

**Colorado River Team  
100<sup>th</sup> Meridian Initiative  
Draft Meeting Minutes  
Utah Division of Wildlife Resources  
Salt Lake City, UT  
October 7, 2008**

**ACTION ITEMS**

- Find and provide merchandise (trailer stickers, hats, etc.) for the group. Check with Joe Starnichek at the Washington Office of Help Stop Aquatic Hitchhikers.
- Work to Engage Special Interest Groups (Commercial Haulers, Sail boaters, Scuba Divers, Seaplanes.) and educating them on the importance of cleaning and disinfecting equipment. Plan to have made contact before next meeting with a report.
- Establish a contact with the oil and gas industry to determine a way to track water conveyances used for hauling water.
- Bob Pitman will rework the MOU for invasive species to include the entire basin and will email it to the group.
- Work toward finding funding sources and support for the commercial hauler trainings.
- Work on setting up PCR testing and detecting as soon as possible.
- David Britton will link the Forest Service Web Site to the Meridian web site.
- UDWR will provide the template for the various marketing tools they have been using. Larry Dalton will email them to David Britton to make available to interested members of the group.
- David Britton will get with Erin Williams regarding making the PSA Commercial available.

**Welcome  
Bob Pitman**

Bob Pitman welcomed the group stating that the 100<sup>th</sup> Meridian is a partnership of agencies all collaborating their efforts to do what can be done to prevent the introduction and spread of AIS (aquatic nuisance species) and to determine how best to coordinate those agencies and each of their roles.

## **US Forest Service ANS Policy and Management Cynthia Tait – Aquatic Ecologist Forest Service (Intermountain Region)**

Cynthia Tait presented her findings from studies that the Forest Service performed specifically where Fire Operations were concerned. Her task force asked questions regarding cleaning fire equipment and disinfecting it for AIS, and what possible contaminants could be effected by their ground equipment and internal tanks from the planes.

Land management agencies entrusted with the health of the land don't want to be responsible for the spread of invasives. At the time, there were no agency standards or directives to issue any guidance. So, Cynthia's group worked on a protocol for the best ways to prevent the spread of aquatic invasive species.

They looked for a practical and efficient scientific and cost-effective way to disinfect equipment and kill organisms. Chemical Decontaminants such as; quaternary ammonium compounds are preferable and are readily available, inexpensive and easy on equipment. Bleach is cheaper but more toxic, damages gear, and not effective in killing New Zealand Mudsnails.

Do not discharge any cleaning fluids in water. For Dreissenids, Formula 409 was used, but is not the disinfectant of choice, quats are effective.

If there are invasive species present

- Avoid contaminated sites and invasives as much as possible
- Remove mud, all plants
- Power wash, flush tanks and hoses with clean hot water

If in doubt, internal tanks and hoses can be decontaminated with quaternary ammonium compounds, such as Quat128, or bleach.

The full guidelines for fire operations are available online at: [www.fs.fed.us/r4/resources/aquatic](http://www.fs.fed.us/r4/resources/aquatic), as well as maps where AIS have already been located and chemical breakdowns of best decontaminates.

The Forest Service is currently working to bring together key people in order to take action by forming partnerships at the forest and region levels and ANS education outreach public contacts.

The Forest Service R4 is planning to a funding partnership with UDWR for funding during FY09. \$98,000 will for used mainly for mobile boat washers, seasonal employees, and vehicles.

Other regions within the Forest Service are gearing up and USGS is also working on putting together an AIS database.

## **Utah Boater Surveys**

### **Larry Dalton**

Boater surveys give a lot of useful information, such as; where boats are going and coming from, what the owners know about AIS, and the surveys give us an opportunity to inform the public how they can help. This spring/summer season 7,000 boaters were questioned, 89% knew a lot about Quagga Mussels. Results will follow, and be shared with the 100<sup>th</sup> meridian.

By law in Utah boats have to prove to be free of mussels before they are allowed on the water. They are given a questionnaire where they have to declare they are clean, and it gets signed and certified. This certificate must be placed in the window of their boat. Law Enforcement Officers will begin to arrest people if they will not comply. Currently any restitution goes into the fund for AIS preventative measures. Utah employs 1 full time AIS coordinator (Larry), 5 full time AIS biologists, and 35 seasonal employees.

