

**Member Updates for the Western Regional Panel Meeting,  
Hawaii, September 11-13, 2007**

**Member Reports**

---

<b>1. State members</b>	
a. Montana.....	3
b. New Mexico.....	3
c. Colorado.....	4
d. North Dakota.....	4
e. Kansas.....	5
f. Utah.....	7
g. Nevada.....	8
h. Idaho.....	8
i. California.....	9
j. Alaska.....	11
k. Washington.....	15
l. Hawaii.....	16
<b>2. Other members</b>	
a. Puget Sound Partnership.....	17
b. Prince Williams Sound Regional Citizens Advisory Council.....	18
c. Pacific States Marine Fisheries Commission.....	19
d. The University of Texas at Arlington.....	20
<b>3. Federal members</b>	
a. U.S. Coast Guard.....	21
b. U.S. Geological Survey, Western Fisheries Research Center.....	23
c. U.S. Fish and Wildlife Service/CALFED.....	25
d. U.S. Fish and Wildlife Service.....	26
e. NOAA National Marine Fisheries Service.....	28
<b>4. International members</b>	
a. British Columbia.....	30
b. Alberta.....	32
c. Manitoba.....	33

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

### STATE MEMBERS

---

#### **Organization: Montana Fish, Wildlife and Parks**

Eileen Ryce, Montana Aquatic Nuisance Species Coordinator

1420 East 6<sup>th</sup> Ave

Helena, Montana, 59620

Email address: erylce@mt.gov

Phone: 406-444-2448

Fax: 406-444-4952

#### **ANS activities for the past year:**

1. A boat inspection program was established in 2004 and runs annually from May through September
2. HACCP training has been provided for all state and federal fish hatchery staff in addition to all fisheries field personnel.
3. Every major waterbody in Montana has been monitored for invasive invertebrate (including zebra mussels and New Zealand mudsnails) and submersed invasive plants (including Eurasian watermilfoil). Monitoring is continuous and ongoing, a variety of methods are used to accommodate the different habitats and species we are sampling. To date no zebra mussel adults or veligers have been detected within the state. Populations of New Zealand mudsnails continue to expand but slowly and have yet to be found in any waters west of the divide within the state.
4. Eurasian watermilfoil was confirmed in Montana for the first time on June 19, 2007, it has been confirmed in two reservoirs on the Clark Fork River (Noxon Reservoir and Cabinet Gorge Reservoir). Both reservoirs are being studied to determine the impacts of Eurasian watermilfoil. Control options are being evaluated, at this time the Eurasian watermilfoil has spotty distribution and is only dense in a few locations. Both reservoirs have healthy stands of native submerged aquatic plants. All access points on both positive reservoirs have been sign posted to alert the anglers/boaters, public outreach and education has been a major part of the containment strategy in addition to continual monitoring in the surrounding area.
5. A hatchery ANS inspection program was developed in 2005 and is ongoing. The program requires that all state, federal and private hatcheries be inspected for any ANS within their inflow, effluent or within the hatchery. Since 2005 one commercial hatchery has tested positive for New Zealand mudsnails however, measures adopted during 2006 now ensure that the spread of New Zealand mudsnails from the facility is being prevented, fish stomachs were analysed during the winter of 06/07 to determine if the measures are being effective, no stomachs contained New Zealand mudsnails. Starting in 2007 all hatcheries are being tested for VHSV as part of their fish health certification.
6. During 2006 and 2007 several ANS were added to the state Prohibited Species list. An updated list can be viewed in ARM 12.6.2215.
7. Angler and boater surveys have been conducted at all major river, lake and reservoir access sites since 2004 and is ongoing occurring annually from May through September. The information gained from the surveys is used to identify bodies of water

## **Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007**

at highest risk of introductions, to help identify possible transport patterns by recreational boaters to identify pathways for the movement of ANS, and they are also used to gauge the ANS awareness of the public and to evaluate which methods of awareness are working best. These surveys are helpful in prioritizing work for the next field season.

8. Public outreach efforts include: signs at all river, lake and reservoir access sites, booths at outdoor shows, interacting one-on-one with anglers and boaters at access sites, several public presentations at special interest group meetings, universities, lake home owner associations and others, brochures at all Fish, Wildlife and Parks offices, and traveler information systems (TIS).
9. ANS training has been provided to the US Fish and Wildlife Service, US Forest Service fire fighters and field workers, FWP regional fisheries staff, and Salish and Kootenai tribe.
10. A study conducted during 2006 on the effectiveness of TIS as an effective ANS outreach tool was completed during the winter of 06. The study showed that TISs in Montana are not a good outreach tool and that one-on-one interactions with the public are the most effective way to get information on ANS to the public.
11. The Montana ANS management plan is being revised; revisions should be complete by winter of 07.
12. All Montana commercial hatchery operators are being investigated to determine there threat to the introduction of unauthorized fish species into open waters. Unauthorized fish introductions continue to be a main vector for the introduction of ANS into Montana, currently there are over 520 known cases of unauthorized fish introductions in the state. The Department is evaluating what can be done to minimize these introductions.

---

### **Organization: New Mexico Department of Game and Fish**

Brian Lang, Invertebrate Zoologist  
Conservation Services Division, One Wildlife Way  
Santa Fe, NM, 87507  
Email address: [brian.lang@state.nm.us](mailto:brian.lang@state.nm.us)  
Phone: 505-476-8108  
Fax: 505-476-8128

### **ANS activities for the past year:**

1. In collaboration with Bob Pitman, USFWS, Region 2, ANS Coordinators, the NMDGF shared costs for purchase of ANS signage (2 types: boat ramp, streamside fishing; 75 total) and posts to place at fishing/boating access points on state and federal lands throughout the Pecos River drainage.
2. The Draft New Mexico State Aquatic Nuisance Species Management Plan was completed in March 2006, and is currently under administrative review within NMDGF prior to distribution to stakeholders for public comment.
3. The NMDGF continues to monitor and manage golden algae in the lower Pecos River by: documenting algal blooms relative to water quality conditions; evaluating post-bloom recovery of biotic communities; and examining land use practices within the basin to identify environmental triggers for blooms.

