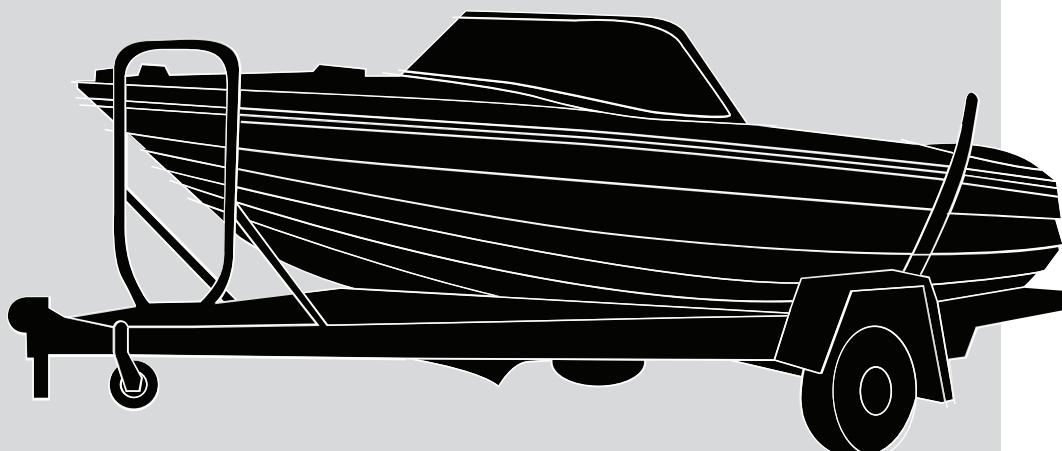


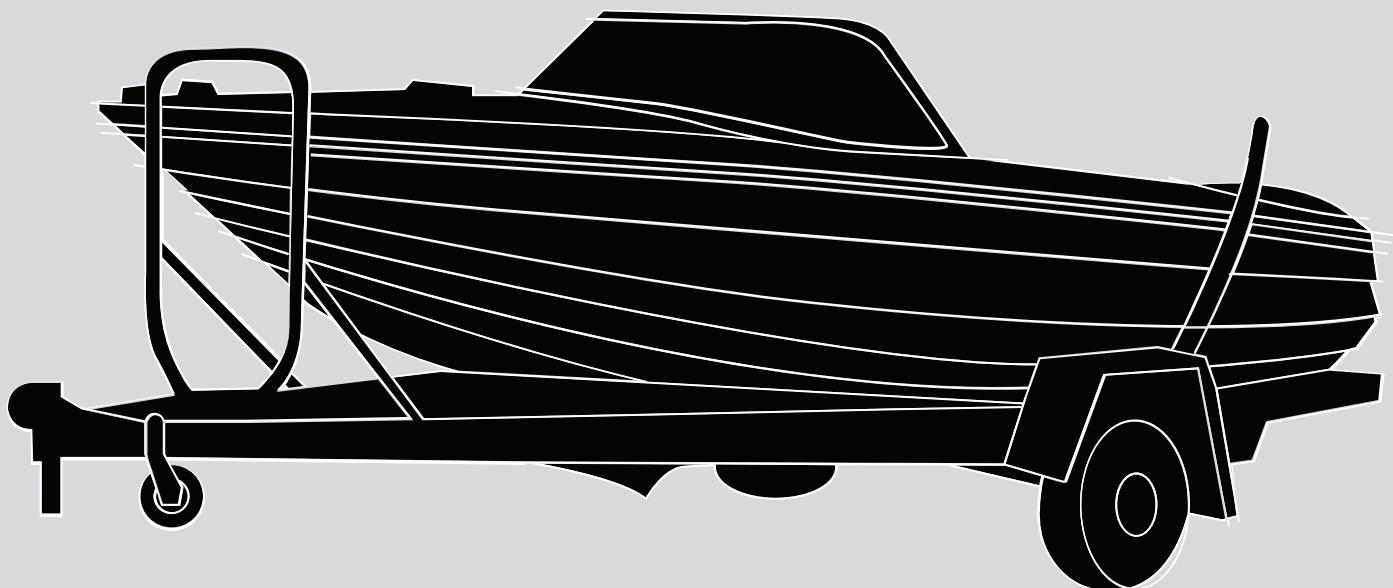
MODEL QUAGGA/ZEBRA MUSSEL RECIPROCAL VESSEL CERTIFICATION PROGRAM FOR CLEAR LAKE AND NEIGHBORING LAKES IN NORTHERN CALIFORNIA



Lisa A. DeBruyckere, Creative Resource Strategies, LLC
Robyn Draheim
Stephanie Showalter Otts, National Sea Grant Law Center



PREPARED FOR LAKE COUNTY,
CALIFORNIA



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EXECUTIVE SUMMARY

Effective management of aquatic invasive species (AIS) risk from recreational boating requires cooperation among the jurisdictions charged with managing those waterbodies. Although preventing the introduction of invasive zebra and quagga mussels (*Dreissena* spp.) to uninfested bodies of water is a high priority for many resource managers, actualizing the protocols, standards, and other tools necessary for coordination can be complicated and challenging, especially when the waterbodies in question are managed by a variety of jurisdictional types.

To help protect uninfested Northern California waters from the detrimental effects of dreissenid mussels and to enhance collaboration for mussel prevention, Lake County initiated this project. The primary goal was to work with the relevant resource agencies, jurisdictions, and partners that manage lakes Berryessa, Mendocino, Sonoma, and Clear Lake to understand and assess similarities and differences among their mussel prevention programs, identify programmatic challenges and opportunities, evaluate the possibility of developing a local system of reciprocity, and create a framework to guide the implementation of comprehensive watercraft inspection and decontamination (WID) program components within the context of reciprocity. The standards and protocols outlined in Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination Programs for Dreissenid Mussels in the Western United States (2016) provided a foundation for evaluating existing programs at the four waterbodies as well as a template for developing a draft model reciprocal vessel program. Although comprehensive WID programs are traditionally recommended as a basis for reciprocity, this project also explored the potential for reciprocity among waterbodies based on one or more shared aspects of WID programs.

Unlike most western states, the State of California delegates much of the responsibility for preventing and managing dreissenid mussel infestations to local water body managers. The result of this decentralized approach is the creation of more than 100 individual WID programs, each with their own rules and regulations. Therefore, local codes and ordinances are important to addressing gaps in the statewide program. To assist with the adoption of local ordinances in Mendocino, Napa, and Sonoma County and the implementation of reciprocal watercraft inspection programs within the region, a “Model Local Watercraft Inspection and Decontamination Ordinance” was drafted.

This report documents 11 recommendations identifying specific actions each jurisdiction can implement to advance reciprocity in the areas of administration, information sharing, law enforcement training and incentives, watercraft inspection and decontamination, quality assurance and quality control, and outreach and education.

The pathway to a regional watercraft inspection program with elements of reciprocity will involve changes to each of the existing programs. These changes represent movements toward more comprehensive WID programs. Although developing a reciprocal WID program across neighboring waterbodies with multiple jurisdictions presents many challenges, the first step toward developing such a program already exists: the desire to strengthen efforts to prevent dreissenids by all the managers of the watercraft inspection programs in Lake County, at Lake Berryessa, and at lakes Sonoma and Mendocino. These entities also seek the ability to enhance prevention efforts without significantly curtailing boating, or other water-based recreational activities. This is an especially important consideration for managers who must balance the interests of the end users of

water with its recreation value, or localities that depend on revenue-generating recreational activities that have an active local boating population, or residential users. Enhancing WID programs with an eye toward reciprocity among neighboring lakes may provide managers with opportunities

to increase boater buy-in and enhance local recreational opportunities for boaters who pose a low risk for mussel introduction as well as address key gaps that exist because of a decentralized state program.



Top: Mussel Dog, Pearl, inspecting watercraft for mussels (Photo credit: Debi DeShon).

Right: Infested watercraft educational display used by Clear Lake staff (Photo credit: George Buckner).

BACKGROUND

Preventing the introduction of invasive zebra and quagga mussels (*Dreissena* spp.) to uninfested bodies of water is a high priority for resource managers throughout the western United States because of the significant ecological, economical, and sociological effects from these species.

Although dedication to preventive actions can seem daunting because of the required long-term commitment of resources, the cost of taking no action is potentially irreversible and far more costly than preventive actions. Once mussels have become established, there is little that can be done to restore the ecology and function of these ecosystems.

Recreational and commercial boats are a known dispersal vector for quagga and zebra mussels (Western Regional Panel 2010; Kelly et al. 2012). Although neither quagga nor zebra mussels have been detected in any Northern California water body, zebra mussels have been detected in San Justo Reservoir in San Benito County, California, and quagga mussels have been detected in water bodies in the Southern California counties of San Diego, San Bernardino, Orange, Riverside, Imperial, Ventura, and Los Angeles.

Cooperation among jurisdictions responsible for the management of water bodies is essential to effectively manage aquatic invasive species risks from recreational boats (Otts and Nanjappa 2014). To establish a foundation for reciprocity, Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination Programs for Dreissenid Mussels in the Western United States (2016) was developed in cooperation with 16 western states and four Canadian provinces. These standards and protocols are intended to provide a set of best management practices for watercraft inspection and decontamination programs and provide the best in

standards, practical science, and technology to ensure watercraft inspection and decontamination program efficacy and consistency (Elwell and Phillips 2016).

In addition to these standards and protocols, which are updated regularly to ensure the latest science and technology is incorporated, a model legal framework and guidance was developed to promote reciprocity among state watercraft inspection and decontamination programs. Model legislative provisions were published in 2014 (Otts and Nanjappa 2014) and model regulations in 2016 (Otts and Nanjappa 2016) after several years of meetings and discussions with attorneys general, state aquatic invasive species coordinators, and others responsible for management and enforcement of state laws associated with aquatic invasive species. The standards and protocols and model legal framework help to inform the development of reciprocal agreements among water body jurisdictions.

To protect uninfested Northern California waters, aquatic resources, and infrastructure from the deleterious effects of dreissenid mussels, Lake County initiated a project to develop a collaborative regional plan for mussel prevention. Specifically, the primary goal of the project is to work with relevant resource agencies, jurisdictions, and partners that manage lakes Berryessa, Mendocino, Sonoma, and Clear Lake to understand and assess similarities and differences among their mussel prevention programs, develop a draft model reciprocal vessel program based on the Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination Programs for Dreissenid Mussels in the Western United States (2016), and work with regional management to finalize the plan, including developing associated policy documents.

RECIPROCITY

Reciprocity is “a mutual exchange of privileges,” and specifically, “a recognition by one of two countries or institutions of the validity of licenses or privileges granted by the other” (Merriam-Webster 1999). As it relates to watercraft and dreissenids, reciprocity refers to the recognition of a watercraft inspection or decontamination certificate issued by another entity, if that entity adheres to minimum standards for inspection and decontamination (Otts and Nanjappa 2014). The mechanism to establish compliance could be a form, or a tamper-proof device (e.g., a seal attached to the vessel). Such reciprocity is a win-win for water body jurisdictions and conveyance owners, as it simplifies compliance, reduces the amount of time required for watercraft inspections, and helps to protect water bodies from new introductions of dreissenids (Otts and Nanjappa 2014). Reciprocity requires a system to establish and record the most recent inspection and decontamination history of conveyances (Otts and Nanjappa 2014). Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination Programs for Dreissenid Mussels in the Western United States (2016) states that comprehensive programs are recommended for reciprocity because they provide the greatest level of protection (Elwell and Phil-

lips 2016), however, reciprocity can be based on one or more aspects of a watercraft inspection program, including seals, reporting, or educational materials.

The conditions that inform the management decision of what type of watercraft inspection and decontamination program a jurisdiction implements will also determine the scope of any reciprocity agreements. At a minimum, participating entities must agree upon a level of acceptable risk as well as which type of watercraft inspection program most closely meets the objective, keeping in mind that many lack the capacity, funding, and authority to implement comprehensive watercraft inspection programs, but still wish to simplify compliance and reduce inspection times, thereby increasing boater buy-in while minimizing the risk of introducing dreissenids. Developing and implementing these goals and initiatives requires the establishment of trust and communication among jurisdictions as well as the means, authorities, and discipline to achieve mutual goals. Jurisdictions that have existing reciprocal agreements for other issues may more easily develop and implement reciprocal watercraft inspection programs because of previously established trust and proven forums for effective communication.



Example of a Clear Lake mussel sticker.

THE CORE ELEMENTS OF A WATERCRAFT INSPECTION AND DECONTAMINATION PROGRAM

Watercraft inspection and decontamination (WID) programs are a key strategy to prevent the introduction and spread of dreissenids in western states (Elwell and Phillips 2016). However, diversity exists in the types of inspection and decontamination programs implemented based on resources available, authorities, needs, factors associated with the water body itself, such as number of access points, amount of local versus non-local use, amount of vessel traffic, and other considerations. Although consistency across jurisdictional boundaries may be difficult to achieve, interjurisdictional coordination and cooperation are key to successful prevention efforts and positive boater relationships (Elwell and Phillips 2016). Comprehensive WID programs that incorporate decontamination, quarantine, or exclusion are recommended (Elwell and Phillips 2016).

The core elements of a WID program include:

- Self-inspection (both voluntary and mandatory)
- Screening for high-risk watercraft and equipment
 - Screening interview at a staffed entry point to a waterbody followed by an inspection (vessels must be clean, drained, and dry and must not have been in an infested waterbody in the past 30 days unless decontaminated and accompanied by the associated paperwork)
- Decontamination and/or quarantine, or exclusion of vessel
- Vessel certification

There are several types of WID programs (Elwell and Phillips 2016), including:

- **Self-inspection** (both voluntary and mandatory)—Relies on compliance and knowledge of the vessel owner, and in general, provides the least amount of protection. Self-inspection programs are often used to supplement staffed inspection stations when those stations are closed, or self-inspection stations exist at low-risk water bodies. Self-inspection programs provide a minimum level of protection.
- **Screening for high-risk watercraft and equipment**—Includes a screening interview at a staffed entry point to a waterbody to identify high-risk vessels and equipment, followed by an inspection. Vessels must be clean, drained, and dry, and must not have been in an infested waterbody in the past 30 days unless decontaminated and accompanied by the associated paperwork.
- **Comprehensive**—Includes screening interviews at the point of entry, comprehensive inspection of all vessels/equipment, and decontamination and/or quarantine or exclusion of watercraft and watercraft certification.

Baseline protocols and standards (Elwell and Phillips 2016) recommended in any type of region-wide program or program among jurisdictions includes:

- All entities involved in the program should use a tamper-proof seal system that certifies the vessel is clean, drained, and dry.

- Information associated with either the seal, or the accompanying certificate, should designate the entity applying the seal, the locale where the vessel was sealed, the type of inspection, decontamination, or quarantine, and the seal date.
- The entity applying seals and using receipts should follow the Uniform Minimum Protocols and Standards.
- Only vessels/equipment that have passed an inspection, or been decontaminated, by trained personnel should receive a watercraft seal.
- Certification sealing should only be applied by a trained inspector.

Vessels and equipment that have been sealed and certified using Uniform Minimum Protocols and Standards may receive expedited processing at the discretion of the receiving jurisdiction.

The California Department of Fish and Wildlife published their Guidance for Developing a Dreissenid Mussel Prevention Program in March of 2017 (CDFW 2017). The document includes information on risk assessment, pathway identification, potential actions to mitigate introductions, monitoring, management associated with recreational activities as well as public education and outreach, and required documentation for any prevention program.

ESTIMATING WATER BODY RISK OF INTRODUCTION AND ESTABLISHMENT

Many factors contribute to the risk of dreissenid introduction and establishment, including environmental parameters (e.g., dissolved calcium, pH), and the extent and types of public use (e.g., total day use, presence of boat ramps and marinas, proximity to transportation corridors, motorized boating, fishing). Total day use of a water body, presence of boat ramps and marinas, water body size and access, motorized boating, fishing, and angling tournaments are important determinants of risk of introduction (Wells et al. 2010). Once introduced, pH and calcium concentrations, considered critical environmental parameters for dreissenid mussel survival and growth (Hincks and Mackie 1997; McMahon 1996), are likely to determine the success of establishment (Wells et al. 2010).

In general, dreissenid adults in North America inhabit waters with calcium concentrations greater than or equal to 15 mg Ca₂₊/L, and populations become dense at concentrations greater than or equal to 21 mg Ca₂₊/L (McMahon 1996).

Dreissenid veligers are found in North America at pH levels between 7.4 and 9.4; pH 8.4 is optimal (McMahon 1996). Adult dreissenid mussel growth is generally limited at pH less than 6.5 to 6.9 and pH greater than 10, because under those conditions, dreissenids lose calcium to the external environment (Hincks and Mackie 1997; McMahon 1996).

Water temperature is not expected to limit dreissenid growth as dreissenids inhabit a wide range of temperatures in North America. They are found in the Great Lakes at temperatures less than 41°F, and in the lower Mississippi where temperatures reach and exceed 86°F (McMahon 1996).

RECREATIONAL VESSEL USE IN NORTHERN CALIFORNIA

The state of California, which has a large recreational boating population, numerous jurisdictions with administrative oversight, and numerous residential and destination water bodies with dreissenid mussels, hosts a spectrum of reciprocity programs (Table 1). California represents a complex array of water managers, which can present jurisdictional barriers to reciprocity, especially at the larger scale (Guisti 2010). Some entities have taken an initial step to develop reciprocal programs between the water bodies that they manage (intra-agency programs). A secondary step is the development of reciprocal WID programs within close geographic proximity and with management agencies with which they already share or coordinate actions.

Water bodies in Southern and Central California, where mussels have been spreading since 2007, have more quickly implemented mandatory vessel interception/inspection before launching and banding of vessels upon exiting.

California has the world's largest, most productive, and most controversial water system (Hundley 2001). Many of these waterways are popular destinations for recreational boaters. According to the U.S. Coast Guard, of the 11.9 million recreational vessels registered in the United States in 2015, California ranked fourth in the nation in recreational vessel registrations—a total of 772,542 motorboats and sailboats more than eight feet in length were registered (U.S. Coast Guard 2016).

The California legislature enacted the Harbors and Navigation Code, Division 3, Chapter 5, Article 1.3, Sections 675 and 676, which became effective January 1, 2013, to promulgate regulations to impose an additional Quagga and Zebra Mussel Infestation Prevention Fee to the boater registration fee

collected by the Department of Motor Vehicles to fund infestation prevention programs in California's reservoirs. From 2007 through 2016, CDFA border protection stations inspected 1,241,204 vessels, detected 75,349 watercraft that needed to be cleaned or have their water drained, and detected 1,619 vessels with confirmed adult mussels (California Department of Fish and Wildlife 2017).

The focus of this report is on mussel prevention program challenges and opportunities at Clear Lake, and lakes Berryessa, Mendocino, and Sonoma.

In addition, we identified Northern California water bodies with significant recreational vessel use that represented a broad diversity of water body management authorities, including state agencies, federal agencies, counties, community and water conservation districts, and planning agencies (Table 1). The patchwork of water body jurisdictions in Northern California makes it imperative that consistent standards and protocols for watercraft inspection are applied, and that reciprocity be implemented to facilitate compliance with watercraft inspections and help to ensure Northern California water bodies are protected from an introduction of quagga and zebra mussels.

Implementation and acceptance of a reciprocal WID program is dependent on several factors, including opportunities, resources, and risks. Boaters in Lake County are subject to County Ordinance 2936 (Appendix A) while boating at any waterbody within the county regardless of jurisdiction. This encompasses Clear Lake, Indian Valley Reservoir and Lake Pillsbury. Ordinance 2936 established a fee-based inspection program for all water vessels launched in Lake County. The surrounding counties do not have similar ordinances, which may present an opportunity for standardizing mussel (and

other aquatic invasive species) prevention across the region in question.

One key task for this project is to identify Northern California water bodies with significant vessel recreational use, and identify potential receptivity, and in particular, barri-

ers, to a reciprocal program. Jurisdictional authorities were contacted for the water bodies listed in Table 1 to assess receptivity to engaging in discussion about reciprocity. Specifically, federal, state, county, and water conservation, parks, and community services districts were contacted.

Table 1. Northern California water bodies with significant vessel recreational use that represent a diversity of waterbody management authorities. Calcium and pH statistics provided by California Department of Fish and Wildlife (pers. comm.). Water bodies with an asterisk have a high potential for dreissenid introduction and establishment because of recreational boat use as well as calcium and pH levels.

