

WESTERN REGIONAL PANEL: ANNUAL MEETING MINUTES

September 12 and 13, 2007
Ilikai Hotel, Oahu Meeting Room
Honolulu, Hawaii

The Western Regional Panel (WRP) of the Aquatic Nuisance Species Task Force (ANSTF) held its annual meeting September 12 and 13, 2007, at the Ilikai Hotel in Honolulu, HI. People could attend a field trip which included snorkeling to Coconut Island in Kaneohe Bay on September 11.

Participants heard reports on WRP-funded projects, member reports on lessons learned, 100th Meridian response to quagga mussel invasion, a newly discovered virus, lessons learned specially to Hawaiian ANS in Hawaii, presentations on State Invasive Species Councils and on funding sources beyond FWS and State Funds. On the evening of September 12, 2007, members were invited to an evening social at the Sheraton Moana Surfrider Hotel.

WELCOME

Kevin Anderson, Puget Sound Partnership, WRP Chair
Laura Thielen, Hawaii Invasive Species Council Interim Chair
Earl Campbell, Assistant Field Supervisor, U.S. Fish and Wildlife Service

KEYNOTE SPEAKER – DR. ISABELLA ABBOTT

Bob Nishimoto, Hawaii Division of Aquatic Resources, introduced keynote speaker Dr. Isabella Abbott, an ethno-botanist from the University of Hawaii and the first native Hawaiian woman to receive a Ph.D. Dr. Abbot specializes in seaweeds and has written eight books, more than 150 papers and has mentored numerous future biologists.

Dr. Abbott gave a brief history of the native Hawaiian way of life and the broad and long view of invasives on the islands with her presentation titled: *'Nuisance' Species and Natural Resource Management: A Hawaiian Perspective*. A brief introduction of the Hawaiian Islands and some of its invasive species introduced to the islands throughout history were mentioned: for example, pumpkins that were brought by Captain Vancouver around 1880 to Kauai and Niihau. In the ocean, Hawaii's endemic species include: 25% of corals, 25% of algae, 25% of shallow water fish, 32% of shallow water invertebrates. Some natives species include: *O pae kala ole* (freshwater shrimp), *Nohu pinao* (scorpion fish), *O'opu nopili* (freshwater fish), *Ilio holo i ka ua ua* (Hawaiian monk seal).

Today, large vessels are one of the largest threats to native aquatic species in Hawaii either because of the ballast water that they carry or due to mechanical impacts (such as being grounded on a coral reef) while sailing in the islands.



[Dr. Abbott's PowerPoint Presentation: "Nuisance" Species and Natural Resource Management: A Hawaiian Perspective](#)

WRP FUNDED PROJECTS

(Note: 10 minutes each, supported by 1-page or less handouts)

ANS Early Detection Program – Karen McDowell, San Francisco Estuary Project

The San Francisco Estuary Project is recognizing the importance of early detection in preventing the spread of ANS by working with various Bay Area watershed groups to assist in recognizing new invasive species. Objectives of the ANS Early Detection Program is to prevent the introduction and spread of ANS into local creeks, streams and waterways: 1) to create a user-friendly spiral-bound ANS binder for watershed groups to use out in the field; 2) develop a model website and e-mail list server for use by watershed groups. The objective of the binder is to add species of interest for identification allowing created I.D. cards to be slotted in sleeves within the binders.

A particular goal is also to develop an advisory committee, created by partnerships with estuary groups and freshwater groups. In October 2007, there will be field testing with the binders to see if they are helpful in identifying ANS. A final species list has not yet been decided. The criteria for the species chosen to be included in the binder will include but will not be limited to particular species that have not yet invaded a particular area but will likely invade soon. It is hoped that the final binder (product) after field testing will serve as a prototype for use in other watersheds within the United States.

Assessment of Potential for Zebra Mussel Invasion of Waters in the Western U.S. via Saltatory Dispersal and Evolution of Increased Thermal Tolerance – Dr. Robert McMahon, University of Texas at Arlington

The purpose of the research was to compare the acute and chronic upper thermal limits of zebra mussel populations from both the warm southwest habitat and cool northeast habitat. Mussel samples were collected from Lake Oologah, OK (2006 and 2007) and Saratoga Lake (2006) and Hedges Lake (2007) in New York. Samples were held for 28 days in tanks at 29°C to observe the mortality between the different groups of mussels. Above 29°C, there was a 100% mortality rate and with Lake Oologah water temperatures in July and August 2006 reaching 29°C, this wiped out the entire population of zebra mussels. Field excursions during March 2007 indicated that mussels were repopulating Lake Oologah. This re-established population may possess some genetic differences from the population prior to the summer 2007 thermal selection event that may make them more heat tolerant.

Comparison of genetic fingerprints of isolated zebra mussel populations did not find any additional evidence of evolution of thermal tolerance. The conclusion was that zebra mussels from Lake Oologah are not more thermally tolerant than Saratoga and Hedges.

Because of expense of travel or late funding support, the following presentations that were not given orally. Handouts from Davidson and Crooks gave updates on their projects:

- *Habitattitude in Hawaii* – Sara Pelleteri
- *Invasive Ecosystem Engineers in Salt Marshes* – Jeffrey Crooks

- *Characterization of Risk on Species Transfer on Recreational Boats in Marine Systems via Hull Fouling* – Ian Davidson
 - *Regional Surveys and Outreach for the Isopod, Sphaeroma quoianum* – Catherine E. de Rivera
 - *Development of Preemptive Rapid Response Teams for Aquatic Weeds* – Lars Anderson
 - *Boater Surveys in Lake Mead* – Shawn Gerstenberger
 - *Educational Database* – Mark Sytsma
- ANS educational materials database developed by Portland State University can be read at: www.clr.pdx.edu/projects/edoutreach



[Bob McMahon's PowerPoint Presentation: UT Arlington's Zebra Quagga Research](#)

100TH MERIDIAN RESPONSE TO QUAGGA MUSSEL INVASION

David K. Britton, Ph.D., U.S. Fish and Wildlife Service, gave a report on the 100th Meridian response to quagga mussel invasions in the west.

In January 2007, quagga mussels were found in Lakes Mead, Havasu and Mohave. This represents the first detection of these species west of the Rocky Mountains. Lake Mead NRA developed an immediate and comprehensive response. Adult mussels were found covering boat hulls in the boulder basin of Lake Mead.

Quagga mussels are now in southern California (Los Angeles and San Diego areas) and in western Arizona. The 100th Meridian is trying to stop infestations in areas such as Lake Powell where infestations are most likely caused by boat traffic. The National Park Service website for quagga/zebra Mussels Infestation Response Plan can be found at: <http://www.nature.nps.gov/biology/Quagga>

The “Stop Aquatic Hitchhikers!” campaign in UT, NV, CA and AZ is raising awareness of invasive mussels. An online training certificate is given after completion of a quiz on responsible boating. A printable certificate is issued and this allows boaters to keep it with them to show authorities that they are aware of AIS and are properly trained on keeping gear cleaned.