## **Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007**

---

### **Organization: Colorado Division of Wildlife**

Vicki Milano, Deputy Fish Pathologist/Acting Aquatic Nuisance Species Coordinator  
22 East Edison  
Brush, CO, 80723  
Email address: Vicki.milano@state.co.us  
Phone: 970 842 6308  
Fax: 970 842 6329

### **ANS activities for the past year:**

1. Conduct an ANS statewide survey of major river drainage basins in Colorado. Collect and archive mollusks and crayfish for baseline data. Ongoing project.
  2. Develop an ANS state management plan for Colorado in partnership with several government agencies and non-profit organizations. Completion date projected for March 2008.
  3. Review and approve/deny aquatic animal importations into state of Colorado.
  4. Purchase and distribute ANS signs throughout state.
  5. Coordinate watercraft decontamination training workshop.
  6. Coordinate and present at ANS seminars throughout Colorado.
  7. Provide assistance to Liliias Jarding who is conducting USFWS-100<sup>th</sup> Meridian boater survey for Colorado.
  8. Participate and review National Park Service Quagga/Zebra Mussel Infestation Prevention and Response Planning Guide.
  9. Attended 100<sup>th</sup> Meridian quagga mussel meeting in Las Vegas, Nevada.
  10. Attend Risk Assessment workshop in Kansas City, Missouri.
- 

### **Organization: North Dakota Game and Fish Department**

L.R. Schlueter, ANS Coordinator  
7928 45<sup>th</sup> Street  
Devils Lake, ND 58301  
Email address: Lschluet@state.nd.us  
Phone: 701.662.3617  
Fax: 701.662.3618

### **ANS activities for the past year:**

1. Monitoring – selected waters having high use by nonresidents from infested states/areas; standard sampling protocols used; no aquatic nuisance species (ANS) infestations found
2. 2005/North Dakota Legislation gave NDGF the authority to promulgate regulations to prevent/control ANS; Administrative rules/regulations have been drafted, being reviewed by legal counsel, minor adjustments in wording likely to occur; regulations key points are - no aquatic vegetation on/in the boat or equipment and dewater the bilge, livewell or compartments, regulations include construction and equipment for hire; ANS restrictions include live aquatic bait importation regulations and fish hatcheries.

## **Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007**

3. Informational articles/presentation; following the design/format which has been established.
4. Eurasian watermilfoil (EWM) control; fall dewatering of Dead Colt Creek Reservoir for two years appears to have reduced the population, option now is to do a fall spot treatment with Navigate on the few remaining plants; local (FWS, COE, college, city officials, Barnes County weed board and county water resource district, and others) planned to do spot treatment of EWM this spring, high water prevented this; group is planning to spot treat the few remaining plants with Navigate this fall - - lesson in communication, local self direction to a project's design and completion, and rapid response to a new infestation.
5. Provided technical information to others (federal, state, and regional) on ANS issues or as requested

---

### **Organization: Kansas Department of Wildlife and Parks**

Jason Goeckler, ANS Coordinator  
P.O. Box 1525  
Emporia, KS, 66801  
Email address: [jasong@wp.state.ks.us](mailto:jasong@wp.state.ks.us)  
Phone: 620-342-0658  
Fax: 620-342-6248

### **ANS activities for the past year:**

#### 1.0 ANS Program Summary

The Kansas Aquatic Nuisance Species Management Plan was approved by the ANSTF in May 2005. The goals of the plan are to prevent new introductions of ANS to Kansas, prevent dispersal of established populations of ANS, eradicate or control to minimize the adverse ecological, economic, social, and public health effects of ANS, educate all aquatic users of ANS risks, and to support research ANS in Kansas. The coordinated efforts contained within the plan are designed to protect residents of Kansas and the state's aquatic resources from the multitude of potential losses associated with ANS plants and animals.

#### 2.0 Major Accomplishments

Continue to monitor zebra mussel reproduction in El Dorado Reservoir with monthly plankton tows. Record veliger densities were observed in July 2006 (236 veligers/L). Settling structures have also been deployed to determine daily settlement rates.

Zebra mussels were discovered in Winfield City Lake in December 2006. Monitoring and outreach activities are underway.

Research is also being conducted to determine risk of zebra mussel transport from El Dorado Reservoir and Winfield City Lake via recreational boaters (bilge and livewell sampling). Survey will also evaluate educational campaign effectiveness.

Continue to distribute educational materials to El Dorado Reservoir users. A new flyer was developed for distribution to all lake users (campers, boaters, anglers, day-users, etc.).

## **Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007**

Continue to monitor (Portland samplers and/or plankton tows) all department waters and the Kansas/Missouri River @ KC for presence of zebra mussels.

Numerous ANS press releases were produced including front page coverage in the Wichita newspaper. Also, included large section in fishing regulations dedicated to ANS.

Conducted boater surveys as part of the 100th Meridian survey program.

Surveyed silver carp in the Kansas River.

Participated in regional zebra mussel forum for surface water users (municipalities and industry).

Continue to investigate zebra mussel report from Cheney Reservoir. In Aug. 2004, plankton tows (taken by Oklahoma biologists) revealed veligers to be present. All subsequent samples have been negative for veligers. No adults have been found. This lake is no longer considered infested.

For department use, we have implemented a 'triploid only' grass carp program.

Added the requirement that fishing tournament directors must certify that all 'bass pass' registered tournament participants are 'ANS free'.

Distribute ANS prevention materials to registered fishing tournaments.

Implemented HACCP for department fish imports.

Zebra mussel information was posted on popular fishing websites.

Stop Aquatic Hitchhiker signs have been placed at all boat ramps across Kansas.

Distributed educational material to Kansas bait dealers about the emerging fish virus Viral Hemorrhagic Septicemia (VHS).

White perch were added to the prohibited species list.

HACCP training was provided to multi-agency and multi-state natural resource management staff.

HACCP plans have been written for stream survey crews as well as fish hatchery operations.

Human dimension research is being conducted to evaluate baitfish use in Kansas and how to eliminate this vector for ANS spread.

Asian tapeworm was discovered in the wild.

Wild fish health testing is being conducted this summer.

A multi-agency VHS Task Force has been formed to prevent its spread into Kansas.

## **Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007**

### **Organization: Utah Division of Wildlife Resources**

Larry B. Dalton, ANS Coordinator

P.O. Box 146301, 1594 West North Temple, Suite 2110

Salt Lake City, UT, 84116-6301

Email address: larrydalton@utah.gov

Phone: 801-652-2465

### **ANS activities for the past year:**

1. A low level of effort remains ongoing in Utah to preclude or contain ANS species statewide, but the most intense activity has focused upon Dreissena species as follow:
2. Quagga mussels were discovered on Utah's doorstep at Lake Mead in early January 2007.
3. Utah Department of Natural Resources immediately established a team involving three divisions--Water Resources, Wildlife Resources and State Parks & Recreation--to assess immediate risk to Utah, including a policy concerning the keeping of invasive mussels out of Utah. The policy was developed to guide the various departments in state government.
4. A risk assessment for Utah's waters via query of Lake Mead boaters in February 2007 showed Lake Powell, Jordanelle State Park, Willard Bay State Park, Deer Creek State Park and Bear Lake State Park to evidence strong desirability regarding where the boaters were going next.
5. The NPS at Lake Powell a year earlier had initiated one-on-one, pre-launch contacts with boaters in an attempt to interdict folks who were inadvertently transporting invasive mussels by determining if their watercraft had recently been in infested waters east of the 100<sup>th</sup> meridian, compelling contaminated boats to be decontaminated at the concessionaire's facilities. Following discovery of quagga mussels at Lake Mead, this effort was elevated and continues today.
6. During the spring of 2007 NPS installed high-pressure hot water sprayers, one at Wahweep and one at Bullfrog, compelling an increasing number of suspect boats to be decontaminated.
7. Utah Division of Wildlife Resources in April 2007 purchased ¼ million "Zap the Zebra" brochures, and with the assistance of Utah State Parks & Recreation direct 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.
8. Utah Division of Wildlife Resources in July 2007 established a new ANS program and authorized budget to build a massive, statewide ANS Team, involving a state ANS coordinator (Larry Dalton) a new outreach ANS coordinator, 5ANS biologists, 17 new ANS wildlife technicians, and 5 new conservation officers. All will be assigned to deal with ANS issues, particularly quagga mussels.
9. Utah Division of Wildlife Resources in July 2007 designed, purchased and distributed 1,500 foam core signs and 4,500 paper signs, all 11x17 full color and displaying the Stop Aquatic Hitchhiker logo, advising folks how to rid their watercraft of aquatic nuisance species. These signs were distributed at every boating water, statewide.
10. Several boats with evidence of quagga mussels have been interdicted in Utah during the summer of 2007; most having left Lake Mead and were attempting to launch at Lake Powell, but one actually launched in Bear Lake.