WATER BODY	COUNTY	MANAGER	CALCIUM	pH
Lake Oroville	Butte	Department of Water Resources	9.0	7.35
Fallen Leaf Lake	El Dorado	US Forest Service	2.6	8.6
Folsom Lake	El Dorado, Placer, Sacramento	California State Parks	5.46	-
Lake Tahoe	El Dorado	Tahoe Regional Planning Agency	12.4-24.1 ¹	-
Clear Lake	Lake County	Lake County	22.8	8
Indian Valley Reservoir	Lake	Yolo County Flood Control and Water Conservation District	17	8
Lake Pillsbury	Lake	US Forest Service	18	7.8
Eagle Lake	Lassen	US Forest Service	12	9.08
Lake Mendocino	Mendocino	US Army Corps of Engineers	17	8.23
Lake Berryessa	Napa	Bureau of Reclamation	17	7.3
Donner Lake	Nevada	Truckee Donner Recreation and Parks District	7.2	7.9
Lake Almanor	Plumas	US Forest Service	8	7.8
Whiskeytown Lake	Shasta	National Park Service	7.02	7.81
Lake Shasta	Shasta	US Forest Service	9	7.93
Stampede Reservoir	Sierra	US Forest Service	8.7	8.2
Lake Sonoma	Sonoma	US Army Corps of Engineers	17	7.1-7.6
Ruth Lake	Trinity	Ruth Lake Community Services District	9	7.97
Trinity Lake	Trinity	US Forest Service	5	8.14
New Bullards Bar	Yuba	US Forest Service	9.2	8.3

¹Tahoe Keys Marina registered 12.4ppm Ca; Ski Run Marina, which has Asian clam beds, registered 24.1ppm Ca.

The following are examples of some of the issues associated with reciprocity in Northern California waterbodies:

- The Ruth Lake Community Services District has an inspection process and sticker program in addition to complying with the State of California program. They expressed interest in this project as well as concerns about any increases in costs associated with program expansion or modification. Investments they have made to date include security gates, inspection hours, and stickers.
- The Truckee-Donner Recreation and Parks District and the Town of Truckee are separate entities; the Town of Truckee conducts off-site inspections and includes the enforcement arm of the operation. The District owns and operates the main boat launch for Donner Lake. District barriers include an ungated ramp and lack of enforcement authority.
- The Yolo County Flood Control & Water Conservation District owns and operates Indian Valley Reservoir in Lake County, and abides by Lake County's mussel screening program. Management staff noted there is staff on site four days per week to perform screenings, and the reservoir is lightly used, resulting in less than 10 screenings per month. The District seeks to follow the guidance of Lake County.
- The US Forest Service manages the Shasta and Trinity Lake units of the National Recreation Area (NRA). The water bodies are monitored to detect an infestation. There are no Forest Service or concessionaire inspection programs at either water body, however, information and signage occurs at each of the 14 boat launches (seven on Shasta, six on Trinity, and one on Lewiston Lake) as well as at the information counters, at each ranger station, and on the website. There is inadequate funding to support a formal inspection program.
- Three boatable waterbodies exist within the Lake Tahoe jurisdiction of the Tahoe Regional Planning Agency (TRPA)—Tahoe, Fallen Leaf Lake, and Echo Lakes. All are subject to the TRPA Code of Ordinances. Inspections for all three lakes occur at any of the four inspection stations, however a different seal is issued for each lake. Neither Fallen Leaf Lake nor Echo Lake have invasive aquatic plants, clams, or fish currently found in Lake Tahoe. Management staff refer to reciprocity that exists among the lakes, noting, however, that the reciprocity is not unilateral. Vessels can move from either Fallen Leaf or Echo Lake to Lake Tahoe without an inspection (they must be sealed), but not the reverse; an inspection and decontamination are required to transport vessels from Lake Tahoe to the other two lakes. Lake Tahoe embarked on a path to reciprocity with the Town of Truckee, which manages the AIS program for Donner Lake. The TRPA currently shares one inspection station with the Town of Truckee, however progress toward reciprocity has halted. The residents of the Town of Truckee preferred to avoid restricted access to Donner Lake for "locals," and the town has not pursued it further. If the TRPA initiated reciprocity, TRPA would require access to be blocked if no one is present to ensure launching boats have been inspected. The TRPA would also seek similar protocols for inspection and decontamination, properly trained staff, implementation of Quality Assurance/Quality Control (QA/QC) (secret shopper), and other elements of a more comprehensive reciprocity program.

WATERCRAFT BANDS USED IN CALIFORNIA

Numerous entities attach bands to watercraft in California as part of state, or local, watercraft inspection programs (Appendix G). These tamper-proof bands (also referred to as seals or wire tags) may be issued for a variety of reasons depending on the waterbody and the issuer. Bands usually indicate that a vessel falls into one of the following categories: quarantine, failed inspection, passed inspection, passed inspection banded upon waterbody exit, and banded upon exit in an infested waterbody. Banding allows watercraft inspectors to quickly ascertain the status of a vessel before it is launched and if accompanied by a receipt, the seal provides additional information about the history of the vessel. In turn, bands may provide the watercraft operator with an expedited watercraft inspection prior to the next launch. Many bands and seals are printed with a unique identification number which, in conjunction with a shared database, can allow tracking of vessels and provide managers with valuable boater movement data. The following are examples of banding in California:

- East Bay Regional Park District: Del Valle Reservoir and Quarry Lakes.
- Bands are issued upon exit for watercraft that have been in infested waters by:
 - Los Angeles County Parks and Recreation: Castaic Lake (presumed infested with quagga mussels)—issued to exiting watercraft to expedite re-entry at Castaic and Pyramid Lakes only.
- Bands are issued by the California Department of Food and Agriculture and the California Department of Fish and Wildlife for vessels quarantined per Fish and Game Code Section 2301.
- Bands are issued for failed inspection by:
 - California Department of Parks and Recreation: Lake Perris and Silverwood Lake.
- Bands are issued upon exit for watercraft that pass inspection by:

²In addition to banding by different jurisdictions in California, many Western States issue seals to trailered watercraft passing through roadside inspection stations.

CURRENT WATERCRAFT INSPECTION PROGRAMS IN CALIFORNIA

The state of California, which has a large recreational boating population, numerous jurisdictions with oversight over water bodies, and several residential and destination water bodies with dreissenid mussels, hosts a spectrum of prevention programs (Table 2).

Table 2. Watercraft inspection programs in the State of California. Note: Northern California programs are designated with an asterisk.

Waterbody	Website
Anderson, Lak	http://www.ParkHere.org
Arrowhead, Lake	http://www.ala-ca.org/Boat-Inspections~398313~24073.htm
Berryessa, Lake*	http://www.usbr.gov/mp/ccao/berryessa/
Big Bear Lake	http://www.bbmwd.com/Launching.html
Blue Lakes*	http://www.nomussels.com/
Boca Reservoir*	http://truckeeboatinspections.com/
Bucks Reservoir*	http://www.buckslakemarina.com/
Cachuma Lake	http://www.countyofsb.org/parks/cachumaquagga.sbc
Calero Reservoir	http://www.ParkHere.org
Camanche Reservoir	http://www.ebmud.com/recreation/quaggazebra-mussel-prevention-program
Combie, Lake*	http://lakecombielca.com/Mussels.htm
Canyon Lake	http://www.canyonlakepoa.com/recreation/lake-2/boating
Casitas, Lake	http://www.casitaswater.org/lower.php?url=boating-and-fishing
Castaic Lake	http://www.castaiclake.com/ansinspections.html
Chabot, Lake	http://www.ebparks.org/activities/boatingsailing/invasivemussels
Clear Lake*	http://www.nomussels.com/
Contra Loma Reservoir	http://www.ebparks.org/activities/boatingsailing/invasivemussels
Coyote Reservoir	http://www.ParkHere.org
Crowley Lake	http://www.crowleylakefishcamp.com/boats
Cuyamaca, Lake	http://www.lakecuyamaca.org/
Del Valle, Lake	http://www.ebparks.org/activities/boatingsailing/invasivemussels
Diamond Valley Lake	http://dvmarina.com/policy/
Diaz Lake	http://www.inyocountycamping.com/diaz_lake_campground.html
Don Pedro Lake	http://www.donpedrolake.com/RecreationArea/Boating/index.htm
Donner Lake*	http://truckeeboatinspections.com/
Echo Lake	http://www.echochalet.com/
El Capitan Reservoir	https://www.sandiego.gov/water/recreation/watercraft/privateboats
Fallen Leaf Lake*	http://www.flcsd.org/services/marina/mooring-rates
Hemet, Lake	http://www.lakehemet.org/faq.php#boating
Hennessey, Lake*	http://www.cityofnapa.org/index.php?option=com_content&view=article&id=1331&Itemid=827
Henshaw, Lake	http://www.lakehenshawresort.com
Hidden Valley Lake*	http://www.nomussels.com/
Highland Springs Reservoir*	http://www.nomussels.com/

Hodges Reservoir	https://www.sandiego.gov/water/recreation/reservoirs/hodges
Horseshoe Lake (Quarry Lakes)	http://www.ebparks.org/parks/quarry_lakes
Independence Lake*	http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/nevada/placesweprotect/independence-lake.xml
Indian Valley Reservoir*	http://www.nomussels.com/
Jenkinson Lake	http://www.eid.org/recreation/boating
Klondike Lake	http://www.tellmedwp.com/go/doc/1475/2922598/
Lafayette Reservoir	http://www.ebmud.com/recreation/quaggazebra-mussel-prevention-program
Lake of the Pines*	http://www.lop.org/sub_category_list.asp?category=93&title=Lake+and+Quagga+Mussel+Information
Lexington Reservoir	http://www.ParkHere.org
Loch Lomond	http://www.cityofsantacruz.com/departments/water/watershed/recreation
Lopez Lake	http://slocountyparks.org/camp/lopez-lake/
Los Banos Reservoir	http://www.parks.ca.gov/?page_id=27723
Los Vaqueros Reservoir	http://www.ccwater.com/9/Los-Vaqueros
Martis Creek Reservoir*	http://www.spk.usace.army.mil/Locations/Sacramento-District-Parks/Martis-Creek-Lake/
Mendocino, Lake*	http://www.spn.usace.army.mil/Missions/Recreation/Lake-Mendocino/
Milton Reservoir*	http://www.recreation.gov/camping/Skillman/r/recreationalAreaDetails.do?contractCode=NRSO&facilityId=249922
Modesto Reservoir	http://www.stancounty.com/parks/reservoir.shtml
Morena, Lake	http://www.sdcounty.ca.gov/parks/fishing/index.html
Nacimiento, Lake (Pvt. Ramps)	http://www.slocountywater.org/site/Frequent%20Downloads/Quagga%20Mussels/Lake%20Nacimiento%20Mussel%20Prevention%20Program/Resident%20Vessel%20Program/index.htm
Nacimiento, Lake (Public Ramps)	http://www.mcwra.co.monterey.ca.us/mussels_quagga_zebra/mussels_quagga_zebra.php
New Melones Lake	http://www.usbr.gov/mp/ccao/newmelones/docs/Form_Mussel_Free_Certification.pdf
O'Neill Forebay	http://www.parks.ca.gov/?page_id=27723
Pardee Reservoir	http://www.ebmud.com/recreation/quaggazebra-mussel-prevention-program
Perris, Lake	http://www.parks.ca.gov/?page_id=24696
Pillsbury, Lake*	http://www.nomussels.com/
Pine Mountain Lake (Pvt.)	http://www.pinemountainlake.com/
Pinto Lake	http://www.pintolakepark.com/Level2/boat-inspection.html
Piru, Lake	https://www.unitedwater.org/news-a-outreach-4/lake-piru-recreation-area/quagga-mussel-detection
Prosser Creek Reservoir*	http://truckeeboatinspections.com/
Puddingstone Lake	http://parks.lacounty.gov/wps/portal/dpr/Parks/Frank_G_Bonelli_Regional_Park
Pyramid Lake	http://www.castaiclake.com/ansinspections.html
Quarry Lakes	http://www.ebparks.org/activities/boatingsailing/invasivemussels
Rainbow Lakes (Quarry Lakes)	http://www.ebparks.org/parks/quarry_lakes
Rollins Lake*	http://www.nid.dst.ca.us/recreation.cfm
Ruth Lake*	http://www.ruthlakecsd.org/sidebar/zebra-quagga-mussels/
Salt Spring Valley Reservoir	http://www.saltspringvalleyreservoir.com/
San Antonio, Lake	http://www.mcwra.co.monterey.ca.us/mussels_quagga_zebra/mussels_quagga_zebra.php

San Luis Reservoir	http://www.parks.ca.gov/?page_id=27723
San Pablo Reservoir	http://www.ebmud.com/recreation/quaggazebra-mussel-prevention-program
San Vicente Reservoir	https://www.sandiego.gov/water/recreation/watercraft/privateboats
Santa Margarita Lake (aka Salinas Reservoir)	http://www.slocountywater.org/site/Frequent%20Downloads/Quagga%20Mussels
Scotts Flat Reservoir*	http://nidwater.com/recreation/
Shadow Cliffs Lake	http://www.ebparks.org/parks/shadow_cliffs
Shasta Lake*	http://www.fs.usda.gov/alerts/stnf/alerts-notices/?aid=1672
Silverwood Lake	http://www.parks.ca.gov/?page_id=25893
Skinner, Lake	http://www.rivcoparks.org/reservations/annual-pass-form/
Sonoma, Lake*	http://dontmoveamussel.com/
Stampede Reservoir*	http://truckeeboatinspections.com/
Stevens Creek Reservoir	http://www.ParkHere.org
Sutherland Reservoir	http://www.sandiego.gov/water/recreation/quaggamussels.shtml
Tahoe, Lake*	http://tahoeboatinspections.com/
Trinity Lake*	http://www.fs.usda.gov/alerts/stnf/alerts-notices/?aid=1672
Tulloch Reservoir	http://www.tridamproject.com/
Upper Otay Reservoir	https://www.sandiego.gov/water/recreation/watercraft/privateboats
Vail Lake	http://vaillakeresort.com/wp/frequently-asked-questions/
Whiskeytown Lake*	http://www.nps.gov/whis/planyourvisit/stop-aquatic-hitchhikers.htm
Wildwood, Lake*	http://www.lwwa.org/lake.html
Wolford, Lake	http://www.escondido.org/lake-wohlford.aspx
Woodward Reservoir	http://www.stancounty.com/parks/reservoir.shtml



Lake Berryessa boat inspection site.
Photo credit: George Buckner.

WATERCRAFT INSPECTION PROGRAMS IN NORTHERN CALIFORNIA

A total of 29 water bodies in Northern California (i.e., waterbodies north of Sacramento) have some type of watercraft inspection program (Table 2). This report focuses on elements of watercraft inspection programs at Clear Lake, and lakes Berryessa, Sonoma and Mendocino (Table 3).

Lake Sonoma and Lake Mendocino—These two reservoirs, located in neighboring counties, are owned by the US Army Corps of Engineers. Both lakes are members of the North Coast Zebra and Quagga Mussel Consortium, local governments and stakeholders that seek to prevent the introduction and spread of dreissenids in local waters. The Consortium seeks to develop and implement a regional prevention plan, including the development and implementation of mandatory watercraft inspections at Lake Sonoma and Lake Mendocino. Much of the Consortium's plan has been modeled on the program implemented by Santa Clara County, which runs a comprehensive prevention program with mandatory inspection stations, optional exit banding, and internal reciprocity at five lakes and reservoirs in the County.

In 2016, the US Army Corps of Engineers, in conjunction with the Sonoma County Water Agency, received a \$600,000 grant from the California Department of Parks and Recreation, Division of Boating and Waterway's Quagga and Zebra Mussel Infestation Prevention Fee Grant Program, to hire and train seasonal watercraft inspectors for both reservoirs. Because of federal contracting complications, the funding has not been released for this purpose.

The Sonoma County Water Agency provides voluntary watercraft inspections at public boat ramps, primarily during high-use times (i.e., Fridays, Saturdays and Sundays) using mussel detecting dogs. The contractor, Central Valley Detection Canine, has staffed

inspections and awareness events since 2012. The private marina at Lake Sonoma does not currently conduct inspections.

Central Valley Detection Canine has developed an informal local boater system for inspections at Lake Mendocino and Lake Sonoma. During the weekend inspection operating hours, boaters can request a card from the inspectors that has a colored sticker indicating that the boat has passed inspection by the mussel dogs. Boaters can display this card for expedited launching the same weekend at either lake.

Lake County—The dreissenid prevention program in Lake County encompasses five waterbodies: Clear Lake, Lake Pillsbury, Blue Lakes, Hidden Valley and Indian Valley Reservoir. The program was established by County Ordinance 2936 in 2009. The Ordinance requires all motorized boats to be screened or inspected and to display a sticker before launching at the numerous public/private boat launches. The program was augmented from 2014 to 2017 with state funding to employ boat ramp monitors at the seven busiest boat ramps to check boater compliance with the program. The county is also using state funding for the purchase of two additional decontamination stations. In the summer of 2017, the Lake County quagga prevention program included public ramps and several portable decontamination stations. The goal of the Lake County program is to ensure all boats launched in Clear Lake and other bodies of water within the county are screened and issued a Lake County mussel inspection sticker. Kayaks, canoes, and non-motorized boats eight feet or less in length are not required to have a sticker. Lake County treats resident and non-resident water vessels differently as it pertains to both screening and certification. Resident water vessels are vessels with a Department of Motor Vehicle (DMV) registration iden-

tifying the vessel as being physically located in Lake County, a vessel whose owner can demonstrate the vessel is moored or stored at a commercial facility located in Lake County, or any other means deemed acceptable by the Director of Water Resources relative to proof of residency in Lake County. Resident water vessels and trailers receive Resident Mussel Stickers after undergoing an annual screening process that verifies the vessel is clean, drained, and dry upon exiting a water body. In addition, the owner answers several questions, completes and signs a Mussel Screening Application, demonstrates a DMV registration, and pays a \$20 fee. Vessels that are not clean, drained, and dry and are considered to pose a risk to county waters must undergo a physical inspection by an authorized inspector. Inspection fees, if needed, are allowed in the Lake County Ordinance and could be assessed based on the length of the watercraft and the presence/absence of ballast tanks. An inspection may lead to decontamination, or quarantine, based on the finding of an inspector. Although there is currently no charge imposed for decontamination, the County could determine the cost of an authorized inspection based on the length and type of water vessel, as follows:

- Vessels up to 12 feet in length: \$12
- Vessels from 12 feet to 18 feet in length: \$25
- Vessels 18 feet and longer: \$40
- Vessels that contain ballast tanks and/or bladders shall be charged an additional \$20 per inspection

If a vessel is found to be infested with adult dreissenid mussels, the vessel owner will be informed that his/her vessel shall be quarantined by the California Department of Fish and Wildlife. If the vessel is found to be potentially infested with dreissenid mussel larvae (e.g., it is not clean, drained, or dry), the vessel may not be launched until it has been decontaminated and re-inspected by an authorized inspector.

Visitor vessels are watercraft that do not meet the definition of a Resident Water Ves-

sel. Prior to the first launch in every calendar month, the vessels must be present at a screening location to obtain Visitor Mussel Stickers, and the vessels must be re-screened upon returning to Lake County after having been launched in an out-of-county water body. The visitor screening and physical inspection processes are similar to the resident program. All visitor vessels and trailers much have Visitor Mussel Stickers affixed, and these expire at the end of each calendar month.

Lake Berryessa—The Bureau of Reclamation administers the Lake Berryessa Invasive Mussel Inspection Protocol. Boaters visiting Lake Berryessa must comply with a screening and inspection protocol, which consists of an interview by site staff, and vessels may be subject to inspection. Boats coming from an infested water body that have not been decontaminated and dry for 30 days are not allowed to launch.

The Solano County Water Agency (SCWA) implements a summer intern project at Lake Berryessa for boat inspections as well as education and outreach on aquatic invasive species. SCWA interns staff ramps operated by several concessionaires during the peak boating season, and additional interns operate on peak boating days (Fridays, Saturdays, and Sundays). When interns are not available, concessionaires are encouraged to inspect boats before launching. Concessionaire staff are offered WIT I training annually, and contracts with concessionaires include language with regard to preventing AIS introductions. If no trained staff are available at the public ramp, boaters are expected to complete a self-screening form before launching.

The Lake Berryessa watercraft inspection team is committed to facilitating responsible boating at Berryessa. Boaters who fail a screening and are turned away are offered a boat rental voucher.

Table 3. A comparison of Clear Lake and neighboring area watercraft inspection programs.

* Lake County requires screening before purchase of sticker, not before each launch; vessels that have boated outside the county must submit to a no-fee re-screening before relaunching in Lake County waters even if their sticker has not expired.

** Inspections are not mandatory and only occur Fri-Sun at the public ramps.

*** If staff are not present to screen, boaters are expected to complete a self-screening form.

	CLEAR LAKE	INDIAN VALLEY	LAKE PILLSBURY	LAKE SONOMA	LAKE MENDOCINO	LAKE BERRYESSA
Screening Interview	Y*	Y*	Y*	Y**	Y**	Y***
Pre-launch Inspection	As needed	As needed	As needed	Fri-Sun**	Fri-Sun**	As needed
Fee	Y	Y	Y	-	-	-
Resident Program	Y	Y	Y	-	-	-
Restricted Access	-	-	-	-	-	Y
Quarantine Restrictions	-	-	-	-	-	Y
Decon Onsite	Y	-	-	-	-	Y
Database	-	-	-	-	-	-
Vessel Marking	LC Sticker	LC Sticker	LC Sticker	None	None	None

Table 4 includes other water bodies in Northern California that have elements of watercraft inspection programs. Understanding the breadth of watercraft inspection programs that currently exist in Northern California will help inform the development of a potential reciprocal program among the four primary water bodies of interest in this study, and could serve to inform the development of a much broader program in the future.

