).

Written by the Chicago Harbor Safety Committee, a broad-based proactive stakeholder's forum; forming a partnership between the private sector and government agencies, for identifying, assessing, planning, communicating, and implementing operational and environmental measures that ensure the safe, secure, efficient and balanced management, operation, and development of Chicago area waterways, including the waters of the Chicago River and Lake Michigan. This reference provides recommendations and guidance for operations in a multiple use waterway system combining commercial cargo, commercial passenger, recreational and human powered vessels, including owner operated, rental and charter vessels, one of the busiest locks in the country, operation and maintenance of the greatest number of movable bridges in a city, a popular riverwalk, and architectural tours on passenger vessels.

Commandant, U. S. Coast Guard (2012), *Commandant Instruction 16001.1 Subj: Waterways Management (WWM)*, [https://media.defense.gov/2017/Mar/15/2001717041/-1/-1/0/CI\\_16001\\_1.PDF](https://media.defense.gov/2017/Mar/15/2001717041/-1/-1/0/CI_16001_1.PDF), Washington, D.C.

This Instruction defines Coast Guard Waterways Management (WWM) and serves as the basic architecture for guidance across the broad range of WWM functions. The guide is intended to enhance understanding of the WWM functional world of work and afford field unit personnel with a tool when considering WWM activities.

Cordell, H. Ken, Green, Gary, and Betz, Carter J. (2009), *Long-Term National Trends in Outdoor Recreation Activity Participation—1980 to Now*, <https://srs.fs.usda.gov/trends/pdf-iris/IRISRec12rptfs.pdf>, A Recreation Research Report in the IRIS Series, USDA, US Forest Service.

Includes findings of the National Survey on Recreation and the Environment. Table 1 shows percentages of the U. S. population and number of participants in 33 outdoor recreation activities which could be compared over time (starting in 1982-83).

Cordell, H. Ken; Betz, Carter; Bowker, J. Michael; English, Donald B.K.; Mou, Shela H.; Bergstrom, John C.; Teasley, R. Jeff; Tarrant, Michael A.; Loomis, John (1999), *Projections of Outdoor Recreation Participation to 2050*, <https://www.srs.fs.usda.gov/pubs/20814>, Champaign, Illinois, Sagamore Publishing.

Outdoor Recreation in American Life is the United States' only ongoing, comprehensive assessment of the trends, current situation, and likely future of outdoor recreation demand and supply. New and different aspects of national demand, resemblances to the past, and trends in the supply of outdoor recreation opportunities, both from the private and public sectors, are examined. In addition, short papers from academic topical specialists, as well as from public agencies, recreation user groups, and industry, are included.

Cordell, H. Ken; Betz, Carter; Green, Gary (2008), *Nature-based Outdoor Recreation Trends and Wilderness*, <https://www.srs.fs.usda.gov/pubs/30615>, International Journal of Wilderness, Vol. 14, No. 2.

"...by taking a broad view of this 21st-century society, it appears to us that Americans' interest in and appreciation of nature-based recreation and wildlands is up."

Deep Creek Lake (2004), *Deep Creek Lake Boating and Commercial Use Carrying Capacity Study*, <http://deepcreekscience.com/documents/biblio/00015716.pdf>, Maryland Department of Natural Resources.

The general purpose of this study is to provide the independent carrying capacity assessment. This study was specifically conducted to determine: current/existing recreational boating lake uses; potential/projected future recreational boating uses; optimal recreational boating use carrying capacities, the ability of the lake to accommodate existing and future demands; and management options for controlling growth if boating commercial uses at the lake meet or exceed carrying capacity. In addition to simply quantifying existing and future recreational use, this study also provides information to help address some of the recreational use issues and conflicts that currently exist at Deep Creek Lake.

Delta Protection Commission (2010), *Delta Protection Commission Land Use and Resource Management Plan for the Primary Zone of the Delta*, [http://delta.ca.gov/wp-content/uploads/2019/12/Land-Use-and-Resource-Management-Plan-2.25.10\\_-m508.pdf](http://delta.ca.gov/wp-content/uploads/2019/12/Land-Use-and-Resource-Management-Plan-2.25.10_-m508.pdf), State of California.

The goals of the Plan, as set out in the Act, are to "protect, maintain, and where possible, enhance and restore the overall quality of the Delta environment, including but not limited to agriculture, wildlife habitat, and recreational activities; assure orderly, balanced conservation and development of Delta land resources and improve flood protection by structural and nonstructural means to ensure an increased level of public health and safety.

Department of Ecology (2018), *Draft Report of Vessel Traffic and Vessel Traffic Safety Strait of Juan de Fuca and Puget Sound Area*, [https://app.leg.wa.gov/ReportsToTheLegislature/Home/GetPDF?fileName=1808014\\_08883891-b402-4fc0-9e4d-a2e7d67bfe1f.pdf](https://app.leg.wa.gov/ReportsToTheLegislature/Home/GetPDF?fileName=1808014_08883891-b402-4fc0-9e4d-a2e7d67bfe1f.pdf), State of Washington, Publication 18-08-014.

The Salish Sea is internationally regarded for its ecological, economic, and cultural significance. There has not been a major oil spill in the Salish Sea from collisions or groundings for over 20 years (Van Dorp & Merrick, 2015). This impressive record is a result of a comprehensive safety regime that includes international, federal, and state standards. Other contributing factors include regional collaborative efforts by government, tribes, and stakeholders through forums such as the Puget Sound Harbor Safety Committee (PSHSC), and proactive and voluntary measures taken by industry associations and responsible marine operators.

Department of Homeland Security (2011), *Small Vessel Security Implementation Plan Report to the Public*, [https://www.dhs.gov/sites/default/files/publications/dhs-uscg-small-vessel-security-strategy-report-to-public-012011\\_0.pdf](https://www.dhs.gov/sites/default/files/publications/dhs-uscg-small-vessel-security-strategy-report-to-public-012011_0.pdf), Washington, D.C.

The Strategy's four major goals are: 1. Develop a strong partnership with the small vessel community to enhance maritime domain awareness, that is the effective understanding of anything associated with the maritime domain that could impact our security, safety, economy, or environment; 2. Strengthen maritime security and safety based on a coherent plan with a layered, innovative approach; 3. Exploit technology to enhance our ability to detect, determine the intent of, and, where necessary, interdict small vessels; and, 4. Improve coordination, cooperation, and communications between the public and private sectors, as well as with our international partners.

Department of Homeland Security (2019), *Regulated Navigation Area; Ohio, Monongahela, and Allegheny Rivers, Pittsburgh PA*, <https://www.govinfo.gov/content/pkg/FR-2019-07-01/pdf/2019-13932.pdf>, U.S. Coast Guard, Federal Register/Vol. 84, No. 126/ July 1, 2019/ Proposed Rules; 33 CFR Part 165.823.

The Coast Guard proposed (and later finalized) a regulated navigation area on certain parts of the Ohio, Monongahela, and Allegheny Rivers. This action is necessary to provide for the safety of persons, vessels, and the marine environment on these navigable waters due to the high volume of vessels navigating the area.

Dorval, K. Brian; Riecks, Jeff (2017), *Technical Support Documents: On-Water Recreational Boating Skills Standards for Human-Propelled; Powerboating, Sailing; and Instructional Standards* (multiple documents), <https://www.usnows.org/assess-and-update>, United States Sailing Association, NOWS Program Subject Matter Expert Core Team.

Four Technical Support Documents (TSD) have been developed to assist education providers, course developers, instructors, students, operator evaluators and operators in using the On-Water Recreational Boating Skills Standard for entry-level recreational skills instruction and assessment and for Instruction Approach. The information contained in this document enhances understanding and guides the application of the On-Water Recreational Boating Skills Standards for the design and implementation of instructional programs, courses, and curriculum for entry-level recreational boat operation.

Doshi, Sheela (2006), *Recreational Carrying Capacity in Lakes: How much is too much?*, <https://clp.indiana.edu/doc/fact-sheets/carrying-capacity.pdf>, LaGrange County Lakes Council Inc., Angola, Indiana. Indiana Clean Lakes Program, Factsheet 10-02.

