

## APPENDIX F: PUBLIC EDUCATION AND OUTREACH MATERIALS



# QUAGGA/ZEBRA MUSSEL FACT SHEET



State and federal agencies have initiated a unified response to the quagga mussel invasion in California. The involved agencies include the Departments of Fish and Game (DFG), Water Resources, Food and Agriculture, Boating and Waterways, Parks and Recreation; U.S. Fish and Wildlife, National Park Service, and Bureau of Reclamation; Metropolitan Water District and the City of San Diego Water Department; and multiple local authorities.

## History of quagga/zebra mussels in North America

- Arrived from Europe in the 1980s
- Spread to many eastern waterways, rivers and lakes
- Quagga found in Lake Mead in Nevada on Jan. 6, 2007, and later throughout Lake Mead's lower basin
- Quagga found in Lakes Mojave and Havasu in the Colorado River Jan. 17, 2007
- Quagga found summer 2007 in the Colorado River Aqueduct System
- Quagga recently found in San Diego County in San Vicente Reservoir, Lake Murray Reservoir, Lower Otay Reservoir, Lake Dixon, and Miramar Reservoir and in Riverside County in Lake Skinner and Lake Mathews.
- Zebra mussels found in San Justo Reservoir, San Benito County, Jan. 2008

## Economic impact

U.S. Congressional researchers estimated that an infestation of the zebra mussel in the Great Lakes area cost the power industry \$3.1 billion in the 1993-1999 period, with an economic impact on industries, businesses, and communities of more than \$5 billion.

In California, spread of the mussels threatens water delivery systems, hydroelectric facilities, agriculture, recreational boating and fishing, and the environment in general.

## Quagga:

- Typically the same size as a fingernail but can grow up to about 2 inches long
- Common color patterns vary wildly with black, cream, or white bands
- Habitat varies – they can colonize both hard and soft surfaces in freshwater, from the surface to more than 400 feet in depth.
- Arrived in the U.S. from the Ukraine in 1989

## Zebra:

- Typically the same size as a fingernail but can grow up to about 2 inches long
- Commonly have alternating dark and light stripes
- Inhabit fresh water at depths from 4 to 180 feet (most commonly 6-12 feet) and prefer hard surfaces
- Arrived in the U.S. in 1988 from Europe

## Both mussels:

- Produce young (larva) that are too small to see with the naked eye, but newly settled young feel like sandpaper on smooth surfaces
- May release over 40,000 eggs in a reproductive cycle and up to 1 million in a spawning season
- Attach to aquatic plants, boats, motors, trailers, and recreation equipment or can be present in water (in addition to substrates, docks, piers, anchors, etc)
- As they grow, can be seen on boat hulls, especially around trim tabs, transducers, along keels, and on lower units and propellers
- Can be found in bilges, live wells and motors
- Can survive three to five days out of water depending upon temperature and humidity in summer, longer in the winter - up to 30 days

## Border Protection Stations - Jan. 29, 2007 through June 15, 2008

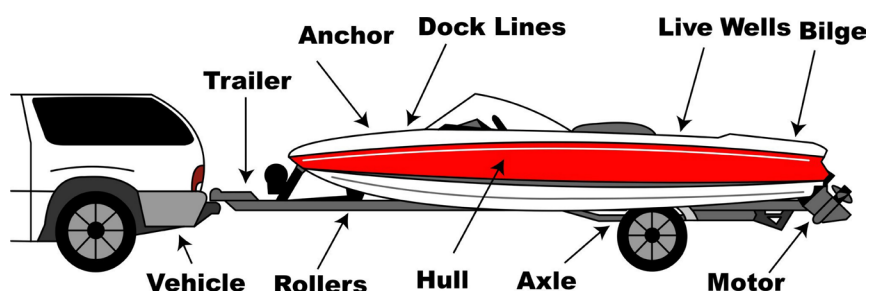
- |                                      |         |
|--------------------------------------|---------|
| • Boats checked:                     | 117,427 |
| • Boats with water needing drainage: | 11,322  |
| • Boats with confirmed adult finds:  | 150     |