Table 4. Waterbodies in Northern California that have elements of watercraft inspection programs.

WATERBODY	SCREENING INTERVIEW	PRELAUNCH INSPECTION	FEE	SELF-INSPECTION	RESIDENT PROGRAM	RESTRICTED ACCESS	QUARANTINE RESTRICTIONS	DECON ONSITE	DA-TA-BASE	VESSEL MARK-ING
LAKE OROVILLE	-	-	-	-	-	-	-	-	-	NA
FALLEN LEAF LAKE	Y	Y	Y	-	-	Y	Y	Y	Y	BAND
FOLSOM LAKE	-	-	-	-	-	-	-	-	-	NA
LAKE TAHOE	Y	Y	Y	-	Y	-	Y	Y	Y	BAND/STICKER
CLEAR LAKE	Y*	AS NEEDED	Y	-	Y	-	-	Y	-	STICKER
INDIAN VALLEY RESER-VOIR	Y*	AS NEEDED	Y	-	Y	-	-	-	-	STICKER
LAKE PILLSBURY	Y*	AS NEEDED	Y	-	Y	-	-	-	-	STICKER
EAGLE LAKE	-	-	-	-	-	-	-	-	-	NA
LAKE MENDOCINO	Y (FRI-SUN)*	FRI-SUN VOLUNTARY	-	-	-	-	-	-	-	Y*
LAKE BERRYESSA	Y (WHEN STAFFED)	AS NEEDED	-	VOLUNTARY*	-	-	Y	Y	-	NONE
DONNER LAKE	Y	Y	Y	-	Y	-	Y	Y	Y	BAND/STICKER
LAKE ALMANOR	-	-	-	-	-	-	-	-	-	NA
WHISKEYTOWN LAKE	-	-	-	VOLUNTARY	-	-	-	-	-	NONE
LAKE SHASTA	-	-	-	VOLUNTARY	-	-	-	-	-	NONE
STAMPEDE RESERVOIR	-	-	-	MANDATORY	-	-	-	-	-	NONE
LAKE SONOMA	Y (FRI-SUN)*	FRI-SUN VOLUNTARY	-	-	-	-	-	-	-	Y*
RUTH LAKE	Y	Y	Y	-	Y	-	?	?	-	STICKERS AND BANDS
TRINITY LAKE	-	-	-	VOLUNTARY	-	-	-	-	-	NONE
NEW BULLARDS BAR	-	-	-	-	-	-	-	-	-	NA

COMPARISON OF THE CALIFORNIA WATERCRAFT INSPECTION AND DECONTAMINATION PROGRAM TO THE NATIONAL MODEL LEGAL FRAMEWORK

In April of 2017, the National Sea Grant Law Center at the University of Mississippi School of Law reviewed each state's watercraft inspection and decontamination laws and regulations to assess how each state's program compared to the authorities set forth in the model legal framework. The National Sea Grant Law Center produced, *From Theory to Practice: A Comparison of State Watercraft Inspection and Decontamination Programs to the Model Legal Framework* (2017). The report documented that California's aquatic invasive species laws and implementing regulations include about 43 percent of the core authorities set forth in the model legal framework (Otts 2017). The model legal framework was compared to the Cal. Fish & Game Code §§2301–2303 and the Cal. Code of Regs. Tit. 14, §§672–672.1.

Section 2301 authorizes the Department of Fish and Game to inspect and quarantine infested boats, close recreational facilities, and restrict access to certain lakes. It also gives local water operators an option to control their own waterways by implementing a dreissenid mussel monitoring and prevention program. The section provides specific authority to cite a person that possesses, imports, ships, or transports in the State, or causes to be planted within the waters of the state, dreissenids; and gives authority to conduct inspection of all vehicles and vessels for the presence of dreissenids, as well as authority to impound or quarantine any conveyance that carries dreissenids.

Section 2302 mandates implementation of mussel monitoring and control plans at uninfested waterways where recreational boating and fishing activities are permitted.

Authorities not expressly provided for in California's invasive species statutes and

regulations include a findings/purpose statement, definitions, documentation, certification of personnel, and authorization of third parties (Otts 2017). California provisions that partially match the model include powers and duties (California law does not have an express provision authorizing cooperative agreements), owner responsibilities and conveyance restrictions (California does not have a "Clean, Drain, Dry" and drain plug provisions or launch restrictions), and conveyance determinations (California does not have the authority to impose costs) (Otts 2017). California provisions completely or closely matched the model relative to conveyance inspections, "local boater" programs, and penalties (Otts 2017).

California delegates much of the responsibility for preventing and managing dreissenid mussel infestations to local water body managers. Local codes and ordinances are therefore critically important to addressing gaps in the statewide program. Of the four counties relevant to this study (Lake, Napa, Sonoma, Mendocino), only Lake County has adopted a local ordinance authorizing a water vessel inspection program.

Lake County Ordinance 2936 was enacted in 2011. As mentioned above, Lake County requires annual (resident) and monthly (non-resident) watercraft screenings. Screenings may involve visual verification that the vessel is clean, drained, and dry. Vessels that are not cleaned, drained, and dry, or seem to pose a risk must be inspected by an authorized inspector. Vessels found during an inspection to possibly be infested with mussels must be decontaminated. Vessel owners who refuse to consent to screening, or inspection, may not launch. Lake County issues mussel stickers, which must be affixed to the vessel and its trailer, upon satisfactory completion of the annual or monthly screening process.

Lake County Ordinance 2936 contains many of the model authorities and provisions suggested in the model legal framework. Key provisions missing include:

- requirements to remove drain plugs and attached vegetation upon exit;
- requirements to issue documentation, such as receipts and seals, following an inspection or decontamination (note: documentation is essential for communication among jurisdiction); and
- express authority for law enforcement or other officials to stop, detain, and inspect vessels while in transit or before launch.

Currently, no provisions exist to address watercraft inspection and decontamination in Mendocino, Napa, or Sonoma County codes of ordinances. The BOR and Solano County Water Agency have developed draft ordinance language to facilitate a vessel inspection program at Lake Berryessa for consideration by Napa County (Appendix B). The ordinance would require screening by certified personnel prior to launch, followed by vessel inspection and decontamination if determined necessary. Similar to Lake County, the draft language for Napa County is missing provisions related to drain plugs, attached vegetation, law enforcement stops, and documentation. The draft also does not address procedures or criteria for authorization of third parties, which would include BOR and Solana County Water Agency at Lake Berryessa.

In addition to addressing gaps in the statewide program, local ordinances can assist with federal efforts to manage recreational activities. For example, BOR regulations require boaters to comply with “Federal, state, and local laws applicable to the operation of a vessel, other watercraft, or seaplane on Reclamation waters” (43 C.R.F. § 428.38). The U.S. Army Corps of Engineers regulations state that “state and local laws and ordinances shall apply on project lands and waters,” including laws and ordinances governing the operation of vessels (36 C.F.R. § 327.36).

To assist with the adoption of local ordinances in Mendocino, Napa, and Sonoma counties and the implementation of reciprocal watercraft inspection programs in the region, the National Sea Grant Law Center drafted a “Model Local Watercraft Inspection and Decontamination (WID) Ordinance” (Appendix F). The model local ordinance is designed to support state and regional implementation of the model legal framework for WID programs developed by the Western Regional Panel Building Consensus Committee. The model local ordinance builds upon the existing Lake County Ordinance to address gaps identified above and seeks to provide a foundation from which stakeholders can pursue regional consistency.

CURRENT RECIPROCAL VESSEL CERTIFICATION PROGRAMS IN THE UNITED STATES

To assess the potential to develop a successful reciprocity program at lakes Berryessa, Mendocino, and Sonoma, and Clear Lake, we reviewed reciprocal watercraft inspection programs that exist in the United States, particularly those in the State of Washington, between three states—New Mexico and Colorado, and Wyoming and Colorado—and among several locations in California.

Reciprocal vessel certification programs vary. Reciprocity agreements between some jurisdictions may mean waived inspections whereas others may simply expedite the inspection process. Some programs may not have full reciprocity among all members due to suspect water body designations or the existence of non-dreissenid aquatic invasive species of concern.



Dreissena spp. Attached to native bivalve.
Photo credit: www.westernais.smugmug.com.

State of Washington

Whatcom County: Lake Whatcom and Lake Samish—Boats launching from a location with an Aquatic Invasive Species Check Station need to be re-inspected each time they launch unless their boats have a Lake Whatcom Management Program wire seal (issued upon exit from a staffed boat ramp). The program, a joint project of Whatcom County, the City of Bellingham, and the Lake Whatcom Water and Sewer District, conducted 9,571 boat inspections at the two lakes in 2016. Inspectors track the home residence of boat owners, the last water body visited, and previous water bodies visited to assess risk. Boaters may be eligible for a \$10 discount on their Aquatic Invasive Species Permit if they pass an online AIS Awareness Course (<http://whatcomboatinspections.com/ais-awareness-course>). Owners of motorized, or registered watercraft, pay an annual permit fee of \$50 (unlimited inspections), or vessel owners can pay \$20 for a 3-day pass (unlimited inspections). Non-motorized, hand-carried watercraft owners pay \$10 (unlimited inspections). If decontamination services are required, the fee is an additional \$25. Annual permit holders must affix the permit to their vessel so that permit numbers can be recorded and tracked by the inspector on duty.

<https://bellingham.maps.arcgis.com/apps/MapSeries/index.html?appid=9d9a28f925df4483a9159a33b9121fea>.

New Mexico and Colorado; Wyoming and Colorado

New Mexico, Wyoming, and Colorado entered into multi-state reciprocity agreements in 2014. Each state accepts one another's wire boat seals (New Mexico – yellow, Colorado – green, Wyoming – brown) and receipts, providing that inspectors are trained according to Uniform Minimum Protocols and Standards (2016), follow the same field procedures, and are held to the same quality

control standard. Acceptance of the seal and receipt is at the discretion of each trained inspector, such that if water is draining from a vessel, or the inspector suspects there is an issue with the seal or accompanying paperwork, he/she can conduct an inspection using state-specific protocols.

With funding from the USFWS, Colorado Parks and Wildlife developed and manages a database to electronically document and report on watercraft inspection and decontamination operations to facilitate information sharing among the states that choose to participate. The Regional WID Data Sharing System, which does not collect personal information, is currently used by Lake Tahoe, Colorado, Utah, New Mexico, Nevada, and Arizona. Participating entities use the database for their respective WID data collection needs, especially at infested waters, as well as to provide watercraft movement notices for compliant boaters that receive inspections and decontaminations, and are then moving to uninfested waters. The barrier to using and implementing the database is that a mandatory WID program must be in place so that the entity can physically enter and share data.

California

Silverwood Lake, Lake Perris, Hemet Lake, and Diamond Valley Lake—California State Parks and Urban Park Concessionaires (also known as the California Parks Company) developed an agreement (Appendix H) using reciprocal banding, which allows boaters to move among four lakes without having to be re-inspected. Urban Parks Concessionaires performs inspections acting as a contractor of the Metropolitan Water District of Southern California at Diamond Valley Lake and Lake Hemet. Boats that have cleared inspection at any of the four lakes can enter through a “banded boat” lane, expediting their launch. Inspectors in this special lane confirm the launching history of the boat using a Quagga Inspections Database (QID) (<https://www.quaggainspections.com/Ser>-

vices/qid.php), a handheld vessel-tracking mobile application used during inspections at all four lakes. The agreement among the Metropolitan Water District of Southern California and the Lake Hemet Municipal Water District was facilitated by the fact that the lakes share a common database of boat inspections (Note: Lake Perris and Silverwood Lake are now “watch list” lakes in the QIS database as quagga mussel veligers were discovered in February 2017 in the Santa Ana pipeline connecting the two systems (Marshall Pike, pers. com.)).

The Bay Area Regional Consortium—The Bay Area Regional Consortium for Mussel Prevention (Consortium) was organized in 2009 to facilitate inter-agency coordination on quagga and zebra mussel prevention activities. The consortium is comprised of Santa Clara County Parks and Recreation Department, Alameda County Water District, Contra Costa Water District, Monterey County Parks Department, Monterey County Water Resources Agency, San Benito County Water District, East Bay Regional Park District, East Bay Municipal Utility District, Zone 7 Water Agency, and the Santa Clara Water District. Led by the Santa Clara County Parks and Recreation Department, the group cooperatively developed the Bay Area Consortium Zebra and Quagga Mussel Coordinated Prevention Plan. The Bay Area Regional Consortium, agreed via a 5-year MOU (renewed through 2020) to implement watercraft inspection guidelines, reservoir monitoring, and other BMPs for equipment/water transfer outlined in the Zebra and Quagga Mussel Coordinated Prevention Plan. The Plan provides guidance to water district and recreation managers to promote the mutual goal of preventing the introduction and spread of dreissenid mussels in the region and throughout the State.

Several, but not all, of the members of the Consortium have reciprocal banding programs between jurisdictions (e.g., EBMUD and EBRPD, see below), while others limit their acceptance of bands to sites within

their own jurisdiction (e.g., Santa Clara County Parks and Recreation District). All members require mandatory screening and inspections of motorized and non-motorized vessels before launching and all offer site-based banding upon leaving the water. The primary difference between consortium members is in vessel restrictions and automatic quarantines. Santa Clara County Parks has the strictest restrictions:

Vessels registered out-of-state, or in counties south of the Tehachapi Mountains (San Luis Obispo, Kern, San Bernardino, Santa Barbara, Ventura, Los Angeles, Orange, Riverside, San Diego and Imperial) are banned from Santa Clara County waterways (active military members stationed in a permissible area excepted)...

Whereas, for example, only boaters seeking to launch at Monterey County Parks that have been boating on infested waters within 10 days are prohibited.

East Bay Municipal Utility District—A member of the Bay Area Regional Consortium, the East Bay Municipal Utility District (EBMUD) provides drinking water for 1.4 million people in Alameda and Contra Costa Counties. The mission of the district is to manage natural resources within the district, to provide high-quality water and wastewater services as well as reasonable rates, and to preserve and protect the environment. The district has a Vessel Inspection Program that includes a vessel history survey and subsequent physical inspection. Boats that fail either must be decontaminated.

- Vessels fail the Vessel History Survey if:
 - they come from a high-risk area, which is defined as an area where positive identification of either quagga or zebra mussels have been documented;
 - they have launched on waters in high-risk areas within the past 30 days; or

- the vessel operator fails to comply with any aspect of the inspection process.
- Vessels fail the Physical Vessel Inspection if standing water is found anywhere in the vessel, if water drains out of an engine when the motor is lowered into the vertical position, if aquatic invasive species are attached to the vessel, or if the vessel operator fails to comply with any aspect of the inspection process.

Vessels that fail either the survey or the inspection can pay to have their vessel decontaminated.

When vessel operators leave the launch ramp or gate, they can elect to have a vessel inspection seal placed on their vessel that allows them to return to a reservoir within the district without having an additional physical inspection (if their vessel configuration allows for placement of the seal and if qualified applicators are present to attach the seal). Vessels arriving with a seal are required to complete a Vessel History Survey. EBMUD has reciprocal banding agreements with those other reservoirs within the Bay Area Consortium that adhere to the same inspection standards.

East Bay Regional Park District—The East Bay Regional Park District (EBRPD) has an Invasive Mussel Program that includes placing a secure, tamper-proof plastic tie between the vessel's bow-mounted eye bolt and the trailer when the vessel leaves the lake. Vessels returning with an intact seal receive an abbreviated inspection, and are not subject to an additional inspection fee, however, entrance and launching fees apply. Vessels may be re-banded repeatedly if the vessel arrives at the lake with an intact band and the operator has a copy of the inspection form.

EBPRD honors EBMUD banded watercraft at all EBRPD facilities. EBMUD banded watercraft are not subject to an inspection fee, but remain subject to launch and entrance fees.

Santa Clara County Parks Vessel Inspection Program—Vessels registered out of state and in counties south of the Tehachapi Mountains (San Luis Obispo, Kern, San Bernardino, Santa Barbara, Ventura, Los Angeles, Orange, Riverside, San Diego, and Imperial) are banned from Santa Clara County waterways). All other vessels originating from permissible areas must pass a vehicle inspection. A banding program is offered to vessel owners visiting Santa Clara County Parks. The vessel operator can elect to have a band attached to the vessel between the winch hook of the trailer and the eyebolt of the bow of the vessel. If the band remains intact, the vessel can re-launch in the future without an inspection. If the vessel must be re-inspected, a vessel fee applies. Santa Clara County Parks is working on accepting bands from other jurisdictions, but currently does not accept any band from outside Santa Clara County Parks.



Educational display used at Clear Lake.
Photo credit: George Buckner.

PROGRAM ELEMENTS UNPOPULAR WITH BOATERS

Watercraft inspection rules and regulations differ across the many waterbodies in California, thus efforts to implement programs to protect waterbodies from the unwanted introduction of invasive species have unpopular elements. Even mandatory programs require some level of willing cooperation on the part of vessel operators, therefore, it is important to assess efforts that have been unsuccessful or unwelcome. In the absence of a statewide standard, boaters face confusing requirements, unexpected costs, and other inconveniences that may diminish their perceptions of their recreational experiences. Others may be encouraged to “cheat the system” by providing inaccurate information to inspectors, or on the screening forms.

Creating strong reciprocal programs with local boater buy-in among neighboring waterbodies is one way to lessen the inconvenience of watercraft inspections while enhancing adequate waterbody protections.

Examples

Lake Casitas—All boats are subject to a 35-day quarantine period, with the exception of those that are compliant with their Tamper-proof Tag Program. All vessels are subject to inspection by appointment only. Vessel operators must contact the main gate via telephone to schedule a boat inspection appointment. This element is unpopular because, although it provides for the highest level of protection to the waterbody, the need to schedule an appointment for an inspection as well as implementation of “emergency measures” that requires all vessels to be subject to a 35-day mandatory quarantine period, place perceived significant restrictions on boaters.

Cachuma Lake—All trailered vessels are required to have a 30-day vessel quarantine to protect against the introduction of dreisse-

nids. The lake has dry boat storage for vessel owners to store their vehicles during quarantine. The exception to the quarantine is vessels that have a Cachuma Lake boat launch security tag, and kayaks and canoes that pass the inspection program power wash. In 2014, lake managers offered inspection/tagging stations at two offices by appointment, allowing vessel owners to have their vessels inspected and tagged without traveling to the lake. The lake managers no longer offer this service, making it less convenient and costlier for vessel operators to transport their boat to the lake for tagging.

Castaic Lake—Because of the close vicinity of Castaic to Pyramid and Piru lakes (both now positive for quagga mussels), mandatory inspections are enforced for all motorized and non-motorized vessels launching at Castaic (Note: Prior to quaggas showing up in Piru and Pyramid the three lakes had a reciprocity program for banded boats). The program is following a “Zero Tolerance! Boats Must be 100% dry!” standard (Note: This is a standard used by many waterbodies in California). Boats that are not 100% dry will fail the inspection and not be allowed to launch for eight days. Boaters may be asked to raise and lower outdrives to check for the presence of water. Boat owner complaints include a range of concerns from being failed for having filled coolers on board to having tap water in a recently serviced engine.

Calero Reservoir (Santa Clara County)—A member of the Bay Area Regional Consortium, Santa Clara County also follows a 100% dry standard for all lakes and reservoirs. All vessels intending to recreate on a Santa Clara County lake or reservoir must pass a vessel inspection prior to launching. To pass inspection, vessels must be “clean and dry”. “Clean and dry” means that no dirt, vegetation, or water can be found anywhere on the vessel. This includes internal

compartments of the vessel and the engine. When the outboard is lowered, no water can flow out. The county asks boaters to be diligent in making sure all vessels—boats, kayaks, personal watercraft, etc.—are clean and dry. No water can be seen or felt, including water from beverage coolers, or water toys. Similar to Lake Castaic and other lakes employing the same the 100% dry standard, these protocols are not always popular with boaters for numerous reasons. Boaters who may be trying to do the right thing may be turned away, and there are no timely options available to remedy the issue prior to launching, thus curtailing their entire outing, or forcing them to travel to a lake that does not share the same requirements.

In addition, vessels without a current California registration and mussel fee sticker are prohibited as well as all vessels registered out-of-state, or in one of the California counties south of the Tehachapi Mountains (with an exception for military personnel stationed in Southern California). Because of these more stringent launch standards, Santa Clara watercraft inspectors do not allow reciprocity with boats banded by their Bay Area Regional Consortium partners, such as East Bay Regional Parks District.

Clear Lake—The non-resident sticker program in Lake County requires that non-residents undergo a full screening and purchase a new sticker for each calendar month they intend to boat in the county. They county sells stickers for the following month about five days prior to the end of the current month. Near the end of the calendar month, some non-resident boaters may actively choose to boat elsewhere to avoid the screening/sticker purchase process due to the limited utility of the sticker purchase. In addition, many non-residents may boat exclusively at Clear Lake, but are nevertheless ineligible for the more cost-effective and convenient resident boater sticker program.