## **Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007**

11. In August 2007 U.S. Geological Survey, NPS & Utah Division of Wildlife Resources personnel received notification from the Denver BOR lab that routine July 2007 samples from Lake Powell evidenced veligers for either quagga or zebra mussels. Additional sampling in August again confirmed veligers in very low numbers in the Wahweep Marina area.
12. To date, no adult mussels have been discovered in Lake Powell, despite intense monitoring.

---

### **Organization: Nevada Department of Wildlife**

Jim Heinrich, Native Aquatic Species Staff Specialist  
1100 Valley Road  
Reno, NV, 89005  
Email address: [jheinrich@ndow.org](mailto:jheinrich@ndow.org)  
Phone: 775-688-1532  
Fax: 775-688-1697

### **ANS activities for the past year:**

1. Quagga mussels are found in Lake Mead on Jan 6, 2007, and at the NDOW Lake Mead Fish Hatchery the following day.
2. The Lake Mead Fish Hatchery is shut down for cleanup on Feb 9, 2007, previous stocking sites are recorded and tracked for mussel presence, mussel survey, and long term monitoring.
3. Draft HACCP's and Draft Monitoring Plans are in place with artificial habitat samplers deployed in priority Nevada waters\*. Water temperatures in these waters reach 9° C and are scheduled for veliger plankton tow samples. Tows are completed during the spring and summer months and submitted to PSU with an initial negative for the first Wildhorse Reservoir sample. All other samples are pending.

\* Las Vegas urban fishing ponds, Eagle Valley Reservoir, Echo Canyon Reservoir, Pahranaagat Valley Lake, Kirch Wildlife Management Area, Topaz Lake, Rye Patch Reservoir, Wildhorse Reservoir, South Fork Reservoir, Ruby Lakes.

---

### **Organization: Idaho State Department of Agriculture**

Amy Ferriter, Invasive Species Coordinator  
2270 Old Penitentiary Road  
Boise, ID, 83701  
Email address: [aferriter@agri.idaho.gov](mailto:aferriter@agri.idaho.gov)  
Phone: (208) 332-8686  
Fax: (208) 334-2840

### **ANS activities for the past year:**

1. The State of Idaho added 21 species to its Noxious Weed list in 2007 (bringing the total to 57). Several aquatic plants have been added to the list, allowing for state-funded control programs. These species are: Brazilian elodea, hydrilla, water hyacinth, parrotfeather milfoil, and Eurasian watermilfoil.
2. The Idaho State legislature has appropriated \$8 million to the Idaho State Department of Agriculture (ISDA) for eradication and control of Eurasian Watermilfoil since 2006.

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

Available project funding is being distributed to as many high-priority projects throughout the state as possible. In an effort to advance Idaho's new aquatic plant control program, ISDA commissioned a Peer Panel Review (Review) to provide an assessment of the State's program and provide programmatic recommendations to ISDA. The Panel was Chaired by Dr. Joseph Joyce, Ph.D., Executive Associate Vice President for Agriculture and Natural Resources, University of Florida. The 6-member Panel included aquatic plant managers from Florida, California and Minnesota who have expertise in the control and management of submersed aquatic vegetation nationally and internationally. The scope of the Review included an evaluation of ISDA-funded projects to control Eurasian Watermilfoil in Idaho's lakes and waterbodies. The Review identified areas where the program has been successful and assessed strategic, programmatic, and organizational options to minimize the costs and increase the effectiveness of the program in future years (a copy of the Review is available at: <http://www.agri.idaho.gov>).

3. Idaho has completed a draft Aquatic Nuisance Species (ANS) Plan and is hoping to have approval from the Federal ANS Task Force in November, 2007. Additionally, the Idaho Invasive Species Council has launched an ANS Task Force that reports to the Council. It is chaired by Tom Woolf, Aquatics Program Manager, ISDA.
4. Idaho has initiated an Early Detection and Rapid Response (EDRR) monitoring program for quagga mussel. This species was discovered for the first time in the West in Lake Mead (NV) in January, 2007. Infested water was inadvertently transported to the Idaho border before the infestation was known. Given the threat this species poses, the Idaho Invasive Species Council is coordinating a monitoring system of volunteers to sample threatened waterbodies.

---

### **Organization: California Department of Fish and Game**

Susan Ellis, Invasive Species Coordinator  
1416 Ninth Street, Suite 1260  
Sacramento, CA, 95814  
Email address: [sellis@dfg.ca.gov](mailto:sellis@dfg.ca.gov)  
Phone: 916 653-8983  
Fax: 916 653-2588

### **ANS activities for the past year:**

1. Submitted ANS Plan to Governor's office for signature. Hope to have it signed by November ANSTF meeting.
2. Responded to Quagga mussel infestation of Lake Mead. Mussels have now been detected in the Lower Colorado River, as far as Parker Dam. Mussels have infested the entire Metropolitan Water District Colorado Aqueduct and reservoirs that receive raw water from the aqueduct in San Diego County.
3. Formed interagency working group to work on quagga mussel related issues statewide. Agencies involved include Fish and Game, Boating and Waterways, Water Resources, Parks and Recreation, Food and Agriculture, USFWS, US BOR.
4. Increased invasive species staffing with 8 scientific and 8 law enforcement personnel. Hiring has not yet taken place.
5. Purchased 8 boat wash stations and a boat for use in monitoring Colorado River mussel populations.