A joint committee was formed in May of 2005 by the LaGrange County Lakes Council (LCLC) and the Steuben County Lakes Council (SCLC) to investigate lake carrying capacity. here is a perception by the members of these two organizations that overuse is degrading the safety and enjoyment of our lake.

Dudley, Marianna (2017), *Muddying the Waters: Recreational Conflict and Rights of Use of British Rivers*, <https://link.springer.com/article/10.1007/s12685-017-0193-2>, Department of Historical Studies, University of Bristol, United Kingdom Water Hist (2017) 9:259–277 DOI 10.1007/s12685-017-0193-2.

Abstract: Rivers have historically been spaces of recreation, in addition to work, trade, and sustenance. Today, multiple groups (anglers, canoeists, rowers, swimmers) vie for the recreational use of rivers in Britain. But, this paper argues, legal definitions of rights of use have not kept up with the growth of recreational river use. Focusing on two groups, anglers and canoeists, it explores the emergence of conflict between recreational users of British rivers in the twentieth century, and subsequent campaigns for universal public rights of navigation on inland waterways. As a result of conflict (real and perceived), small-scale organized groups have re-conceptualized river spaces in ways that reflect a modern engagement with, and understanding of, water through recreation and suggests that small-scale conflicts on British rivers are challenging how we use, govern, and conceptualize river water.

First Light Power Resources, Milone & MacBroom (2014), *Candlewood Lake Overcrowding Plan*, [https://firstlightportal.myadept.com/pdf/Candlewood\\_Lake\\_Overcrowding\\_Plan.pdf](https://firstlightportal.myadept.com/pdf/Candlewood_Lake_Overcrowding_Plan.pdf).

This overcrowding plan is essentially divided into four distinct sections. The first section describes the lake and its current recreational usage as such applies to the issue of overcrowding. The second section identifies and discusses the various user conflicts that arise from overcrowding conditions. The third section identifies and discusses various causes for and issues that create and/or exacerbate overcrowding problems. All three of these sections are intended to discuss appropriate data, issues and problems inherent in littoral or riparian overcrowding both within a general context and then as is applicable to the current situation on Candlewood Lake. The final section identifies recommended courses of action that could either mitigate or prevent overcrowding problems on Candlewood Lake into the future.

Florida Department of Environmental Protection (2020), *Florida Dept. of Environmental Protection Division of Recreation and Parks Recreational Carrying Guidelines*, [https://floridadep.gov/sites/default/files/DEP%20carrying%20capacity%20guidelines%20508\\_0.pdf](https://floridadep.gov/sites/default/files/DEP%20carrying%20capacity%20guidelines%20508_0.pdf), Division of Recreation and Parks.

Includes an example of an optimum carrying capacity for outdoor recreation activities water-based activities (Appendix B).

Florida Fish and Wildlife Conservation Commission (2016), *Anchoring and Mooring Pilot Program Proposed Report of Findings and Recommendations*, <https://www.boatus.com/gov/assets/pdf/fwc-2016-anchoring-and-mooring-report.pdf>, Division of Law Enforcement Boating and Waterways Section.

The Florida Fish and Wildlife Conservation Commission (FWC), in consultation with the Department of Environmental Protection (DEP), was directed by Florida's Legislature in 2009 to establish a pilot program to explore potential options for regulating the anchoring or mooring of vessels (other than live-aboard vessels) outside the marked boundaries of public mooring fields. This Legislative action was codified in Section 327.4105, Florida Statutes (F.S.), and has since become widely referred to as the "Anchoring and Mooring Pilot Program.

Four Township Water Resources Council, Inc. (2005), *Little Long Lake Recreational and Environmental Carrying Capacity Study*, <http://ftwrc.org/publications/littlelonglakerecc.pdf>, Michigan.

For the purposes of this report, recreational carrying capacity refers to the number of boats that can be operated on a lake without compromising safe recreational use, aesthetic enjoyment, and/or environmental quality. Environmental carrying capacity refers to a lake's ability to sustain pollution inputs without degrading water quality. A key element of an environmental carrying capacity evaluation is an analysis of the watershed.

Fouse, Jerry (2009), *Technical Report: Boating Density Analysis - A Comparison Among Tennessee Valley Authority and Other Federal Agency, State Agency, and An Investor-Owned Utility*, [https://corpslakes.erdc.dren.mil/employees/carrycapacity/pdfs/TVA-FINAL\\_Boating\\_Density\\_Analysis\\_2009.pdf](https://corpslakes.erdc.dren.mil/employees/carrycapacity/pdfs/TVA-FINAL_Boating_Density_Analysis_2009.pdf), Tennessee Valley Authority, Office of Environment and Research.

TVA operates the Tennessee River system based on an integrated method that balances recreation with other demands on the system. TVA does not regulate boating. The U.S. Coast Guard and the Valley states have established recreational boating regulations for public waterways located within their borders. The purposes of this report are (1) to compare approaches and findings of recreational boating capacity studies completed by TVA, federal and state agencies, and investor-owned utilities and (2) to describe an inexpensive, quick assessment method for estimating cumulative impacts to recreational boating.

Gona, Deborah - Principal Investigator (2004), *A Guide for Multiple Use Waterway Management Second Edition*, <https://community.nasbla.org/viewdocument/guide-for-multiple-u>, National Water Safety Congress, National Association of State Boating Law Administrators.

A tool for resource managers, planners, regulators, and other waterway stakeholders and professionals who are trying to make sense of an evolving body of information about multiple use waterway issues and conflicts and site-appropriate ways for coming to terms with them. This body of information which grounds the analysis and presentations within the Guide is made up of research reports management plans process summaries, academic and governmental studies, conference and workshop proceedings, meeting minutes, media articles, and, Internet-based sites produced or maintained by public private and non-profit agencies and organizations.



Government Accountability Office (2009), *Maritime Security: Vessel Tracking Systems Provide Key Information, but the Need for Duplicate Data Should Be Reviewed*, <https://www.gao.gov/products/gao-09-337>, Report to the Committee on Homeland Security, House of Representatives.

U.S. ports, waterways, and coastal approaches are part of a system handling more than \$700 billion in merchandise annually. With the many possible threats—including transportation and detonation of weapons of mass destruction, suicide attacks against vessels, and others—in the maritime domain, awareness of such threats could give the Coast Guard advance notice to help detect, deter, interdict, and defeat them and protect the U.S. homeland and economy. GAO was asked to review the Coast Guard's efforts to achieve awareness about activity in the maritime domain. This report addresses: the extent to which the Coast Guard (1) has vessel tracking systems in place, (2) can use these systems to track vessels that may be threats, and (3) has coordinated the development and implementation of these systems. To answer these questions, GAO analyzed relevant statutes, regulations, and plans for vessel tracking systems, compared the roles of the planned systems, and interviewed appropriate officials.

Haas, G.E.; Wells, M.D.; Lovejoy, V.; Welch, D. (2007), *Estimating Future Recreation Demand: A Decision Guide for the Practitioner*, <https://www.usbr.gov/recreation/publications/recreationdemand.pdf>, U.S. Department of the Interior Bureau of Reclamation, Office of Program and Policy Services, Denver Federal Center, Colorado.

The purpose of this Demand Guide is to help practitioners assess recreation demand in their routine administration and planning processes and to help decision makers make better and more defensible decisions. The estimation of recreation demand is a decision based upon sound professional judgment and due consideration of many information sources and factors. As pointed out by Mr. Franklin, many decisions are difficult because of the human tendency to be very selective and narrow at any point in time about what information is considered. The field of decision science has determined that humans need analytical structure and tools to best deal with complex decisions. Thus, this Demand Guide is a question-based tool to help practitioners assemble and analyze important available information. It provides a structured thinking process and a means to be mentally organized. It also provides examples of how to display and record important information so that it is: 1. Effectively considered during decision making 2. Retrievable and useful for future planning and visitor monitoring efforts 3. Included in the administrative record as judicial evidence that the decision was reasonable, logical, reasoned, and trackable.