Excerpts from social media conversations about watercraft inspections in California

"Wish I could make the drive to Casitas which takes me two hrs. in L.A. and 101 traffic. With the Quagga boat inspection process and the 35-day quarantine period guess I'll stick to our local lakes..."

"If you boat has an ice chest in it with ice or open water bottles, it's a fail!!! (keep ur ice chest in your vehicle until you pass inspection)."

"It's just tap water... You mean I drove all the way here to get turned away?"

"The outdrive test in my IMO really isn't a fair test !!! there's gotta be another solution then turning an entire family around after driving 2hrs towin the boat.....should be able to just hook up a hose and cranker up, then blow everything out the pipes right in front of mr ranger."

"Santa Clara county doesn't care if you had to drive through fog to get there, if there is ANY water in or on the boat or trailer, you fail. They don't want to hear about driving through a puddle, or fog or rain or whatever. It's dry or fail."

"Since there were only a couple days of May left, I didn't want to fork over the extra \$20 for the May Quagga Mussel decal."

ESTABLISHING RECIPROCITY

Although developing a reciprocal WID program across neighboring waterbodies with multiple jurisdictions presents many challenges, the first step toward developing such a program already exists: the greatest commonality across all watercraft inspection programs in Lake County, at Lake Berryessa, and at lakes Sonoma and Mendocino is the desire to strengthen programmatic efforts to prevent the introduction of aquatic invasive species, with a special emphasis on quagga and zebra mussels. Also desired by these entities is the ability to enhance prevention efforts without significantly curtailing boating or other water-based recreational activities. This is an especially important consideration for managers that must balance the interests of the end users of the water with its recreation value, or localities that depend on the revenue recreation activities provide and have an active local boating population or residential users. However, enhancing WID programs with an eye toward reciprocity between neighboring lakes may also provide managers with a way to increase boater buy-in for more prescriptive programs by allowing the development and expansion of efficiencies (e.g., simplified compliance, expedited launches) as well as incentives for locals and frequent users.

Reciprocity refers to the recognition by one entity of a watercraft inspection or decontamination effort performed another entity “providing that that entity adheres to an agreed upon set of minimum standards for inspection and decontamination” (Otts and Nanjappa 2014). Programs that seek to develop mutual reciprocity must agree upon specific program elements to be implemented (other desirable options may mutually benefit the programs but have little bearing on functional reciprocity). This includes establishing minimum standards for inspections and decontaminations, monitoring of each waterbody for AIS, actively testing the caliber of inspections (sometimes referred

to as “secret-shopper” programs or quality control), implementing systems for recognizing the successful completion of an inspection or decontamination (options include bands, tags, receipts, etc.), and developing an avenue for coordination and communication among entities.

The following are program elements and recommendations that may be explored by managers to develop watercraft inspection programs with the goal of establishing reciprocity between neighboring lakes.

Water Body Monitoring

For one entity to accept that a boat or other watercraft leaving one body of water is free of mussels or other unwanted AIS, there is a need to demonstrate that the waterbody in question is not harboring said organisms. Because it can be difficult, if not impossible, to prove the negative presence of a rare organism, entities must also agree on minimum standards for early detection monitoring and analyses. Finally, validated results must be made available to all entities.

To establish a comprehensive lake monitoring program, entities will need to consider the following:

- Develop a list of target species (AIS species of concern). These lists need not be identical for all waterbodies if there is agreement relative to priority species.
- Develop best management practices for monitoring, including frequency and timing of monitoring as well as standards for gear type, locations, techniques, etc.
- Agree to guidelines for sample analyses (this is particularly relevant for dreissenid veliger monitoring sam-

ples, which may be analyzed using a variety of methods)

- Data sharing system(s).

Inspections

Comprehensive mandatory inspections are recommended for cross-jurisdictional reciprocity programs (Elwell and Phillips 2016). Although standards, protocols, and certification are available for inspections, decontaminations, and watercraft inspectors, these represent a minimum baseline for developing programs with an eye toward reciprocity. Specifically, all inspections must follow the Uniform Minimum Protocols and Standards (Elwell and Phillips 2016) and must be performed by trained watercraft inspectors. If decontamination of suspect boats will be allowed by all entities, similar minimum standards and training must be implemented for that process as well. If needed, location-specific BMPs for inspections and decontaminations may be developed and approved by all entities.

The recommended baseline for establishing such programs would include the following elements:

- Mandatory inspections
 - Established by county ordinance and/or agency directive
 - Provide enforcement authority
 - Include concessionaire and other contracting language where appropriate
- A system for communicating the successful completion of an inspection or decontamination
 - All entities involved in the program should use a tamper-proof seal system with a unique ID that certifies the vessel is clean, drained, and dry. Information associated with the seal and the accompanying certificate or receipt should designate the entity

applying the seal, the locale where the vessel was sealed, the type of inspection, decontamination, or quarantine, and the seal date.

- The entity applying seals and using receipts should follow the Uniform Minimum Protocols and Standards.
- Only vessels/equipment that have passed an inspection or have been decontaminated by trained personnel should receive a watercraft seal.
- Certification sealing should only be applied by a trained inspector.



Clear Lake staff checking artificial substrates for mussels. Photo credit: George Buckner.

Coordination and Communication

It has been suggested that a first-step toward cross-jurisdictional reciprocity is the successful establishment of intra-agency reciprocity (Guisti 2010). Such reciprocity, as has been established somewhat informally between Lakes Sonoma and Mendocino, and more formally via County Ordinance in Lake County, can be viewed as incremental steps toward a broader program development.

Cross-jurisdictional watercraft inspection reciprocity programs are rare, but can be successful if they are created on an established platform of strong communication and coordination between entities. Established channels of communication that exist between potential cooperators may be a natural place to initiate reciprocity because it builds upon existing trust among entities that are already comfortable working together as a cohort.

Open, frequent and easy communication between partners is vital to:

- Establishing initial programmatic goals
- Developing mutually beneficial programs
- Honoring existing, successful program elements
- Communicating both successes and hardships
- Adjusting implementation strategies as needed
- Sharing data
- Minimizing duplication of effort
- Maximizing consistent messaging
- Capitalizing on efficiencies of scale
- Preparing for future challenges and opportunities

It is likely that numerous management entities will be involved in reciprocity that involves natural and man-made water bodies. In some instances, management entities have little or no jurisdiction over recreational use of the waterbodies. Nonetheless, it is import-

ant that all jurisdictions agree to the goals of the watercraft inspection program, commit to participate in regular communication and updates, and agree to hold their own agency actions to the same standards (especially important for preventing the introduction and spread of AIS via agency watercraft, shared equipment, raw water transfers, etc.).

- Annual coordination/communication venue
 - Convening annually with neighboring jurisdictions and others involved in reciprocity programs maintains lines of communication, leverages resources, creates efficiencies, assesses past season challenges, and helps to anticipate and prepare for future challenges and opportunities.
- Real-time data sharing
 - All entities involved should use the same electronic system for recording and sharing watercraft screening information as well as information associated with either the seal, or the accompanying certificate.
 - Using an established and widely-used database, such as the Regional WID Date Sharing System (also known as the Colorado database), will not only allow watercraft inspectors and decontamination stations to electronically document operations and to share information across jurisdictions, it can also provide valuable information on watercraft that have been documented as having boated in infested waters and, in many cases, provide advance notice to destinations.
- Report sharing
 - Sharing information on past seasons allows reciprocal jurisdictions to understand the challenges, opportunities, strengths, and

weaknesses or program implementation at specific sites, allowing jurisdictions to learn from one another and work together to collaboratively address issues.

Quality Assurance and Quality Control

It is unrealistic to expect entities to simply accept the certification of another program without a demonstration that the other programs meet the same standards implemented by the accepting program. Managers at the receiving waterbody must have confidence that the waterbody last visited is uninfested, that the inspectors at the source are performing their duties as trained, and that staff are communicating similar messaging to the public. Beyond developing and successfully using the communication strategies recommended above, quality control is important:

- Entities must agree to and implement a “secret shopper” style quality assurance quality control system to ensure that inspectors, concessionaries, decontamination stations, etc. are using Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination Programs for Dreissenid Mussels in the Western United States, providing accurate information to boaters, and performing other tasks as required by the reciprocity standards.

Local Boater Programs

Reciprocity among waterbodies can be considered a “public-service” because it rewards low-risk boaters by eliminating or streamlining the process of re-inspecting compliant watercraft and enhances programmatic efficiency by allowing management to focus resources and personnel on higher risk conveyances, such as complex watercraft and equipment (Zook and Phillips 2009). Encouraging local boater participation may be a key to the successful adoption of a mandatory and comprehensive watercraft inspec-

tion program. Local boater participation can be achieved directly (via incentives and rewards) and indirectly (through efficiencies, standardized protocols). It can also be achieved by enhancing communication and feedback among jurisdictional authorities and water users. Boaters need to understand their role and responsibilities, the potential impacts of unsuccessful prevention efforts, what they are being asked to do (and pay), what others are doing to prevent introductions (beyond WID), and that their values and concerns are being heard and are understood.

Ideas include:

- Indirect incentives
 - Expedited boat launches at “home lake” as well as at all participating lakes with seal/certificate
 - Same clean, drain, dry standards at all participating lakes
- Direct incentives
 - Passport system
- Financial incentives (examples below in use at other lakes)
 - AIS online training for local boaters to reduce fees
 - Discounted “unlimited inspections”
 - Discounted launch fees
- Two-way communication with local stakeholders
 - Annual report aimed at users/boaters
 - Forums for boater feedback, participation
 - Facilitate community stewardship, local lake watch efforts
- Validation
 - Local participants need validation that the program is being enforced and targeting high-risk boats.

PATHWAY TO STRONGER WID AND RECIPROCITY

For all three jurisdictions, the pathway to a regional watercraft inspection program with elements of reciprocity will involve changes to existing programs. For each, the changes represent a move toward more comprehensive watercraft inspection programs. Each jurisdiction faces different challenges and barriers. To better understand the challenges to mandatory WID and reciprocity, we chose to evaluate their current programs, the direction each is headed, and their long-term goals.

To better assess the current status of WID programs in the three jurisdictions, we described, and affirmed with them, their program elements within the framework of California's Fish and Game Code dealing with aquatic invasive species. Although not all steps are sequential, we loosely followed a decision tree format so that each jurisdiction could view their current programs, overlay their short-term goals, and envision their long-term goals for preventing the introduction of dreissenid mussels through prevention efforts. We then layered the elements of reciprocity identified in the previous section of this report.

Fish and Game Code Chapter 3.5. Aquatic Invasive Species [2300 - 2302]

Section 2301 (d) (1) of the code directs entities that operate water supply systems to “implement measures to avoid infestation by dreissenid mussels.”

Section 2302 requires that any entity that owns a reservoir where recreational, boating or fishing activities take place (excluding those with mussels):

- 1) Assess the vulnerability of the reservoir for the introduction of nonnative dreissenid mussel species, and
- (2) Develop and implement a program designed to prevent the introduction of nonnative dreissenid mussel species.

At a minimum, the prevention program must include: public education, monitoring for dreissenid mussels, and management of permitted recreational, boating, or fishing activities.

Figure 1 shows the relationship between the two sections of the Aquatic Invasive Species section of the Fish and Game Code. The red boxes represent those elements mentioned in the Fish and Game Code 3.5 Section 2302 and further defined by the Department of Boating and Waterways Quagga and Zebra Mussel Infestation Prevention Program (Note: “As part of its mission, the Division of Boating and Waterways manages the Dreissenid Mussel Infestation Prevention Program, which supports preventative plans that help protect California’s reservoirs from a dreissenid mussel infestation... Funding priority is given to prevention plans that are consistent with Fish and Game Code, Section 2302...” http://dbw.parks.ca.gov/?page_id=28822). The blue boxes were added to represent other actions we believe to be consistent with those two undertakings (conducting a vulnerability assessment and developing a prevention plan).

To expand the management portion of the prevention program, we created five building blocks, one of which is the actual watercraft inspection and decontamination program whose elements reflect the baseline protocols and standards for a comprehensive WID program as defined by Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination Programs for Dreissenid Mussels in the Western United States III (Elwell and Phillips 2016) (Figure 2).

Lastly, we overlaid and defined the five key elements of reciprocity as they related to the efforts to implement dreissenid prevention programs (Figure 3).

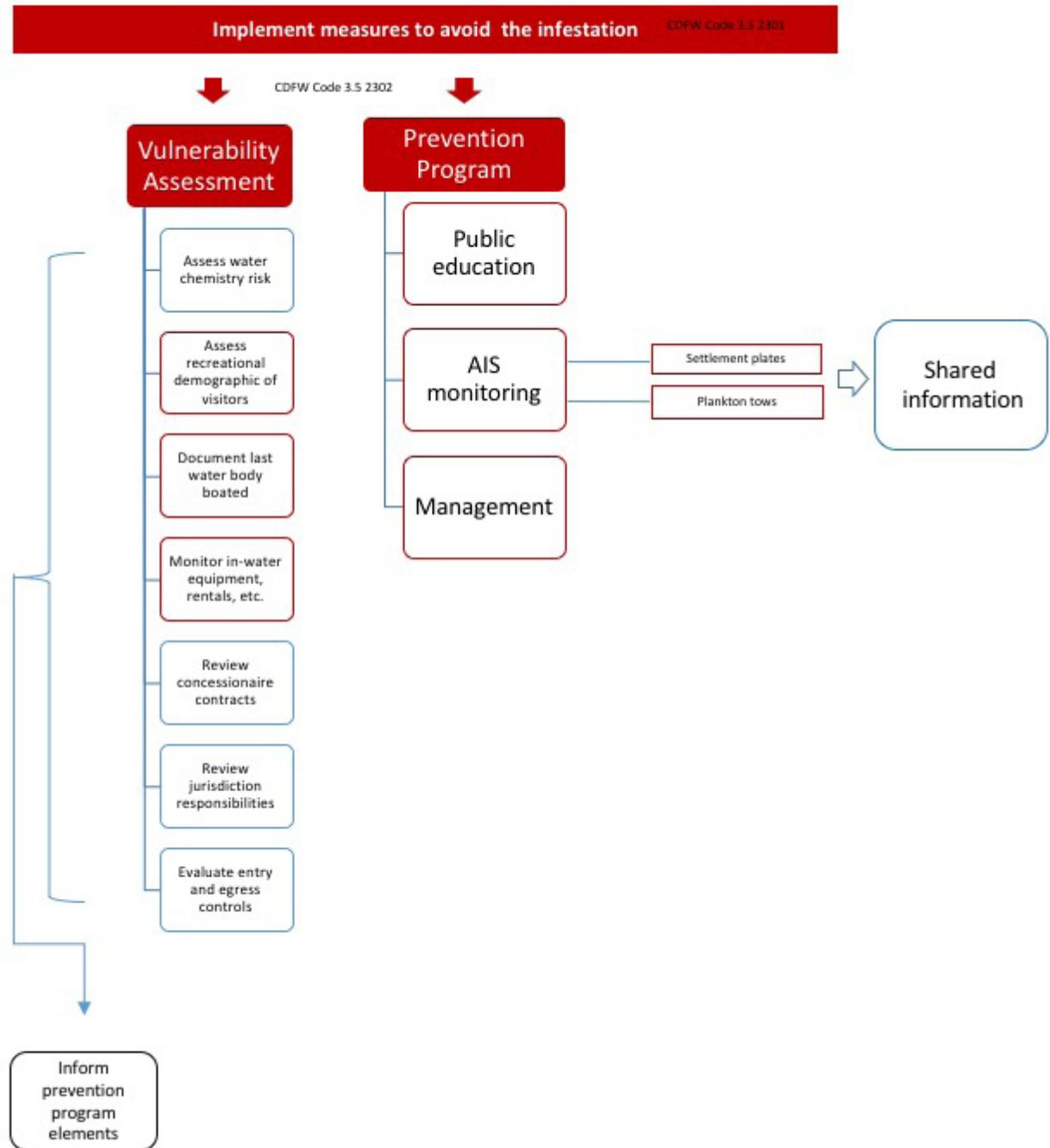


Figure 1. Dreissenid Prevention Planning.

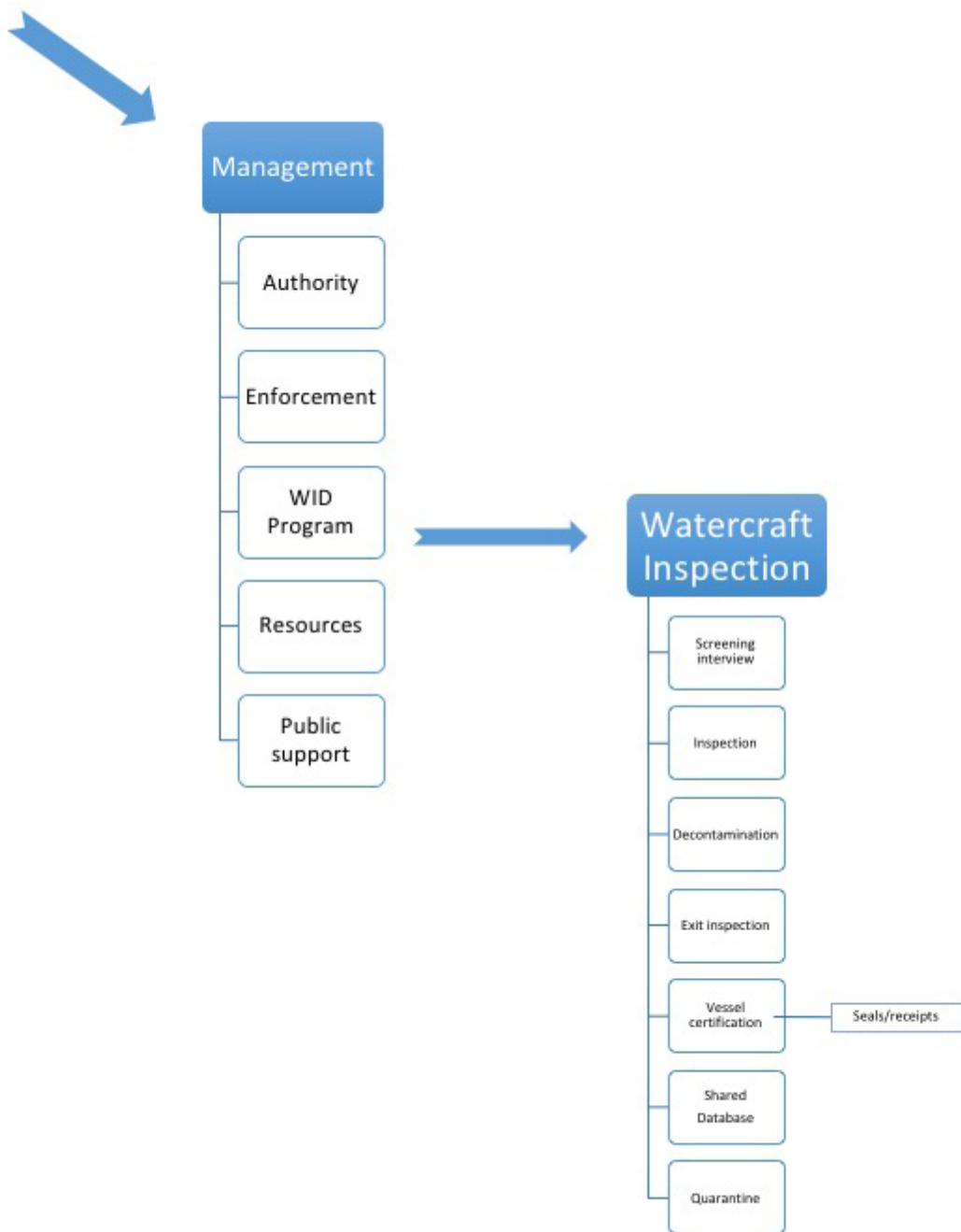


Figure 2. Elements of a Comprehensive WID Management Plan.