[David Britton's PowerPoint Presentation: Western Quagga Mussels](#)

BIOLOGICAL SUPPLY HOUSE COMMITTEE REPORT

Paul Heimowitz, USFWS, gave a report on the WRP Science Education Pathway Workgroup. Paul stressed the importance of teaching educators and students of the potential harm that can be done when doing science experiments at school. He and other colleagues in the Northwest have found that Oregon schools using the FOSS curricula have acquired live organisms such as rusty crayfish, Brazilian elodea, and other ANS from biological supply companies. After the school is “done” with the animals, anecdotal evidence suggests some classes “return” the creatures to local streams or lakes. Instead, it is against the law to release ANS into the wild regardless of whether they are kept alive or not. USFWS, Oregon Sea Grant, Portland State University, and Oregon Department

of Fish and Wildlife have collaborated to educate not only people in education but also biological supply houses and organism suppliers, including development of an outreach brochure. Following a session on this pathway at its 2006 meeting, the WRP formed a workgroup to consider possible actions at the regional level. The workgroup agreed to base their effort on a prior pathway analysis developed under the lead of Sam Chan at Oregon Sea Grant.

Analysis of the pathway is identified through 4 main components:

1. Biological supply houses
2. Organism suppliers
3. Science curricula developers – FOSS
4. Schools/teachers/students – on the ground

The next steps for are to draft recommendations for WRP's consideration in late September. Draft recommendations include 1) expanding the *Habitattitude* campaign to engage biological supply companies and perhaps to jointly develop outreach materials; 2) outreach regarding current lists of prohibited species; and 3) HACCP (hazard analysis critical control plan) plans/certification for organism suppliers. Other solutions to consider include a protocol for humane euthanasia as an alternative in case a local pet store does not want to take unwanted classroom organisms, and a list of viable repositories. If warranted, some or all of the recommendations ultimately adopted by the WRP should be forwarded to the ANSTF.



[Paul Heimowitz's PowerPoint Presentation: Science Education Pathway](#)

MEMBERS REPORTS ON LESSONS LEARNED

Facilitated by Kevin Anderson, members submitted reports (3 minutes each) in writing ahead of time.

States:

COLORADO – Vicki Milano, Colorado Division of Wildlife, reported that whirling disease was discovered in Colorado dating back to the 1980s – a national conference was scheduled to discuss the problem. It was determined at that time that there was nothing in the hatcheries so it was assumed that there shouldn't be anything in the wild. A few years later, the disease devastated the wild population of trout. Millions of dollars later and lots of lab research, the state started cleaning up the problem but it still exists. They learned not to assume anything and that there is always a need to investigate further.

KANSAS – Jason Goeckler, Kansas Department of Wildlife and Parks, stressed how important it is to communicate with all parties. In the case of a new infestation, make sure to inform all stakeholders first. Anyone that has a legal stake in the infested water needs to hear the news from you directly, not later in the newspaper. If you get the stakeholders on board early, any mitigating action you take later will go more smoothly once you have opened the communication channels.

UTAH – Larry Dalton, Utah Division of Wildlife Resources' Aquatic Nuisance Species Coordinator reported that in July 2007, plans and budget were put in place to hire 41

brand new personnel to focus entirely on ANS issues. A full-time ANS outreach coordinator was hired. UDWR purchased ¼ million “Zap the Zebra” brochures and with the assistance of Utah State Parks and Recreation, mailed them to all of Utah’s 65,000 registered boaters, and distributed the remainder statewide to every boating water, to all boating sales or maintenance shops, and to major sporting goods retail outlets in Utah. There is now an online ANS training program everyone registering or renewing their boat license to pass at a 100% score before the license can be issued.

IDAHO – Amy Ferriter, Idaho State Department of Agriculture, reported that Idaho is finishing an ANS plan and is hoping for approval by ANS Task Force in November 2007. Additionally, the Idaho ISC has launched an ANS Task Force that reports to the Council which will be chaired by Tom Woolf, Aquatics Program Manager, ISDA. Idaho added 21 species to its Noxious Weed list in 2007 (with a total of 57). Some of the species added to the list are: Brazilian elodea, hydrilla, water hyacinth, parrotfeather milfoil and Eurasian watermilfoil. The Idaho State legislature has appropriated \$8 million since 2006 for eradication and control of Eurasian watermilfoil. In an effort to advance Idaho’s new aquatic plant control program, Amy went to University of Florida for a Peer Panel Review to assess and provide programmatic recommendations to ISDA. A copy of the review is available at: <http://www.agri.idaho.gov>. Idaho has also initiated an Early Detection and Rapid Response monitoring program for the quagga mussel. Rachel Winston will be working on an outreach campaign for ANS.

CALIFORNIA – Susan Ellis, California Department of Fish and Game, ISC Coordinator learned that you can’t do it alone. When quagga mussels were found in California, she couldn’t do it without the 100th Meridian’s help. CDFG formed an interagency working group involving the Department of Boating and Waterways, Water Resources, Parks and Recreation, Food and Agriculture, USFWS and US Bureau of Reclamation. They sent pamphlets to everyone with a registered boat and created posters, press releases and a webpage to notify owners about the quagga mussels. A quagga mussel hotline was also established. The Department of Food and Agriculture beefed up their check stations 24/7 to intercept boats coming from the Colorado River and the Great Lakes. Eight wash stations (portable) were purchased and moved throughout the state. An ANS Plan was sent to the Governor’s office for signature and they hope to have it signed by the ANSTF at the November meeting.

ALASKA – Tammy Davis, Alaska Department of Fish and Game, said that Alaska is in the fortunate position of having few ANS present at this time and especially considering its position of having the largest coastline in the nation. As others have mentioned, one difficulty is staffing – many are the sole staff person for an agency. Because of this problem, she is thankful for those in Federal and non-governmental agencies who have partnered with Alaska Department of Fish and Game with the help of Lisa Ka’aihue with the Prince William Sound RCAC. Communication is the key among these agencies – their fledging Alaska ANS working group has been effective in working on issues in communication.

WASHINGTON – Allen Pleus, Washington Department of Fish and Wildlife, has learned that coordination is critical in the job (internally and externally) but is very difficult because ANS organization and management is highly fragmented within the

state. There are so many people to coordinate with from trying to build management plans to building pathways to species. There is a lot of politics involved in getting things done and the organization is trying to learn the secrets of staffing. They have hired three seasonal staff to conduct boater surveys across the state in regards to zebra/quagga mussels, hired a new ballast water inspector and will hire a new biologist/diver to lead their tunicate management effort.