**For more information**  
**Quagga hotline – 866-440-9530**  
**<http://www.dfg.ca.gov/invasives/quaggamussel/>**

## What boaters can do to stem the spread of invasive quagga/zebra mussels



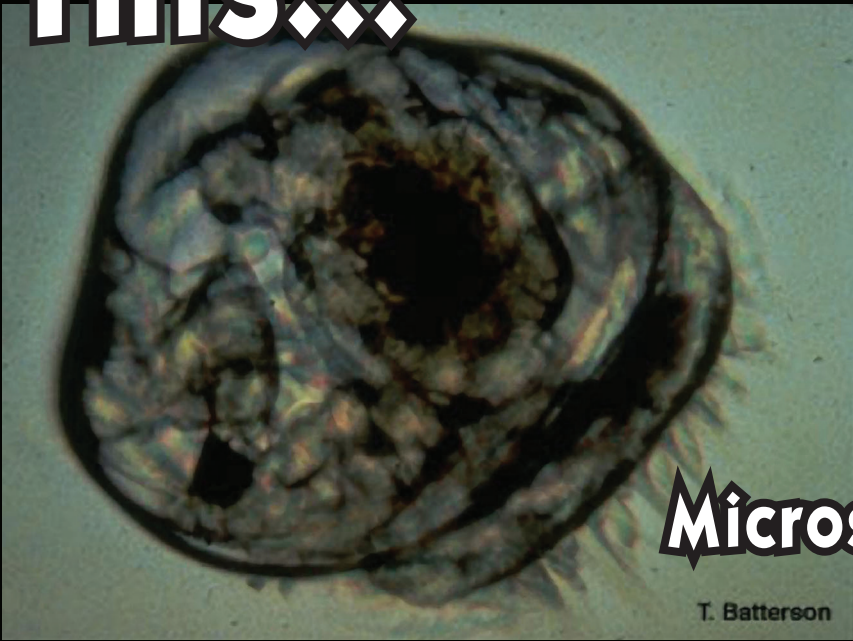
- Be aware that transferring a boat that has been in infested waters will allow the spread of quagga mussels, or the closely related zebra mussels.
- Thoroughly wash the hull of each fishing boat, sailboat, or personal watercraft once it leaves the water. This is especially important if the vessel has been moored for more than a day.
- Use hot water from a high-pressure hose when possible during all cleaning operations. The use of chlorine in the cleaning process is also recommended.
- Thoroughly wash any watercraft trailer used to remove a boat from a lake, river or waterway. Use hot water from a high-pressure hose when possible, or use chlorine in the cleaning process.
- Physically inspect all exposed surfaces. The presence of quagga mussels will feel like sandpaper to the touch.
- Remove aquatic plants from boat, motor and trailer. Check all underwater fittings and equipment, such as rollers, axle, bilge and trailer, and above water equipment, such as anchors, live wells, and docks. Place aquatic plants in trash if possible.
- Drain any lake or river water from equipment including the motor, bilges, live wells, bait buckets, and coolers. Ensure all drained areas are dry.
- Ensure the watercraft's lower outboard unit is drained and dry.
- Dispose of unwanted live bait on shore or in trash.
- Any vessel traveling from Lake Mead, Lake Mohave, Lake Havasu, the Colorado River, or lakes that receive water from the Colorado Aqueduct, including: Lake Skinner (Riverside County), Lake Mathews (Riverside County), San Vicente Reservoir (San Diego County), Dixon Lake (San Diego County), Lower Otay Reservoir (San Diego County), Miramar Reservoir (San Diego County) and Lake Murray (San Diego County) should remain dry and out of water for five days.
- For personal watercraft, impeller areas can contain quagga and zebra mussels and aquatic plants. Once upon the trailer, run the engine for five to 10 seconds to blow out excess water, mussels and plants. Before leaving water access, inspect and remove any mussels or plants from intake, steering nozzle, hull, and trailer.
- Exercise patience at Department of Fish and Game vehicle checkpoints and Department of Food and Agriculture border inspection stations.



# THE MUSSELS ARE HERE!

What you can't see will ruin your boat!

This...



Microscopic

T. Batterson



...will do this!