No Zebra or Quagga mussels have been found, however dreissenids may have been found. Utah requires two labs certifications, results will follow.

Lake Powell employees sample every two weeks and are always watching. DWR is very concerned about Lake Powell as it is highly popular, and the threat level is extremely high, but it remains non evasive. The survey interviews help determine risk, plus help educate boaters about decontamination.

It is recommended to clean boats, wipe off all mud, plants, etc., drain at the water you are going to leave, and then let the boat dry after each use. It is important to clean every part that touches water. Drying times required are as follows: Summer - 7 days, Spring/Autumn - 18 days and Winter 30 days. For boaters who use their boats more often, they are required to have their boats professional cleaned with water at least 140 degrees.

Currently, Aquatic Biologists will provide “at home” professional cleaning; however it may not be possible to keep providing this service in the future.

The surveys show that Bear Lake is also a top origination, and destination water. DWR is prepared to protect this water, and will move more employees there if the need arises. The first Utah mussel scare happened at Bear Lake in the form of a boat coming from Lake Mead.

Larry requested a Certified Public Manager (CPM) group to ascertain the best ways to get the message out to boaters. They determined that the boaters need the information right on the boat ramp. Fliers and announcements are now posted at the ramps so the message is being delivered where and how it is needed.

Enforcement is a key issue, and Larry works closely with the DWR officers. Larry stated that over 1.4 million DWR dollars have been spent, marketing and providing information

going out via: newspapers, TV and radio advertisements and interviews, at boat ramps, billboards and signs. Utah's message with AIS is "Clean, Drain, Dry" and with education and awareness hope to keep AIS at bay.

Larry mentioned that he would like to put into action UPC or Tag readers for boats, which would be a fast and easy way to determine where boats have been and if they've been properly cleaned.

### **PCR Methodology**

**Kevin Kelly (Reclamation)**

**John Wood (Pisces)**

John Wood presented molecular methods and ideas for identifying organisms. There is a lot at stake when making these types of calls.

Extensive research has been done on identifying and distinguishing molecules that are characteristic of one organism or species and not another. The advantages are they are rapid to implement, can be performed on multiple samples at one time, accurately ID individual species at any life state, and signal amplification technologies provide very high sensitivity. They can take up to 200 samples at a time.

Nearly all molecular methods examine either proteins or nucleic acid, which can be identified by proteins: allozymes or with nucleic acids: DNA sequencing or PCR.

All methods focus on particular specific sequence differences. The Dreissena genome is estimated to be  $1.6 \times 10^9$  base pairs. Most PCR tests use the same genome. There are 2 primers (DNA) that attach and amplify sequences in between.

There are advantages for having multiple assays. There are 5 different assays in 3 different labs, increasing the number of samples that are tested, which is usually not with the same assay. Results are relative when samples have been tested with different assays. They need to test more samples with multiple assays.

Other pressing issues are: standardizing DNA preparation procedures, results show silica membrane spin columns; PCR inhibitors, humic acids are extremely potent PCR inhibitors and are very common in environmental samples; contamination, results show high signal amplification of PCR, which are highly susceptible to contamination, and tow net samples, large solids volume are difficult to handle (PCR or microscope), strategies for preliminary purification of veligers.

Some options to destroy the DNA are: Chlorine (20% bleach for 10 minutes), Ultraviolet light (1-2 hours in the sun). This information needs to be distributed to the different agencies.

**Reclamation – USFWS cooperative agreement**

## **Sample**

The Meridian Group has been working to develop a Memorandum of Understanding with private entities. They have been trying to determine how to best coordinate with the entities and control and maintain (signs, information sharing, etc). The Group would like other agencies within the CO River Basin to become a partner with the Meridian Group. Bob will work towards standardizing the MOU in favor of the entire Colorado River drainage.

## **100<sup>th</sup> Meridian Website – new information and issues (REDUCING THE SPREAD!)**

### **David Britton**

The website ([www.100thmeridian.org](http://www.100thmeridian.org)) was established in 2001, is the heart of what makes the collaboration of the Meridian Group work. It was designed to be a central location to fact check, for information sharing (boat surveys, etc.), and somewhere to point the public to.