HAWAII – Sara Pelleteri, HI Division of Aquatic Resources, reported that although the funding for the AIS program has continued to increase, including for the Hawaii Invasive Species Council, as well as specific grant funding from federal sources, it is still difficult to keep technicians in Hawaii because of the lack of funding for permanent positions. With the job requiring a variety of skills (e.g. to be divers, boaters and taxonomists), there is a high turnover rate. It is a balancing act of how much can be accomplished based on the budget and there is a need to educate the state legislature to permanently fund positions for technicians in the AIS program.

Federal Agencies:

U.S. COAST GUARD - Jacob Varghis updated the WRP on the Ballast Water Management Program and reported that the program is doing very well. Verification and compliance rates are high, yet the government is slow coming up with new regulations. The next process is to establish a discharge standard and performance standard for on-board treatment of ballast water. This project is coordinated by the USCG headquarters in Washington D.C. The USCG published an ANPRM in March 2002 requesting public input for the ballast water discharge standard. Currently they are analyzing the input and after evaluating the environmental impact, a final NPRM will be published. No target date has been set for this report.

USGS - David Woodson spoke about several issues on lessons learned. On research to detect AIS in plankton samples, they learned: 1) Consistent PCR amplification of target marine species DNA in plankton samples containing many other marine organisms is difficult; 2) Molecular diagnostic systems based on PCR amplification allows for 96 – 192 samples to be analyzed in 8 hrs but this is too time consuming for automated analysis; 3) While microarray's can be used to screen for the DNA of specific aquatic invasive species, alternative chemistry is required to achieve robust results with mixed species samples; 4) Solid Phase Laser Scanning Cytometers offer a very promising technique to identify, quantify and assess the viability of phytoplankton in ballast water samples. Habitat restoration on the Columbia River has been used as an effective means of controlling non-native sail fin molly and mosquito fish, while promoting native Ash Meadows pupfish. Care should be taken in using niche models (e.g. GARP) to predict distributions of ANS. Although such niche models are beginning to be used for marine/estuarine invaders, intercalibration studies comparing models or complete validation studies are lacking for marine/estuarine organisms. Lights Manual has finally been released summarizing invertebrate species from central California and Oregon.

USFWS CALFED – Stockton Office

Louanne McMartin reported that invasive species are under the radar for many biologists. Watershed symposia are scheduled in three CALFED areas for 2008. The lessons learned this year was that the natural resource work force (biologists, researchers,

hatcheries) needs to understand how they spread non-native invasive species. Thus, the NISP has promoted the use of HACCP planning for natural resource managers as a planning tool that identifies potential risks associated with operational logistics and specific pathways that could introduce non-targets during routine activities.

NOAA NATIONAL MARINE FISHERIES SERVICE – NOAA NATIONAL MARINE FISHERIES SERVICE – Blake Feist reported that in recent years, green crab have expanded their range on the west coast of the United States and up into Vancouver Island in British Columbia. Existing distribution maps and literature reviews of the green crab impacts need to be updated in order to improve awareness. On a more philosophical note, Blake noted, based on his interactions at scientific meetings with various policy makers and researchers, that there isn't 100% overlap between what researchers like to study and what policy makers want to know. Specifically, there is overlap of interest regarding impacts of NIS as well as current distribution and future range expansion. However, it's harder to garner the interest of researchers over things like prevention, control and eradication, and outreach. Conversely, it's hard for researchers to convince policy makers and resource managers of the importance of using genetic fingerprints to identify vectors of NIS introductions. Fortunately, there's a lot of potential overlap of interests for things like ecological and economic impacts, evolutionary consequences and implications, life history patterns and natural history.

Blake made four suggestions that could encourage more overlap in the interests of resource managers/policy makers and researchers:

1. Engage economists
2. Engage social scientists
3. Engage advertising professionals
4. Recruit more scientists who are engaged in policy issues

US FISH AND WILDLIFE SERVICE – Paul Heimowitz noted two key lessons to remember: you are never as ready as you want to be, and there are still more AIS out there than quagga mussels and New Zealand mudsnails. He reported on several key activities by USFWS ANS programs in the West, noting continued efforts to find more ways to get resources and stressing the value of partnerships with state and other regional organizations.

NATIONAL PARK SERVICE – Bryan Moore learned to build on negative experiences and use the experiences to do better in the future especially when trying to get supplemental funding. He also learned the lesson and importance of dealing with partners and that putting a plan together will not necessarily mean that it will be implemented.

Provinces

BRITISH COLUMBIA - Gary Caine, Ministry of Agriculture and Lands, reported that on May 8, 2007, USDFW in Olympia, WA advised BC that a houseboat originating from the Missouri River and bound for Vancouver Island was detained at the Ridgefield port of entry due to the presence of zebra mussels on the hull and trailer. Both were decontaminated and released. This was the third boat purchased by the operator of a resort at Sproat Lake, near Port Alberni. Sproat Lake is an aquatic recreational

destination and the base for forest fire control (Martin Mars water bombers) that service western Canada and North America. With this amount of traffic, the lake could be “ground-zero” for AIS dispersion over a significantly large area of western Canada and the U.S. Although it’s impossible to predict all vectors of invasion, water bombers suck up 7200 gallons of water in one load and if there are AIS in the water, the bombers themselves are a pathway of invasion that was never considered before. BC has no dedicated 24/7 AIS hotline and there is no designated provincial contact for AIS reports. There is no lead authority within both the federal, provincial or regulatory agencies and current regulations and policies are inadequate for rapid response and remediation. Canada is amending the Fisheries Act to include new provisions and authorities to control AIS and BC is amending their Wildlife Act to include AIS as a program priority issue. Canada and BC are collaborating on priority AIS risk assessment for BC through the Centre for Expertise on Aquatic Risk Assessment. Clean and disinfect your water bombers after every invasion!!



[Gary Caine’s PowerPoint Presentation: BC Update](#)

Other Coastal Interests:

PRINCE WILLIAMS SOUND REGIONAL CITIZENS ADVISORY COUNCIL -

Lisa Ka’aihue spoke of the value of partnerships as the most important lesson learned. Through partnerships, her organization is able to work outside their region of Prince William Sound, northern Gulf of Alaska. They have formed partnerships with the USFWS, the NPS and more recently with the University of Alaska. The best example of successful partnering is how they started monitoring European Green Crabs in their region in 1996. This past year, they were able to expand the monitoring from the Aleutians to southeast Alaska with partnership funding.

PACIFIC STATES MARINE FISHERIES COMMISSION - Jim Athearn reported that upon visiting sport shows in the NW regions in 2007 (WA, OR, ID, CA, CO, UT), although there were two other state Fish and Game agencies present at the shows, there was no ANS information. This is a worrying concern as two to three years ago, ANS information could be found at these shows. Since most states now have ANS coordinators (typically Fish and Game staff) and are working on state management plans, he expects more info for the public and not less. The lesson learned is that people are busy with regional and national coordination and internal coordination with invasive species panels and committees (all of which is important) but there needs to be more emphasis on local, grassroots efforts to educate the public.