## **Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007**

6. Increased operational hours at Border Check Stations to intercept boats coming from the Colorado River and Great Lakes.
7. Provided boat inspection training (through Pacific States Marine Fisheries Commission) to wardens and biologist – 10 trainings.
8. Prepared legislation to increase enforcement capability for inspecting and quarantining potentially infested watercraft and quarantining and mandating control plans for infested waterbodies.
9. Held Science Advisory Panel meeting for quagga mussel.
10. Contracted with San Francisco Estuary Institute to provide Scientific Advice and for updated analysis to identify waters that need focused sampling/monitoring. The Phase 1 Risk Assessment is available on our website and discusses environmental parameters preferred by dreissenid mussels. The contract also calls for incorporating boating data into the analysis, producing a report to support long-term monitoring of calcium levels, a Phase 2 risk assessment that incorporates updated literature and water quality data, a study of spatial/temporal variation in calcium concentrations in California lakes, and an assessment of the effect of concrete structures on dissolved calcium levels.
11. Contracted with Portland State University to collect and process veliger samples from high priority waters.
12. Developed canine interdiction program for quagga mussels.
13. Developed outreach materials – posters, fliers, Q & A, press releases, webpage for quagga mussel.
14. Established Quagga mussel hotline.
15. Developed contract for stakeholder education and outreach for quagga/zebra mussel and New Zealand mudsnail.
16. Established reporting form for new invasive species detection, placed on website.
17. Updated Invasive species website (<http://www.dfg.ca.gov/invasives/>)
18. Prepared for rotenone treatment of Lake Davis to eradicate northern pike.
19. Continued surveys of aquatic plants in sensitive habitats in California
20. Implemented control activities for weeds on State Wildlife Areas
21. Recommended additions to state restricted species list (Coqui frog, Nerodia, Silver largescale carp, black carp, channeled apple snail)
22. Marine Invasive Species Program Activities

CDFG/OSPR has completed the initial sampling of the outer coast locations and the second round of sampling in the bays and harbors as part of the monitoring effort required for the Marine Invasive Species Program. The second round of sampling along the outer coast was begun this summer and should be completed by late fall. Taxonomic identification of specimens will be on-going and should be completed by next summer. All data from the biological monitoring program will be compiled for a report to the Legislature which will be completed and available to the public in January of 2009.

In addition to the field investigations, CDFG has contracted with SERC to review the species lists that have been assembled from the various surveys and assist in the determination of introduction status (native, non-native, cryptogenic), the likely transport mechanism (vectors such as ballast, hull fouling, aquaculture, etc.), and the native and possible source region of

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

the non-native colonists. The SERC study began in July of this year and should be completed by December.

A third area of research recently begun will use DNA analysis to help identify difficult taxa and, possibly, help establish the process and pathways of introduction and spread of NIS. By looking at populations of NIS in various locations along the coast we're hoping to determine to what degree they may be related. Closely related populations of a given species may have expanded from the site of initial introduction by some secondary vector, those unrelated were likely introduced independently. It's hoped this analysis will help establish a pattern of initial introduction sites and the subsequent trans-coastal spread of NIS. Preliminary DNA work on Watersipora was begun early this year and is nearly complete. Additional work on several sponges and possibly polychaets will begin this fall.

The information generated by all these studies will be included in the NIS database that will be available on the OSPR website before the end of the year.

Researchers with experience and expertise in the field of invasive species are invited to review the on-line data and provide us with any new or additional information regarding the species listed, or species that are not listed but should be. This biological monitoring program is a work in progress and input from the NIS community is encouraged and always welcome.

Questions regarding the database can be directed to Steve Foss, 916-341-6958 or [sfoss@ospr.dfg.ca.gov](mailto:sfoss@ospr.dfg.ca.gov).

---

### **Organization: Alaska Department of Fish and Game**

Tammy Davis, Project Leader, Invasive Species Program

P.O. Box 115526

Juneau, AK, 99811-5526

Email address: [tammy.davis@alaska.gov](mailto:tammy.davis@alaska.gov)

Phone: 907-465-6183

Fax: 907-465-2772

### **ANS activities for the past year**

1. Alaska Invasive Species Working Group (AISWG) - In 2006 a broad range of representative from state, federal, university, citizen, native, conservation, and military organizations joined forces to minimize impacts by invasive species in Alaska by facilitating collaboration, cooperation, and communication among AISWG members and the people of Alaska. The goal of AISWG is formation of an Invasive Species Council that will replace the Working Group and will lead strategic planning and actions regarding all taxa of invasive species for the state.

Monthly teleconferences allow representatives to relate invasive species related activities and report sightings of species of concern. Bi-annual meetings allow for face to face contact and tend to be work meetings to continue to refine the goals and objectives of the collective.

- Marine subcommittee of AISWG- The marine subcommittee is chaired by a representative from NOAA/NMFS and has representatives from USFWS, National Park Service (NPS), ADF&G, Kachemak Bay National Estuarine Research and Reserve (KBRR), Prince William Sound Regional Advisory Council (PWSRCAC). Members of the subcommittee are committed to working collaboratively on a green

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

crab (*Carcinus maenus*) monitoring effort with a strong citizen science component.  
See below

2. The department cooperated with Pacific States Marine Fisheries Commission (PSMFC), and Portland State University (PSU), University of California Davis (UC, Davis) and Smithsonian Environmental Research Center (SERC) to continue a research project on green crab: "*Green Crab Control Methods, Phase 2: Evaluating Effectiveness and Effects of Carcinus maenas Removal in Bodega Harbor*". Green crabs are present in California, Oregon and Washington State and there is a documented population, comprised of several year classes, on the coast of British Columbia, Canada. Ocean current transport of larvae or ballast water may serve to introduce this species to Alaska waters. The main goal of the project is to reduce the number of green crabs at the research site. Testing the relationship between the survivorship of recruiting green crab and adult green crab abundance and the abundance of native species that may provide a biotic resistance to re-establishment of the population is an additional objective. A final report is due at the end of 2008.
3. Green Crab Citizen Monitoring Effort- Partnership between PWSRCAC, KBRR, USFWS, NOAA/NMFS, ADF&G-with support from Sitka Tribe, Southern Southeast Regional Aquaculture Assoc. Inc., NPS among other partners) Project to expand on work that has been done by PWSRCAC and KBRR in previous years and take monitoring for green crab into new areas of Prince William Sound, Kachemak Bay and to southeast Alaska. Training for organizations/citizen scientist to follow a monitoring protocol devised by KBRR and in use in southcentral. Educational and outreach opportunities exist, as children have been members of a monitoring team, and learn about a range of aquatic organisms while being introduced to invasive species issues.
4. Prince William Sound Science Center (PWSSC) – Aquatic invasive species monitoring in the Copper River Delta- Monitoring epibenthic community in large Dungeness crab nursery area for presence of green crab. The Copper River Delta is near to where Alaska-bound oil tankers dump segregated ballast water and has potential to be prime habitat for green crab. Second year of a three year project. No species of concern reported in FY07.
5. Alaska ShoreZone Mapping and Imagery- Collaboration with a wide range of natural resource agencies (NOAA, United States Forest Service (USFS), NPS, Alaska Department of Natural Resources DNR), Exxon Valdez Oil Spill (EVOS) Trustee Council, Nature Conservancy, PWSRCAC, Cook Inlet Regional Advisory Council (CIRAC) - The ShoreZone system catalogs geomorphic and biological resources to high resolution, attribute rich dataset that can infer site data over broad spatial ranges and a variety of habitat models. It is unique in that low-tide-oblique aerial imagery sets allow one to view a specific area and access biophysical data about the site. Each unit includes information about the across-shore substrate and morphology, biotic and anthropomorphic features in the shore zone. It is very useful for habitat modeling and has been used to determine a range of sites to be monitored for green crab.
6. A partnership between ADF&G, USFWS, and PSU will support creation of an identification manual for native and high-risk non-native aquatic plant species. Because of the extensive use of boats and float planes as primary means of transportation in Alaska, invasive plant introductions could result in widespread invasion throughout the state. Invasive species can degrade ecosystems and interfere with boat and float plan traffic, depending on the size of the invasion and where it occurs. The manual can be used by field biologists, subsistence users and the general public to become familiar with native plants and introduced species for which to watch. Changes to an ecosystem are likely to be detected by those who work, hunt, fish and/or recreate there. PSU will use

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

the Washington Department of Ecology's *An Aquatic Plant Identification Manual for Washington's Freshwater Plants* as a template with modifications for Alaska-specific species. Expected completion date is June 2008.