# DON'T MOVE A MUSSEL!

**Clean, drain, dry boats & equipment**  
**Dispose of live bait in trash**

Dry 5 days in hot weather & up to 30 days when cool & moist

**Protect your boat, fisheries and California waters!**

**MUSSEL HOTLINE 866-440-9530**  
**[www.dfg.ca.gov/invasives/quaggamusel](http://www.dfg.ca.gov/invasives/quaggamusel)**

**DON'T MOVE A MUSSEL!**

## Quagga/zebra mussels

**ruin boats and destroy waters**

**DON'T LET THEM RIDE WITH YOU!**

**Quagga/zebra mussels** in California waters could result in an environmental and economic disaster. They can cause a shift in native species and disrupt the ecological balance of entire bodies of water. The mussels clog water pipes, coat piers, and ruin boat motors. Transferring a boat from an infested water to another water could spread the mussels.



**YOU CAN STOP THEM!**

**For more information  
866-440-9530**



**[www.dfg.ca.gov/invasives/quaggamusel](http://www.dfg.ca.gov/invasives/quaggamusel)**

# DON'T SPREAD INVASIVE SPECIES

## When leaving the water:

- **Inspect** all exposed surfaces - small mussels feel like sandpaper to the touch.
- **Wash** the hull of each watercraft thoroughly.
- **Remove** all plants and animal material.
- **Drain** all water and **dry** all areas.
- **Drain** and **dry** the lower outboard unit.
- **Clean** and **dry** all live-wells.
- **Empty** and **dry** any buckets.
- **Dispose** of all bait in the trash.
- **Wait** from 5 days in summer heat or up to 30 days in cool, moist weather and **keep** watercraft dry between launches into different fresh waters.
- **Calculate your dry time at:** <http://www.100thmeridian.org/Emersion.asp>



### STOP AQUATIC HITCHHIKERS!

Prevent the transport of nuisance species.  
Clean all recreational equipment.

[www.ProtectYourWaters.net](http://www.ProtectYourWaters.net)

**¡No Mover Un Mejillón!**

**Los Mejillones de  
Quagga/Zebra  
arruinan los barcos y  
destruyen las aguas**

**¡NO LOS DEJE MONTAR CON USTED!**

**Los mejillones de Quagga/zebra** podrían resultar a un desastre ambiental y económico en las aguas de California. Pueden causar una cambio en la especie nativa e interrumpir el equilibrio ecológico de aguas enteras. Los mejillones tapan la tubería de agua, cubren los embarcaderos, y arruinan los motores de los botes. La transferencia de un barco de un agua infestada a otra agua podría diseminar los mejillones.



**¡SE PUEDE DETERNLOS!**

**Para más información**

**866-440-9530**

**[www.dfg.ca.gov/invasives/quaggamussel](http://www.dfg.ca.gov/invasives/quaggamussel)**





# NO DISEMINARSE LA ESPECIE INVASORA

## Al salir el agua:

- **Examine** todas las superficies expuestas - los mejillones pequeños se sienten como el papel de lija al tacto.
- **Lave minuciosamente** el casco de cada vehículo acuático.
- **Quite todo** el material de las plantas y animales.
- **Drene toda** la agua y **seque** todas las areas.
- **Drene y seque** por afuera la borda más baja de vehículo.
- **Limpie y seque** todos los pozos.
- **Vacie y seque** cualquier cubeta.
- **Deseche toda** la carnada en la basura.
- **Espere** desde 5 días durante el verano caliente hasta 30 días en el tiempo fresco y húmedo entre los lanzamientos y **mantenga** su vehículo acuático seco antes de meterlo nuevamente a un agua dulce diferente.
- **Calcule su tiempo seco a:** <http://www.100thmeridian.org/Emersion.asp>

¡PARARASE LAS AUTOSTOPISTAS  
ACUÁTICOS!

Prevengase el transporte de la especie del fastidio.

Limpiese todo el equipo recreacional.

© Departamento de Pesca y Cazaria de California



**STOP AQUATIC HITCHHIKERS!**  
Prevent the transport of nuisance species.  
Clean all recreational equipment.

[www.ProtectYourWaters.net](http://www.ProtectYourWaters.net)



## **NOTICE OF PROPOSED EMERGENCY RULEMAKING**

**NOTICE IS HEREBY GIVEN** that the Department of Parks and Recreation Division of Boating and Waterways (hereafter department) proposes to adopt the Quagga and Zebra Mussel Infestation Prevention Program Emergency Regulations after considering comments, objections, and recommendations regarding the proposed emergency action.