UNIVERSITY OF TEXAS, ARLINGTON – Dr. Robert McMahon reported on the apple snails (*Pomacea insularum*), which are voracious eaters of submerged vegetation in Houston and Florida. In Texas, they invade the rice growing areas and because they are native to the South American equatorial region, apple snails cannot tolerate cold. Thus, their laboratory recently completed a study of the physiological limits of the invasive snails. It revealed that specimens of *P. insularum* have relatively high pH and desiccation tolerances, a salinity tolerance typical of the majority of freshwater snails, a relatively poor capacity to maintain oxygen consumption rates under hypoxic conditions and an incipient, tolerated temperature range of 15° - 36°C. The snail’s lower thermal

limit should restrict its North American distribution to southern regions of Gulf of Mexico coastal states, all of Florida and portions of southern California.

TEXAS PARKS AND WILDLIFE – Earl Chilton stressed the importance of paying close attention to local groups as well as the need for grassroots support. Although using as much support as you can is essential, Earl advised to use caution with high profile celebrities who can create too much publicity and impact without first understanding the facts and figures.

SAN FRANCISCO ESTUARY PROJECT – Karen McDowell reported on the 40 to 50 vessels in the San Francisco Bay that were going to be towed to the Panama Canal to be dismantled. It was requested that the vessels be soft scrubbed before sending them to Panama Canal but studies found that pieces of metal and paint were contaminating the bay. The dilemma of cleaning the vessels without contaminating the water is a challenge that they are dealing with before sending them to the Panama Canal.

LESSONS IN HAWAII ISSUES

The Eradication of Snowflake Coral on the Island of Kauai: 18 Months Later.

Tony Montgomery, HI Division of Aquatic Resources, reported on eradication of Snowflake coral (*Carijoa riisei*) on the island of Kauai. *C. riisei* is a fast growing octocoral originally thought to be from the Caribbean, but now believed to be from the western Pacific. It is shown to be highly invasive in deeper waters off Maui but is widespread throughout all main Hawaiian Islands with the possible exception of Kauai County. The goal for Tony and his team was to eradicate *C. riisei* completely from Kauai using two different kinds of plastics to smother the coral, as well as survey and treat reef populations, address vectors and potential reintroductions.

Port Allen has the largest known reproductive population and was the perfect place for a case study for large scale proof of the concept. Of the 738 pilings, 60% were infested with coral. The timeline of activity is as follows:

2001 – First sighting of *C. riisei* in Kauai by the Bishop Museum

July 2004 – Assessment of Port Allen

October 2005 – Begin Port Allen piling wrapping

May 2006 – Finish wrapping pilings

May 2006 – April 2007 - Port Allen survey/treatment, found plastic ripped

April 2007 – Finish Port Allen wrapping

Can *C. riisei* be eradicated? There still has not been enough re-surveys done to know whether the first wrapping made enough of an impact. A foolproof wrapping technique has not yet been fully developed without ripping holes in the plastic. With enough money and resources, wrapping probably can be done but it is still unknown.

Developing the eradication program concurrently (while undertaking large projects) proved to be a challenge and the lack of a well-defined plan from the beginning and understanding of resources (early on, \$100,000 were used for staff and resources) were some of the lesson learned. The lack of technologies in developing the wrapping method was a challenge but technologies are slowly starting to emerge such as the use of hot water treatment (New Zealand). Overall, maintaining positive morale and

communication with key staff members and will prove successful in helping to eradicate *C. riisei*.



[Anthony Montgomery's PowerPoint Presentation: Eradication of Snowflake Coral](#)

Invasive Species Control at the James Campbell National Wildlife Refuge with Emphasis on the American Bullfrog

Michael Silvernagle, USFWS, reported on the American bullfrog problem in the James Campbell National Wildlife Refuge. The refuge was established in 1976 when the Kahuku Sugar Mill closed and waterbird habitat in the area became jeopardized. The closure of the mill resulted in the drying of settling ponds which were formerly heavily utilized by waterbirds. There is approximately 117 acres of land mass of which 70 acres are intensively managed wetlands. The refuge is maintained mostly for endangered waterbirds, particularly the endangered Hawaiian Stilts.

The invasive American bullfrog was first introduced to Hawaii in 1879 and is now a problem on Hawaii, Maui, Oahu, Molokai, Lanai and Kauai (USGS 2002). A single female lays up to 20,000 eggs and juveniles and adults can travel more than four miles in a few weeks to colonize new water sources.

There was a loss of young Hawaiian stilt chicks between one to five days old leading to a low chick survival rate. Although there was documented predation by cattle egrets and black-crowned night herons, more studies occurred during the 2003 – 2004 stilt breeding season to determine key predators.

After the study was over, it was found that 77% known chick loss was attributed to bullfrogs. The shallow water and abundant edge bring stilts and bullfrogs together and bullfrogs were found subterranean as well. Soon after, monthly standardized bullfrog surveys were done as well as bullfrog removal and necropsies (abnormal-looking internal organs and a presence of bacteria was found in both males and females and in 39% of all frogs harvested). Control methods for bullfrogs include:

1. Water level manipulation – reduces tadpoles and juveniles
2. Trapping – reduce adults and juveniles
3. Shooting –reduce adults and juveniles

The frogs are now declining but are being maintained instead of eradicated, due to their mobility. There was improved chick survival in 2007 with 2.1 chicks/successful nest. Greater knowledge of bullfrogs in HI may aid in improved control.

Summary: Bullfrogs are an important predator on Hawaiian stilt chicks. Because stilt chicks and bullfrogs share overlapping habitats, regular systematic control can reduce and maintain low bullfrog populations. Staff and time commitment is the key to success. In the future, they hope to identify the bacteria found in bullfrogs, determine impact of bullfrogs on other native species, evaluate moats and relationships to supporting bullfrogs, explore salinity as a control tool and study bullfrog life history in Hawaii.



“Super Sucker” Project

Brian Parscal, HI Division of Aquatic Resources, gave a presentation on a new invention which mechanically removes marine invasive algae in Hawaii. The Super Sucker program was developed with the help of the Nature Conservancy, the UH Department of Marine Biology and the State of Hawaii Department of Land and Natural Resources. The goal for the program is to remove alien algae from reefs in Hawaii without harming any marine life in the process. To prevent harming any live species, a Venturi pump (bought by the Nature Conservancy, typically used for the gold mining industry) was used because it can suck the algae, bypassing the actual pump thus not killing any marine organism. They found organic taro farmers who could use the algae as compost. It was a win-win situation for all involved.