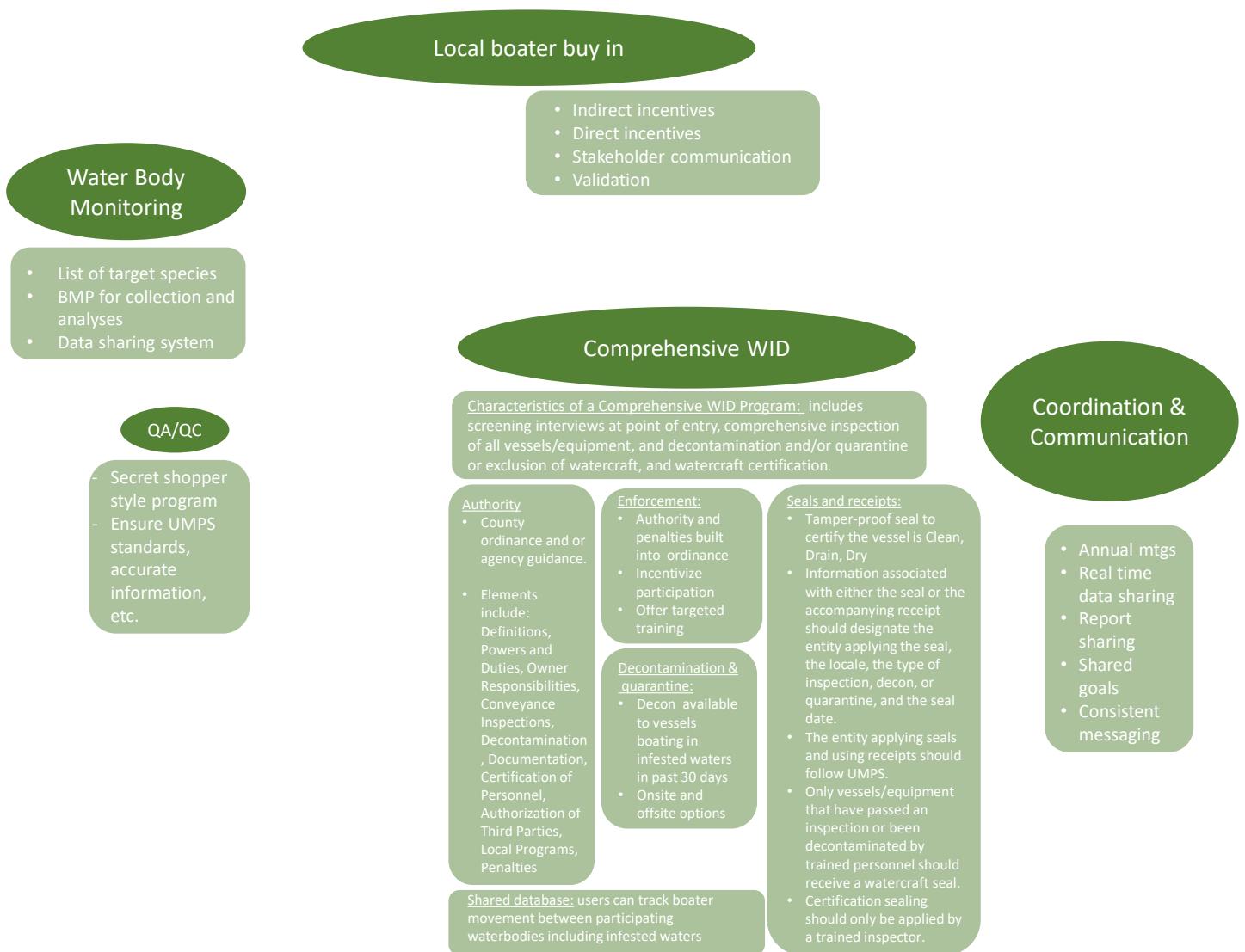


Figure 3. Five elements of reciprocity.

Altogether, these figures form the decision tree framework we used to evaluate each of the individual programs managed by the three jurisdictions (Figure 4). Each of our three programmatic assessments followed this visual format.

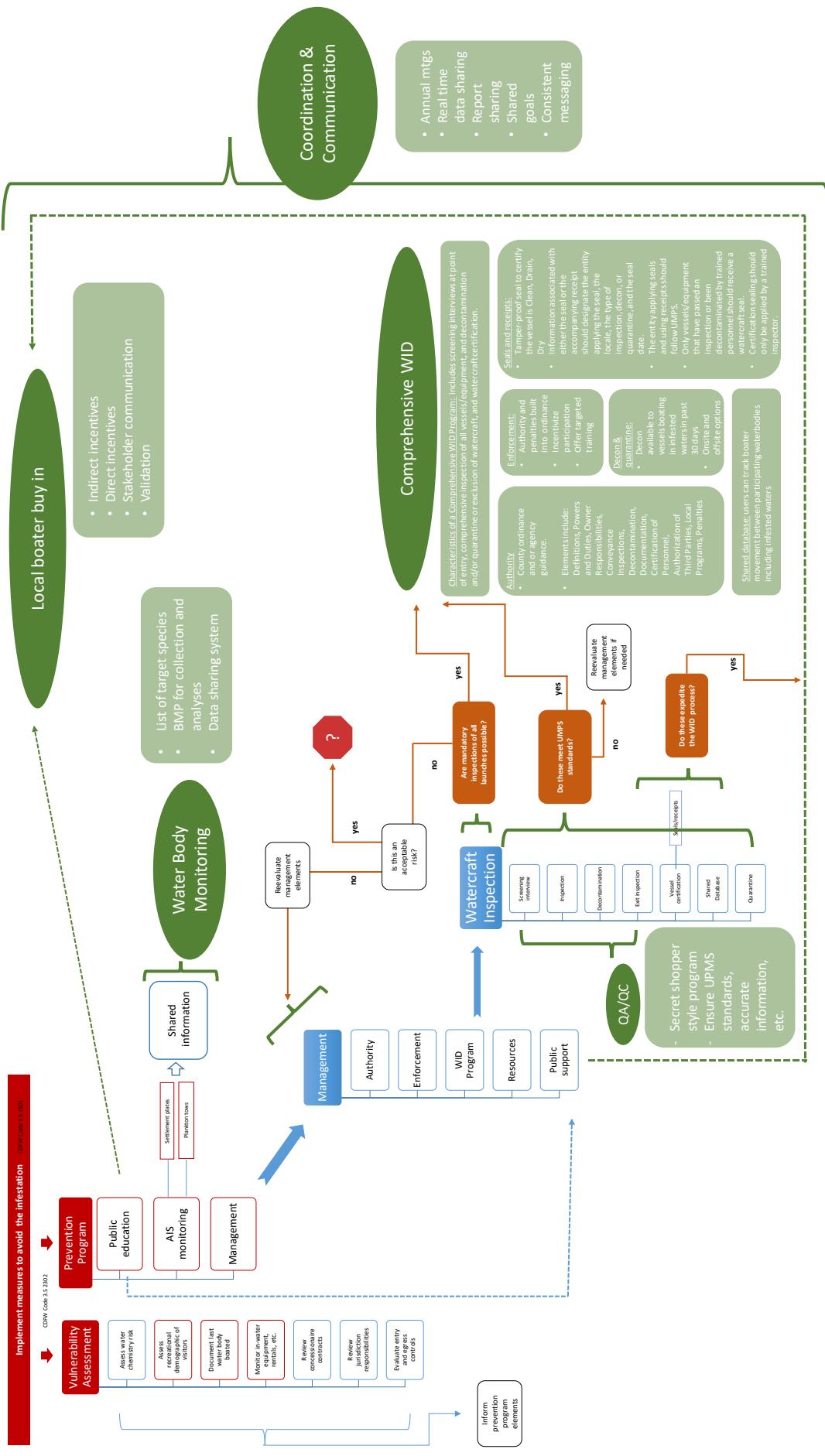


Figure 4. Prevention Plan Decision Decision Tree.

WID Program Assessment: Clear Lake

For the purpose of the assessment we limited our review of Lake County's prevention program to Clear Lake, by far the most utilized waterbody in the jurisdiction, although we noted instances where further action or clarification was needed to accurately capture the program elements. The dreissenid prevention program currently implemented at Clear Lake has many of the baseline elements of a comprehensive watercraft inspection program. At program inception, program managers assessed the vulnerability of the lake to a dreissenid introduction (based on water chemistry and boater use) and implemented a program well in advance of the Fish and Game Code requirements. However, one barrier to reciprocity may be the lack of mandatory inspection before each launch, made more difficult by the size of the lake,

the predominance of lakeshore residential property, and the number of access points to the lake, including private launches.

Actions that Clear Lake could implement to enhance their program focus on the elements of WID that are not covered by the current prevention program: exit inspections, seals, and participation in a shared watercraft inspection database (Figure 5). Other areas that may be strengthened or implemented include quality assurance/quality control assessments of local sticker providers as well as spot checks of local boaters (cross-referenced with a boater database that captures boater movement in the western United States), increased communication with other regional water body managers, and public outreach with the intent of increasing public buy-in for continued prevention efforts and exit banding.



Clear Lake, showing one of the many boat docks and access points. Photo credit: Robyn Draheim.

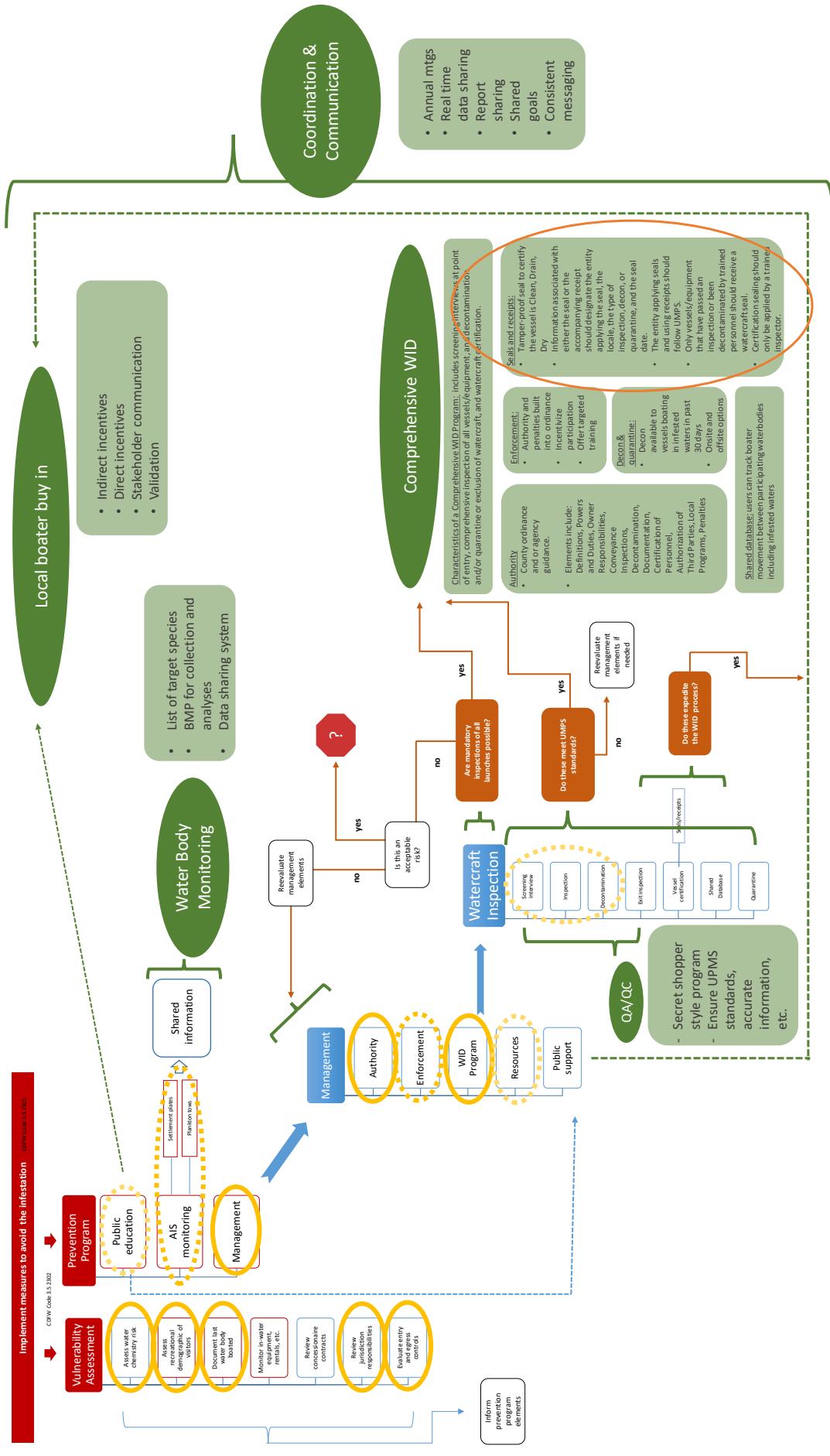


Figure 5. Clear Lake Decision Tree.

WID Program Assessment: Lake Berryessa

Lake Berryessa jurisdictional managers are developing elements of a mandatory watercraft inspection program (Figure 6). To accomplish this, they will need to establish the authority and enforcement necessary to do so, which they are exploring through a proposed ordinance in Napa County. They will also need to be able to fund year-round inspectors at their public boat ramp, develop an exit inspection and seal program, and gate the ramp when inspections are not

available. In addition, they may wish to explore writing language into their concessionaire contracts, or establishing standard operating procedures that require private boat ramps to inspect and seal boats. Currently the program stations their own inspectors outside of several of the private ramps to provide WID support. Program staff recently purchased a portable decontamination station and is determining the location to site the unit. The lake has also expressed interest in participating in the Regional WID data sharing system.



Top left photo: Stop Aquatic Hitchhikers sign entering Lake Berryessa.
Bottom right photo: Lake Sonoma. Photo credits: George Buckner.

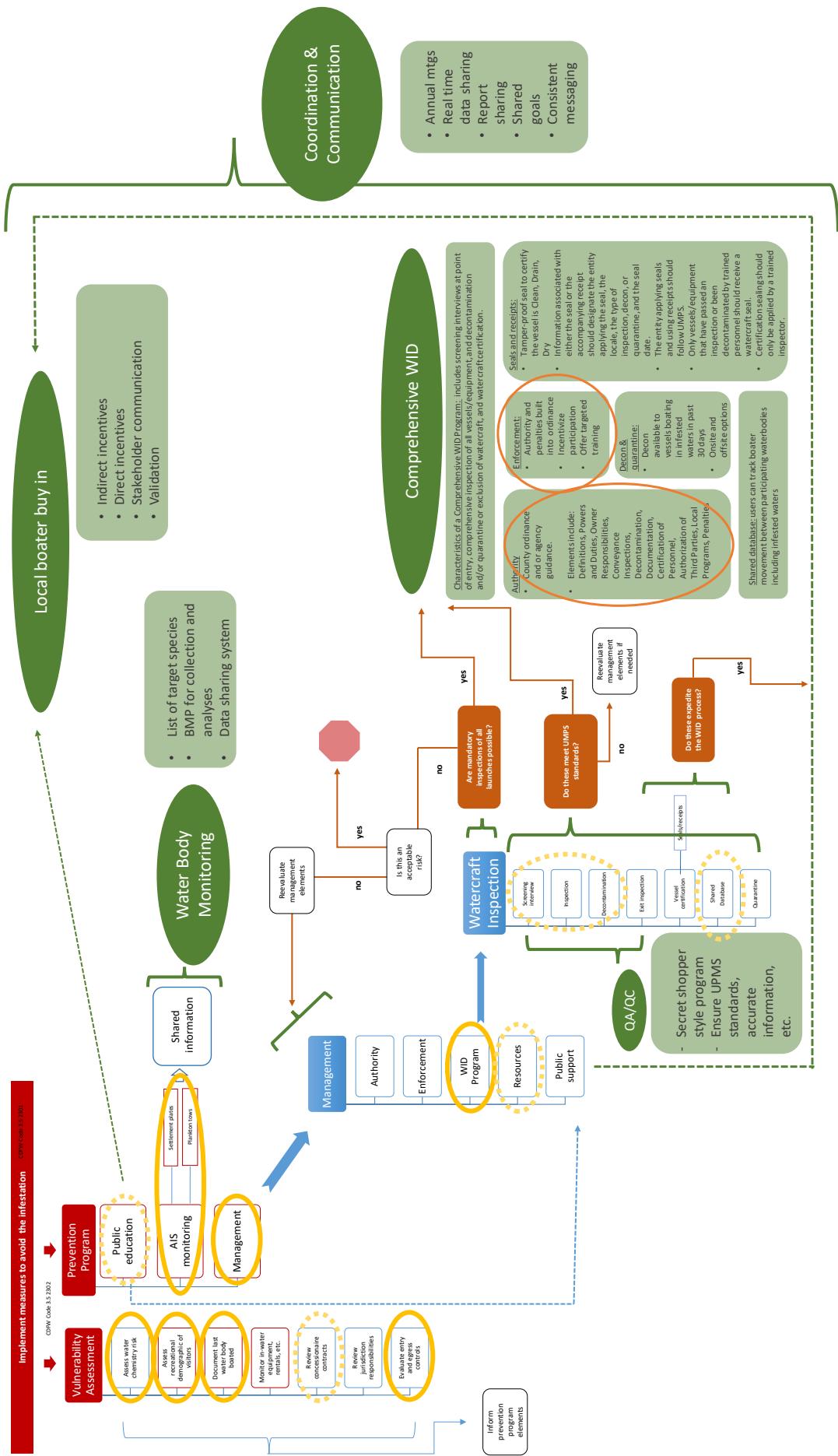


Figure 6. Lake Berryessa Decision Tree.

Challenges and Barriers to Reciprocity

There will always be challenges and barriers to developing and implementing a reciprocal watercraft inspection or AIS prevention program. Addressing barriers will allow for the development of a stronger more successful program.

Funding is often the first hurdle mentioned, however, other considerations need to be assessed and addressed at a local and regional scale.

- Shifting political will and priorities
- Entrenched agency distrust
- Conventional silos of oversight
- Infrastructure challenges
- Resource allocation



Infrastructure can present challenges to effective WID program implementation.
Photo credit: George Buckner.

THE LOCAL BOATER PASSPORT: ONE ELEMENT OF RECIPROCITY

What are AIS Passports?

AIS Passports are uniquely numbered booklets (aka passports) designed for boaters that frequently transport watercraft between two or more collaborating jurisdictions. Passports provide boaters with consistent AIS messaging and resources and help them track the last waterbody visited. If implemented properly, AIS passports can expedite inspections, making it more efficient for both boaters and managing jurisdictions to manage local boater traffic and enhance AIS prevention efforts. The AIS passport concept is modeled after the principals of community-based social marketing, the intent of which is to foster and incentivize boater behavior changes at the community level by directly involving the target audience in activities that benefit both boaters and jurisdictions.

Who is Implementing AIS Passport Programs?

The state of Washington, through the Washington Department of Fish and Wildlife (WDFW), has implemented a Watercraft Passport system for several years. The original target audience was day-use boaters in the greater Spokane, WA area who frequently cross the Washington/Idaho border to recreational boat in Idaho (e.g., Lake Coeur d'Alene and Lake Pend Oreille). The WDFW passport is free, available to any boater regardless of the state of residence, and provides information on AIS, boat inspections, and AIS authorities in the Pacific Northwest. According to the WDFW website: "passport holders whose watercraft and gear meet the clean/drain/dry requirements described in the booklet are likely to have shorter inspection times at AIS check stations." In addition to easing backups at cross-border inspection stations on busy boating week-

ends, the passport system allows WDFW to collect information on boater movement and behavior. Some recreational groups, such as the Oregon Whitewater Association, recommend that their members apply for WDFW Passports if they are going to be transporting their boats into Washington.

In 2017, the provinces of Alberta and British Columbia (B.C.) initiated a pilot AIS Passport program for cross-border collaboration in Western Canada. The passport was aimed at watercraft that travel frequently through B.C. and Alberta. When passports are issued, boaters must sign a commitment to practice clean, drain, dry and to stop at all inspection stations. Although it remains mandatory for all passport holders to stop at inspection stations, having a passport expedites the inspection process. Both provinces collect data on boater experiences with the passport program to evaluate effectiveness of the pilot program and inform future changes. Preliminary reports indicate that the overall response to the pilot program has been positive, but that any rollout of this type of program needs to be accompanied by thorough training of inspectors relative to integrating passports into standard watercraft inspection and decontamination practices.

How do AIS Passports Work?

Meant primarily for frequent boaters, passports may be applied for online (WA) or at an inspection station or outreach event (Canada). Interested parties complete the required paperwork, are issued a passport with a unique identifying number, and are asked to carry the passport with them to realize the intended benefits from the passport program. The passport is stamped/dated-signed by an inspector each time a boater travels through an inspection station. The passport then serves as a record of past

watercraft inspections. An inspection receipt may or may not be issued in addition to the passport stamp (per a set of agreed upon, standardized protocols). Inspections by other entities/at locations not collaborating with the issuer of the passport may not choose to honor a passport as a stand-alone, valid receipt of WID. For this reason, passports are primarily targeted at high frequency, local boaters. However, if inspectors are using a shared database, such as the Regional WID data sharing system, this concern may be lessened.

Passports typically consist of one page for recording information about the watercraft for which it is assigned (in WA a passport may be issued for multiple watercraft), information about the passport program, blank pages for inspection stamps, information about clean, drain, dry, information about AIS of concern, inspection station locations, contacts for more information, and log pages for boaters to record where they have boated during the season. Each passport comes with a unique identification number that can be used to quickly identify the boater's information at a cooperating inspection station.

AIS Passport Benefits

The AIS passport concept is modeled on the principals of community-based social marketing, (i.e., to foster sustainable habits by incentivizing behavior changes at the community level), and as such, may be ideally suited to increase local boater buy-in as waterbodies with no dreissenid infestations continue to transition to mandatory WID. Boaters most likely to feel inconvenienced by increased inspections are local boaters that frequently move among the same waterbodies in a small geographic area. These types of boaters represent the lowest-risk category of boater (assuming they do not boat in any infested waterbodies that may be within close geographic range to the water bodies they frequent) and would benefit the most from an expedited process. The AIS Passport program would treat local/frequent boaters

in much the same manner as determined by current screening effort, even as WID programs become more comprehensive.