Holmes, Timothy; Brown, Tommy (2006), *Lake George Recreation Study Plan 2005*, [https://lgpc.ny.gov/system/files/documents/2018/07/lgfinalrecplan\\_0.pdf](https://lgpc.ny.gov/system/files/documents/2018/07/lgfinalrecplan_0.pdf), Human Dimensions Research Unit, Cornell University.

The overall purpose of the project was to collect relevant information, sample user perceptions, and develop a flexible plan to assist the Commission in fulfilling its legislative mission of providing reasonable public access and recreational use of Lake George without congestion, overcrowding, and safety hazards. In addressing those goals, the research team assessed existing recreational use conditions for the lake as a whole and for 67 individual lake zones. The resulting database establishes a benchmark of use levels and activities while providing a framework for monitoring and evaluating changes in use.

Homeland Security Institute (2007), *Report of DHS Small Vessel Security Summit*, [https://www.dhs.gov/xlibrary/assets/small\\_vessel\\_NSVSS\\_Report\\_HQ\\_508.pdf](https://www.dhs.gov/xlibrary/assets/small_vessel_NSVSS_Report_HQ_508.pdf), Publication no. RP07-12-01.

The purpose of the National Small Vessel Security Summit (NSVSS) was to engage private, commercial and government stakeholders in discussions on a range of issues involving the security risks posed by small vessels in the U.S. maritime domain, including those risks involving international arrivals.

Kinzel, Paul J.; Carl J. Legleiter, and Jonathan M. Nelson (2013), *Mapping River Bathymetry with Small Footprint Green LiDAR: Applications and Challenges*, [https://www.brr.cr.usgs.gov/gstl/kinzel\\_papers/Kinzel\\_JAWRA\\_2013.pdf](https://www.brr.cr.usgs.gov/gstl/kinzel_papers/Kinzel_JAWRA_2013.pdf), Journal of the American Water Resources Association (JAWRA) 1-22. DOI: 10.1111 / jawr.12008.

Airborne bathymetric Light Detection and Ranging (LiDAR) systems designed for coastal and marine surveys are increasingly sought after for high-resolution mapping of fluvial systems. To evaluate the potential utility of bathymetric LiDAR for applications of this kind, we compared detailed surveys collected using wading and sonar techniques with measurements from the United States Geological Survey's hybrid topographic / bathymetric Experimental Advanced Airborne Research LiDAR (EAARL).

Kopke, Kathrin; O'Mahony, Cathal; Cummins, Valerie; and, Gault, Jeremy (2006), *Recreation Carrying Capacity Final, Cork Harbor*, <https://www.ucc.ie/research/crc/publications/reports/RecreationCarryingCapacityFinal2.pdf>, Gault Coastal and Marine Resources Centre, ERI, University College Cork, Ireland.

The Coastal Research and Policy Integration (Corepoint - <http://corepoint.ucc.ie>) project aimed to demonstrate the benefits of taking an integrated approach to the management of coastal resources, while highlighting the important role of science in informing policy. In bridging the science-policy gap, Corepoint facilitated closer links between local authorities and research centres through the formation of Expert Couplets. In Cork Harbour the Expert Couplet comprised the Coastal and Marine Resources Centre and the Planning Policy Unit of Cork County Council working in partnership to examine coastal issues.

LaGrange County Lakes Council, Inc. (2006), *Full to Overflowing - A Study of Lake Carrying Capacity*, <http://snowlake.us/publicaffairs.html>, Indiana.

A joint committee was formed in May of 2005 by the LaGrange County Lakes Council (LCLC) and the Steuben County Lakes Council (SCLC) to investigate lake carrying capacity. There is a perception by the members of these two organizations that overuse is degrading the safety and enjoyment of our lakes. The conclusion that the committee reached, based on both the literature sources and its own work, is that the lakes studied exceed their carrying capacity on most, if not all summer weekends.

Lake George Park Commission (2016), *Lake George 2015 Recreation Study Summary Report*, <https://www.lakegeorgeassociation.org/wp-content/uploads/2017/02/2015LakeGeorgeRecreationStudy.pdf>, Lake George, New York.

The purpose of this study is to provide both a snapshot in time and an analysis of current recreational boating and general use trends on Lake George over the past decade to provide a better understanding of the Lake and its use. It will also help inform and guide future decisions. This document is intended to be a resource for the casual reader interested in recreation on the lake, and also as a guiding document and tool for both short and long-term planning.

Lake Ripley Management District (2003), *Lake Ripley Watercraft Census & Recreational Carrying Capacity Analysis*, <https://lakeripley.org/wp-content/uploads/2021/01/Lake-Ripley-Watercraft-Census-Recreational-Carrying-Capacity-Analysis-2003.pdf>, Cambridge, Wisconsin.

The purpose of this study is to 1) quantify lake usage during the 2003 boating season, 2) develop a formula for estimating recreational carrying capacity under varying user conditions, and 3) evaluate Lake Ripley's carrying capacity status with respect to existing lake-use data.

Leonard, Eddie; Fletcher, Jim; Swett, Robert; Sidman, Charles (2008), *Comprehensive Maritime Management Master Plan for Brevard County, Florida*, <https://community.nasbla.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=837b5400-d8d7-fa00-c3d7-bdbec3e25f29>, University of Florida and Florida Sea Grant.

Details the process and lists goals, objectives, and tasks for the Brevard County Maritime Master Plan.

Long Island Sound Inventory and Science Subcommittee of the Blue Plan Advisory Committee (2020) *Long Island Sound Resource and Use Inventory*, <https://portal.ct.gov/DEEP/Coastal-Resources/LIS-Resource-and-Use-Inventory-Home>, University of Connecticut, Groton, Avery Point.

In May of 2015, the CT legislature passed Public Act 15-66, the "Blue Plan" legislation - launching an official marine spatial planning process for Long Island Sound. Under existing authorities, the Blue Plan seeks to create a comprehensive, coordinated and proactive approach to help protect traditional uses, natural resources, and environmental quality relative to potential new uses that may or may not be compatible. The Long Island Sound Resource and Use Inventory aims to present objective and stakeholder/expert reviewed information summarized to the extent possible through a series of maps, along with a narrative, and a historical and socio-economic context, to "tell a story" about a given sector.

Mariani, Eleanor (2012), *Boating Carrying Capacity Determination and Justification*, <https://community.nasbla.org/viewdocument/boating-carry-capacity?LibraryFolderKey=5feb7136-7569-4943-9a51-9c09f2ec3084&DefaultView=folder>, National Association of State Boating Law Administrators.

A method is proposed which focuses on scientific and physical factors and does not entertain the subjectivity of personal prejudices, sentiments or preferences. This formula can be applied to all lakes, ponds or rivers in the state and uses the water-body size and current regulations in conjunction with accepted standards of speed, distance and safe spacing between vessels.

Martin County, Florida (2013), *68D-24.143 Martin County Boating Restricted Areas*, <https://www.flrules.org/gateway/ruleno.asp?id=68D-24.143>, Florida Department of State.

The link opens the Florida Administrative Code and Florida Administrative Register showing the history of this rule from Jan. 6, 2006 to date.

National Association of State Boating Law Administrators (2009), *Best Management Practices (BMP) for Abandoned Boats*, <https://marinedebris.noaa.gov/adv-document/best-management-practices-abandoned-boats>, Governmental Affairs and Administration Committee, Waterways Management Subcommittee.

The focus of this report is to recommend best management practices applicable to the steps commonly taken by states to resolve the issues of abandoned or derelict vessels. These elements include: 1) Determination of abandonment/derelict vessel, 2) Determination of ownership, 3) Notification phase, 4) Waiting period, 5) Notice of intent to sell or notice of waiver of rights, 6) Sale or disposition, and 7) Transfer of ownership and re-registration, if warranted.

National Association of State Boating Law Administrators (2017), *ANSI/NASBLA 101-2017: Basic Boating Knowledge – Human Propelled*, <https://community.nasbla.org/viewdocument/ansinasbla-101-2017-basic-boating>, National Boating Education Standards Panel.

