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DEPARTMENT OF NATURAL RESOURCES	EFFECTIVE DATE 03/19/07	
POLICIES AND PROCEDURES	REVISION DATE	
SUBJECT: Prevent Invasion Of Zebra Mussel Into Utah Waters		
Michael R. Styler, Executive Director		

## I. PURPOSE

To define the policy of the Department of Natural Resources (Department) that will provide direction on the prevention of Zebra mussel infestation into Utah's waters.

## II. POLICY

It is the policy of the Department to prevent the infestation of Zebra mussel (*Dreissena* sp.) into Utah's waters. Divisions of the Department will cooperate and provide resources to prevent infestation by:

- a. Planning and implementing interdiction and containment efforts to prevent infestation of Zebra mussel into Utah's waters.
- b. Assisting with monitoring efforts to document the absence or presence of Zebra mussel.
- c. Informing the public on Zebra mussel impacts, prevention measures, and monitoring updates; and
- d. Inviting other government agencies (including adjoining states) and non-governmental organizations to participate and provide resources (interdiction, monitoring, and conservation outreach) to prevent infestation of Zebra mussel into Utah's waters. The development of cooperative agreements with these agencies and organizations may be considered as part of this mutual process.

## III. AUTHORITY

Authority is vested under Sections 23-13-5 and 23-20-1 of the Utah Wildlife Code. The Utah Wildlife Board, under Rule 657-3-22 (w) for Collection, Importation and Possession of wildlife species in Utah, identified *Dreissena* species as prohibited.

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#### IV. PROCEDURE

a. Prevention:

The Department will take the lead in reconvening the state's Aquatic Nuisance Species (ANS) Team to address the prevention of Zebra mussel infestation into Utah. The ANS Team will include those affected parties wishing to participate.

- i. The Division of Wildlife Resources is designated as the lead Division for the Department.
- ii. The Department will ask the ANS Team to assist in developing cooperative interdiction efforts between the Department, National Park Service, other federal agencies, inter- and intra-state agencies and their respective agencies, municipalities, public utilities, private industry and other relevant parties that address preventative measures for Zebra mussel infestation. Interdiction efforts include, but are not limited to, law enforcement checks and boat and equipment disinfection. The initial interdiction efforts have been started at the Lake Powell National Recreation Area due to its proximity to infected waters and high boating use.
- iii. The Department will assist the ANS Team in conducting a risk assessment of Utah waters with high potential for Zebra mussel infestation. Thereafter the Department will help direct long-term interdiction efforts on these prioritized state waters (e.g., Quail Creek, Sand Hollow, and Gunlock reservoirs).
- iv. The ANS Team will be strongly urged by the Department to support the interagency development of individual Hazard Analysis and Critical Control Point (HACCP) plans at these high-risk waters.
- v. The Department will assist the ANS Team in identifying and pursuing cooperative funding packages for the interdiction efforts to support increased boat checks at high-risk waters, and development of boat cleaning stations that follow 100<sup>th</sup> Meridian protocol. (See [www.100thMeridian.org](http://www.100thMeridian.org)).

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vi. The Department will ask the ANS Team to coordinate their interdiction efforts with those Department Divisions with law enforcement authority and the Utah Attorney General's office to review, clarify and pursue laws and rules that will help with these prevention measures.

b. Monitoring:

The Department will support the ANS Team to cooperatively develop and implement monitoring efforts at priority waters, based on the aforementioned risk assessment, to determine the presence or absence of Zebra mussel. Monitoring has already been started at Lake Powell. The Department will assist with the following:

- i. Use monitoring protocol identified by the 100<sup>th</sup> Meridian group to insure continuity throughout interstate water systems.
- ii. Identify and pursue cooperative funding packages within the monitoring programs to support biologically sound sampling methods, and a long term Zebra mussel database housed within the Department.
- iii. Coordinate monitoring efforts with public water utilities and private industry to help track infestation potential. All monitoring will provide annual sampling results for the Department's Zebra mussel database.

c. Conservation Outreach:

The Department will support the ANS Team to cooperatively develop and implement conservation outreach efforts to prevent Zebra mussel infestation into state waters.