7. Southcentral Northern pike management plan- supported by the USFWS- A management plan that describes the problem of Northern pike (*Esox lucius*) that were illegally transported to bodies of water in southcentral, which is outside their native range. The document discusses the biology of Northern pike, describes locations of infestation, and provides a list of goals and priorities, as well as objectives for controlling and eradicating pike. Eradication efforts are underway this field season and will continue in 2008.
8. Yakutat Village Ponds Invasive Northern Pike Management Plan-with additional support from Southeast Sustainable Salmon Fund, - Northern pike were introduced into 11 interconnected small ponds located in Yakutat, Alaska. Near to these ponds is the Situk River; for its size, one of most productive salmon and steelhead systems in southeast. The recreational and economically important activities of commercial, subsistence and recreational fishers are at risk if invasive pike are illegally transported to the Situk River. Developing a management plan and then completing the objectives of the plan will complete the goal of eradicating this population of pike. Building relationships between the Yakutat Fish and Game Advisory Committee, the Yakutat Salmon Board and the Community and Borough of Yakutat so that all eradication actions have public buy in. Use of piscicide has been determined to be the best practice to eliminate pike from these ponds; applications will take place autumn 2007. Final report of activities and final draft of management plan to follow.
9. Invasive Tunicates- partnership between PSMFC, NOAA/SeaGrant, and ADF&G- A two year project looking at pathways of invasion by studying colonial tunicates of the genus *Didemnum* sp. This species is of interest because it reproduces rapidly and is known to foul marine habitats, including shellfish aquaculture and fishing grounds, hulls of ships and maritime structures.
10. Atlantic Salmon- ADF&G and SSSF funded educational opportunities for ADF&G staff and the public on regarding identification of Atlantic salmon and the threat they pose to wild stocks of Pacific salmon.
  - An experienced Washington Department of Fish and Wildlife (WDFW) stream snorkeler was brought to southeast, Alaska to provide a stream fish identification workshop for ADF&G field staff. Obvious morphological markings were discussed and underwater video footage of Atlantic salmon, in various life stages, while in their habitat was viewed to show variation between salmon species. In-water snorkel survey techniques were shared with staff in Peterson Creek where the ADF&G, Division of Sport Fish already participate in steelhead stream surveys.
  - ADF&G and WDFW stream snorkelers participate in a survey of the Situk River for Atlantic salmon. No Atlantic salmon were observed.
  - Public Service Announcements describing obvious identification details of Atlantic salmon and relating the need to report Atlantic salmon captures to local ADF&G offices were read at radio stations throughout southeast, Alaska.
11. Aquatic invasive species display panels were created to be used around the state at events to inform the public of the impacts of invasive species. Panels highlight information about Atlantic salmon, Northern pike, New Zealand mud snails, aquatic plants, and on how to avoid spreading nuisance species.

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

12. Quahog parasite Research-NOAA/SeaGrant and ADF&G- The goal of this project is to determine if a parasite found in quahogs (large east coast clam) from Maine can infect northwest coast littleneck clam populations. Live quahogs are shipped from the east coast to the west coast for live food markets. Live quahogs have been released by the public into west coast marine waters. Quahogs carry QPX (quahog parasite unknown) pathogen and the object is to determine the susceptibility of manila and native little neck clams, and geoducks to the QPX pathogen by cohabitating with infected hard shell clams of the east coast. Report due by the end of the year 2007.
13. Change in ADF&G regulatory language-During the 2006 Alaska Board of Fish and Board of Game schedule new regulatory language was adopted by both boards to strengthen the state's laws in regard to invasive species.
  - The Board of Fish adopted language that would prohibit persons to import, own, possess, breed, transport, distribute, release, purchase or sell within Alaska any species of injurious fish, mollusk, crustacean, or their eggs already listed in federal regulations. This regulation brings the state regulations in line with federal regulations regarding these injurious species.
  - The Board of Game adopted language that adds deleterious exotic wildlife to a list of organisms that require a permit to possess live game, and states that the commissioner of ADF&G may handle any feral deleterious exotic wildlife in an appropriate manner. Deleterious wildlife includes species in the *Muridae* rodent family.
  - After Board of Game adoption, regulations now allow the use of poisons for taking deleterious exotic wildlife within a building, vessel, port, vehicle, or aircraft when use of Alaska Department of Environmental Conservation registered pesticides in the approved manner.
  - As of September 2007, it is unlawful to knowingly or unknowingly transport, harbor or release live *Muridae* rodents, which includes true mice and rats, gerbils, and their relatives.
14. Alaska Invasive Rodent Management Plan-with funding assistance from the United State Fish and Wildlife Service (USFWS); Alaska Department of Fish and Game (ADF&G) staff is in the final stages of developing a management plan to guide agencies toward actions to prevent, assess and ultimately, eradicate populations rats; primarily, Norway rats and roof rats.

Alaska Rat Action Team (AKRAT)- Formation of a multi-agency (Federal, state, and NGO) collaborative group to align forces so that agencies do not overlap target actions, this organization was formed to pool resources and join experts to close gaps in knowledge and activities. Successful creation and dissemination of a brochure and website to inform the commercial fishing fleet, fish processors and the public about the threat rat populations can pose to vessels, facilities and home owners, and wildlife. Visit [www.stoprats.org](http://www.stoprats.org) for more information
15. The Alaska Natural Heritage Program, an affiliate of the University of Alaska, Fairbanks, has begun work on a non-native animal species list for Alaska. As the preliminary work toward generating a non-native animal ranking for the state, an information acquisition and data synthesis is being completed to inform managers of the species that currently pose a threat to Alaska's ecosystems and wildlife populations. Consultation with biologists and a complete literature review will be completed prior to compilation of the species list. Life histories, modes of dispersal, impacts and control options for listed species will lay the groundwork for completing a ranking of animal species, and

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

ultimately prepare the department's invasive species program to complete its goal of writing an all taxa invasive species management plan.