Scope: This Standard applies to basic sailing knowledge education and proficiency assessment in the United States, U.S. territories, and the District of Columbia. B) Purpose: This document establishes the national standard for basic recreational sailing knowledge with a primary focus on safety and mitigation of risks associated with recreational sail boating. C) Description: This Standard contains the basic knowledge elements that a beginner (entry-level) operator should have in order to safely operate a small sailboat of less than 26 feet in length by day in light to moderate winds (up to 12 knots) and sea conditions. Auxiliary power knowledge is not included. On-water skills elements are not included.

National Association of State Boating Law Administrators (2016), *ANSI/NASBLA 103-2016: Basic Boating Knowledge – Power*, <https://community.nasbla.org/viewdocument/ansinasbla-103-2016-basic-boating>, National Boating Education Standards Panel.

Scope: This is the minimum required standard that applies to all basic boating courses in the U.S. states and territories and District of Columbia. Purpose: To establish the national standard for use by course providers to meet the needs of recreational boaters for basic boating knowledge in order to identify and reduce primary risk factors and mitigate their effects on recreational boating.

National Association of State Boating Law Administrators (2018), *ANSI/NASBLA 103.1-2018: Supplement - Basic Boating Knowledge – Water-Jet Propelled Boats*, <https://community.nasbla.org/viewdocument/ansinasbla-1031-2018-supplement>, National Boating Education Standards Panel.

Scope: This supplement applies to basic boating knowledge education and proficiency assessment in the United States, U.S. Territories, and the District of Columbia. Purpose: This document provides optional, supplementary content for ANSI/NASBLA 103-2016: Basic Boating Knowledge – Power to address basic recreational Water-Jet Propelled knowledge with a primary focus on safety and mitigation of risks associated with recreational boating. It contains basic knowledge elements that a beginner (entry-level) operator should have in order to safely operate a water-jet propelled watercraft. This supplement focuses on operational characteristics of two principle water-jet propelled vessels currently available to the recreational boating public; Personal Watercraft (PWC) and Jet Boats. Water Jet-Pack types of vessels such as Jet-Lev, Fly-Boards and Hover Boards are not addressed in this education standard.

National Association of State Boating Law Administrators (2018) *Technical Report – Basic Boating Knowledge – Human-Propelled ESP TR 101-2018*, <https://community.nasbla.org/viewdocument/esp-tr-101-2018-technical-report>, National Boating Education Standards Panel.

This Technical Report advances use and common understanding of the American National Standards for Basic Boating Knowledge. This Technical Report supports the American National Standard (ANS) entitled ANSI/NASBLA 101-2017: Basic Boating Knowledge – Human Propelled (hereafter called the “Standard”), which was formulated through voluntary consensus of representatives of federal and state government, industry, non-profit organizations, and public sectors. The purpose of this Technical Report is to provide information that helps design and implement successful recreational powerboating education and training programs.

National Association of State Boating Law Administrators (2018), *Technical Report – Basic Boating Knowledge - Power ESP TR 103-2018*, <https://community.nasbla.org/viewdocument/technical-report-basic-boating-k>, National Boating Education Standards Panel.

This Technical Report was developed by the National Boating Education Standards Panel. Its contents were developed to advance use and common understanding of the American National Standards for Basic Boating Knowledge. This Technical Report supports the American National Standard (ANS) entitled ANSI/NASBLA 103-2016: Basic Boating Knowledge – Power, which was formulated through voluntary consensus of representatives of federal and state government, industry, non-profit organizations, and public sectors. The purpose of this Technical Report is to provide information that helps design and implement successful recreational powerboating education and training programs.

National Association of State Boating Law Administrators (2020), *Best Management Practices (BMPs) for Abandoned Boats*, [https://marinedebris.noaa.gov/sites/default/files/publications-files/Best%20Management%20Practices%20for%20Abandoned%20Boats\\_NASBLA\\_2009.pdf](https://marinedebris.noaa.gov/sites/default/files/publications-files/Best%20Management%20Practices%20for%20Abandoned%20Boats_NASBLA_2009.pdf), Governmental Affairs and Administration Committee, Waterways Management Subcommittee.

Abandoned recreational vessels are unsightly and pose potential threats to navigation and the environment (i.e., sources of pollution and illegal dump sites). Additionally, they are often difficult and expensive to remove. Such vessels are a growing national problem. The Waterways Management Subcommittee, of the National Association of State Boating Law Administrator's Governmental Affairs and Administration Committee, was charged with writing a report containing recommendations for best management practices (BMPs) on issues surrounding salvage insurance and the effects of abandoned vessels on the states.

National Oceanic and Atmospheric Administration (2014), *Cordell Bank National Marine Sanctuary Final Management Plan - Updated in Response to the Sanctuary Expansion*, [https://nmscordellbank.blob.core.windows.net/cordellbank-prod/media/archive/management/cbnms\\_fmp\\_december\\_2014.pdf](https://nmscordellbank.blob.core.windows.net/cordellbank-prod/media/archive/management/cbnms_fmp_december_2014.pdf), National Ocean Service Office of National Marine Sanctuaries.

A sanctuary management review is conducted at a sanctuary periodically, in accordance with the National Marine Sanctuaries Act (NMSA; 16 U.S.C. 1431 et seq.). The updated plan applies to the entire area encompassed by the sanctuary. The issue areas and programs addressed in this document were built with guidance from the general public, sanctuary staff, agency representatives, experts in the field and the sanctuary advisory council.

National Oceanic and Atmospheric Administration (2014), *Gulf of the Farallones National Marine Sanctuary Final Management Plan*, [https://nmsfarallones.blob.core.windows.net/farallones-prod/media/archive/manage/pdf/expansion/GFNMS\\_FMP\\_12\\_04\\_14.pdf](https://nmsfarallones.blob.core.windows.net/farallones-prod/media/archive/manage/pdf/expansion/GFNMS_FMP_12_04_14.pdf), National Ocean Service Office of National Marine Sanctuaries.

The Gulf of the Farallones National Marine Sanctuary (GFNMS) Management Plan has been updated in response to the sanctuary expansion. A sanctuary management review is conducted at a sanctuary periodically, in accordance with the National Marine Sanctuaries Act (NMSA; 16 U.S.C. 1431 et seq.). The updated plan applies to the entire area encompassed by the sanctuary. The issue areas and programs addressed in this document were built with guidance from the general public, sanctuary staff, agency representatives, experts in the field and the sanctuary advisory council.

National Oceanic and Atmospheric Administration (2020), *Airborne Light Detection and Ranging (LiDaR) Shining a Light on Ocean and Coastal Mapping*, <http://ccom.unh.edu/theme/lidar>, Center for Coastal & Ocean Mapping, NOAA-UNH Joint Hydrographic Center.

Airborne light detection and ranging (LiDaR) is a remote sensing technology that is proving increasingly beneficial in a variety of ocean and coastal mapping applications. Includes a link to a printable factsheet.

National Oceanic and Atmospheric Administration (2020), *Coastal Change Analysis: Monitoring Changes in the Nation's Coast*, <https://coast.noaa.gov/data/digitalcoast/pdf/ccap-faq-regional.pdf>, Coastal Services Center.

An overview of C-Cap monitoring coastal changes on a 5-year repeat cycle.

National Oceanic and Atmospheric Administration (2020), *Find Nautical Charts, Chart Locator* <https://nauticalcharts.noaa.gov/>, Office of Coast Survey.

Provides access to certified Charts and general use charts for free download. Also Chart Viewers, and other publications including US Chart 1 (symbols, abbreviations, and terms).

National Research Council (2005), *Highlights of the National Academies Reports on Managing The Nation's Largest Lock and Dam System*, [https://www.nap.edu/resource/11444/upper\\_mississippi\\_final.pdf](https://www.nap.edu/resource/11444/upper_mississippi_final.pdf).

A general overview of the planning process. Includes a summary of waterway congestion and system management. In its navigation feasibility study, the Corps attempted to gauge future levels of U.S. grain exports and demands on the waterway. Within its study, the Corps devoted considerable resources to developing and applying economic models to help forecast future demands on the waterway and to evaluate the benefits of constructing larger lock facilities.



National Transportation Safety Board Safety (2017), *Shared Waterways: Safety of Recreational and Commercial Vessels in the Marine Transportation System*,

<https://www.nts.gov/investigations/AccidentReports/Reports/MSR1701.pdf>, Recommendation Report 18NTSB/MSR-17/01.