A coordinated AIS Passport effort may also help facilitate actions that achieve elements of reciprocity among waterbodies. A successful pilot program would leave frequent visitors with a favorable impression of the inspection processes within the cooperating areas. The coordinated effort represented by an AIS Passport program would likely be viewed as a step toward reciprocity without the need to institutionalize identical standards among waterbodies. This would facilitate the phasing in of mandatory WID efforts and the move to exit-banding to facilitate reciprocity. It also allows management entities to formalize their information sharing and other coordination efforts as they move toward a goal of reciprocity.

One often overlooked aspect of successful campaigns aimed at changing behaviors (in this case implementation of clean, drain, dry to prevent the introduction of invasive mussels) is the importance of peer role models—a factor which has been shown to be far more effective and empowering than outreach and awareness messaging alone. A successful AIS Passport program, i.e., one that is easy to implement and creates positive community response, could help build a stakeholder base for strengthening AIS prevention efforts and reinforce peer-to-peer encouragement of best management practices, i.e., modeling sustainable behavior. An AIS Passport program would also allow for more analysis of observations and surveys, such as helping explain barriers to behavioral change, i.e., clean, drain, dry, WID.

In some cases, an AIS Passport may even encourage boaters to increase their visitation of nearby waterbodies, contributing to a positive outcome for local economies.

Potential AIS Passport Scenarios for Clear Lake and Lakes Berryessa, Sonoma, and Mendocino

I. Comprehensive

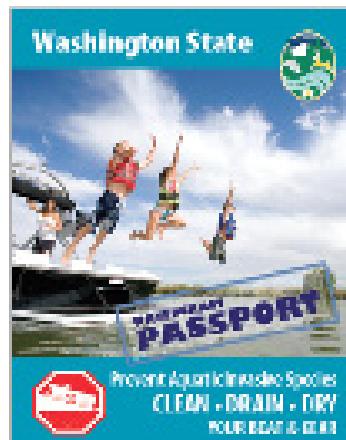
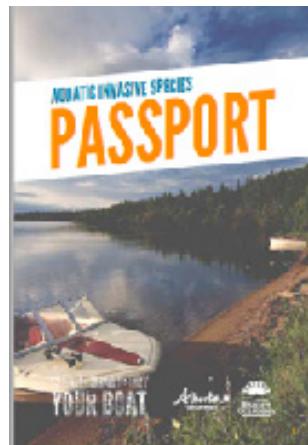
- Implemented at all cooperating lakes; at public, concessionaire run and/or hotel-owned (i.e., staffed) ramps.
- Expedited (not eliminated) WID.
- Tied to use of western database for all WID.
- Develop a page for Lake County sticker/info.
- Option—passport program participants qualify for annual Lake County sticker, perhaps implement in the second year (apply with your first passport – may need a change to County Ordinance)
- Lake County resident would not be required to re-inspect or re-assess if only boating at Lakes Berryessa, Lake Sonoma or Lake Mendocino – i.e., reciprocity lakes...) (may require a change to the Ordinance).
- Signing application for passport would allow the three entities to share and analyze collected information (beyond data western database).

II. County by County

- Implement among Lakes Sonoma/ Mendocino and Berryessa.
- Implemented at all cooperating lakes; at public and concessionaire-managed ramps.
- Expedited (not eliminated) WID.
- Tied to use of western database for all WID.
- Could expand to all North Coast Consortium entities.
- Signing application for passport would allow both entities to share and analyze collected information (beyond data in western database).

III. Internal - U.S. Army Corps of Engineers

- Implement to avoid repeat inspections between Lakes Sonoma and Lakes Mendocino (within a specified time frame – already an informal weekend process in place).
- Expedited (not eliminated) WID.
- Would be improved by tying to western database, but timeframe chosen above may make this unnecessary.
- Implement at public ramp, then incorporate concessionaire in process.



RECOMMENDATIONS

Implementing a Pathway Toward Reciprocity

Jurisdictional managers for Lakes Berryessa, Sonoma, and Mendocino convened in Lakeport, California on January 18, 2018 to discuss the overall project and potential actions to advance reciprocity with the managers of the Lake County WID team. The following 11 recommendations identify specific actions each jurisdiction could take to advance reciprocity in the areas of administration, information sharing, law enforcement training and incentives, watercraft inspection and decontamination, quality assurance and quality control, and outreach and education.

Administration

- A. Secure short- and long-term locations for watercraft decontamination, including a trained individual to conduct decontaminations.
 - Responsibility: Berryessa/Sonoma/Mendocino management
- B. Address any existing gaps or shortcomings in existing county ordinances
 - Responsibility:
 - Berryessa: Consider revisiting with Napa County after incorporating ordinance enhancements; review model ordinance
 - Sonoma/Mendocino: Consider using the county ordinance as a tool for developing authority for mandatory watercraft inspection and decontamination (explore potential for engaging with Mendocino County Inland Water and Power Commission and Sonoma County, both of which have nexes with the US Army Corps of Engineers)
 - Clear Lake: Consider elements of the current ordinance that may hinder law enforcement participation
- C. Annually update the plan required by the California Department of Fish and Wildlife for watercraft inspection and decontamination programs.
 - Responsibility: All jurisdictions

Information Sharing

- D. Share water body monitoring data with local jurisdictions
 - Responsibility:
 - Berryessa to share information directly with other jurisdictions.
 - Sonoma/Mendocino to establish a comprehensive water body monitoring program at Mendocino and share data with local jurisdictions; data collected by state agencies is shared via the online database.
 - Clear Lake to continue to share data via the online database.
- E. Join the regional watercraft movement database.
 - Responsibility:
 - Sonoma/Mendocino: USACE to connect with Colorado staff to access the database currently being used by Mussel Dogs.

Clear Lake: Contact Colorado to join the database, and have monitors, not screeners, upload the data. Request funding as part of 2019 grant program

F. Convene twice annually (immediately after the conclusion of the summer boating season, and during the winter) to share lessons learned and discuss potential changes to program in coming year.

- Responsibility: All jurisdictions.

Law Enforcement Training and Incentives

G. Take steps to encourage enhanced participation in enforcement of existing watercraft inspection and decontamination regulations via training and incentives

- Responsibility:

- Berryessa: Invite law enforcement to participate in WIT 1 and 2 trainings. Convey to Napa County the benefits of investing county resources in actions that prevent an introduction of dreissenids in the county.
- Clear Lake: Consider providing training to law enforcement to incentivize enhanced participation.

Watercraft Inspection and Decontamination

H. Strengthen existing watercraft inspection and decontamination programs.

- Responsibility:

- Berryessa:
 - Meet with the Bureau of Reclamation management to discuss potential contract with concessionaires that incorporates watercraft inspection and decontamination.
 - Formalize policy, including potential for banding and concessionaire contract enhancements.
 - Review concessionaire contracts from other states/areas to inform enhancements to existing contracts.
 - Consider incentivizing concessionaires by providing funding for watercraft inspection and decontamination.
 - Develop and fund a mandatory, year-round inspection program.
 - Develop an exit inspection system and offer seals – build into operational plan with concessionaires and address the challenge of banding boats upon exit.
- Sonoma/Mendocino:
 - Install gates at public boat ramps.
 - Consider contracting watercraft inspection and decontamination station implementation:
 - Develop an exit inspection system and offering seals at public ramps.
 - Review concessionaire contracts from other states/areas to inform enhancements to existing contracts.
 - Consider incentivizing concessionaires by providing funding for watercraft inspection and decontamination.
 - Develop and fund a mandatory, year-round inspection program by exploring opportunities for funding packages; more formally plan and budget for watercraft inspection and decontamination in future budgets.
 - Consider relocating inspections to a location near the visitors center, and incorporating bands/seals (versus the current two locations that are being used for inspections).

- Clear Lake:
 - Develop an exit inspection system and offer seals at public ramps as a pilot program.
 - Enhance local boater program with frequent boater options for out-of-county boaters.
 - Increase compliance checks for local boaters.
 - Ensure trained county inspectors conduct inspections and decontaminations, not volunteers.

Quality Assurance and Quality Control

I. Participate in a regional secret shopper-style program to ensure all programs are meeting the Uniform Minimum Protocols and Standards. Consider developing a cadre of volunteers to implement the program.

- Responsibility: All jurisdictions.

Outreach and Education

J. Work together on boater messaging and boater incentives in the region, sharing resources and capacity for outreach (e.g., radio advertisements, print media, social media).

- Responsibility: All jurisdictions.

K. Implement a local boater passport.

- Responsibility: All jurisdictions.

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APPENDICES

Appendix A. Ordinance 2936 – County of Lake.

Appendix B. Draft Napa County Dreissenid Ordinance.

Appendix C. Comparison of Lake County Ordinance to Napa County (draft) Ordinance.

Appendix D. Comparison of Lake County Ordinance to the Model Legal Framework.

Appendix E. Comparison of Napa County Draft Ordinance to the Model Legal Framework.

Appendix F: Model Local Watercraft Inspection and Decontamination (WID) Ordinance.

Appendix G. Bands issued in California.

Appendix H. Examples of Watercraft Inspection and Decontamination Contracts with Concessionaires.

Appendix A. Ordinance 2936 – County of Lake.

BOARD OF SUPERVISORS, COUNTY OF LAKE, STATE OF CALIFORNIA ORDINANCE
NO. 2936

AN ORDINANCE AMENDING ARTICLE IX TO CHAPTER 15 OF THE LAKE COUNTY CODE ESTABLISHING A FEE-BASED INSPECTION PROGRAM FOR ALL WATER VESSELS LAUNCHED IN THE COUNTY OF LAKE

THE BOARD OF SUPERVISORS OF THE COUNTY OF LAKE ORDAINS AS FOLLOWS:

Section 1: Article IX of chapter 15 of the Lake County Code is hereby amended to read as follows:

ARTICLE IX. WATER VESSEL INSPECTION PROGRAM

Sec. 15-52. Findings.

52.1 The county of Lake holds the waters of Clear Lake in trust for the benefit of all citizens pursuant to legislation enacted in 1973 which conveyed in trust to the County of Lake the submerged lands of Clear Lake for the furtherance of navigation, commerce, fishery recreation, and wherever possible and appropriate preservation of the land and waters in their natural state. Clear Lake, as well as all other water bodies within the County of Lake represent a significant environmental resource to our citizens and are interrelated to the distribution systems of the County's water purveyors.

52.2 The aquatic invasive species of Dreissenid mussels such as Quagga and Zebra mussels pose a significant and imminent threat to the water bodies within the County of Lake. Dreissenid mussels have already created serious and irreparable harm to bodies of water located in other location in the United States and California. Once introduced into a water body, these mussels proliferate at an alarming rate, drastically altering the ecosystem of that water body, harming and/or consuming native species and food resources within the ecosystems they infest.

Dreissenid mussels additionally pose a significant and imminent threat to the water distribution systems of Lake County which draw water from Clear Lake and other water bodies within the County. These mussels attach to inside water treatment intake structures, pipes, and facilities to such a significant degree that the ability to distribute water through the County's existing, and in some cases antiquated infrastructure will be severely compromised.

52.3 Presently, it does not appear that any water body in Lake County has been infested with Dreissenid mussels. However, Water Vessels entering Lake County from other areas of the state and country may have recently been launched in infested bodies of waters making those vessels at high risk to carry mussels (adults and larvae) into Lake County waters.

52.4 A screening and inspection program is integral to the preservation of the water bodies and water distribution systems within the County of Lake, and to the drainages from Lake County.

52.5 this Ordinance is enacted under the police power of the county pursuant to Article XI, Section 7 of the California Constitution which authorizes the County to adopt and enforce regulations for the protection of the public health, safety, and welfare that are not in conflict with general laws.

Sec. 15-53. Definitions.

53.1 For purposes of this Article, the following words and phrases shall have the following meanings:

- (a) "Affidavit of Compliance" means a declaration to be executed by all Water Vessel owners and operators who wish to launch said vessels in a water body in the County of Lake which attests to the responsibility of that owner/operator to ensure that his/her Water Vessel is properly screened and, if necessary inspected and/or decontaminated prior to launching.
- (b) "Authorized Screener" means and individual authorized by the Lake County Department of Water Resources to conduct the screening process necessary to determine whether a Water Vessel is at high risk to carry any Dreissenid mussel such as Quagga and Zebra and any other aquatic, non-native invasive species.
- (c) "Authorized Inspector" means and individual who has received the necessary training approved by the Lake County Department of Water Resources to conduct inspections of Water Vessels for the purpose of determining whether said vessels are contaminated with any Dreissenid mussel such as Quagga and Zebra and any other aquatic, non-native invasive species.
- (d) "Launch" means the introduction or placing of any trailered Water Vessel into a water body within the County of Lake.
- (e) "Live bait" means any fish or other organisms used in conjunction with fishing the waters of Lake County.
- (f) "Mussel Sticker" means the stickers issued by an Authorized Screener/Inspector evincing the fact that the vessel to which the stickers are affixed has been screened and found to be at low risk to carry any Dreissenid mussel such as Quagga and Zebra and any other aquatic, non-native invasive species.
- (g) "Non-native invasive species" means species identified by the State of California that establish and reproduce rapidly and which may threaten native species through competition, predation, parasitism, introduction of pathogens, or physically or chemically alter the habitat. Such species include, but are not limited to, New Zealand Mud Sails and non-native aquatic plants as defined in Chapter 26A of the Lake County Code.
- (h) "Non-resident water vessel" means a vessel that does not meet the definition of a Resident water vessel.
- (i) "Resident water vessel" means:

1. A vessel that has been issued a DMV registration that identifies its owner as being physically located within the borders of Lake County.
2. A vessel whose owner can demonstrate that it is moored or stored at a commercial facility located in Lake County.
3. Any other means deemed acceptable by the Director of Water Resources as to proof of residency in Lake County providing that the vessel is on the Lake County Assessor's current unsecured tax roll for boats.

(j) "Screening and Inspection Program" means the program of screening and inspection required by this Ordinance to ensure that all Water Vessels launching into water bodies in Lake County are free from contamination from adult and larval Dreissenid mussels and other aquatic, non-native invasive species.

(k) "Water Vessel" means any trailered watercraft, or jet ski, or float plane capable of being launched into a water body within the County of Lake except as specifically exempted herein. Canoes, kayaks, car-top boats, float tubes, rafts, wind surfers/boards, boogey boards, nonmotorized paddle boats, and nonmotorized sail boats that are eight feet or less in length are not considered water vessels for purposes of this ordinance and are thereby exempt from the provisions herein.

(l) "Water Vessel Inspection" means a physical inspection, using the training approved by the Lake County Department of Water Resources, of a vessel known or suspected to have been in water in an infested county or which bears a DMV registration in a county, either within or outside the State of California, which is known to be infested with Dreissenid mussels and other aquatic, non-native, invasive species.

(m) "Water Vessel Screening" means the process used to verify that a vessel and its trailer have not been in contact with a body of water in a county infested with Dreissenid mussels and/or is registered in a county, either within or outside the State of California, which is known to be infested with Dreissenid mussels and other non-native, invasive species.

Sec. 15-54. Applicability.

This Ordinance shall be applicable to any trailered Water Vessels intending to launch in a water body within the County of Lake.

Sec. 15-55. Mussel Stickers for Resident Water Vessels.

Because the weight of scientific evidence presently available strongly indicates, the greatest risk of contamination to our water bodies is by Water Vessels entering Lake County from other jurisdictions, the following program shall be applicable to all Resident Water Vessels.

55.1 Owners and operators of Resident Water Vessels, having submitted to screening and inspection, as applicable, shall receive Resident Mussel Stickers designating the vessel as a Resident Water Vessel and absent an event necessitating re-screening and/or re-inspection as specified in 15-57.1, these Mussel Stickers shall expire at the end of each calendar year.

55.2 Every Resident Water Vessel and its trailer must be affixed with Resident Mussel Stick-

ers prior to launching that vessel in any water body in the County of Lake.

55.3 Resident Mussel Stickers shall be issued according to a color code that will change annually.

55.4 Upon expiration of the annual Resident Mussel Stickers, at the end of the calendar year, the resident vessel must undergo the necessary screening/inspection requirements to obtain next year's valid Mussel Stickers.

Sec. 15-56. Mussel Stickers for Non-resident Water Vessels.

56.1 All Non-resident Water Vessels and their trailers must be affixed with color-coded, monthly, Non-resident Mussel Stickers after screening and prior to launch in any water body in the County of Lake. Stickers are not transferable between vessels.

56.2 Non-resident Mussel Stickers shall be issued according to a color-code that will change monthly.

56.3 Upon expiration of the Non-resident Mussel Stickers, the Non-resident Water Vessel must undergo the necessary screening/inspection requirements to obtain valid Mussel Stickers for the next calendar month.

Sec. 15-57. Screening/Inspection Requirements.

57.1 Screening Requirements.

Screening shall be required of:

(a) All Resident Trailered Water Vessels prior to their first launch in every calendar year, or

(b) All Non-resident trailered Water Vessels prior to their first launch in every calendar month, or

(c) All trailered Water Vessels, Resident or Non-resident, that have been launched in a body of water outside of the County of Lake pursuant to the executed Affidavit of Compliance.

57.2 Screening Process.

(a) The screening process shall be conducted by an Authorized Screener or Authorized Inspector and shall consist of:

(1) A series of questions concerning the past location of the Water Vessel prior to launching in a water body in the County of Lake, designed to determine whether said past location constitutes an appreciable risk that said Water Vessel may be infested with Dreissenid mussels. Said questions shall be answered on the County of Lake Screening Application Invasive Species Inspection Program form, and

(2) May require a visual verification by the Authorized Screener that the Water

Vessel and trailer are clean, drained and dry.

- (b) Water Vessels which, as a result of the screening process are found to be clean, drained and dry, and do not pose an appreciable risk to the water bodies of Lake County shall be affixed with Mussel Stickers in a location as designated in the instruction accompanying the Mussel Stickers which signifies that the vessel may be launched into a water body in the County.
- (c) Water Vessels which, as a result of the screening process, are not clean, drained and dry, or do appear to pose an appreciable risk to the water bodies of Lake County shall be required to undergo an inspection by an Authorized Inspector. The County of Lake Screening Application Invasive Species Inspection Program form shall identify that vessel as requiring authorized inspection.
- (d) Affidavit of Compliance: At the time of the screening, the vessel owner/operator shall be required to execute an affidavit which attests to the responsibility of that owner/operator to ensure that his/her Water Vessel is clean, drained and dry and properly screened, re-screened, inspected, and, if necessary, decontaminated prior to launching in a water body in the County of Lake. The Affidavit shall be signed under penalty of perjury.
- (e) If the Screening Application form is filled out falsely this shall be a violation of this Ordinance.

- (f) A Water Vessel owner or operator may refuse to consent to said screening. If the Water Vessel owner or operator refuses to consent to screening, that Water Vessel shall not be allowed to launch in any water body within the County of Lake and shall be in violation of this Ordinance if he/she should nonetheless attempt to do so.

57.3 Inspection Requirements

- (a) All Water Vessels determined as a result of the screening process to constitute an appreciable risk of contamination due to the possible presence of Dreissenid mussels shall submit to an inspection by an Authorized Inspector prior to launching in a water body in the County of Lake.
- (b) Said inspection shall consist of a thorough search of the exterior and interior of the Water Vessel, including but not limited to bilge pumps, motors, and live wells, ballast tanks, bladders, and areas of standing water.
- (c) A Water Vessel owner or operator may refuse to consent to said inspection. If the Water Vessel owner or operator refuses to consent to inspection, that Water Vessel shall not be allowed to launch in any water body within the County of Lake and shall be in violation of this Ordinance if he/she should nonetheless attempt to do so.
- (d) At the time of the inspection, if any Water Vessel is found to contain other aquatic, non-native invasive species, the Water Vessel owner or operator shall be required to remove said invasive species prior to launching in a water body within the County of Lake.
- (e) If, pursuant to the required inspection, a Water Vessel is found to be clean, drained and dry, and free of any possible Dreissenid mussel infestation and any other Water Vessel, the

Authorized Inspector shall certify that the Water Vessel can be launched in Lake County after receiving the appropriate Mussel Stickers from an Authorized Screener.

(f) **Affidavit of Compliance:** At the time of the inspection, the vessel owner/operator shall be required to execute an affidavit which attests to the responsibility of that owner/operator to ensure that his/her Water Vessel is properly inspected and, if necessary, decontaminated prior to launching in a water body in the County of Lake. The Affidavit shall be signed under penalty of perjury.

(g) If, pursuant to the required inspection, a Water Vessel is found to be infested with adult Dreissenid mussels, the vessel owner shall be informed that his/her Water Vessel shall be quarantined by the California Department of Fish and Game. If the vessel is found to possibly be infested with Dreissenid mussels, the vessel owner may not launch his/her vessel until such time as that vessel has been decontaminated and re-inspected by an Authorized Inspector. The vessel owner shall be directed to a decontamination station where the vessel will undergo a decontamination process. Once the vessel has been decontaminated, re-inspected and found to be at no risk of contaminating Lake County waters, the vessel can be affixed with Mussel Stickers as described hereinabove.