### **Organization: Washington Department of Fish & Wildlife**

Allen Pleus, ANS Coordinator

600 Capitol Way N

Olympia, WA 98501-1091

Email address: pleusaep@dfw.wa.gov

Phone: 360-902-2724

Fax: 360-902-2845

<http://wdfw.wa.gov/fish/ans/index.htm>

### **Highlights of ANS activities for the past year:**

#### **1. Staffing & Budget**

- Will have over 8.5 FTE in permanent or project and 3.5 FTE temporary staffing this biennium
- Biennium funding now over \$2 million

#### **2. Zebra/Quagga Mussels**

- New legislation passed to allow random mandatory check stations
- 3 seasonal staff conducting boater surveys across state
- Enforcement officer has trained over 100 DFW staff in past 6 months to identify and decontaminate infested watercraft
- Outreach and education at fishing tournaments, sport shows, state fairs and other public venues
- Participation in Columbia River Basin Team efforts

#### **3. Ballast Water (<http://wdfw.wa.gov/fish/ballast/ballast.htm>)**

- Participated on the state Ballast Water Work Group that provided recommendations and successful legislation to improve the state's ballast water program.
- In process of re-establishing the Ballast Water Work Group under WDFW per governor's direction. Currently working on rulemaking to implement law.
- Hired new Ballast Water Inspector – will now have 2
- Working on federal legislation

#### **4. Invasive Marine Tunicates**

- Established populations of *Styela clava*, *Ciona Savignyi*, and *Didemnum sp.* in Puget Sound
- New \$300,000 contract to implement management plan
- Hiring new biologist/diver to lead management effort
- Certified current biologist as second agency diver to assist
- Purchased video drop cameras and a share of an underwater ROV for conducting baseline surveys, research and monitoring
- Conducted control operations on 5 marinas this winter to remove tunicates from vessel hulls

#### **5. Invasive Species Council**

- Established in 2006 legislation and first meeting last November

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

- Working on state strategic plan

### **Organization: Hawaii Department of Land & Natural Resources/Division of Aquatic Resources**

Sara Pelleteri  
AIS Coordinator  
1151 Punchbowl Ave. Room 330  
Honolulu, HI 96813  
Email: [sarap@hawaii.edu](mailto:sarap@hawaii.edu)  
808-587-2276

### **Summary of Program Highlights**

**Ballast Water:** Ballast Water Administrative Rules are awaiting the Governor's signature. These rules include guidance relating to the treatment or exchange of vessel ballast water prior to entry into the State, record keeping, and reporting such activities to the State. This information will enable the State to better assess the potential risk of an incoming vessel containing alien species in its ballast water holds.

Jason Leonard was hired as the new Ballast Water/Hull Fouling Coordinator and is currently working on a variety of projects, including a recreational vessel hull-fouling survey to assess the risk posed by recreational vessels entering the state from other regions.

**Budget:** Funding for the AIS program has continued to increase, including Hawaii Invasive Species Council funding as well as specific grant funding from federal sources.

**Supersucker Project:** The Supersucker program has continued to receive publicity and interest from many organizations. The program has met with challenges, associated with long-term operation as a collaboration with soft money support. However, the past year has seen the launch of "Supersucker Jr." owned and operated by DLNR/DAR and that barge is currently being utilized around the island of Oahu, with interest expressed by neighbor island counties to possibly test the operation on their islands.

***Actinodiscus nummiformis* eradication:** The popular aquarium organism, *Actinodiscus nummiformis* was intentionally introduced to waters around the island of Oahu approximately 10 years ago. The Aquatic Invasive Species Team has managed to eradicate it after a concerted effort that took almost two years.

**Aquatic Invasive Species Response Team:** Despite difficulties of keeping the team staffed at full level as well as funding enough boats and transportation to full utilize them at full capacity, they continue their work on AIS projects around the state that include continued mapping of invasive algae around the state, assisting with a hull inspection program for vessels traveling to the Northwest Hawaiian Island Marine Sanctuary, and the *Carijoa riisei* project at Port Allen.

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

### OTHER MEMBERS

---

#### **Organization: Puget Sound Partnership**

Kevin Anderson, ANS Program Manager

P.O. Box 409000

Olympia, WA 98504-0900

Email address: kevin.anderson@psp.wa.gov

Phone: 360-725-5452

Fax: 360-725-5456

#### **ANS activities for the past year:**

6. The legislature dissolved the Puget Sound Action Team on July 1, 2007 and recreated it as the Puget Sound Partnership. The Partnership provides policy, planning and budget support to protect and restore the Puget Sound ecosystem - including work related to managing non-native marine, estuarine, and freshwater plants and animals that disrupt the ecosystem.
7. Cross Border Work:  
Conducted a year long research project (in partnership with British Columbia, Ducks Unlimited Canada, the Washington Department of Agriculture, The Nature Conservancy and the Pacific Coast Joint Venture) to release and track the distribution of drift cards as a way to predict how invasive *Spartina* can spread from areas of heavy infestation in the shared marine waters between Washington and British Columbia. We released 600 cards each month for 12 months from 3 sites in British Columbia and 3 in Puget Sound. People report when they find cards. We enter the location of found cards into a GIS database. Next step is to produce a summary report of findings.
8. Ballast Water:  
The Action Team chaired and staffed the state Ballast Water Work Group. The group developed recommendations and draft legislation to improve the state's ballast water program. Delivered the report and proposed legislation to appropriate legislative committees and the Governor's office. The legislature updated the state's ballast water law based on the Work Group's recommendations.
9. Invasive Marine Tunicate Response:  
In 2006, the Action Team secured \$250,000 from the Governor's emergency fund and a supplemental appropriations to prevent invasive tunicates from spreading in Puget Sound. The Washington Department of Fish and Wildlife (WDFW) received funding to contain and eradicate club tunicates from boat hulls. The Puget Sound Partnership, in cooperation with a stakeholder advisory committee, prepared an Interagency Invasive Tunicate Response Plan. The Partnership also set up a toll free 1-800 number and web site for reporting newly discovered invasive tunicates. The Partnership also prepared and distributed identification cards and billing inserts for recreational boaters and marina operators. We also funded a project to educate divers about invasive tunicates. In cooperation with WDFW, we submitted an accomplishments report and recommendations for next steps to the Governor and the legislature.
10. Policy and Budget:  
Every two years, the Partnership prepares an interagency work plan and budget to protect and restore the Puget Sound. The ANS elements in the 2007-2009 Puget Sound Conservation and Recovery Plan were developed based on recommendations above

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

and on the needs of the state Aquatic Nuisance Species Committee. The legislature provided \$974,000 for the following interagency aquatic nuisance species activities:

- i. \$116,000 to the Washington Department of Ecology to develop a permit for aquatic herbicide and pesticide use, provide assistance and training, administer grants, develop educational materials, and develop management strategies for noxious, invasive freshwater weeds.
- ii. \$358,000 to the Washington Department of Fish and Wildlife to implement and enforce the state's ballast water regulations in Puget Sound, to continue and expand monitoring, and to develop response strategies for non-native animal invasions.
- iii. \$500,000 to the Puget Sound Partnership to continue invasive tunicate control and eradication work, carry out tunicate surveys and /conduct a 'clean your hull' education campaign.