Findings: 1. Harbor safety committees can substantively improve safety between commercial and recreational vessels if risks are regularly identified, practices are developed and implemented to mitigate these risks, and these practices are shared with stakeholders and other harbor safety committees. 2. All recreational vessel operators need to attain a minimum level of boating safety education to mitigate the various risks associated with the type of vessel being operated. 3. The Coast Guard should renew its efforts to seek legislative authority to require recreational boaters on waters subject to the jurisdiction of the United States to obtain education that meets National Association of State Boating Law Administrators or equivalent standards. 4. A Guide to Multiple Use Waterway Management should be reviewed and updated at regular intervals.

National Water Safety Congress (1996), *A Guide for Multiple Use Waterway Management*,  
<https://community.nasbla.org/viewdocument/a-guide-for-multiple-use-waterway-m>.

Produced by the National Water Safety Congress in 1996, this Guide serves as a useful tool for multiple use waterway planning and management at all levels. It stresses the importance of comprehensive and systemic waterway research and analysis and it presents a basic waterway management planning process for easy use or modification based upon your situation. In addition, the Guide provides an introduction to the many waterway management techniques and offers helpful guidelines for consideration when preparing effective, balanced multiple use waterway management plans.

National Waterways Foundation (2017), *A Modal Comparison of Domestic Freight Transportation Effects on the General Public: 2001–2014*, <http://nationalwaterwaysfoundation.org/documents/Final%20TTI%20Report%202001-2014%20Approved.pdf>, Center for Ports and Waterways, Texas.

Topical areas covered in this research: Cargo capacity, Congestion, Emissions, Energy efficiency, Safety impacts, and Infrastructure impacts. The analysis is predicated on the assumption that cargo will be diverted to rail or highway (truck) modes in the event of a major waterway closure. The analysis considered the possible impacts resulting from either a diversion of 100% of the current waterborne cargo to the highway mode or a diversion of 100% of the current waterborne cargo to the rail mode.

National Waterways Foundation (2020), *A Strong Inland Waterways System Delivers a Stronger American Economy – Brochure*,

[http://www.nationalwaterwaysfoundation.org/documents/NWF\\_169416\\_OverviewBro\\_Final\\_lowres.pdf%20for%20web.pdf](http://www.nationalwaterwaysfoundation.org/documents/NWF_169416_OverviewBro_Final_lowres.pdf%20for%20web.pdf).

Illustrates the overall comparison of water transportation to land transport in moving goods.

National Wild and Scenic Rivers System (2018), *Steps to Address User Capacities for Wild and Scenic Rivers, A Technical Paper of the Interagency Wild and Scenic Rivers Coordinating Council*,

<https://www.rivers.gov/documents/user-capacities.pdf>, - Multiple Agencies.

This paper addresses user capacity determinations for public use consistent with applicable law. "Public use" is defined here to mean visitor use and Wild and Scenic Rivers (WSR)-specific administrative use within the WSR corridor. Activities on non-federal lands inside a WSR corridor and activities on federal and non-federal lands adjacent to a WSR corridor are considered in assessing baseline and current conditions to the extent these activities could inform decisions on user capacities.

New South Wales (2017), *Maritime Safety Plan 2017-2021 - "Towards Zero"*,

<https://future.transport.nsw.gov.au/sites/default/files/media/documents/2018/TNSW8277-Maritime-Safety-Plan-ACC-MARCH2018.pdf>, New South Wales Government, Australia.

The Maritime Safety Plan forms a key part of this important Government objective. While NSW has made significant progress in reducing drowning fatalities on boats, more needs to be done on issues such as lifejackets, alcohol and helping people make informed decisions about weather conditions. Greater focus is now also on non-drowning fatalities - which sadly we are still seeing no reduction in and the associated issues of speed, keeping a proper lookout and judgement. Finally, this plan sets out a comprehensive list of initiatives which aim to reduce fatalities and serious injuries by 30 per cent and lay the foundation for the drive towards the long term target of zero fatalities on the water.

Newburgh City Council (2017), *A Harbor Management Plan for the City of Newburgh, New York*, <https://www.cityofnewburgh-ny.gov/383/LWRP-Harbor-Management-Plan>, New York State Department of State, BFJ Planning.

Why is a harbor management plan important to Newburgh? The plan will strengthen the City's ability to set and advance its own vision for the future of its waterfront and navigable waters on the Hudson River, in coordination with state and federal agencies. The purpose of the harbor management plan is to guide the beneficial use and conservation of the City's water and waterfront resources and to help ensure that those resources are sustained for the benefit of future generations.

Ohio Department of Natural Resources (2004), *Ohio Department of Natural Resources Boating on Ohio Waterways Plan*, <https://community.nasbla.org/viewdocument/ohio-department-of-natural-resource?LibraryFolderKey=5feb7136-7569-4943-9a51-9c09f2ec3084&DefaultView=folder>, Division of Watercraft.

This is a report of boating opportunities in Ohio along with public input on wants and needs. Includes this summary regarding user conflict: *Conflicts on waterways will continue to challenge recreation providers and users in the future. However, increased boater education, enforcement and facility upgrades should assist in alleviating the circumstances that lead to conflicts.*

O'Keefe, Thomas; Sector, Jordan (2019), *River Access Planning Guide: A Decision Making Framework for Enhancing River Access*, [https://www.river-management.org/assets/RiverAccessGuide/02212020%20Layout\\_RAPG\\_FINAL\\_\\_PRINT\\_v21.1.pdf](https://www.river-management.org/assets/RiverAccessGuide/02212020%20Layout_RAPG_FINAL__PRINT_v21.1.pdf), National Park Service, Bureau of Land Management, American Whitewater, and River Management Society.

River Access Planning Guide provides a step-by-step process for planning for river access with recreation users in mind. The planning guide intends to serve as a resource for planners, river managers, and users as they approach site selection and design to establish new river access or improve existing access. The thoughtful planning and design supported by the planning guide will support and benefit public resource agencies, river managers, and private entities responsible for providing waterway access.

Olvany, Kevin; Pitchford, Jonathan (2010), *Final Canandaigua Lake Peak Use Boat Inventory and Carrying Capacity Analysis* (see Boat Use Study), <https://www.canandaigualake.org/publications>, Canandaigua Lake Watershed Council, New York.

This report is intended as a planning tool and guide as part of a comprehensive analysis of the lakeshore regulations of six shoreline municipalities and the Uniform Docks and Moorings Law. The report should also be used as a resource for reviewing agencies when analyzing the impacts of specific projects that provide boat access to the lake. Four different methodologies from the carrying capacity literature were used to determine peak boat use carrying capacity for Canandaigua Lake. Understanding the carrying capacity of Canandaigua Lake is critical to determining if the existing rules and regulations are meeting the intended purpose of the law.

Outdoor Foundation (2019), *2019 Special Report on Paddlesports and Safety*, [https://cdn.ymaws.com/www.americancanoe.org/resource/resmgr/sei-educational\\_resources/2019\\_Special\\_Report\\_on\\_Paddl.pdf](https://cdn.ymaws.com/www.americancanoe.org/resource/resmgr/sei-educational_resources/2019_Special_Report_on_Paddl.pdf), In partnership with ACA and National Association of State Boating Law Administrators.

In 2018, 22.9 million Americans, or 7.6% of the U.S. population, took to rivers, streams, lakes, and oceans to participate in at least one paddling activity. This participation rate is a slight decrease from 7.7% in 2017 and 7.8% in 2016. In terms of specific paddlesports, recreational kayaking continues to grow in popularity and seems to be replacing many Americans' desires to canoe. Stand up paddling, on the other hand, doesn't have nearly as high a participation rate as either canoeing or recreational kayaking, but its popularity has soared in recent years, gaining 1.5 million participants since 2013.

Outdoor Foundation, (2020), *2019 Outdoor Recreation Participation Report*, <https://outdoorindustry.org/resource/2019-outdoor-participation-report/>, Boulder, Colorado.