Gracilaria salicornia and *Eucheuma denticulatum* are the two species of algae targeted. The first sea trials were done near Coconut Island, Marine Reserve in Kaneohe Bay. Water was able to drain off the barge and sea cucumbers were left unharmed. After a few runs, they realized the barge couldn't be maneuvered well in shallow water. The USFWS offered to fund the next project – Super Sucker Junior. Two used Honda diaphragm pumps were used for Junior. Junior is small enough to being able to pull up to a pier and onto the beach. The Super Suckers were not designed to get every single piece of algae but once the major biomass is removed, natural grazing takes care of the remainder of the algae left behind and the difference on the reef is substantial.

The partners held a press event to bring awareness of alien algae and to unveil the Super Sucker. They also thanked Senator Inouye for helping make the project happen. The History Channel came to Hawaii to film a segment on “Modern Marvels” and a recent article in National Geographic News described the project.

LESSONS LEARNED: As far as designing the barge, there were not very many mistakes. Trying to get the manpower and resources to operate the Super sucker more frequently is the biggest obstacle. Labor is difficult because the employees have to come from a “pool” from the three agencies that support the project i.e. divers have to be UH scientific divers, most often students, who are busy with other projects. With such a small sample of people to operate the project, it is difficult to maintain a full-time team.

STATE PLANS: PRESENTATIONS AND DISCUSSION ON STATE INVASIVE SPECIES COUNCILS AND ON FUNDING SOURCES BEYOND FWS AND STATE FUNDS

Karen McDowell, San Francisco Estuary Project, facilitated the presentations and discussion on state plans. She reported that funding for implementing state AIS activities is important and the goals/purposes for the activities are to raise awareness of issues at the executive level to receive the appropriate staffing, funding and directive to implement the state AIS management plan or AIS activities. The state agency makes management decisions on AIS issues and coordinates activities between all agencies, organizations and stakeholders working on issues. Some of the problems that state INS councils face are:

- Resistance to forming/attending another committee (particularly at high levels).
- Executives tend to be busy and either don't attend meetings or delegate attendance to a lower level employee.
- Requirement of staff time to organize and coordinate the committee.
- Energy often runs out after designated tasks are completed.

Karen suggested that for a successful state ISC, there needs to be a well-defined charge for the committee, and there must be a proper make-up of committee members to accomplish goals. The committee should meet as needed (not too often) and then form ad hoc committees for specific tasks. Karen gave a report on a list of some states and their state plans:

Illinois – Illinois Aquatic and Terrestrial Nuisance Species Task Force (State Plan 2000) is a mix of high-level executives and both Aquatic and Terrestrial Invasive Species coordinators and university researchers. Interest has really waned since its inception. Scheduling is problematic and a lot of guidance is done through email which has worked better than meetings for them.

Iowa – Does not have a state AIS committee. Boat registration fees recently increased, and half of funds go to AIS.

Pennsylvania – Governor's ISC was formed in January 2004 and was active by October 2005. Funding for the program is permanent but there is no dedicated funding for the council. Voting members are the seven agency heads, ten members of public representing agriculture, natural resource organization and academia. Their responsibilities include developing and implementing an AIS State Plan. The creation of a State AIS management plan drafted a terrestrial and aquatic management plan soon to be combined with the AIS Plan. Their main challenge is developing a sense of identity for the council.

Indiana, Lake and River Enhancement Program (LARE) - Formed a committee for a development of an AIS plan (approved fall 2004). Approximately \$800K are reserved for the state AIS plan which is funded mainly by fees collected when a watercraft is annually registered and licensed. That annual fee increased three years ago.

California – Fees from commercial vessels fund all of the ballast water issues programs but not other sectors of AIS.

Christy Martin – Hawaii Invasive Species Council

In the early 1990s, two studies reported that Hawaii had the worst alien pest problem in the nation (TNC/NRDC 1992; U.S. OTA 1994). There was a major problem in communication between the different agencies and eventually, gaps were bridged by forming the Hawaii Invasive Species Council. Today, there is a council on each island and task forces were created for each island: see handout. The Hawaii Invasive Species Council is a legislative council and its interim strategic plan was funded \$4 million for the first couple of years, \$2 million following year and \$4 million in 2007.

Each time the government changes, they need to be re-educated. Prevention groups, research groups and outreach working groups (aquatic and terrestrial) all continue to have to go to legislature each year for funding. Successful legislation had recently passed to inspect each vessel at the port of entry (\$1 on each 20ft or larger vessel). This law is estimated to bring in about \$700K/yr.

Susan Ellis – California Department of Fish and Game

The California Department of Fish and Game has had a ballast water program since the 1990s. Although California still doesn't have a state plan, a council was set up for AIS. Governor Schwarzenegger unfortunately got rid of the council. Instead, ad hoc activities have been done. The state has gone through two iterations on the plan and because the main working group gets input from academia, getting a council together is difficult. (NOTE: The California state ANS management plan received approval by the ANSTF in November 2007 pending the governor's signature).

Allen Pleus – Washington Department of Fish and Wildlife

The WDFW ANS Unit is charged with preventing the introduction and spread of invasive aquatic animal species. The current top three ANS issues include ballast water, recreational watercraft transportation (zebra/quagga mussels), and marine tunicates.

Washington's ballast water program was first developed with the assistance of the ANS committee in 2001. The legislature established a Ballast Water Work Group (BWWG) as a stand-alone stakeholder advisory group from 2002 to 2007. In 2007, the BWWG was reestablished under the state Department of Fish and Wildlife and coordinates with the state's new Invasive Species Council. The BWWG is comprised of : state and federal agencies, shipping industry representatives, the environmental community and state tribes. The lead Washington state agencies are: Fish and Wildlife, Ecology, and the Puget Sound Partnership.

In general, state regulatory agencies base the importance of an invasive species on a combination of the following elements:

- Economic impact
- Environmental impact
- Land ownership
- Politics
- Funding

Allen believes that they are making progress in Washington. The need to coordinate with different agencies is critical in getting things done. Washington also has a boat registration fee that funds AIS. Recent legislation provided a potential new income source from ballast water penalties and fees. This "soft money," must be used for research and cannot be used for salaries.



[Allen Pleus's PowerPoint Presentation: WA State ANS Management](#)

Tony Montgomery – Hawaii Division of Aquatic Resources

Tony spoke about the plan for pacific partnerships for invasive species management through the PILN (Pacific Invasive Learning Network) which is part of SPREP (South

Pacific Regional Environment Program). The PILN brings together people to share ideas and skills, experience and knowledge while breaking the isolation of the remote islands in the Pacific. The organization also helps develop lessons learned from projects and brings awareness in the South Pacific. Through these meetings, mentoring and assistance in funding and creating a donor database are learned. Although the Pacific islands are surrounded by water, much of the invasive species concerned seem to be land-based. To bring more awareness to marine invasive species and because the islands within Micronesia are small, isolated and vulnerable to invasive species, the Micronesia Regional Invasive Species Council (RISC) was created. This council includes: Federated States of Micronesia, the Republic of the Marshall Islands and the Republic of Palau. The council hopes to develop emerging projects, share skills, knowledge and experience through PILN teams.