- i. The Department will assist the ANS Team in developing and utilizing public information signs, media coverage and messages (e.g., brochures) consistent with other states and the 100<sup>th</sup> Meridian group related to Zebra mussel infestation. Immediate efforts should be directed toward Lake Powell, as well as other high-risk waters.
- ii. The Department will coordinate with other states and the 100<sup>th</sup> Meridian to develop common messages, and to share information on infestation reports or possible management/control research.

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- iii. The Department will work with interested partners to develop a long-term education program to inform the public of the need for proper boating disinfection when moving between waters.

## V. BACKGROUND

The state of Utah, under direction of the Department of Natural Resources, recognizes that *Dreissena* mussels (commonly referred to as Zebra mussels) are a harmful aquatic nuisance species not native to Utah. They originate from the drainage systems of the Black and Caspian seas in Eastern Europe. These mussels were first discovered in the United States in the Great Lakes (Lake St. Clair) around 1986-1988. Since that time, Zebra mussels have spread throughout the eastern United States due to the absence of natural predators, high reproductive potential, adaptability to available aquatic habitats, and unintentional human transport. Expanding populations of these species are now found throughout the Mississippi, Missouri, and Arkansas River drainages. Reported densities from the Great Lakes area are over 100,000 mussels per square meter at some facilities.

One of the *Dreissena* mussel species (Quagga mussel) was recently discovered during January 2007 in Lake Mead and other downstream reservoirs of the lower Colorado River. This finding in the Colorado River system expands the documented range of invasion by over 1000 miles from previously known locations to the east. The proximity of these reservoirs to those located upstream in Utah significantly increases the risk that *Dreissena* mussels could infest state waters. Infestation events are usually first documented in or around boating facilities on waters, indicating a strong correlation to their being transported through boating and other aquatic related activities. Irrigation and other water delivery systems, common throughout Utah's arid environments, are other pathways whereby aquatic invasive species can be transported.

The infestation of *Dreissena* mussels (hereafter called Zebra mussels) in the eastern United States has caused millions of dollars of economic loss to public agencies and private industry. Zebra mussel can severely hinder the delivery of

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water for domestic, municipal, industrial, and agricultural purposes due to their ability to clog or foul pipes, pumps, water intake screens, water treatment facilities, power plant intakes and cooling systems, and fish screens. The boating industry incurs additional recreation costs associated with boat and motor damage, cleaning costs, and disinfection needs required for containment at infected waters. Public safety has also been documented as a hazard to those using the beach areas on recreational waters (unprotected feet) due to the sharpness of the bivalve shells.

Ecologically, zebra mussels alter aquatic environments by filtering from the water the essential nutrients and green algae that form the base of the food chain required by native species and sport fish for growth and survival. A major concern is the potential impacts from infestation to Utah's native sensitive species, which have already declined to low population levels due to other negative factors such as habitat loss. Other concerns include potential impacts to important recreational fisheries and the potential to interfere with irrigation, municipal and industrial water delivery facilities.

Several years ago, a group was formed under the direction of the U.S. Fish and Wildlife Service to address the spread of invasive species, such as Zebra mussels. The group was named the "100<sup>th</sup> Meridian" because Zebra mussels were not found west of this longitude line at the time of organization. To date there is no known method to eradicate them after establishment. Prevention through education and interdiction are the first lines of defense against invasion of these species. The 100<sup>th</sup> Meridian group has facilitated communication and cooperative efforts among stakeholders to educate and contain Zebra mussels; and to share current management ideas on limiting impacts from them once infestation has occurred.

To protect and preserve public safety of Utah's citizens, its critical water resources and uses, the economy of its aquatic based recreation and its valuable fish and wildlife resources, the Department of Natural Resources has developed a policy that will provide direction on the prevention of infestation of Zebra mussels into the State's waters. This policy also addresses the need to form partnerships with other governmental agencies and private industry to coordinate and ensure its successful implementation.