About half the U.S. population participated in outdoor recreation at least once in 2018, including hunting, hiking, camping, fishing, canoeing among many more outdoor activities. Unfortunately, the report highlights an alarming trend that just under half the U.S. population does not participate in outdoor recreation at all. Highlights include: Less than 20% of Americans recreated outside at least once a week. Americans went on one billion fewer outdoor outings in 2018 than they did in 2008. Of the people who report they go outside; 63% report they go outside within 10 miles of their home. Kids went on 15% fewer annual outings in 2018 than they did in 2012.

Outdoor Foundation (2020), *2021 Outdoor Recreation Participation Report*, <https://outdoorindustry.org/resource/2021-outdoor-participation-trends-report/>, Boulder, Colorado.

In 2020 the world witnessed incredible upheaval, and Americans across the country took to the outdoors in search of respite from COVID-19. The 2021 Outdoor Participation Trends Report reveals that in 2020, 53% of Americans ages 6 and over participated in outdoor recreation at least once, the highest participation rate on record. Remarkably, 7.1 million more Americans participated in outdoor recreation in 2020 than in the year prior. Nearly half of the U.S. population did not share in the proven, positive health outcomes of the outdoors.

Puget Sound Harbor Safety Committee (2017), *Puget Sound Harbor Safety Plan Updated*, <https://static1.squarespace.com/static/59356b2ce3df280bc208d8b6/t/59716784a803bb33436924a5/1500604300015/Harbor+Safety+Plan+June+2017+%28color+final%29.pdf>, Puget Sound Harbor Safety Committee, State of Washington.

With its regular meetings and broad stakeholder group participation, the PSHSC offers an agile and vibrant forum to lead the stakeholder community in identifying and resolving conflicts or concerns, existing and potential, in the commercial and recreational use of Puget Sound. The PSHSC should be viewed as the agent of choice by government, industry and environmentalists to present and respond to user conflicts, desired new environmental practices, new safety initiatives, and natural resource conflicts or changes.

Sargent, Bill; Swett, Robert; Brown, Ernie; Sidman, Charles; Fletcher, Jim; and Fik, Tim (2007), *A Recreational Boating Characterization of Brevard County*, <https://ufdc.ufl.edu/IR00004291/00001>, Florida Sea Grant College Program.

This report documents the methods, procedures, and results of a map-based mail survey that was distributed in three waves to 11,916 Brevard County, Florida boaters (some participating boaters received up to three questionnaires over the year-long study period) to obtain seasonal information about their boating preferences, use profiles, and travel patterns. Boaters were categorized according to the type of facility that they used to access the waterway: marina wet slip, marina dry storage, public ramp, and private dock.

Sidman, Charles; Swett, Robert; Fik, Tim; Fann, Susan; Sargent, Bill (2006), *A Recreational Boating Characterization of Sarasota County*, <https://www.flseagrant.org/wp-content/uploads/flsgps06001.pdf>, Sea Grant, University of Florida.

This report documents the methods and procedures implemented, during February through December 2005, to survey and characterize boaters who recreate on waterways within and around Sarasota County, on the basis of trip departure category (marina wet slip, marina dry storage, public ramp, and private dock). Vessel and boat trailer registration numbers collected at marinas and boat ramps within Sarasota County were used to obtain names and mailing addresses from the state's Vessel Title Registration System (VTRS) for marina and ramp samples. Names and mailing addresses for waterfront parcel owners obtained from Sarasota County tax records were compared to the VTRS to identify the dock sample (waterfront parcel owners that also own a boat). A map-based questionnaire was mailed to a sample of 4,650 area boaters. This information is intended to assist Sarasota County with prioritizing and improving waterway access and maintenance, optimizing boat facility siting, and targeting available resources to those issues of greatest concern to the boating community.

Sowman, M.R. (1987), *A Procedure for Assessing Recreational Carry Capacity of Coastal Resort Areas*, [https://www.researchgate.net/publication/248535416\\_A\\_procedure\\_for\\_assessing\\_recreational\\_carrying\\_capacity\\_of\\_coastal\\_resort\\_areas](https://www.researchgate.net/publication/248535416_A_procedure_for_assessing_recreational_carrying_capacity_of_coastal_resort_areas), Landscape Urban Planning 14. Pgs. 331-344.

Increased recreational pressure in coastal areas adjacent to resort towns has in many areas resulted in degradation of the resource and a reduction in the quality of the recreation experience. It is therefore imperative that recreation planners and decision-makers determine the appropriate level of recreational use that can be sustained by the coastal resources of an area before approving applications to extend resort towns and expand recreational facilities. In this paper, a systematic procedure for assessing recreational carrying capacity of coastal resort areas is described. The concept of recreational carrying capacity as used in the assessment procedure is defined and problems associated with its interpretation and practical application in planning and decision-making are discussed. The procedure proposes a series of linked activities comprising nine consecutive stages and relies on data obtained at previous stages to advance to succeeding stages. The procedure seeks to acquire pertinent information, ascertain current recreational pressure, project resource demands, and assess the physical, ecological and social carrying capacity of the area for major recreational activities. Constraints associated with the development proposal are identified and finally the appropriate level of recreational use for the area is determined.

State of California (2008), *Delta Vision Strategic Plan*, [http://www.deltavisionfoundation.org/wp-content/uploads/2013/06/Delta\\_Vision\\_Final.pdf](http://www.deltavisionfoundation.org/wp-content/uploads/2013/06/Delta_Vision_Final.pdf), Governor's Delta Vision Blue Ribbon Task Force.

The Blue Ribbon Task Force response to Executive Order S-17-06 to “develop a durable vision for sustainable management of the Delta” with the goal of “...managing the Delta over the long term to restore and maintain identified functions and values that are determined to be important to the environmental quality of the Delta and the economic and social well-being of the people of the state.”

State of Connecticut (2009), *Candlewood Lake Boater Survey*, <https://community.nasbla.org/viewdocument/candlewood-lake-boater-survey>, Department of Environmental Protection.

In July of 2009, the Connecticut General Assembly passed Special Act 09-12, requiring the Department of Environmental Protection (DEP) to make recommendations concerning the maximum boat length and motor size permitted on Candlewood Lake. The DEP reviewed existing data regarding lake use and conducted additional research to aid in making a policy suggestion.

State of New Hampshire (2020), *Final Report of the Commission to Study Wake Boats*, <http://gencourt.state.nh.us/statstudcomm/committees/1434/reports/Commission%20to%20Study%20Wake%20Boats%20-%20Final%20Report.pdf>, New Hampshire Study Commission.

According to the 2019 US Bureau of Economic Analysis on Outdoor Recreation report, New Hampshire is in the top 10 ten states in the country where the outdoor recreation economy represents a significant percentage of the state's gross domestic product (GDP). The popularity of recreational boating by the people of New Hampshire and visitors alike has led to increased use of NH's lakes and rivers. Recreational boating includes both crafts that are motorized (fishing/pontoon/wake boats/personal watercraft) and nonmotorized (kayaks/canoes/paddleboards/sailboats). The recent increased interest in wakeboarding, wakesurfing, and other water sports employing the use of “wake,” tow” or “ballast boats” has given rise to concerns by many users of New Hampshire's waters. As a result, the Legislature created our study commission.

State of Washington (2020), *WA Derelict Vessel Removal Program*, <https://www.dnr.wa.gov/programs-and-services/aquatics/derelict-vessels/legal-authorities-and-how-program-works>.

WA state Derelict Vessel Removal Program website.

State of Washington (2020), *WA Vessel Turn-In Program*, <https://www.dnr.wa.gov/programs-and-services/aquatics/derelict-vessels/vessel-turn-program>.

Washington State's Vessel Turn-In program website for boats less than 45-feet in length in poor condition or which no longer function.

Tarrant, Michael A.; English, Donald B. K. (1996), *A Crowding-based Model of Social Carrying Capacity: Applications for Whitewater Boating Use*, <https://www.srs.fs.usda.gov/trends/pdf/nantahalappr.pdf>, USDA Forest Service; National Recreation and Park Association.