[Anthony Montgomery's PowerPoint Presentation: WRP Partnerships](#)

WRP BUSINESS MEETING

Tina led the discussion on several business items:

- ***New WRP members.*** Tina introduced and welcomed new members: **Cynthia K. Tait**, U.S. Forest Service, Intermountain Region (Utah), **Tammy J. Davis**, Alaska Department of Fish and Game, **Amy Ferriter**, Idaho State Department of Agriculture, **Jim Heinrich**, Nevada Department of Wildlife, **Larry Dalton**, Utah Division of Wildlife Resources, **Allen Pleus**, Washington Department of Fish and Wildlife, **Louanne McMartin**, USFWS (California), **Greg Gerlich**, Aquatic Section Manager – Fisheries Chief (Colorado), and **Chris Pague**, The Nature Conservancy.
- ***WRP 2007 Work Plan***
A handout was passed listing the projects funded through the WRP 2007 Work Plan. The first two were chosen by the membership at the annual meeting in September 2006 in Portland. The third was chosen by the Executive Committee in response to money available that needed to be obligated in FY 2007. The projects were:
 1. Regional Surveys and Outreach for the Non-indigenous Burrowing Isopod *Sphaeroma quoianum*, Dr. Catherine de Rivera, Portland State University, \$15,424.00
 2. Expansion of Funding for “*Habitattitude*” Program for Outer Main Hawaiian Islands, Sara Pelleteri, HI Division of Aquatic Species, \$14,576.00
 3. Quagga Mussel Research in Lake Mead, Lake Mohave and Lake Havasu, Dr. Shawn L. Gerstenberger, University of Nevada Las Vegas, \$25,000.00 (with additional \$3,750 from 100th Meridian funds = \$28,750.00)
- ***WRP 2007 Budget Report***
A total of \$75,000 was allocated for the 2007 budget. Total of \$55,000 was used for the three projects mentioned above. Annual meeting costs and travel for members was a total of \$15,300 and travel for the Chair and/or Vice Chair to ANSTF meetings (Arlington, VA and Erie, PA) was a total of \$4,700.
- ***WRP Funded Projects 2004-2007***

A handout was passed out for all projects from 2004 - 2007 from the main WRP website. All funding completion reports are not yet on the website but will be added this fall.

- ***Awards***

Tina thanked and awarded Kevin for his service as chair for the last two years. Sarah Pelleteri was given an award for putting this years meeting together, a special hand-woven basket from invasive water hyacinth crafted from senior citizens in Thailand. Vicki Milano, Allen Pleus, Karen McDowell, Kevin Anderson, Jason Goeckler, Lynn Schlueter, Tony Montgomery and Paul Olin were also thanked in the role that they played in making this meeting come together.

- ***Election of Five Executive Committee Members***

Five two-year terms for executive committee members are open for election. Kevin Anderson, Eileen Ryce and Karen McDowell are currently on the executive committee. Andy Burgess and Amy Ferreter were new members interested in joining as executive committee members. Gary Caine moved the new committee members, David Woodson seconded, and the motioned carried. The first meeting of executive committee members will take place in October by conference call and the chair and vice-chair will be chosen then.

Discussion of Proposal Rankings and Funding Of Projects

Paul Olin facilitated this discussion and provided slides of graphs ranking research proposals.

The top projects are:

- Colorado ANS Management Plan
Curtis Hartenstine, Colorado Watershed Network \$ 9,000
- Train the Trainer, Master Gardeners Prevent Aquatic Invasive
Plant Introductions
Ted Grosholz, UC Davis \$14,950
- Professional Awareness of Flowering Rush in Headwaters
of the Columbia River System
Peter Rice, U. of Montana \$10,750

Funding priority for projects will take place in this order:

- A. Fully fund top two projects – Susan Ellis will look for \$6,000 from the State of CA budget and then fund the 3rd ranking project.
- B. Fund the top two at the amount requested, take money that's left \$6K (about) and divide between those two.
- C. Fund the top two projects and hold the extra money until another project comes up later that year.
- D. Fund the top two projects and offer the rest to the third project

Goal: strive for plan A; if not possible, executive committee can decide which other projects will receive the money.



[PowerPoint Presentation: WRP Research Proposals](#)

The need for agencies to search for matching funds from outside the organization was never a requirement but perhaps it can be considered as a requirement for WRP funding qualification. It was agreed that raised funds do not have to be an equal match and that credit should be given for effort in finding matching funds. Also, people should not be penalized because their institution has high overhead costs.

ANS AWARDS (SLIDE, GRAPH AND PICTURE COMPETITION)

The WRP incorporated a new ANS awards element to this year's annual meeting. The awards were for fun and business categories related to Western region states and issues. Allen Pleus presented awards (chosen by member voting) to members who either submitted their own entries or were nominated for each category.

Best Slogan

"Conservation through Gastronomy," referring to *The Invasive Species Cookbook* by J.M. Franke.

- [The Invasive Species Cookbook by J.M. Franke](#)

Best Song

"Galloping Goby Blues," written by Professor David Jude of University of Michigan.

- [Professor Singing the Blues about Invasive Species](#)
- [Song: Galloping Goby Blues in MP3](#)

Best Bumper Sticker

"Got Aliens?" submitted by Louanne McMartin, referring to a mosaic created by grouping many different animals together to create what appears to be an alien-like mask.

Best Photograph

Jason Goeckler for an image of zebra mussels covering in El Dorado Reservoir (Kansas) after the water was drawn down.

- [El Dorado Reservoir with Water Drawn Down – Jason Goeckler](#)

Best Powerpoint

Greg Gerlich for PowerPoint slide entitled, "Historical Invasive Species – Genghis Khan," which labeled Genghis Khan as an invader and that his descendants today are estimated to be about 16 million.

- [Historical Invasive Species – Genghis Khan](#)

DISCUSSION OF WRP RECOMMENDATIONS PRESENTED AT ANSTF MEETING IN ERIE, PA IN MAY 2007

The WRP submitted the following to the ANSTF in May.

1. Special Permit Provisions

It is well documented that the movement of equipment between water bodies is a significant vector for the spread of zebra mussels and other ANS. Federal, state, and regional entities and their contract awardees frequently move equipment between waters as part of their associated activities. Without the implementation of proper decontamination protocols prior to equipment movement, ANS can be

unknowingly and illegally transferred from infested waters to uninfested areas. The Western Regional Panel recommends that the ANSTF recognize this as a significant vector for the spread of ANS and encourage member agencies to require decontamination of all equipment prior to movement. This can be accomplished through HACCP planning as well as special permit provisions for contract awardees. Often recommendations adopted at the top level of government are not disseminated at the local level. This recommendation needs to be implemented at all levels of government to ensure a 'zero spread' of ANS via government activities. The Western Regional Panel will draft decontamination recommendations for quick incorporation into agency contracts upon request by the ANSTF.