David recently updated the website, changing the navigation bar to make the site even more user friendly and organized. He would appreciate any possible suggestions to make the web site better.

He is working to compile a password protected database, which would show primary and secondary contacts of the Meridian Group, the agencies would be responsible for keeping their own data updated.

He is developing a new boater survey, and encourages anyone to use these surveys; this information can be accessed immediately. He would also like a password protected database where agencies can report any immediate findings, so the community would have current information for each state.

Also available on the web site is a place to request, and watch an informative invasive species video. Soon, he will make available to new public Service announcement.

## **Reaching Out To Additional User Groups**

It is vital to keep in mind all water users, sail boaters, divers, house boaters, river runners, even irrigation equipment could cause trouble. These users all have to be informed.

### **Sailboats**

Sail boats are usually moored, or slipped for long periods of time, giving ample opportunity for mussels to grow on the boat. This needs to be addressed, as periodically these boats need to be checked and cleaned. There needs to be an easier way for boaters to do this, currently a permit is needed to wash and clean boats on Lake Mead, and it is

expensive. We need to encourage boats to stay clean, even if they stay moored at only one water.

Guidebooks will be available soon in California on how to clean each type of watercraft. It is not final yet; however, this book would be something to share with different agencies and states.

### **Scuba Divers**

We need to spread the word that all equipment must be cleaned. It would be best to deal with at scuba shop level. There is some protocol on the 100<sup>th</sup> Meridian web site; however nothing has been set in stone, or approved officially to determine best ways to decontaminate wet suits, and diving equipment. Work needs to be done on recommending standard procedure.

It is suggested to use hot water, and salt water mixes. California has had some meetings with divers, giving information for cleaning equipment.

This could be a serious problem that needs to be addressed; definite protocols need to be outlined.

### **River Runners**

New Zealand Mudsnails are very easy to transport on rafting watercraft. These watercraft use many unexplored areas, there is no standard procedure as of yet and various jurisdictions to deal with.

The Colorado River drains water into 17 different states. We must be proactive, so we don't have to be reactive!

### **Watercraft Inspection and Decontamination research / Commercial Watercraft Transport Outreach**

#### **Bill Zooks**

There are 4,000 – 5,000 commercial watercraft transport operators in the US. Bill would like to provide training opportunities for these commercial drivers. In 2001 and 2007 there was an attempt to educate them through mailings, with little response. He would like to propose a two day training with the top 10 haulers in the Colorado River Basin. The workshop would feature focus group discussions, exchange of ideas, and to select a committee to work on standards for haulers. It would also include demonstrations of inspections and decontaminations. The training would take place in the off season, and would cost approximately \$6,000 – \$8,000, including compensation for participants.

He would also like to hold 34 training classes for over 80 different agencies which would involve ten state representatives, and over 1,600 individuals. This training would be to

inform participates on ways to identify watercraft and equipment as safe, certification, interagency cooperation, and decontamination procedures. He would also like to have a “level two” training where they would instruct others to lead the “level one” training.

The effectiveness of decontamination procedures will determine the amount of spread of the invasives. The estimate to do something like this would be approximately \$50-75,000 dollars. Funding is currently unavailable for either trainings, but would be so helpful.

The Group would like to address the following questions regarding random inspections, especially a state to state inspection. They would like some way to universally accept a boat to their next destination water, if it has had a full decontamination at the last water that it was used. It was suggested to use a lock that could be attached after cleaning, and only opened at the check station of the next destination water. The Group would like to see a universal decontamination and certification process.

They would like to work toward making a more effective way to make the public accept and be easier for them to comply, as public support is imperative.

It was suggested making unannounced inspections, taking boats that have been decontaminated, and go through them with a fine tooth comb using private research company and labs; go through scrapings, samples, and check internal parts of engine to see if they find any live villagers or mussels. There is a need to look for new techniques or tools, in case there are still live ones.

Bill requested that if there were any members who could either help with funding these trainings, or know of any helpful funding sources to let him know.

## **Response Strategies**

### **Larry Dalton**

UDWR has taken sixty samples of 43 water bodies. The protocol states that in order to officially declare the water is contaminated, personnel need to actually see it (with a microscope in the case of driseinna), it needs to pass two separate labs, and then it can be declared the water body is infected. The DWR Director has the authority to close a water in the case of infection, however with the concerns of economic impact on small towns; this decision can't be made lightly. Larry mentioned that when the media gets a hold of information, you are no longer in the driver's seat. Any information should be verified before making a public statement to the media.