Following the Limits of Acceptable Change planning framework, we apply crowding standards proposed by Shelby, Heberlein and Vaske (1989) to develop a crowding-based model of social carrying capacity. Fourteen hundred and seventy boaters (347 commercial guided, 873 commercial non-guided, 28 private rafters, and 222 private canoers/kayakers) on the Nantahala River in North Carolina completed an on-site survey immediately following their white-water trip in the summer of 1994. There were four types of predictor variables: total daily use levels, water release level, time of day, and day of the week. The dependent variable was perceived crowding. Using an ordered logit model, all coefficients were significant at  $p < .05$ . Regression results were then applied to aggregate values to determine carrying capacities for three different crowding standards. Opportunities for applying and expanding the model to other settings and implications for management are discussed.

Titre, John; Gilbert, Joseph, et al. (2010), *Recreational Boating Use Study, Table Rock Lake, Missouri*, <https://www.swl.usace.army.mil/Portals/50/docs/tablerockmasterplanupdate/Boating%20Use%20Study%20Narrative.pdf?ver=2016-07-20-164307-103>, U.S. Army Corps of Engineers, W9127S-07-D-0017 Task Order 02.

The purpose of the study was to assess boaters' perceptions and preferences for various managerial, social, and physical resource conditions on the lake. More specifically, the study focus was to determine boater capacity, density, crowding, and public safety on the lake. In addition, it involved identifying the boaters' most important issues.



U.S. Army Corps of Engineers (2020), *Columbia River System Operations Environmental Impact Statement*, <https://www.bpa.gov/efw/Analysis/NEPADocuments/Pages/Columbia-River-System-Operations-Project.aspx>, Bureau of Reclamation, Bonneville Power Administration.

The U.S. Army Corps of Engineers, Bureau of Reclamation, and Bonneville Power Administration as co-lead agencies, have developed the Columbia River System Operations Environmental Impact Statement in accordance with the National Environmental Policy Act (NEPA). The co-lead agencies prepared this EIS in response to the need to review and update operations, maintenance, and configuration of the 14 CRS multiple purpose dams and related facilities ("projects"). This executive summary provides an overview of the EIS, which is a much larger document that contains highly detailed analyses and results.

U.S. Coast Guard (2021), *Carrying Passengers on Your Boat...Legally?*, [http://wow.uscgaux.info/Uploads\\_wowII/P-DEPT/PaxForHire\\_GuideChart.pdf](http://wow.uscgaux.info/Uploads_wowII/P-DEPT/PaxForHire_GuideChart.pdf).

Federal law requires passenger for hire service operating on U.S. navigable waters to comply with minimum federal safety and personnel licensing laws and regulations.

U.S. Coast Guard (2011), *Proceedings Magazine - Waterways Management Issue*, [https://www.dco.uscg.mil/Portals/9/DCO%20Documents/Proceedings%20Magazine/Archive/2011/Vol68\\_No1\\_Sp2011.pdf?ver=2017-05-31-120645-040](https://www.dco.uscg.mil/Portals/9/DCO%20Documents/Proceedings%20Magazine/Archive/2011/Vol68_No1_Sp2011.pdf?ver=2017-05-31-120645-040), Proceedings Magazine, Vol. 68, No1. Spring 2011.

Covers various topics of interest in Waterway Management including "Improving the Marine Event Permit Program"; "Abandoned and Derelict Vessel Removal"; and, "San Francisco Bay Region's Harbor Safety Committee."

U.S. Coast Guard (2019), *Navigation and Vessel Inspection Circular No. 09-02, Change 5 Subj: Guidelines for the Area Maritime Security Committees and Area Maritime Security Plan Required for U.S. Ports*, [https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2002/09-02\\_Ch5.pdf](https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2002/09-02_Ch5.pdf).

The purpose of this Circular is to: (a) provide guidance to field commanders, the maritime community and Area Maritime Security Committee members on the development and maintenance of Area Maritime Security Assessments and Area Maritime Security Plans; (b) provide guidance on the responsibilities of the Captain of the Port acting as the Federal Maritime Security Coordinator; (c) provide a common template for Maritime Security Plans; (d) address port security issues that are the shared responsibility of the port stakeholders and Area Maritime Security Committees, and; (e) promote the unity of effort among all stakeholders with maritime security interests at the port level.

U.S. Coast Guard, Waterways Management Directorate (2006), *Harbor Safety Committee Desk Reference*, <http://docplayer.net/12497859-Harbor-safety-committee-desk-reference.html>, Washington, D.C.

The purpose of the HSC Desk Reference is to provide a directory of local coordinating committees, Harbor Safety Committees (HSCs), and other parties responsible for the efficient, safe, and secure operation of America's ports and waterways. This desk reference will serve as a resource tool for distributing information such as policy statements, surveys, reports, and guidelines developed at the national, regional, and local levels.

U.S. Coast Guard (2020), *National Recreational Boating Safety Survey Exposure Report*, <https://uscgboating.org/statistics/national-recreational-boating-safety-survey.php>, Office of Boating Safety, Washington, D.C.

The Exposure Survey Purpose was to collect data needed to estimate different measures of exposure for different types of boats in all states and the District of Columbia. The Exposure Survey collected data on a monthly basis during 2018. The principle intent of this survey was to collect valid data necessary to produce reliable measures of recreational boating exposure hours.

U.S. Department of Agriculture (2019), *Importance of Inland Waterways to U.S. Agriculture - Analyzing Three Investment Scenarios*, <https://www.ams.usda.gov/sites/default/files/media/ImportanceofInlandWaterwaystoUSAGricultureFullReport.pdf>, Agricultural Marketing Service.

A study on the importance of the inland waterways to U.S. agriculture and requirements for maintaining the competitive position of U.S. agriculture in world markets.

U.S. Department of the Interior (2004), *Water Recreation Opportunity Spectrum*, [https://www.webpages.uidaho.edu/css386/Readings/WROS\\_Users\\_Guidebook.pdf](https://www.webpages.uidaho.edu/css386/Readings/WROS_Users_Guidebook.pdf), Bureau of Reclamation.

Water recreation management involves a thorough understanding of the water resource and its capability, current and future visitors, the type of experiences sought, regional recreation demand and supply, resource management planning, economic and non-economic valuation, visitor capacity, and other dimensions. The Water Recreation Opportunity Spectrum (WROS) is a tool that planners and managers can use to make better decisions. It is modeled after the Recreation Opportunity Spectrum (ROS) system, yet tailored to water resources such as reservoirs, lakes, rivers, bays, estuaries, wetlands, coastal zones, and marine protected areas.

U.S. Department of the Interior (2009), *Cape Wind Energy Project Final Environmental Impact Statement*, <https://www.boem.gov/renewable-energy/studies/cape-wind-final-environmental-impact-statement-feis>, Minerals Management Service.

This environmental impact statement presents the characteristics of the environment in the project area and analyzes the effects of the construction, operation and maintenance, and decommissioning of the Cape Wind Energy Project, consistent with the requirements of the Outer Continental Shelf (OCS) Lands Act, (67 Stat. 462, as amended, 43 U.S.C §1331 et seq.) and in accordance with the National Environmental Policy Act of 1969. The proposed action is a wind energy facility with a maximum electric output of 468 megawatts (MW) in the Nantucket Sound off the coast of Massachusetts that can interconnect with and deliver electricity to the New England Power Pool. In addition to the proposed action, six alternatives were evaluated in detail, including the no action alternative.

U.S. Department of Transportation (1983), *Guide to Managing Recreational Boating Areas*, <https://community.nasbla.org/viewdocument/guide-to-managing-recreational-boat?LibraryFolderKey=5feb7136-7569-4943-9a51-9c09f2ec3084&DefaultView=folder>, USCG Office of Boating, Public, and Consumer Affairs, Final Report no CG-D-21-83.

This guide is intended to be used by anyone managing a recreational boating area, especially those persons working at the state and local level. Traffic patterns, time zoning, activity zoning, warning/information systems, and access limitation are discussed and illustrated. Guidelines for developing a management plan are presented and discussed. The steps for implementing a management plan are also presented and discussed.

U.S. Forest Service (2017), *National Recreation Opportunity Spectrum (ROS) Inventory Mapping Protocol*, [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd628501.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd628501.pdf), U.S. Department of Agriculture, Washington, D.C.