Jason Goeckler said that working with the Army Corps of Engineers was difficult because they were not recognizing the severe problem of moving large equipment between waters without decontamination first. Jason wants a requirement in the contract that if barges need to be moved, they would have to be cleaned to prevent new infestations, prior to arriving at the new destination.

The group decided to present the recommendation to the ANSTF again with a request that the ANSTF develop a document of all the member agencies decontamination policies which can be disseminated through the regional panels.

2. Viral Hemorrhagic Septicemia Virus

A new, highly virulent and easily transmissible strain (IVb) of viral hemorrhagic septicemia virus (VHSV) has recently been detected in wild fish populations within the Great Lakes Basin. Unlike other strains of VHSV, epizootics due to this virus have been documented in a broad diversity of freshwater fish families and species. This new strain of VHSV poses a significant risk to cultured and wild fish within the Western Regional Panel area and throughout most of North America. The primary vector for transmitting the virus into the region is suspected to be the movement of live fish and fish products. Many states within the Western Regional Panel are evaluating fish transport and bait laws to help reduce the risk from that vector. States have also increased public outreach activities to increase public awareness of the issue. As a fish pathogen VHSV is not readily viewed as an Aquatic Nuisance Species by all agencies or states, additionally many states with well developed fish health programs do not involve their ANS programs or coordinators when evaluating the risks or control/prevention strategies for this pathogen. The Western Regional Panel is encouraging all member states to become familiar with this emerging pathogen and to incorporate it into their ANS programs. The Western Regional Panel requests that the ANS Task Force recognize this pathogen as an ANS and as a severe threat to the natural resources of North America, in addition to encouraging states to incorporate VHSV into their ANS Management Plans.

STATE MANAGEMENT PLAN SURVEY 2007

The ANS Task Force requested the panels to discuss three questions associated with State Management Plans and Eileen Ryce polled the members by e-mail and prepared a

handout with answers to the questions. This session was facilitated by Tina Proctor. After discussion, it was decided to accept the summary of answers by Eileen as follows:

Question 1: Do you have any comments on the guidelines for the development of ANS Management Plans provided by the ANS Task Force?

Summary of responses: Overall those states that have used the guidelines found them helpful. However, some thought that the guidelines did need updating. The minimum criteria need to be updated and clarified. Some want to see the guidelines be more specific requesting more streamlined plans and that the states should be encouraged to write shorter plans and address more specifically what the state can and can not accomplish, specifically how the plan will be implemented and how the outcomes will be evaluated. There were some concerns that the plan reporting system does not adequately address outcome evaluation.

Question 2: Should there be more management on a regional basis?

Summary of responses: All of those whom responded stated that regional management is a good idea; however, concerns were raised about funding and how regional management will be incorporated with state level management. Adequate funding first has to be available for states to adequately implement their own plans however, regional management is an efficient way to manage ANS issues since neighboring states often share ANS or vectors. The overall response was that regional management should be explored more once more stable funding is achieved for the states.

Question 3: How should ANS funds for state management plans be administered?

Summary of responses: All responders agreed that funds should be divided equally; however, funds spent should be more evaluated and reports should demonstrate that the funds were spent on good, evaluated, ANS management.

The discussion also included the following: With the current level of funds available states should receive an equal share of funds, states should not receive funds at the expense of others, if funds were allocated based on need many states with limited budgets and political “clout” would lose out. Current funding is inadequate; as more funds become available and states have adequate funds then additional funds can be used on either regional projects or on merit based projects. States with new plans are in no more need than those with established plans. Others suggested that additional funds be available for emergency situations, such as the implementation of rapid response plans; however, this also seems beyond the current scope of available funds. One suggestion was made to divide funds with 50% to existing plans (equal share), 25% to new state plans, and 25% for emergency situations for states with existing plans.

REPORT ON MRBP (MISSISSIPPI RIVER BASIN PANEL) RISK ASSESSMENT WORKSHOP

Jason Goeckler enjoyed the Tampa session on Risk Assessment in August 2005 but felt that the Kansas City workshop in August 2007 was not as informative. He mentioned that a uniformly accepted Risk Assessment technique needs to be identified. Sarah Pelleteri agreed with Jason and added that some of the risk assessment techniques presented were not user-friendly.

ANS TASK FORCE

Scott Newsham, Executive Secretary ANS Task Force, reported that since 1998, a recurrent theme for the ANS Task Force has been adequate funding and for the state management plan, funding is always a priority. Currently, there is \$1 million in federal funding but Scott doesn't see the numbers rising in 2008 and 2009. Getting the \$4 million that is authorized in the current legislation would be a good start to adequate annual funding. The November 2007 meeting will decide how to allocate funds for next year. All indications are that the federal government is depending on continuing resolutions so it may be awhile before federal funding is seen for next year.

VIRAL HEMORRHAGIC SEPTICEMIA VIRUS (VHS)

Vicki Milano and Jason Goeckler gave a joint presentation on the new disease, Viral Hemorrhagic Septicemia Virus (VHS) that has been recently found in many species of fish. Milano, a fish pathologist described the virus as an acute to chronic, highly contagious viral disease of fish which is expanding its range and the species it infects.

VHS was first reported in Germany in 1938 and is primarily an enzootic viral disease in rainbow trout and turbot in Europe, Sweden, Finland (Types i-iii). Isolated Pacific herring and pilchard along the Pacific Coast of North America (Type IVa) have been found and the virus has recently appeared in Great Lakes Basin (type IVb). There are 42 species affected to date.

VHS is a rhabdovirus (bullet-shaped) and is not a human pathogen although it is a reportable animal disease. There is no current treatment of VHS. Vectors which spread the disease include ballast water, effluent (virus can last several weeks), wildlife (existent in regurgitant birds), fomites, live fish (feces, urine, sexual fluids) and fish offal. The virus has also been found in zebra mussels and it could also be spread through other invertebrates and perhaps frozen baitfish.

How long the virus lasts in water depends on the water temperature and whether it is fresh water or sea water – fresh, 49 days and salt 14 days. The virus is transmissible to all ages of fish. Survivors can be lifetime carriers that shed the virus.

As the name of the disease suggests, skin and internal hemorrhages are the most common clinical sign of VHS. Diagnosis in the lab requires fresh kidney and spleen grown at specific temperatures on appropriate cell lines to look for cytopathic effects and can be confirmed by seriological tests and PCR.

To prevent the spread of VHS nationally, on October 24, 2006, a federal order was issued preventing interstate transport of 37 species of live fish from the eight states (IL, IN, MI, MN, NY, OH, PA, WI) and two Canadian (ONT, QUE) provinces surrounding the Great Lakes. On November 14, 2007, the order was amended to allow importation/interstate travel of VHS-susceptible live fish under certain conditions to decrease the hardship placed on the aquaculture industry of those states and provinces. On May 4, 2007, catch and release activities were allowed. Future issuance of a proposed USDA/APHIS ruling or amendment is needed as there are currently no national fish regulation to regulate interstate fish movements. The USDA has a surveillance program to detect where VHS

is present and to determine the probability of the disease where it is not found. The strongest risk factors are water connection, close proximity to live fish transfers, shared equipment/boats.