### **PROPOSED EMERGENCY REGULATORY ACTION**

The department proposes to adopt emergency regulations to set procedures for the collection and use of the quagga and zebra infestation prevention fee as required by California Harbors and Navigation Code Chapter 5, Division 3, Article 1.3 Sections 675 through 676 beginning with the 2014 recreational vessel registrations payable on December 31, 2013 and thereafter on a bi-annual basis. These emergency regulations specify how the fee will be collected and the criteria for administering the grants in accordance with the statutes.

The regulations shall not apply to registered vessels used exclusively in marine waters as defined in the regulations, estimated by the department to be approximately 40% of all registered vessels. It is up to the vessel owners to opt out of the prevention fee using the method specified in the regulations.

The prevention fee amount was based on input from a Technical Advisory Group (TAG) to determine the amount of the annual fee, not to exceed \$10. After the TAG meetings held in late Spring of 2013, the department took into consideration the comments given, department research, and Department of Motor Vehicles start up and annual costs, and set the fee at \$8 per year with billing to start with the biennial registration beginning January 1, 2014 for \$16 for the two-year registration.

All revenues collected from the fee will be deposited into the Harbors and Watercraft Revolving Fund and shall be used for the following purposes: to cover reasonable costs incurred by the department associated with determining the prevention fee and the Department of Motor Vehicles initial programming costs, adoption of the regulations, and administering the prevention grants; no more than 15% of the remaining revenues collected may be expended by the Department of Fish and Game for inspection, quarantine and enforcement of quagga and zebra mussel prevention activities according to statute; and no less than 85% of the remaining revenues collected shall be made available for grants to entities for dreissenid mussel prevention, vulnerability assessment, monitoring, inspection and education according to Fish and Game Code Section 2302.

This article shall not prevent a special district, city, county or joint powers authority from adopting local regulations or ordinances related to the prevention

and eradication of invasive species that exceed the requirements of this article. The department intends to follow the emergency rulemaking with a regular rulemaking for permanent regulations. The department also intends to have the permanent regulations in place before the expiration of these emergency regulations 180 days from the effective date of these regulations.

### **OPPORTUNITY FOR PUBLIC COMMENT**

Government Code section 11346.1(a) (2) requires that, at least five working days prior to submission of the proposed emergency action to the Office of Administrative Law, the adopting agency shall provide a notice of the proposed emergency action to every person who has filed a request for notice of regulatory action with the agency. After submission of the proposed emergency regulations to the Office of Administrative Law, the Office of Administrative Law shall allow interested persons five calendar days to submit comments on the proposed emergency regulations as set forth in Government Code section 11349.6.

**This Notice of Proposed Emergency Rulemaking is being provided five days prior to the date that the Department will submit the regulations to the Office of Administrative Law.**

### **WRITTEN COMMENT PERIOD – August 28 2013 – September 4, 2013**

Any interested person, or his or her authorized representative, may submit written comments relative to the proposed emergency regulatory action.

#### **Comments shall satisfy the following requirements:**

- Comment shall be in writing, which includes email.
- Comment shall identify the emergency regulation being addressed.
- Comments shall be sent to the rulemaking agency's contact person for the emergency regulations.
- Comments shall be sent to and received by OAL within five calendar days of the filing of the emergency regulations with OAL.

#### **Submit comments to BOTH of the following:**

Office of Administrative Law (OAL)  
Reference Attorney  
300 Capitol Mall, Suite 120  
Sacramento, CA 95814

[staff@oal.ca.gov](mailto:staff@oal.ca.gov)

Joleane King  
Department of Parks and Recreation  
Division of Boating and Waterways  
1 Capitol Mall, Suite 410  
Sacramento, CA 95814  
[Joleane.King@parks.ca.gov](mailto:Joleane.King@parks.ca.gov)

## FINDING OF EMERGENCY

In Section 1 of Chapter 485 of the Statutes of 2012, the Legislature found and declared that:

(a) Quagga and zebra mussels, nonnative dreissenid mussels introduced in the United States from Europe in 1988, pose an immediate and significant threat to California's water supply, flood control, power generation, and aquatic recreation infrastructure. Once established in a body of freshwater, quagga and zebra mussels latch onto pipes, valves, screens, irrigation canals, and gates, often in quantities that severely impede the movement of water and the necessary operation of other critical water management infrastructure.

(b) Quagga and zebra mussel infestation poses tremendous financial burdens on local governments and local economies. Between 2000 and 2010, widespread zebra mussel infestation of the Great Lakes region resulted in over \$5 billion in economic impacts. Were it to become infested, California's Lake Tahoe alone would likely incur economic impacts of over \$20 million annually.