This National inventory protocol identifies mapping criteria and provides repeatable instructions to inventory, map, and classify existing Recreation Opportunity Spectrum (ROS) settings based on forest recreation opportunities and off-forest influences (e.g. motorized routes of other jurisdiction). The product is an existing condition inventory of ROS settings, mapped inconsistencies with those settings, and mapped unique or special opportunities.

U.S. Government (1993), *Passenger Vessel Safety Act*, <https://www.congress.gov/bill/103rd-congress/house-bill/1159/text>.

Passenger Vessel Safety Act of 1993 - Amends federal marine safety law to revise certain definitions regarding passengers, passenger vessels, and certain other types of vessels (including offshore supply, sailing school, and submersible vessels).

U.S. Government (1979), *Kaiser Aetna et al. vs. United States No. 78-738*, <https://www.lexisnexis.com/community/casebrief/p/casebrief-kaiser-aetna-v-united-states>.

This is a link to the case brief. The court held that petitioner's property had not been capable of navigation before they modified it, that it was not the sort of navigable body previously recognized as being incapable of private ownership and, therefore, petitioner's interest was similar to that of owners of fast land adjacent to navigable water. Petitioners had a number of property expectancies that respondent would have to condemn and pay for before it could take over the management of, and allow public access to, the marina.

U.S. Government (1995), *Lykes Bros v USACOE*, 64 F.3d 630 (11Cir. 1995), <https://eleventhcircuit.lexroll.com/lykes-bros-v-u-s-army-corps-of-engineers-64-f-3d-630-11th-cir-1995/>.

Lykes Bros brought civil action pursuant to 5 U.S.C. §(s) 704 against the U.S. Army Corps of Engineers ("Corps") seeking to review and set aside the Corps' determination that Fisheating Creek in Glades County, Florida, is a navigable water of the United States from its mouth at the western shore of Lake Okeechobee to the bridge at State Road 731 near Venus, Florida, some 30 miles upstream. Lykes also sought a declaratory judgment determining that the creek is not a navigable water of the United States. After a seventeen-day trial, the district court reversed the Corps' determination, concluding that Fisheating Creek is navigable only for several miles, from its mouth at Lake Okeechobee to Fort Center, Florida. *Lykes Bros., Inc. v. U.S. Army Corps of Engrs.*, 821 F. Supp. 1457 (M.D.Fla. 1993). The Corps appeals, contending that the district court's findings of fact are clearly erroneous and that the district court misapplied the governing law. We affirm. *Lykes Bros. v. U.S. Army Corps of Engineers*, 64 F.3d 630, 632 (11th Cir. 1995).

U.S. Government (2018), *USCG Maritime Commerce Strategic Outlook – Releasable*, <https://media.defense.gov/2018/Oct/05/2002049100/-1/-1/1/USCG%20MARITIME%20COMMERCE%20STRATEGI%20OUTLOOK-RELEASABLE.PDF>.

The U.S. Coast Guard's vision for enabling maritime commerce valued at \$4.6 trillion of economic activity.

Utah Department of Natural Resources (2000), *Great Salt Lake Comprehensive Management Plan and Decision Document*, [https://www.daviscountyutah.gov/docs/librariesprovider29/planning-docs---davis-county-general-plan/great\\_salt\\_lake\\_comprehensive\\_mgmt\\_plan\\_and\\_decision\\_document.pdf?sfvrsn=2](https://www.daviscountyutah.gov/docs/librariesprovider29/planning-docs---davis-county-general-plan/great_salt_lake_comprehensive_mgmt_plan_and_decision_document.pdf?sfvrsn=2), Great Salt Lake Planning Team, Utah.

Details the legal and public process for approval of the final Comprehensive Management Plan for Great Salt Lake.

Wallace, Roberts & Todd (2009), *Action Plan for the Central Delaware: 2008-2018*, <https://www.slideshare.net/wrt/design/action-plan-for-the-central-delaware-20082018>.

Philadelphia has an extraordinary opportunity to create a world-class riverfront along the central Delaware, but it must act now. Rapid, dramatic change—in the form of hundreds of millions of square feet of new housing, entertainment and retail uses—is coming to the central Delaware. The critical decisions we make today about this vital natural asset and development opportunity will define the riverfront's future for the next century. By investing in parks and open spaces, establishing clear development rules and creating an effective waterfront manager, Philadelphia, like cities around the world, can capitalize on its waterfront's significant potential for recreation and economic development.

Washington State Recreational Boaters Association (2020), *WA Recreational Boating Association of Washington*, <https://rbaw.org/>, Washington State Recreational Boaters Association.

The website is one example of a group representing recreational boaters.

World Health Organization (2021), *WHO Guidelines on Recreational Water Quality*, <https://apps.who.int/iris/handle/10665/342625>, Volume 1: Coastal and Fresh Waters.

License: CC BY-NC-SA 3.0 IGO.

The World Health Organization (WHO) Guidelines on recreational water quality: volume 1 – coastal and fresh waters aim to protect public health by ensuring that the quality of recreational waters is safely managed. These guidelines update substantial content from the 2003 WHO Guidelines for safe recreational water environments: volume 1 – coastal and fresh waters and its 2009 addendum.

World Health Organization (1999), *Health Based Monitoring of Recreational Waters: The Feasibility of a New Approach (The "Annapolis Protocol" Protection of the Human Environment Water, Sanitation and Health Series)*, <https://apps.who.int/iris/handle/10665/66477>, Sustainable Development and Healthy Environments WHO/SDE/WSH/99.1.

Outcome of an Expert Consultation - Annapolis, USA. Co-sponsored by USEPA. Looks at various methods of monitoring the quality of water. Table 16 provides examples of classification and management outcomes.

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A GUIDE FOR MULTIPLE USE WATERWAY MANAGEMENT THIRD EDITION

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## A GUIDE FOR MULTIPLE USE WATERWAY MANAGEMENT (THIRD EDITION)

# ABOUT THE PRIMARY AUTHORS

### PAMELA DILLON



Pamela Dillon serves as project specialist for the National Association of State Boating Law Administrators (NASBLA). In this role, she works to fully articulate NASBLA's national role in standards development and conformity assessment, serving as staff of the National Boating Education Standards Panel. Previously, Dillon served as Ohio's Boating Law Administrator, retiring in 2011 as Chief of the Department of Natural Resources - Division of Watercraft, overseeing the state's comprehensive boating program; including law enforcement, marine patrol training, boater education, facilities, boat registration and titling, and Scenic Rivers programs. Dillon served as Executive Director of the American Canoe Association (2002-2007), working to develop strategic alliances with boating, outdoor recreation, and paddlesport education and conservation programs across the U.S. and Canada. Dillon served two terms as an appointed member of the National Boating Safety Advisory Council, and in 2019 received the U.S. Coast Guard's Distinguished Public Service Award. Dillon served on the boards of the National Safe Boating Council, Professional Paddlesports Association, Outdoor Alliance, American Canoe Association, International Whitewater Hall of Fame, and the World River Centre.

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### RISA SHIMODA



Risa Shimoda supports the River Management Society program staff and board with a background in design engineering, consumer products marketing and non-profit leadership. She received a BS in Engineering / Product Design from Stanford University and trained as a consumer products marketer at Procter & Gamble, M&M/Mars and Coca-Cola USA before directing marketing, sales and product development for kayaks and paddlesports accessories at Perception, the world's largest kayak manufacturer prior to its purchase by Confluence Watersports. As Executive Director of American Whitewater (AW), she and her team represented river users in the relicensing of hydropower projects and pursued the right of public access on precedent-setting cases. She pioneered corporate support for AW and developed its first event-based business model for the Gauley River Festival, the largest U.S. river-based annual fundraising event. An avid whitewater paddler, Risa has produced conferences and advises communities regarding the development of whitewater river parks. Risa co-founded the Outdoor Alliance and has served on the boards of the Conservation Alliance, North American Paddlesports Association, American Whitewater, Nantahala Outdoor Center, American Canoe Association, International Whitewater Hall of Fame, and World River Centre.

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