- Immediately verify a reported AIS detection.
  - Make sure that you actually have a problem.
- Upon verification for the presence of AIS, immediately notify relevant local natural resources managers, pulling their technical personnel together as “response team,” and notify Utah's AIS Task Force.

- Notify those people who need the information.
- The response team must immediately begin surveys to define the extent of an AIS infestation.  
What exactly is infested? And with what type of organisms?
- As the extent of infestation is being determined, set-up an appropriate command structure to guide continuing response team activities for determining and implementing containment and/or control methods for the AIS infestation.
  - Set up a command level.
- Establish internal and external communication systems.
  - Everyone needs to give the same information, and make sure that it is correct.
- Organize available resources (personnel, equipment, funds, etc.) including compliance with laws and permitting requirements.
  - Do the best you can. Make sure that you have what process/permits you need.
- Prevent further spread using quarantine and pathway management.
  - Take whatever actions that will help and contain the situation right off.
- Apply available, relevant eradication, control and/or containment actions and implement mitigations.
- Institute long-term monitoring.
  - Keep watching the situation.
- Evaluate response effectiveness, modify the Rapid Response Strategy as needed and pursue long term funding for AIS management.
  - Be willing to make changing and improvements where you see fit

It was mentioned that having a “Prevention Plan” would be helpful as well.

**Research and Lake Management/Update on Quagga Mussel Control Program  
Rick De Leon – California Metropolitan Water District**

The California Metropolitan Water District went through phases to assess and clean the water systems that Quagga Mussels had attached themselves to. They spent several months simply procuring equipment and evaluating the situation. Then they put their plans into action by installing chlorination systems, designing disinfection systems, applying their research on control systems, establishing isolation barriers along the Colorado River Aqueduct and collaborating with other agencies.

They went through a total disinfecting process, having much success with constructed steel trash racks, to keep the mussels off. They found that the mussels don't congregate on the new steel trash racks. After 21 days 100% of Quagga Mussels were dead. It is important to keep constant chlorine pressure.

In their research they worked with disinfectants, chemical additives, anti-fouling, coatings, and anoxia. They plan to continue inspections and implementation as well as developing new control strategies. It is important to collaborate with other agencies, and they are planning a committee for the 2009 Fish and Wildlife Service workshop to develop a monitoring plan for western waters.

### **Other Items**

- National meeting will be held on January 22-23.
- The next meeting will tentatively be scheduled for March 09 and held in Grand Junction, Colorado.

## List of Attendees

1. **David Britton**, Asst. Regional AIS Coordinator, USFWS R2, Box 19498, Arlington, TX 76019, Phone: 817 272-3714 , Fax: 817 272-2855, david\_britton@fws.gov
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3. **Natalie Muth**, AIS Biologist, Utah Division of Wildlife, 152 E 100 N, Phone: 435-790-8938 , nataliemuth@utah.gov
4. **Erin Williams**, U.S. Fish and Wildlife Service, Phone: 703-358-2034 , erin\_williams@fws.gov
5. **Bryan Moore**, Biologist, National Park Service, 601 Nevada Hwy, Boulder City, NV 89005, Phone: 702-293-8901 , Fax: 702-293-8624, bryan\_moore@nps.gov
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7. **Bill Zook**, Contractor, Pacific State Marine Fisheries Commission, 320 E. Penzance Rd. Shelton, WA 98584, Phone: 360-427-7676 , bjzook2@msn.com
8. **Mark Anderson**, Aquatic Resources Management Chief, National Park Service / Glen Canyon NRA, PO Box 1507, Page, AZ 86040, Phone: 928-608-6266 , Fax: 928-608-6283, mark\_anderson@nps.gov
9. **bob pitman**, USFWS, Phone: 505-248-6471 , bob\_pitman@fws.gov
10. **Larry B. Dalton**, AIS Coordinator, Utah Division of Wildlife Resources, 1594 W. North Temple, Salt Lake City, UT 84114-6301, Phone: 801 652-2465 , larrydalton@utah.gov
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15. **Kevin McAbee**, Ecologist, US Fish and Wildlife Service, 2369 West Orton Circle,  
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16. **Ronald E. Zegers** , Director, Southern Nevada Water Authority , 243 Lakeshore  
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17. **Russ Findlay**, Fish And Wildlife Biologist, Bureau of Reclamation, 302 East 1860  
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18. **yvette converse**, assistant center director, US Fish and Wildlife Service  
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19. **Crystal Stock**, Aquatic Invasive Species Biologist, Utah Division of Wildlife, 1470  
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20. **Jay Groves**, Fisheries Biologist, Ute Indian Tribe, P.O. Box 190 Ft. Duchesne,  
Utah, Phone: 435.725.4816, jayg@utetribe.com
21. **Terry J. Hickman**, Environmental Programs Manager, Central Utah Water  
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22. **Maureen Wilson**, Project Coordinator, Mitigation Commission, 230 South 500  
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(801) 524-3148, mwilson@uc.usbr.gov (I will not be available until noon on October  
7, but will be attending after that.)