57.4 Decontamination

Decontamination stations shall be operated by the County of Lake, Department of Water Resources. Said stations shall be open to all owner/operators of Water Vessels. There shall be no fee associated with decontamination.

Decontamination shall be required of all vessels that have been determined to be at high risk of being infested with Dreissenid mussels. Such determination shall be made if the vessel is not clean, drained and dry, OR was last in the water of an infested county, less than 30 days ago.

Sec. 15-58. Screening/Inspection Stations.

58.1 Designated locations are available within the County. The current list of Authorized screeners is available at www.co.lake.ca.us/mussels. [Note: At the time of this publication, the correct website for the list of authorized screeners is www.nomussels.com.

58.2 Inspections shall be carried out by County personnel at any time. Vessel owners shall be referred to the nearest Authorized Inspector when required. Inspections may be scheduled by calling the Department of Water Resources, (707) 263-2344.

58.3 Nothing in this Ordinance precludes screening and/or inspections at other locations within the County which may be offered by private persons and/or organizations if such screenings are performed by Authorized Screeners and such inspections are performed by Authorized Inspectors.

Sec. 15-59. Fees.

The following fees are hereby established for County-operated screening and inspection services:

(a) The fee for each screening and/or inspection performed by the County of Lake shall be ten dollars (\$10.00)

(b) Fees collected for screening and/or inspection, that are not otherwise encumbered, shall be used to fund the Water Vessel Inspection Program.

Sec. 15-60. Disposing of Live Bait into a Water Body in Lake County is Prohibited.

It shall be unlawful to dispose of any live bait and/or any liquid containing live bait or any liquid which previously contained live bait in a water body in Lake County.

Sec. 15-61. Criminal Penalties.

(a) Any person violating any provision of this Ordinance shall be guilty of a misdemeanor. Such individual shall be deemed guilty of a separate offense for each launching a water body in the County of Lake.

(b) Any individual convicted of a violation of this chapter shall be punishable by a fine of not less than one thousand dollars (\$1000.00) and/or up to six months in the county jail or both.

(c) A Water Vessel unlawfully launched in a water body in the County of Lake shall be subject to impound if, pursuant to a misdemeanor arrest for violation of this Ordinance, a law enforcement officer determines that circumstances necessitate law enforcement custody of the Water Vessel.

(d) Payment of any penalty herein shall not relieve any individual from the responsibility of correction the violations as found by the law enforcement officer.

(e) any person found not in compliance with this ordinance is subject to citation shall be escorted off the water body, and shall subject to any other legal action as deemed necessary by the enforcement officer including but not limited to detaining said person and water vessel until inspected as required under this chapter.

(f) Fines collected as a result of violating this Ordinance, that are not otherwise encumbered, shall be used to fund the Water Vessel Inspection Program.

Sec. 15-62. Public Nuisance Declaration.

Any violation of this chapter is hereby declared to be unlawful and a public health nuisance and may be abated by authorized County personnel, irrespective of any other remedy provided in this Ordinance.

Section 2: It can be seen with certainty that there is no possibility that this Ordinance may have a significant effect on the environment. However, even if the proposed action is determined to be a "project", the proposed action would be categorically exempt from CEQA under CEQA Guidelines Section 15307 as a Class 7 Categorical Exemption which, "consists of actions taken by regulatory agencies as authorized by State law or local ordinance to assure the maintenance, restoration or enhancement of a natural resource where the regulatory process involves procedures for protection of the environment."

Section 3: All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of such conflict and no further.

Section 4: This Ordinance shall take effect on the 24th day of February 2011, and before the expiration of fifteen (15) days after its passage, it shall be published at least once in a newspaper of general circulation printed and published in the County of Lake.

The foregoing ordinance was introduced before the Board of Supervisors on the 18th day of January 2011, and passed by the following vote on the 25th day of January 2011.

AYES: Supervisors Smith, Rushings, Fartington, Brown and Comstock

NOES: None

ABSENT OR NOT VOTING: None

COUNTY OF LAKE

Board of Supervisors

BY:

Clerk of the Board of Supervisors

Appendix B. Draft Napa County Dreissenid Ordinance.

Aquatic Invasive Species Ordinance (01/12/2016)

1.0 Purpose

The purpose of this ordinance is for the continuance of navigation, commerce, fishery, recreation, and protection of native aquatic species and their aquatic habitat in Napa County by preventing the introduction and spread of Aquatic Invasive Species.

2.0 Findings

Aquatic Invasive Species of Dreissenid mussels, such as Quagga and Zebra mussels, pose a significant and imminent threat to the water bodies of Napa County, in particular, Lake Berryessa. Dreissenid mussels have already created serious and irreparable harm to bodies of water in California and throughout the United States. Once introduced to a water body, these mussels can proliferate at an alarming rate, drastically altering the ecosystem of that water body, harming and or consuming native food resources, displacing native aquatic species, and additionally could pose a significant and imminent threat to water distribution systems at Lake Berryessa (Chris S-what are the names of the local systems?) and downstream.

Presently, it does not appear that any water body in Napa County has been infested with Dreissenid mussels. However, water vessels entering Lake Berryessa from other areas of the state and country may have been launched in infested water bodies, making those vessels at high risk to carry mussels (adults and larvae) into Napa County waters. There are at least 6 known infested water bodies within a days drive of Napa County (Lake Mead, Lake Havasu, San Justo Reservoir, Lahontan Reservoir, Rye Patch Reservoir, and Lake Piru).

A screening and inspection program is integral to the preservation of aquatic resources of Lake Berryessa. The Lake Berryessa Partnership, which staff from various Napa County agencies participate in, partners with the Solano County Water Agency (Water Agency) and the U.S. Bureau of Reclamation (Reclamation) on a Dreissenid mussel screening and inspection program at Lake Berryessa. However, as neither the Water Agency nor Reclamation have a law enforcement charter, and the California Department of Fish and Wildlife can only enforce Fish and Game Code on vessels with visible mussels, an alternate source of enforcement must be developed.

If the watercraft owner/operator falsely provides information this shall be a violation of this Ordinance.

5.0 A watercraft owner/operator may refuse to consent to said screening. If the watercraft owner/operator refuses consent to screening, that watercraft shall not be allowed to launch in any water body within Napa County and shall be in violation of this Ordinance if he/she should nonetheless attempt to do so.

6.0 Fees

Not sure what to do here-need to check with Reclamation-I am assuming that they would

allow vendors to charge a fee for inspection for a sticker type program if they inspect all vessels-but need to check. Would part of fees go towards enforcement-to Napa County? Or do we allow vendors to keep that as an incentive to inspect all vessels (which is what I would lean towards)? Need to follow up with Reclamation regarding their willingness to help with funding any enforcement and what both Napa and Solano can put towards that end.

7.0 Enforcement

The enforcement of this Ordinance shall reside with Napa County or its designee (should we state Napa Sheriff here or leave as it?).

- Fines/Criminal Penalties

This is where I need a lot of input-what is appropriate (may be tied to funding) for enforcement? Just fines, potential imprisonment after second offense, impounding of vessels?

- Applicability

- This Ordinance provides for Administrative Citations, which are in addition to all other legal remedies, criminal or civil, which may be pursued by Napa County or its designee.

- This chapter is adopted pursuant to the authority granted by Napa County or its designee.

- Definitions

- Responsible Person shall mean any individual who is the owner or occupant or real property or water vessel, owner or authorized agent for any business, company, or entity, or any person who has caused or maintains a violation of this Ordinance.

- Administrative Citation Authority & Service Procedures

- Whenever an Enforcement Officer charged with the enforcement of any provision of this Ordinance determines that a violation of that provision has occurred, the Enforcement Officer shall have the authority to issue an Administrative Citation to any Responsible Person for the violation.

- An Administrative Citation on a form approved by Napa County or its designee may be issued to the Responsible Person by the Enforcement Officer for violations of the Ordinance in the following manner:

- Personal Service. In any case where an Administrative Citation is issued, the Enforcement Officer shall attempt to locate and personally serve the Responsible Person and obtain the signature of the Responsible Person on the Administrative Citation.

- Any person being issued an Administrative Citation shall be required to produce adequate identification and sign the Administrative Citation. Any person who refuses to produce adequate identification or refuses to sign such citation is guilty of a misdemeanor and maybe taken into custody by any peace officer of the State of California.

- Failure or refusal to sign the Administrative Citation by the Responsible Person shall not

affect the validity of the Administrative Citation or of subsequent proceedings.

- Service of Administrative Citation by Mail. If the Enforcement officer is unable to locate the Responsible Person, the Administrative Citation may be mailed to the Responsible Person by certified mail, postage prepaid with a requested return receipt. Simultaneously, the citation may be sent for first class mail. If the citation is sent by certified mail and returned unsigned, then service shall be deemed effective by first class mail, provided that the citation sent by first class is not returned.

- **Administrative Citation Contents**

To the extent practicable, each Administrative Citation shall contain the following information:

- The date and time of the violation.
- Name, address and phone number of the Responsible Person.
- The address or a definite description of the location where the violation occurred.
- The Section of the Ordinance violated and a description of the violation.
- The amount of the fine for the code violation.
- A description of the fine payment process, including a description of the time within which and the place to which the fine shall be paid.
- An order prohibiting the continuation or repeated occurrence of the Ordinance violation described in the Administrative Citation.
- A description of the Administrative Citation review process, including the time within which the Administrative Citation may be contested and the place from which a Request for Hearing Form to contest the Administrative Citation may be obtained.
- The name and signature of the citing Enforcement Officer.

- **Amount of Fines**

The amount of the fines for Ordinance violations imposed pursuant to this Chapter shall be set forth in the Schedule of Fees established by resolution of the Napa County (Code?) or its designee.

The Schedule of Fees shall specify any increased fines for repeat violations of the same Ordinance provision by the same person within twelve months from the date of the Administrative Citation.

The Schedule of Fees shall specify the amount of any late payment charges imposed for the payment of a fine after its due date.

- **Payment of Fine**

The fine shall be paid to Napa County or its designee within twenty-one (21) days from the date of the Administrative Citation.

Payment of a fine under this Chapter shall not excuse or discharge any continuation or repeated occurrence of the Ordinance violation that is the subject of the Administrative Citation.

- **Hearing Request**

Any recipient of an Administrative Citation may contest that there was a violation of the Ordinance or that he or she is the responsible party by completing a Request For Hearing Form and returning it to Napa County or its designee within twenty-one (21) days from the date of the Administrative Citation.

A Request for Hearing Form may be obtained from the department specified on the Administrative Citation.

- The person requesting the hearing shall indicate if they choose to appear in person for the hearing or have the written appeal be submitted for review by the Hearing Officer.
 - If the Enforcement Officer submits an additional written report concerning the Administrative Citation to the Hearing Officer for consideration at the hearing, then a copy of this report also shall be served, mailed, or provided to the person requesting the hearing at least five (5) days prior to the date of the hearing.
- Hearing Officer
Napa County or its designee shall designate the Hearing Officer for the Administrative Citation Hearing.

52.3 Hearing Procedure

- A hearing before the Hearing Officer shall be set for a date that is not less than fifteen (15) days and not more than sixty (60) days from the date that the Request for Hearing is filed in accordance with the provisions of this Chapter.
- At the hearing, the party contesting the Administrative Citation shall be given the opportunity to testify and to present evidence concerning the Administrative Citation.
- The failure of any recipient of an Administrative Citation to appear at the Administrative Citation Hearing shall constitute a forfeiture of the fine and a failure to exhaust their administrative remedies.
- The Administrative Citation and an additional report submitted by the Enforcement Officer shall constitute *prima facie* evidence of the respective facts contained in those documents, provided, however, that the Hearing Officer may consider such other relevant evidence at the hearing in his or her discretion.
- The Hearing Officer may continue the hearing and request additional information from the Enforcement Officer or the recipient of the Administrative Citation prior to issuing a written decision.

10.0 Hearing Officer's Decision

- After considering all of the testimony and evidence submitted at the hearing, the Hearing Officer shall issue a written decision to uphold or cancel the Administrative Citation and shall list in the decision the reason for that decision.
- If the Hearing Officer determines that the Administrative Citation should be upheld the Hearing Officer shall be set forth in the decision a payment schedule for the fine.
- The recipient of the Administrative Citation shall be served with a copy of the Hearing Officer's written decision. The Hearing Officers decision shall also include appeal rights pursuant to the California Government Code Section 53069.4(b)(1).
- The employment, performance evaluation, compensation and benefits of the Hearing Officer shall not be directly or indirectly conditioned upon the amount of the Administrative Citation fines upheld by the Hearing Officer,

11.0 Late Payment Charges

Any person who fails to pay to Napa County or its designee any fine imposed pursuant to the provisions of this Chapter on or before the date that the fine is due also shall be liable for the payment of any applicable late payment charges set forth in the Schedule of Fees.

12.0 Recovery of Administrative Citation Fines and Costs

Napa County or its designee may collect any past due Administrative Citation fine or late payment charge by use of all available legal means.

- Notices
- The Administrative Citation and all notices required to be given by this Chapter shall be served on the responsible party in accordance with the provisions of this Ordinance.
- Failure to receive any notice specified in this Chapter does not affect the validity of proceedings conducted hereunder.

14. Public Nuisance Declaration

Any violation of this chapter is hereby declared to be unlawful and a public health nuisance and may be abated by Napa County, or its designee, irrespective of any other remedy provided by this Ordinance.

Appendix C. Comparison of Lake County Ordinance to Napa County (draft) Ordinance.

	LAKE COUNTY	NAPA COUNTY (DRAFT)
APPLICABILITY/SCOPE	Any trailered water vessel intending to launch in waterbody within Lake County. Note: non-motorized boats, such as canoes, kayaks, etc. are excluded from definition of water vessel.	All motorized and/or trailered watercraft launching in Lake Berryessa. Non-motorized watercraft may be subject to an inspection prior to entering Napa County water bodies.
PROHIBITION ON AIS	No	Yes, ordinance would prohibit (1) transport and introduction of AIS and (2) knowingly launching watercraft contaminated by AIS.
TIMING OF SCREENING	<ul style="list-style-type: none"> • Resident vessels: prior to first launch of calendar year (i.e., yearly screening). • Non-resident vessels: prior to first launch in every month (i.e., monthly screening). • Prior to launch if vessel has been in a water body outside Lake County. 	Prior to launch of any watercraft.
INSPECTION REQUIREMENTS	Water vessels determined, as part of the screening process, not to be clean, drain, or dry or pose a risk to water bodies are subject to inspection by "Authorized Inspector."	All vessels screened are subject to inspection as determined necessary by Certified Personnel.
DECONTAMINATION REQUIREMENTS	If during an inspection, vessel found to "possibly be infested" with mussels, vessel may not launch until decontaminated and re-inspected. If vessel found to be infested with adult mussels, subject to quarantined by California Department of Fish and Game.	All vessels screened are subject to decontamination or quarantine as determined necessary by Certified Personnel.
SEAL/RECEIPT	Color-coded "mussel stickers" are affixed to vessels and trailers following screening and inspections.	No mention of documentation
AFFIDAVIT OF COMPLIANCE	Vessel owner/operators require to execute an affidavit at the time of screening that attests to the responsibility to clean, drain, dry and have vessel properly screened and, if necessary, inspected and decontaminated.	Vessel owner/operators require to execute an affidavit at the time of screening that attests to the responsibility to clean, drain, dry and have vessel properly screened and, if necessary, inspected and decontaminated.
ENFORCEMENT	Provides for criminal penalties. Violations are deemed misdemeanors subject to a fine of no less than \$1,000 or 6 months in jail. Each launch is considered a separate offense.	Provides for administrative citations issued by enforcement officer to the "responsible person" in person or by mail. Schedule of fines would be set by County.
FEES	A \$20 fee is charged for each screening and inspection performed. No fees are charged for decontamination.	There is a placeholder for fees, but no amount stated.
PUBLIC NUISANCE DECLARATION	Yes. Violations of the ordinance are declared unlawful and to be a public health nuisance that may be abated by authorized County personnel.	Yes, any violation of ordinance is unlawful and declared to be a public health nuisance that may be abated by Napa County.

Appendix D. Comparison of Lake County Ordinance to the Model Legal Framework.

Legislative Findings/Purpose		Lake County Code of Ordinances, Art. IX, Sec. 15-52	Ordinance includes several key findings regarding the purpose of the ordinance and the inspection program.
Definitions	Aquatic Invasive Species	Sec. 15-53(g)	LC uses the term "non-native invasive species," which is defined as "species identified by the State of California that establish and reproduce rapidly and which may threaten native species through competition, predation, parasitism, introduction of pathogens, or physically or chemically alter the habitat. Such species include, but are not limited to, New Zealand Mud Snails and non-native aquatic plants as defined in Chapter 26A of the Lake County Code."
	Certified Personnel	Sec. 15-53(b) and (c)	LC uses the term "Authorized Screener" and "Authorized Inspector." Authorized Screener "means an individual authorized by the Lake County Department of Water Resources to conduct the screening process necessary to determine whether a water vessel is at high risk to carry any Dreissenid Mussel such as Quagga and Zebra and any other aquatic, non-native invasive species." Authorized Inspector "means an individual who has received the necessary training approved by the Lake County Department of Water Resources to conduct inspections of water vessels for the purpose of determining whether said vessels are contaminated with any Dreissenid Mussel such as Quagga and Zebra and any other aquatic, non-native invasive species."
	Conveyance	Sec. 15-53(k)	LC uses the term "water vessel." Water Vessel "means any trailered watercraft, or jet ski, or float plane capable of being launched into a water body within the County of Lake except as specifically exempted herein. Canoes, kayaks, car-top boats, float tubes, rafts, wind surfers/boards, boogey boards, nonmotorized paddle boats, and nonmotorized sailboats that are eight (8) feet or less in length are not considered water vessels for the purposes of this article and are thereby exempt from the provisions herein." Narrower than model as it exempts non-motorized vessels.
	Decontamination		
	Drain Plug		
	Infested Water		

Legislative Findings/Purpose		Lake County Code of Ordinances, Art. IX, Sec. 15-52	Ordinance includes several key findings regarding the purpose of the ordinance and the inspection program.
	Inspection	Sec. 15-53(l)	"Water Vessel Inspection means a physical inspection, using the training approved by the Lake County Department of Water Resources, of a vessel known or suspected to have been in an infested county or which bears a DMV registration in a county, either within or outside the State of California, which is known to be infested with Dreissenid Mussels and other aquatic, non-native, invasive species." Narrower than model as it is limited to vessels "known or suspected to have been in an infested county."
	Person		
	Positive Water		
	Receipt		LC requires submission of a "County of Lake Screening Application Invasive Species Inspection Program form" and issues "Mussel Stickers" following the completion of a screening and inspection process. This documentation does not meet the model's definition of receipt because they do not document the vessel's inspection and decontamination history.
	Seal		
	Suspect Water		
	Waters		
Powers and Duties	Identify AIS>List of AIS (Reg)	Sec. 15-53(g)	LC does not have this authority on the local level. This authority is found at state level with CDFW. However, the LC definition of non-native invasive species incorporates state list by reference.
	Identify Affected Waters/Classification of Waters (Reg)		There is no express authority to identify affected waters. Authority is implied, however, by Sec. 15-57.2(a)(1). Provision states that screening form is designed to "determine whether said past location constitutes an appreciable risk" that vessel is infested with mussels. Language suggests LC maintains a list of waters or geographic areas effected by mussels to inform the screening process.
	Possess and Transport AIS		LC does not have this authority on the local level. However, it is unlawful to possess and transport live mussels by state law.
	Stop, detain, and Inspect		Ordinance does not provide express authority to stop vessels en route or before launch. Boaters are supposed to check in at screening stations on an annual or monthly basis, or after launch in a body of water outside LC.

Legislative Findings/Purpose		Lake County Code of Ordinances, Art. IX, Sec. 15-52	Ordinance includes several key findings regarding the purpose of the ordinance and the inspection program.
	Decontaminate or Order Decontamination	Sec. 15-57.3(g); Sec. 15-57.4	"Decontamination shall be required of all vessels that have been determined to be at high risk of being infested with dreissenid Mussels." Vessels "found to possibly be infested with dreissenid Mussels... shall be directed to a decontamination station." Such vessels may not launch until they have been decontaminated and re-inspected.
	Enter into Cooperative Agreements		
Owner Responsibilities & Conveyance Restrictions	Possession, Importation, Shipment or Transport of AIS		LC does not have this authority on the local level. However, it is unlawful to possess and transport live mussels pursuant to state law.
	Placement of Out-of-Compliance Conveyance in Waters	Sec. 15-57.2(f); 15-57.3(c)	Vessel owner who refuses to consent to screening or inspection may not launch. This provision implies that it is unlawful to launch a vessel that is not in compliance with the LC ordinance.
	Clean, Drain, Dry	Sec. 15-57.2(a) (2); (c)	Screening process and Affidavit of Compliance forms reinforce CDD.
	Remove drain plugs		
	Remove aquatic vegetation		
	Comply with Inspection and Decontamination Protocols		No express statement requiring compliance, although refusal to consent will result in launch restrictions.
Conveyance Inspections	Authority to Establish Check Stations	Sec. 15-58.1	Authority to establish inspection stations is implied by ordinance, which states that designated locations are available within the County. Presumably these locations are designated by LC.
	Mandatory Inspections	Sec. 15-57.2(c)	Annual (resident) and monthly (non-resident) screenings are required. Screenings may involve visual verification that vessel is clean, drained, and dry. Vessels that are not CDD or appear to pose a risk must be inspected by an Authorized Inspector.
	Law Enforcement Stops		
Conveyance Decontamination	Perform or Order Decontamination	Sec. 57.3(g); 57.4	Vessels found during an inspection to possibly be infested with mussels must be decontaminated.