What other states are doing:

Wisconsin has banned transport of live fish from the Great Lakes and Mississippi River and its connected waters, upstream to the first dam or fish barrier. No importation of live bait and restricted dead bait unless it has been preserved by means that will kill VHS. Requirement to drain all water bilges, ballast, bait bucket and live well, trailers, and other equipment before leaving water. This also applies to containers and fishing equipment used by bank or shore anglers.

Michigan has a one year moratorium on production and stocking of Walleye, northern Pike.

Ohio allows no movement of fish except Channel Catfish.

Colorado is doing continued inspections of salmonids and monitoring all fish species. The state is reviewing and amending current aquatic species importation and transportation rules (Fish Health Board and Wildlife Commission) and also looking at importation on a case-by-case basis.



[Vicki Milano and Jason Goeckler's PowerPoint Presentation: VHS](#)

WIT (Watercraft Decontamination Training)

Paul Heimowitz report for Bill Zook on the Watercraft Decontamination Training program provided to educate boat inspectors how to disinfect and stop zebra mussels from spreading. A simple kit was created for disinfecting boats. A video was also developed for training in January 2007 mentioning zebra mussels, quagga mussels. Bill and Wen Baldwin have provided 18 trainings in 2006-2007.

The training video will be revised by the end of this calendar year and will include quagga mussels as well. The training is a six hour class and includes testing.

RAPID RESPONSE - LESSONS LEARNED

Paul Heimowitz facilitated the presentations and discussion for rapid response and posed the questions asking when “rapid” response is needed, how “rapid” is defined in terms of time and how quickly something has to be responded to before it’s not considered “rapid” anymore?

Puget Sound Partnership

Kevin Anderson spoke of the invasive *Styela clava* (club tunicate) found on recreational boat hulls (vectors) and *Ciona savignyi* (transparent tunicate) growing in huge numbers with no prior sighting five years ago. Now the *C. savignyi* is the most dominant invasive tunicate that has the potential to adversely affect the geoduck industry in Washington. Four marinas at two locations (one up north and one in the Hood Canal) within Puget Sound are infected by invasive *Styela clava*. In February 2006, the Governor provided

\$250,000 to respond to this problem by 1) stopping *S. clava* from spreading; 2) designating marinas that were infested; 3) surveying other marinas and geoduck harvest tracks for the presence or absence of invasive tunicates; 4) creating an interagency response plan. In 2007, the legislature allotted \$500,000 to the Puget Sound Partnership to: 1) eradicate known populations *S. clava*; 2) assess strategies for managing infestations of *C. savignyi* and *S. clava*; 3) developing a long-term strategy for monitoring tunicate infestations; and 4) carry out an education and outreach program.

Eradication Methods - The methods tested to eradicate the *Styela clava* included hand picking (removing from boat hulls and docks), pressure washing (only on concrete and metal docks and floats), wrapping docks and piers in plastic (ripping and sealing a major problem) and educating recreational boaters by using fliers, ID cards, inserts in mailings, websites and phone lines. The results were: a) divers took 99% of tunicates off boats; b) cleaned only 40% of infested docks; and c) surveyed lower Hood Canal and an additional 55 marinas.

Kevin noted the key lessons learned.

1. Early detection and a rapid response plan are needed regardless for all species even when there are no proven and established methods for controlling the species.
2. Recreational divers cannot be used to help eradication efforts due to liability issues.
3. Using in-water chemical controls need pre-approvals (such as NPDES general permits).
4. Always involve partner agencies and stakeholders when developing solutions such as the state's interagency response plan.
5. With the close proximity of Washington to Canada, cross-border coordination is also key to preventing future infestations.
6. Most of all, don't hesitate, expect the unexpected, and keep communication consistent between agencies.



[Kevin Anderson's PowerPoint Presentation: Puget Sound Partnership](#)

Videoclips: [Ciona HC 06a.mpg](#)
[Ciona HC 06d.mpg](#)
[Styela PH June 07.avi](#) (Large File: 48 MB)

California Department of Fish and Game

Susan Ellis spoke about the quagga mussel infestation incident in Lake Mead NRA. A unified response was made using the incident command system and numerous agencies were involved: Fish and Game, Water Resources, Food and Agriculture, Boating and Waterways, USFWS, Metropolitan Water District and the city of San Diego.

California has funded surveys and inspections. Dive surveys in the lower Colorado River and inland water in southern California have been done along with surface surveys in all high-priority water bodies. Inspections have been increased to 24/7 at CDFA Border Protection Stations (BPS at Yermo, Needles, Vidal Junction, and Truckee).

A public information and education website has been launched:
"Don't Move a Mussel!" www.dfg.ca.gov/quaggamussel/

Hotline: 1-866-440-9530

Ongoing efforts to eradicate quagga mussels in California include having a Scientific Advisory Panel, outreach and training, multi-agency coordination, continued inspection/interdiction, and on-going sampling for larvae.



[Susan Ellis' PowerPoint Presentation: Quagga Mussels](#)

Washington Department of Fish and Wildlife

Allen Pleus spoke about two bills, House bill H.R. 2830 and Senate bill S.B. 1578. Both bills provide new ballast water management, and treatment and implementation standards. They are basically similar and provide for a rapid response plan. The most contentious issues regard removal of state rights to have their own ballast water management program, and concern about undermining the Clean Water Act by removing invasive species from its regulatory control.

REVIEW OF ACTION ITEMS

The following action items were summarized at the end of the business meeting:

- 1) Whether it will be Plan A or B, funding for projects will be decided by the Executive Committee.
- 2) Topics to carry to the task force:
 - Special Permit Provisions – get policies on movement of equipment from each Federal Agency (Larry, Jason and Eileen will develop this recommendation further).
- 3) Disseminate VHS information for members
- 4) Recommendations for biosupply houses – probably will be able to have some for the May 2008 meeting.

WRAP UP

Tina discussed a need to move forward with the existing WRP website and asked for volunteers who will team up to oversee that all relevant information can be found on the website. Jason Goeckler and Kevin Anderson agreed to volunteer.

The executive committee will vote for a new chair and vice-chair in October 2007. Robyn Draheim is no longer on the executive committee as she has just given birth.

100th Meridian 2007 annual meeting will take place in Las Vegas, end of November 2007. Tina will send out more information soon.

The next annual WRP meeting will take place in Colorado in mid-September 2008.

Tina thanked the Joanna (who will be an employee of Susan Pelleteri) for joining the meeting, the Hawaii people for their hospitality and meeting organizers.