---

### **Organization: Prince William Sound Regional Citizens' Advisory Council**

Lisa Ka'aihue, Director of Administration  
3709 Spenard Road, Suite 100  
Anchorage, Alaska, 99503  
Email address: kaaihue@pwsrca.org  
Phone: 907.277.7222  
Fax: 907.277.4523

### **ANS activities for the past year:**

1. Continued our partnerships with the U.S. Fish and Wildlife Service and the National Park Service to sponsor scientific studies in Alaska. We have co-sponsored a series of scientific studies conducted by the Smithsonian Environmental Research Center (SERC) since 1997. The Smithsonian researchers were involved in two major efforts for us this year. We supported a pilot tunicate monitoring project being implemented by SERC. The goal of the program is to monitor for the presence of non-native tunicates (sea squirts), because such tunicates can grow in high densities and cause problems for other marine species. Council staff also participated in this effort by setting up monitoring stations at the Valdez Marine Terminal in the summer of 2006 and following up with other Port Valdez monitoring stations in 2007. The 2006 monitoring in our region did not turn up harmful invasive tunicates. The 2007 monitoring is part of a global monitoring effort.
2. The Smithsonian researchers submitted a draft report forecasting the northward spread of four invasive species to Alaska waters (an invasive barnacle, the European green crab, the club tunicate, and the Atlantic periwinkle). The report concludes that all four species could find suitable environments in Alaska waters to survive and could be indicative of other invasive species spreading to Alaska. The final version of this report should be available soon.
3. Expanded our green crab monitoring network. For many years the council has sponsored a green crab trapping effort in Port Valdez. Although the crab has not been reported in Alaska, it is of concern because ballast water is a known pathway for this crab. Dan Gilson headed this effort by expanding the green crab monitoring network in our region by working with organizations and students in our region and in other regions of Alaska in coordination with local entities, NOAA, and the Kachemak Bay Research Reserve.

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

4. Participation in Alaska Invasive Species Working Group. We continued our participation in this effort to establish a state-wide invasive species group that hopefully would foster proactive management strategies, among other things.
5. Invasive Species Films. I organized a successful film festival with a major focus on invasive species as part of the Alaska Forum on the Environment held in February 2007. I am looking for films for the 2008 film festival if anyone wants to submit them to me!

---

### **Organization: Pacific States Marine Fisheries Commission**

Stephen Phillips, ANS Program Manager  
205 SE Spokane Street, Suite 100  
Portland, Oregon, 97202  
Email address: Stephen\_phillips@psmfc.org  
Phone: 503-595-3100  
Fax: 503 595-3232

### **ANS activities for the past year**

1. **Watercraft Inspection Training (WT):** Bill Zook and Wen Baldwin have conducted numerous watercraft inspection trainings throughout the west in cooperation with numerous resource agencies. At least ten trainings will take place in California in 2007. Funding for this project is being provided by the California Department of Fish and Game, USFWS and Bonneville Power Administration.
2. **Video:** Funding was approved by the USFWS (Stockton) for a remake of the zebra mussel prevention video "It Only Takes One." Bill Zook is the lead for this project. Filming will begin in September.
3. Continued to provide support for monitoring projects including: veliger and adult zebra/quagga mussels (Portland State University, Montana Department of Fish Wildlife and Parks), green crab (Oregon State University, University of California, Davis, Smithsonian and Portland State University,) and Atlantic salmon (Washington Department of Fish and Wildlife).
4. The PSMFC, USFWS, 100<sup>th</sup> Meridian Initiative's Columbia River Basin Team and other Columbia River state and federal agencies, continued work on Columbia River Basin Rapid Response Plan for Zebra Mussels and other Dreissena Species." Go to: <http://100thmeridian.org/ColumbiaRT.asp> for the latest draft. This document includes appendices on 1) Regulatory Requirements for the Use of Pesticides and Non-Pesticides (Sutherland); 2) Dreissenid Response Strategies at Lower Columbia River Basin Hydroelectric Fish Facilities (Kovalchuk); and 3) Bonneville Hydroelectric Project Rapid Response Plan (Athearn and Darland).
5. The PSMFC and USFWS (Paul Heimowitz) began planning a multi agency CRB dreissenid rapid response facilitated tabletop exercise that is scheduled for fall 2007.
6. The PSMFC ANS website has been redesigned. Go to [aquaticnuisance.org](http://aquaticnuisance.org).

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

### **Organization: The University of Texas at Arlington**

Dr. Robert (Bob) F. McMahon, Professor of Biology

Associates: John Morse, Dr. Veena Ramakrishnan, Dr. Majbritt Angarano, Dr. John A. Schetz,  
and Dr. David K. Britton)

Box 19222, The Honors College, The University of Texas at Arlington,  
Arlington, Texas, 76019

Email address: r.mcmahon@uta.edu

Phone: 817-272-7215

Fax: 817-272-7217

### **ANS activities for the past year:**

1. The University of Texas at Arlington group's main ANS activity has centered on research supported by a WRP contract entitled *Assessment of the Potential for Zebra Mussel Invasion of Waters in the Western United States via Saltatory Dispersal and Evolution of Increased Thermal Tolerance*. To date, the research under this grant has allowed determination of the incipient (long-term) 28-day upper thermal limit of zebra mussels from a New York State population and from Lake Oologah, Oklahoma, to be approximately 28°C. This result suggests that the Oklahoma population in the much warmer waters of Lake Oologah has not evolved an increased thermal tolerance relative to mussel populations in the northern portions of North America. Continuous monitoring indicated that when Lake Oologah water temperatures rose above 28°C in August 2006 there was a near 100% zebra mussel population extirpation followed by major population recovery in spring 2007. A similar temperature-induced population extirpation occurred in August 2007. An incipient upper thermal limit of approximately 28°C was also determined for a sample of quagga mussels from Lake Mead, Nevada. Water temperature records from Lake Mead indicate that surface water temperature rarely exceeds 28°C making the lake hospitable to a thriving quagga mussel population and potentially to zebra mussels.

Zebra mussel specimens for determination of DNA fingerprints by AFLP (Amplified Fragment Length Polymorphisms) analysis are being collected and preserved from various isolated and non-isolated aquatic habitats within the North American range of zebra and quagga mussels for DNA analysis. Once mussel samples are obtained, DNA is extracted and preserved for later AFLP analysis. It is expected that DNA analysis for both quagga and zebra mussels will be completed by the end of December 2007. The molecular data obtained will be utilized to determine the degree to which different populations of both species within their North American range are genetically related allowing estimation of the source populations from which newly established western populations of zebra mussels in Oklahoma and quagga mussels in Lake Mead were most likely to have been derived.

2. Our laboratory recently completed a study of the physiological limits of the invasive freshwater apple snail, *Pomacea insularum*, which invaded inland waters in Florida and southeastern Texas over the last 7-10 years. The research was supported by a grant from the Texas Commission on Environmental Quality. 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 species 15°C 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.
3. Our laboratory recently completed the first phase of a collaborative study with the Department of Pharmacology at the University of North Texas Health Science Center on the

## **Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007**

efficacy of a number of novel natural products and their synthetic derivatives as environmentally neutral antifouling agents for zebra and quagga mussels.

4. Our laboratory assisted the National Parks Service in assessing the population dynamics and estimating the time of first introduction of quagga mussels (*Dreissena rostriformis bugensis*) to Lake Mead.

### **FEDERAL MEMBERS**

---

#### **Organization: United States Coast Guard**

Jacob Varghis, Chief, Vessel Compliance  
Bldg 51-5, Coast Guard Island  
Alameda, CA, 94501  
Email address: Jacob.varghis@uscg.mil  
Phone: 510-437-5847  
Fax: 510-437-2961

#### **ANS activities for the past year:**

The Department of Homeland Security, through the U.S. Coast Guard, is the Federal agency authorized by Congress to develop a national regulatory program to prevent the introduction and spread of aquatic nonindigenous species (NIS) into U.S. waters via ballast water discharges from vessels. By direction of the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA) and the National Invasive Species Act of 1996 (NISA), the Coast Guard has promulgated several regulations and continues to develop future regulations to address this issue.