(c) Quagga and zebra mussel infestations have been identified in 25 bodies of freshwater in California, most within the southern California region. These infestations threaten additional water management and recreational facilities throughout southern California as well as facilities across the state. Facilities threatened with infestation include, but are not limited to, agricultural water management infrastructure in the central valley, drinking water facilities in the central coast and north coast regions, power generation infrastructure in the Sierra Nevada, and flood control facilities throughout California's watersheds.

(d) Existing law prohibits the possession, importation, shipment, transportation, planting, or placement of quagga and zebra mussels in any water within the state.

(e) An urgency exists due to the tremendous water management impacts and state and local government costs associated with quagga and zebra mussel infestation and the potential impacts to the state's water supply infrastructure that such infestation could cause if not prevented.

## MATERIALS RELIED UPON

- [California Aquatic Invasive Species Management Plan and Appendices](#). California Department of Fish and Game (DFG), 2008. – A comprehensive study of AIS including recommendations for management and prevention.
- [Invasive Mussel Guidebook for Recreational Water Managers and Users](#). California Department of Fish and Game (DFG), 2010. An overview of the

threat quagga and zebra mussels pose to California's water managers and users. The Guidebook recommends AIS prevention and containment measures, early-detection monitoring for mussels and methods for checking boats, trailers and vehicles for mussels.

- [Sacramento-San Joaquin Delta Boating Needs Assessment 2000 – 2020](#). A study undertaken on behalf of the California Department of Boating and Waterways (DBW) in cooperation with the Delta Protection Commission's Recreation Citizen's Advisory Committee. The study was carried out during the period of 2000 to 2002.
- [Legal and Regulatory Efforts to Minimize Expansion of Invasive Mussels through Watercraft Movements: A Co-learning Workshop](#), August 22–23, 2012, hosted by the Arizona Game and Fish Department and convened in Phoenix, Arizona, by the US Fish and Wildlife Service, the National Association of Attorneys General, Oregon Sea Grant, the National Sea Grant Law Center, and the Western Regional Panel on Aquatic Nuisance Species. (Reports, white papers, action plans and other resources online.)
- [Addressing the Challenge of Mutual Acceptance of Dreissenid Mussel Vessel Certification Programs – A Pathway to Reciprocity](#), 2010. (DFG) By Gregory A. Giusti.
- [Survey of Watercraft Interception Programs for Dreissenid Mussels in the Western United States](#) - Results of an On-line Survey Completed in February 2009. Produced for the Western Regional Panel on Aquatic Nuisance Species by Bill Zook and Stephen Phillips, Pacific States Marine Fisheries Commission.
- [Recommended Uniform Minimum Protocols and Standards for Watercraft Interception Programs for Dreissenid Mussels in the Western United States](#) - A report to the Western Regional panel on Aquatic Nuisance Species by Bill Zook and Stephen Phillips, Pacific States Marine Fisheries Commission.
- [The 100th Meridian Initiative in Nevada](#): Assessing the Potential Movement of the Zebra Mussel to the Lake Mead National Recreation Area, Nevada, USA. 2004.
- [Assessment of Potential for Dispersal of Aquatic Nuisance Species by Recreational Boaters into the Western United States](#) 2001.

## **AUTHORITY AND REFERENCE**

The department is proposing this action pursuant to the authority vested by the Harbors and Navigation Code, Chapter 5, Division 3, Article 1.3 Section 675 (3) (c): "The department shall adopt an emergency regulation to prescribe procedures for the collection and use of the quagga and zebra mussel infestation prevention fee for the purposes of this article. The emergency regulations shall include rules for administering the grants awarded pursuant to Section 676."

The department is a member of California's Quagga and Zebra Mussel Interagency Working Group which works to develop ways for recreational boaters to prevent the spread of these aquatic invasive species. The department posts resources on its Website, develops and distributes joint press releases and publications, and distributes information at events and via other media. The Deputy Director of the Division of Boating and Waterways serves as the California Boating Law Administrator and interacts with other states and federal agencies to control the spread of invasive species across the state and nation.

## **INFORMATIVE DIGEST**

### **Objectives of the Regulations**

The objective of the regulations is to clarify the procedures related to administering the mussel fee intended to cover the costs of dreissenid mussel prevention activities as required by statute. The fee administration includes identification of the fee amount and procedures pertaining to how the fee will be collected and spent within the authority granted by the statutes.