23. **Jon Sjoberg**, Supervising Biologist, Nevada Department of Wildlife, 4747 Vegas Drive, Las Vegas NV 89108, Phone: 702-486-5127 x3300, Fax: 702-486-5133, sjoberg@ndow.org

24. **Chris Haller**, Assistant Boating Coordinator, Utah State Parks and Recreation, 1594 West North Temple, Suite 116, PO Box 146001, Salt Lake City, UT 84114-6001, Phone: 801-538-7464 , Fax: 801538-4802, chrishaller@utah.gov

25. **Cynthia Tait**, ctait@fs.fed.us

26. **Justin Hart**, Assistant Regional Aquatics Manager, Utah DWR, 319 N Carbonville Rd, Ste. A, Price, UT 84501, Phone: 435-613-3723 , Fax: 435-613-3704, justinhart@utah.gov

27. **John Pratt**, Captain, Utah Division of Wildlife Resources, 1496 W. North Temple, Salt lake City, Utah, Phone: 801-538-4886 , Fax: 801-538-4892, johnpratt@utah.gov

28. **Ivan J. Ray**, Manager, Davis and Weber Counties Canal Company, 138 West 1300 North, Phone: 801-774-6373 , Fax: 801-774-5424, cac84067@yahoo.com

29. **Louanne McMartin**, AIS Biologist, Fish & Wildlife Service, 4001 N. Wilson Way, Phone: (209)946-6400 ext. 337, Fax: (209)946-6355, louanne\_mcmartin@fws.gov (Substituting for Ron Smith (Region 8))

30. **Karen Allec**, Southwest Diving, Long Beach, CA, Phone: 760-482-8380 , kallec@att.net

31. **Justin Jimenez**, Fisheries and Riparain Program Leader, BLM Utah, 440 West 200 South, Suite 500, SLC UT 84101, Phone: 801-539-4073 , Fax: 801-539-4074, justin\_jimenez@blm.gov

32. **Robert Radtke**, Hydrologist, Bureau of Reclamation, 125 S. State Street, Salt Lake City, UT 84138, Phone: 801-524-3719 , Fax: 801-524-3826, rradtke@uc.usbr.gov

33. **Mark H. Fuller**, Fish and Wildlife Biologist, USFWS, 1380 South 2350 West, Phone: 435-789-0366 , Fax: 435-789-4805, mark\_h\_fuller@fws.gov

34. **Lindy Higham**, Office Manager, Division Of Wildlife Resources, 1594 West North Temple, Ste 2110, POB 146301, SLC, UT 84114-6301, Phone: (801)538-4806 , melindahigham@utah.gov

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36. **Kevin Kelly**, Research Scientist, U.S. Bureau of Reclamation, PO Box 25007, Mail Stop 86-68220, Phone: 303-445-2017 (secretary), Fax: 303-445-6328, kkelly@do.usbr.gov

37. **John Wood**, Pisces Molecular, Boulder, CO

38. **Ron Blackledge**, Southwest Diving, Long Beach, CA, Phone: 760-482-8380, [kallec@att.net](mailto:kallec@att.net)

39. **Tom McMahon**, AIS Coordinator, Arizona Game & Fish