Legislative Findings/Purpose		Lake County Code of Ordinances, Art. IX, Sec. 15-52	Ordinance includes several key findings regarding the purpose of the ordinance and the inspection program.
	Impound Conveyances	Sec. 15-61(c)	A vessel launched unlawfully is subject to impound. In addition, vessels found during an inspection to be infested with adult mussels will be quarantined by CDFW pursuant to state law.
	Impose Costs		No, ordinance states that "there shall be no fee associated with decontamination." LC, however, does impose a \$10 fee for each screening and inspection performed.
Documentation	Receipt		Ordinance does mention the "County of Lake Screening Application Invasive Species Inspection Program form" that must identify that an inspection was required. Boaters are required to keep a copy, so it's a form of documentation. As mentioned above, this documentation does not meet standards of model.
	Seal		LC issues Mussel Stickers upon completion of the annual or monthly screening process. These stickers do not meet the standard of the model as they do not provide evidence or proof that vessel has not launched since the last inspection.
	Record Retention Requirements	Found on Screening Application Form	Boater must retain a copy of "County of Lake Screening Application Invasive Species Inspection Program form" on board vessel.
	Tamper Prohibitions		
	Reciprocity		
Certification of Personnel		Sec. 15-53.1(b); (c)	Authority is implied by definition of "Authorized Screener" and "Authorized Inspector," which states that these are individuals authorized by Lake County Department of Water Resources to conduct screenings or inspections. No details provided on the certification requirements.
Authorization of Third Parties		Sec. 15-58.3	Screenings and inspections may be offered by private persons and organizations as long as they are performed by Authorized Screeners and Authorized Inspectors.
Local Programs		Sec. 15-55	LC operates separate sticker program for resident and non-resident water vessels. Residents only have to submit to annual, instead of monthly, screenings.
Penalties	Civil		
	Criminal	Sec. 15-61	\$1,000 fine and/or 6 months in prison.

Appendix E. Comparison of Napa County Draft Ordinance to the Model Legal Framework.

LEGISLATIVE FINDINGS/ PURPOSE		NAPA COUNTY ORDINANCE (DRAFT, 5/18/17), SEC. 1.0, 2.0	ORDINANCE INCLUDES SEVERAL KEY FINDINGS REGARDING THE PURPOSE OF THE ORDINANCE AND THE INSPECTION PROGRAM.
Definitions	Aquatic Invasive Species	Sec. 3.1	"Aquatic Invasive Species shall include but not be limited to invertebrates, plants, and fish. Aquatic Invasive Species pose a serious threat to the water bodies of Napa County. They can have a disastrous and potentially irreversible impact to the ecology, recreation, water supply and water quality, and economy of the region. The following provisions shall be adhered to in order to prevent the introduction and spread of Aquatic Invasive Species." <i>This definition does not meet the standards of the model as it doesn't actual define the term. Any species could be AIS under this definition. There is no reference to "non-native" or "threat to native ecosystems," for instance.</i>
	Certified Personnel	Sec. 3.2	"An individual who possesses Watercraft Inspection (Level I) or Watercraft Inspection and Decontamination (Level II) certification as defined by the Pacific State Marine Fisheries Commission, the Western Regional Panel on AIS, or the 100th Meridian Initiative."
	Conveyance		
	Decontamination	Sec. 3.3	"Hot water rinse or spray at high or low pressure."
	Drain Plug		
	Infested Water		
	Inspection	Sec. 3.4; 3.7	Napa County uses the terms "Visual Inspection" and "Full Tactical Inspection." Full Tactical Inspection means "Certified Personnel touching components of the watercraft and trailer to feel for signs of AIS, opening compartments on the watercraft including but not limited to bilge compartment, storage lockers, anchor locker, lowering of gimble, and pumping of bilge." Visual inspection means "Observations made visually by Certified Personnel of the watercraft, trailer, registration number, engine, and additional factors to determine the risk level of a watercraft for harboring AIS."
	Person	Sec. 3.5	Napa County defines "responsible person." Responsible person means "Responsible Person shall mean any individual who is the owner or occupant or real property or water vessel, owner or authorized agent for any business, company, or entity, or any person who has caused or maintains a violation of this Ordinance."
	Positive Water		
	Receipt		
	Seal		
	Suspect Water		
	Waters		

Powers and Duties	Identify AIS/List of AIS (Reg)		Napa County does not have this authority on the local level. This authority is found at state level with CDFW.
	Identify Affected Waters/Classification of Waters (Reg)		
	Possess and Transport AIS	Sec. 4.0	The transport or introduction of AIS into Napa County is prohibited.
	Stop, detain, and Inspect		
	Decontaminate or Order Decontamination		
	Enter into Cooperative Agreements		
Owner Responsibilities & Conveyance Restrictions	Possession, Importation, Shipment or Transport of AIS	Sec. 4.0	The transport or introduction of AIS into Napa County is prohibited.
	Placement of Out-of-Compliance Conveyance in Waters	Sec. 5.5	Vessel owner who refuses to consent to screening or inspection may not launch. This provision implies that it is unlawful to launch a vessel that is not in compliance with the Napa County ordinance.
	Clean, Drain, Dry	Sec. 5.3	Screening process and Affidavit of Compliance forms reinforce CDD.
	Remove drain plugs		
	Remove aquatic vegetation		
	Comply with Inspection and Decontamination Protocols		No express statement requiring compliance, although refusal to consent will result in launch restrictions.
Conveyance Inspections	Authority to Establish Check Stations		
	Mandatory Inspections	Sec. 5.1; 5.2	All motorized and/or trailered watercraft are to be screened prior to launching. Screened watercraft are subject to visual or full tactical inspection if determined necessary by Certified Personnel.
	Law Enforcement Stops		
Conveyance Decontamination	Perform or Order Decontamination	Sec. 5.2	Screened watercraft may be subject to decontamination if determined necessary by Certified Personnel.
	Impound Conveyances	Sec. 5.2	Screened watercraft may be subject to a quarantine for a period of 30 days' maximum if determined necessary by Certified Personnel.
	Impose Costs		

Documentation	Receipt		
	Seal		
	Record Retention Requirements		
	Tamper Prohibitions		
	Reciprocity		
Certification of Personnel			
Authorization of Third Parties			
Local Programs			
Penalties	Civil	Sec. 8.0	Napa County Ordinance provides for "Administrative Citations" as set forth in a Schedule of Fees to be adopted separately.
	Criminal		

Appendix F: Model Local Watercraft Inspection and Decontamination (WID) Ordinance.

Model Local Watercraft Inspection and Decontamination (WID) Ordinance

Prepared by the National Sea Grant Law Center in October 2017

Designed to Support Implementation of Model Legal Framework for WID Programs developed by Western Regional Panel's Building Consensus Committee

I. Findings

1. The County of [X] finds that aquatic invasive species pose an immediate and significant threat to the County's water supply, flood control, power generation, native wildlife populations and biodiversity, and aquatic recreation infrastructure, resulting in negative environmental, economic, and human impacts caused by the degradation of native ecosystems and their associated values.
2. The transportation of recreational watercraft and associated equipment from one waterbody to another is a primary vector for the spread of aquatic invasive species.
3. Watercraft inspection programs help prevent the spread of aquatic invasive species by providing for the inspection and decontamination of watercraft, as well as an opportunity for outreach and education on the risks posed by the introduction and spread of aquatic invasive species. Watercraft inspection programs help protect both the environmental and recreational values of the County's waters, infrastructure, and economy.

II. Definitions

1. "Aquatic Invasive Species" means an aquatic species, including their seeds, eggs, spores, larvae or other biological material capable of propagation, that is not native to the state of California that has been identified by the County to pose a serious threat to the recreational and natural resources of the County's waters.
2. "Authorized Third-Party" means a county department, state or federal agency, municipal government, non-profit organization, or independent business that has been authorized by the County to operate watercraft inspection stations or provide watercraft screening, inspection, and decontamination services.
3. "Certified Personnel" means an individual who has a valid Watercraft Inspection (Level I) or Watercraft Inspection and Decontamination (Level II) certification as defined by the Pacific States Marine Fisheries Commission, and is authorized by the [County Department X] to conduct watercraft screenings and perform watercraft inspections and decontaminations.
4. "Conveyance" means a motorized or non-motorized recreational watercraft and associated equipment that may come in contact with water or that is able to transport water. Conveyance includes trailers, engines and motors, fish holds or live wells, ballast tanks, bilge

areas, anchors, and other items that may come in contact with water or are able to transport or release water that could harbor an aquatic invasive species.

5. “Decontamination” means a process used to kill, destroy, or remove aquatic invasive species and other organic material that may be present in or on a conveyance.
6. “Drain Plug” means a valve or device used to control the drainage of water from a compartment designed to hold water, such as a bilge, livewell, or ballast tank.
7. “Inspection” means a visual and tactile examination of a conveyance to determine whether it may harbor any organisms or other organic material that could present a risk of spreading aquatic invasive species.
8. “Receipt” means a written or electronic documentation issued by Certified Personnel following an inspection or decontamination that contains information regarding the conveyance, any action taken by Certified Personnel, and information correlating to an applied seal, if issued.
9. “Seal” means a tamper-proof device, band, sticker, or other marker that indicates the conveyance has not launched since the last inspection or decontamination.
10. “Waters” means public waters within the jurisdiction of the County used for recreational boating, including rivers, streams, and natural or manmade lakes, ponds, and reservoirs.

III. Conveyance Restrictions

1. Unless authorized by the state of California or other government entity, a person may not possess, transport, or release aquatic invasive species into [X] County.
2. Except as authorized by the County, a person shall not place a conveyance, or cause a conveyance to be placed, into waters of the County without first complying with the screening, inspection, and decontamination procedures set forth in this Ordinance.
3. A person removing a conveyance from waters shall, to the extent practicable, and in accordance with applicable requirements and protocols established by the County:
 - a. Clean the conveyance by removing all visible organic material, including, but not limited to, plants, animals, and mud;
 - b. Drain the conveyance by removing any drain plug that prevents water drainage, and run any pumps on board to expel water; and
 - c. Dry all compartments, spaces, and associated equipment that hold or may hold water to remove any standing water.
4. All drain plugs must be removed during any out-of-water transport of conveyances.
5. A person shall not transport a conveyance with aquatic vegetation attached on or within the conveyance.

IV. Conveyance Screening and Inspections

1. All conveyances within [X] County are subject to screening for aquatic invasive species, consistent with the provisions of this Ordinance.
2. Conveyances that are determined, as a result of the screening process, to pose an appreciable risk to the waters of the County, or that are not in compliance with the clean, drain, and dry requirements of Section (III)(3), must undergo an inspection by Certified Personnel. Areas subject to inspection include, but are not limited to:
 - a. the exterior of the conveyance;
 - b. livewells or fish holds;
 - c. bait buckets;
 - d. bilge areas;
 - e. anchor chains;
 - f. ballast tanks or bags; and
 - g. trailer used to transport conveyance.
3. All conveyance screenings and inspections must be conducted in accordance with County-approved standards and procedures.
4. A conveyance owner, operator, or transporter may refuse to consent to a conveyance screening or inspection. If a conveyance owner, operator, or transporter refuses consent, the conveyance may not be launched in any waters of the County.
5. If adult Dreissenid mussels are found during an inspection, the conveyance is subject to quarantine by the California Department of Fish and Game pursuant to California Fish & Game Code § 2301.
6. If, during an inspection the conveyance is determined by Certified Personnel to pose a risk of aquatic invasive species introduction, Certified Personnel may require a decontamination pursuant to Section V. The conveyance may not be launched in any waters of the County until such time as the conveyance is decontaminated and re-inspected by Certified Personnel.
7. Upon completion of an inspection, Certified Personnel may:
 - a. Remove a seal;
 - b. Affix a seal to the conveyance or issue a receipt to the conveyance owner, operator, or transporter; or
 - c. Require a decontamination pursuant to Section V.
8. A conveyance owner, operator, or transporter shall retain the most recent inspection receipt with the conveyance.
9. It is unlawful for a conveyance owner, operator, or transporter to tamper with or remove a seal without authorization.

V. Decontamination of Conveyances

1. If decontamination is required as a result of an inspection conducted pursuant to Sec-

tion IV, the conveyance shall be decontaminated by Certified Personnel in accordance with County-approved protocols and standards.

2. Certified Personnel may impose a mandatory drying period in accordance with County-approved protocols and standards if necessary to achieve complete desiccation of aquatic invasive species.
3. Following decontamination, Certified Personnel may re-inspect the conveyance to authorize launch.

VI. Screening, Inspection, and Decontamination Stations

1. Conveyance screening, inspections, and decontaminations may be conducted at:
 - a. stations established by the County;
 - b. Authorized Third-Party locations; or
 - c. other locations where Certified Personnel are available to conduct an inspection.
2. A list of station locations is available at [website].

VI. Certification of Personnel

1. No person shall be eligible to conduct conveyance screening, inspections, or decontaminations unless such person is authorized by the County as Certified Personnel. The County may authorize a person as Certified Personnel upon the successful completion of a County-approved training course.
2. Certified Personnel must maintain active certification and must comply with all quality assurance requirements.
3. The County may conduct quality assurance checks to ensure that all Certified Personnel are adhering to County-approved protocols and standards. If the County documents quality assurance violations by Certified Personnel, the County may take corrective action, including, but not limited to, issuance of a written warning notice, reassignment of duties, imposition of additional training requirements, or decertification.

VII. Authorization of Third Parties

1. The County may authorize third parties to operate stations and conduct conveyance screenings, inspections, and decontaminations at locations as identified in Section VI(1).
2. Authorized Third Parties must operate stations in accordance with all County-approved rules and procedures.
3. All personnel conducting screenings, inspections, and decontaminations at stations operated by Authorized Third Parties must be certified in accordance with Section VI.
4. The County may conduct quality assurance checks of inspection stations operated by Authorized Third Parties to ensure the Authorized Third Parties are adhering to County-approved rules and procedures. If the County documents quality assurance violations, then the County may, at their discretion, issue a written warning notice, prohibit screenings, inspec-

tions, or decontaminations at the specific location, or suspend or revoke the authorization under provisions of [relevant county administrative procedure rules].

VIII. Local Boater Programs

The County may develop screening, inspection, and decontamination programs, requirements, or protocols for individual waters or water bodies within designated geographic areas.

IX. Fees

The following fees are hereby established for conveyance screening, inspection, and decontamination services performed by the County:

1. Screening: [\$]
2. Inspection: [\$]
3. Decontamination: [\$]

Fees collected for screening, inspection, or decontamination shall be used to fund the Conveyance Inspection Program.

X. Criminal Penalties

1. Any person violating any provision of this Ordinance shall be guilty of a misdemeanor. Such individual shall be deemed guilty of a separate offense for each launch in a water of County of [X].
2. Any individual convicted of a violation of this Ordinance shall be punishable by a fine of not less than [\$] and/or up to [X] months imprisonment in the county jail or both.
3. A conveyance unlawfully launched in a water of the County of [X] shall be subject to impound if, pursuant to a misdemeanor arrest for violation of this Ordinance, a law enforcement officer determines that circumstances necessitate law enforcement custody of the conveyance.
4. Payment of any penalty herein shall not relieve any individual from the responsibility of correcting the violations as found by the law enforcement officer.
5. Any person found not in compliance with this Ordinance is subject to citation, shall be escorted off the water, and shall be subject to any other legal action as deemed necessary by the enforcement officer including but not limited to detaining said person and conveyance until inspection as required under this Ordinance.
6. Fines collected as a result of violating this Ordinance shall be used to fund the Conveyance Inspection Program.

XI. Public Nuisance Declaration

Any violation of this Ordinance is hereby declared to be unlawful and a public health nuisance and may be abated by authorized County personnel, irrespective of any other remedy provided in this Ordinance.

Appendix G. Bands issued in California.

From: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=89072>

- Bands are issued by the California Department of Food and Agriculture and the California Department of Fish and Wildlife for vessels quarantined per Fish and Game Code Section 2301.
- Bands are issued for failed inspection by:
 - California Department of Parks and Recreation at San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir—accepted between San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir
 - California Department of Parks and Recreation: Lake Perris and Silverwood Lake
 - Canyon Lake Property Owners Association: Canyon Lake
 - Lake of the Pines Association: Lake of the Pines
- Bands are issued upon exit for watercraft that pass inspection by:
 - San Luis Obispo County Parks: Lopez Lakes and Santa Margarita Lake (aka Salinas Reservoir)—accepts bands issued by Lopez Lake and Santa Margarita Lake
 - San Luis Obispo County, Department of Public works: Lake Nacimiento, Private Ramps—issued specifically for watercraft enrolled in the Resident Vessel Program.
 - San Diego County Park District: Lake Morena County Park
 - East Bay Regional Park District: Del Valle Reservoir and Quarry Lakes
 - Ranch California Water District: Vail Lake
 - San Luis Obispo County, Department of Public Works: Lake Nacimiento, Private Ramps—Issued to vessels associated with private communities' general inspection program
 - Los Angeles County Parks and Recreation: Pyramid Lake (lake is infested with quagga mussel); accepts bands issued by Silverwood Lake, Lake Perris, and Castaic Lake
 - Big Bear Municipal Water District: Big Bear Lake
 - Metropolitan Water District of Southern California: Diamond Valley Reservoir
 - Monterey County Parks Department: Lake Nacimiento, Public Ramps
 - Contra Costa Water District: Contra Loma Reservoir
 - Santa Clara County Parks: Calero Reservoir, Coyote Reservoir, Lake Anderson, Lexington Reservoir, Stevens Creek Reservoir
 - California Department of Parks and Recreation at San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir—accepted between San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir
 - California Department of Parks and Recreation: Lake Perris, Lake Silverwood, Diamond Valley Lake, and Lake Hemet have a reciprocal agreement.
 - Arrowhead Lake Association: Lake Arrowhead
 - Santa Barbara County Parks: Cachuma Lake Recreation Area—issued to exiting watercraft that passed an initial inspection and underwent required dry period
 - Tahoe Resource Conservation District: Fallen Leaf Lake
 - Lake of the Pines Association: Lake of the Pine
 - Tahoe Resource Conservation District: Lake Tahoe
 - Los Angeles County Department of Power and Water: Lake Crowley
 - East Bay Municipal Utility District: San Pablo Reservoir

- Humboldt Bay Municipal Water District: Ruth Lake—watercraft inspections are required (yellow stickers are for local boats that are banded, and no inspection is required; red stickers are for non-local boats that require an inspection for a fee; blue stickers are for non-motorized and non-trailered boats that require an inspection and can be launched anywhere once registered)
- Casitas Municipal Water District: Lake Casita
- Lake Hemet Municipal Water District: Lake Heme
- Santa Barbara County Parks: Cachuma Lake Recreation Area—Boats that pass inspection undergo a minimum 35-day drying period prior to launching
- San Luis Obispo County Parks: Lopez Lake and Santa Margarita Lake (aka Salinas Reservoir)
- Bands are issued upon exit for watercraft that have been in infested waters (to expedite re-entry)
 - Lake Piru Recreation Area (lake is infested with quagga mussel)—accepts bands issued by Castaic and Pyramid Lakes. Issued to exiting watercraft to expedite re-entry at Piru
 - Los Angeles County Parks and Recreation: Castaic Lake (presumed infested with quagga mussels)—issued to exiting watercraft to expedite re-entry at Castaic and Pyramid Lakes only. Accepts bands issued by Silverwood Lake and Lake Perris

Appendix H. Examples of Watercraft Inspection and Decontamination Contracts with Concessionaires.

- Standard Operating Procedure 902: Methods for Preventing the Spread and for the Removal of Aquatic Invasive Species, Primarily Quagga Mussels, from Vessels Exiting Lake Mead National Recreation Area (Lake Mead)
- Memorandum of Understanding Between the Idaho State Department of Agriculture and Station Operator (Idaho)
- Watercraft Inspection Station Operation Agreement between Missoula County and Montana Fish, Wildlife and Parks (Montana)
- 2017 Scope of Work for Aquatic Nuisance Species Inspection and Decontamination Stations – Arapahoe National Recreation Area (ANRA) Granby & Shadow Mountain Reservoirs & Grand Lake (Colorado)
- Larimer County Scope of Work for ANS Inspection Stations – 2017 (Colorado)
- 2017 Scope of Work for ANS Inspection and Decontamination Stations by Rocky Mountain Recreation Company at McPhee, Taylor Park and Vallecito Reservoirs (Colorado)