### **Existing Laws Related Directly to the Proposed Action**

#### **A. Comparable State Statutes**

- 1) The Legislature enacted Harbors and Navigation Code, Chapter 5, Division 3, Article 1.3 Sections 675 and 676, which became effective January 1, 2013. Those statutes require that the Department promulgate emergency 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 implement and administer dreissenid mussel monitoring, inspection, and infestation prevention programs, and to prescribe procedures for the collection and use of the fee.
- 2) Fish and Game Code Chapter 3.5, Division 3, Section 2301 was amended in 2007 and became effective October 10, 2007. That statute prohibits any person from possessing, importing, shipping, transporting, or placing dreissenid mussels in any state waterway. The statute also authorizes the Department of Fish and

Game and other agencies to inspect and order the cleaning, impounding, or quarantine of any conveyance potentially carrying dreissenid mussels. The statute also 1) authorizes the Department of Fish and Game, with the concurrence of the Secretary of the Natural Resources Agency, to close or restrict access to waterways as necessary to prevent the spread of dreissenid mussels, and 2) requires any entity in the state that finds dreissenid mussels to report the finding to the Department of Fish and Game immediately. The Department of Fish and Game must then notify affected local and federal agencies including the Department of Parks and Recreation, Division of Boating and Waterways, the Department of Water Resources, and the State Lands Commission in the event of a decision to close, quarantine, or restrict a facility according to this section. Fish and Game Code 2301 was amended in 2011 and became effective on January 1, 2012. The amendment extended the sunset date from January 1, 2012 to January 1, 2017.

3) The Legislature enacted Fish and Game Code Chapter 3.5, Division 3, Section 2302 in 2008, which became effective January 1, 2009. That statute requires the combined efforts of federal, state, and local entities to address the serious threat that dreissenid mussels pose to reservoirs owned or managed by governmental entities and private persons or entities used by the public. These statutes authorize fines to be assessed against reservoir managers who refuse to develop and implement a dreissenid mussel prevention program that includes monitoring, public education, and management of recreational activities where water recreation, boating or fishing are permitted.

## **B. Comparable Federal Statutes**

According to the California Invasive Species Management Plan, no single federal agency has comprehensive authority for all aspects of aquatic invasive species (AIS) management. Federal agencies with regulatory authority over the introduction and transport of aquatic species that may be invasive or noxious include the U.S. Department of Agriculture Animal Plant Health Inspection Service, the U.S. Department of Agriculture Agricultural Marketing Service, the U.S. Fish and Wildlife Service (USFWS), the U.S. Department of Commerce (DOC), and the U.S. Coast Guard (USCG). Many other agencies have programs and responsibilities that address components of AIS, such as importation, interstate transport, exclusion, control and eradication.

The primary federal authorities for managing and regulating AIS derive from the National Environmental Policy Act, the Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA, 1990), the National Invasive Species Act (NISA, 1996), the Lacey Act, the Plant Pest Act, the Federal Noxious Weed Act, and the Endangered Species Act. An Executive Order signed by President William J. Clinton on February 3, 1999 expanded federal efforts to address AIS. The order created a National Invasive Species Council charged with developing a comprehensive plan to minimize the negative economic, ecological and human health impacts of invasive species.



## **Estimate of Costs or Savings**

Harbors and Navigation Code section 675 prohibits that the quagga and zebra mussel infestation fee from exceeding \$10 per year per registered recreational vessel. After receiving input from the TAG and the Department of Motor Vehicles, the department determined that an annual fee amount of \$8 per registered vessel per year is appropriate, once it became clear that the DMV programming/ collection fees would be a one-time expense rather than an on-going one.

Based on \$8 fees paid by 60% of California's estimated 776,000 registered boat owners, an average of \$3.7 million per year will be raised for the Quagga and Zebra Mussel Infestation Prevention Program. (Forty percent of vessels are registered in 13 counties which are on or near marine waters.)

The potential savings to the State due to prevention and education efforts provided through the grant program could avert significant damage to the water delivery system that provides drinking water to millions of southern Californians, or damage to the irrigation network that supports a \$30 billion per year agricultural industry, and could produce extraordinary economic and social consequences.

# # #