#### **Current Regulations and Policies**

Following the invasion of the Great Lakes by zebra mussels, NANPCA was enacted and authorized the Coast Guard to develop regulations for a mandatory ballast water management (BWM) program for the Great Lakes and Hudson River. We established these regulations in 1993 and 1994, respectively. These regulations appear in Title 33, Part 151, subchapter C of the Code of Federal Regulations (CFR). Subsequent high profile invasions around the U.S. prompted Congress to reauthorize and amend NANPCA with NISA. Under NISA, national voluntary BWM guidelines for vessels entering all other U.S. regions after operating outside the U.S. Exclusive Economic Zone were promulgated by the Coast Guard in 1999. NISA required the Coast Guard to assess compliance with the voluntary guidelines with the stipulation to convert them into a mandatory BWM program if the Coast Guard determined that the voluntary guidelines were inadequate. In 2002, the Coast Guard submitted a report to Congress stating that compliance with the guidelines was too low to determine its adequacy, and therefore the Coast Guard intended to develop regulations to address these issues.

In 2004, the Coast Guard established regulations for penalty provisions for vessels bound for U.S. ports who fail to comply with the Great Lakes BWM Program and/or that fail to submit their ballast water reporting forms. These regulations also expanded the BWM reporting and recordkeeping requirements. Later in 2004, regulations were promulgated converting the national voluntary guidelines into a national mandatory BWM program. These regulations appear in CFR, Title 33, Part 151, Subpart D.

A large number of vessels calling on the Great Lakes declare No Ballast Onboard (NOBOBS). However, these vessels may contain residual ballast water and/or sediments and have the

## **Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007**

potential to carry NIS. As these vessels transit the Great Lakes, they off-load their cargo and take on Great Lakes water as ballast water. Once NOBOB vessels take on new cargo, and discharge the mixed (residual and Great Lakes) ballast water, the potential exists for the introduction of NIS into the Great Lakes. In 2005, The Coast Guard established a policy of best management practices for NOBOB vessels entering the Great Lakes. This policy, which strongly encourages NOBOBS to conduct saltwater flushing, was established to reduce the introductions of aquatic NIS into the Great Lakes.

### **Rulemaking in Progress-Ballast Water Discharge Standard**

In addition to the current regulations and policies, the Coast Guard is engaged in a rulemaking that would set a performance standard for the quality of ballast water discharged in U.S. waters. This rulemaking is being carried out under NANPCA and NISA which authorize the Coast Guard to approve alternative ballast water management systems (BWMS) that are found to be at least as effective as mid-ocean ballast water exchange (BWE) in preventing NIS introductions. As the effectiveness of ballast water exchange varies from vessel to vessel, the Coast Guard believes that setting a performance standard would be the most effective way for approving BWMS that are environmentally protective and scientifically sound. Ultimately, the approval of BWMS would require procedures similar to those in CFR, Title 46, and Subchapter Q, to ensure that the BWMS works not only in the laboratory but under shipboard conditions. These would include: pre-approval requirements, application requirements, land based shipboard testing requirements, design and construction requirements, electrical requirements, engineering requirements, and piping requirements. As a necessary first step in approving BWMS, the Coast Guard has proposed defining a ballast water discharge (BWD) standard that would enable us to assess a Ballast Water Management System's ability to be environmentally protective. We did this via an ANPRM, published March 4, 2002, in which we began our rulemaking process by asking for comments to help define a ballast water treatment goal and standard. The rulemaking is entitled "Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters," and documents and public comments relating to the rulemaking can be found at <http://dms.dot.gov> under docket number USCG-2001-10486.

Since September 2003, we have been conducting essential environmental impact analyses to support this rulemaking, as required by the National Environmental Policy Act, the Endangered Species Act, and various other environmental statutes. We have held public workshops across the nation to engage interested stakeholders in discussing the environmental impacts the Coast Guard must consider. The Environmental Protection Agency, the National Oceanic and Atmospheric Administration, and the U.S. Fish and Wildlife Service are assisting us as cooperating agencies. In addition to considering a "no action" alternative that would avoid using a BWD standard to evaluate BWMS, the environmental analysis will also assess the impact of establishing a stringent "virtual sterilization" standard that would require the elimination of all living organisms larger than 0.1 micron. Also, we are considering adoption of some less stringent standard that would establish maximum acceptable discharge concentrations for various types of potential NIS. An example of this type of standard we are evaluating is set forth in the International Maritime Organization's "Convention for the Control and Management of Ships' Ballast Water and Sediments" which was adopted in 2004. The results of these analyses will be published in a Draft Programmatic Environmental Impact Statement (DPEIS), which the Coast Guard is developing in conjunction with the NPRM. The Coast Guard is working to publish these documents as soon as possible, possibly as early as this summer. Not only must the Coast Guard conduct environmental analyses for implementing a BWD standard, we must also conduct economic analyses. Under Executive Order 12866, any federal agency engaged in a significant rulemaking action must conduct an assessment of potential costs and benefits, including an explanation of how the rulemaking is consistent with the statutory mandate and

## **Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007**

presidential policies. This assessment is called a Regulatory Impact Analysis (RIA). The RIA, along with a Federalism analysis, generally would also explain how the rulemaking avoids undue interference with the functions of state, local, and tribal governments. The Coast Guard has made considerable progress on the development of a complex and technically challenging regulation where there is a significant level of uncertainty. The Coast Guard would like to propose the BWD standard as soon as possible for public review and comment. However, the specific date is not decided.

---

### **Organization: U.S. Geological Survey – Western Fisheries Research Center**

David Woodson, Deputy Center Director  
6505 N.E. 65<sup>th</sup> Street  
Seattle, WA, 98115  
Email address: david\_woodson@usgs.gov  
Phone: 206.526.6569  
Fax: 206.526.6654

### **ANS activities for the past year:**

1. Collaborating with Washington state biologists we have obtained samples of 37 native and non-native species in Puget Sound. PCR-based diagnostic markers have been developed for 20 species encompassing bivalves, crustaceans and marine plants. Sensitivity and fidelity tests on the markers have been completed and currently the resolution of target DNA in plankton samples is being evaluated.

One of the greatest difficulties in working with marine species is obtaining high quality DNA that can be analyzed using various molecular technologies. USGS scientists have recently developed a protocol to efficiently extract high quality DNA from high and low density plankton net tow samples. Because of the need for a rapid diagnostic system that can analyze a large number of samples as quickly as possible we have chosen to investigate the suitability of micro array technology.

USGS scientists have recently completed a series of experiments to design species-specific molecular beacons that can be arrayed onto glass slides. In addition, they have developed protocols for arraying the beacons and are in the process of determining sensitivity and fidelity of beacons when exposed to mixtures of DNA that contain target species.

2. USGS scientists have determined that some invasive plants are assisted by symbiotic fungi in establishing themselves in non-native habitats. The fungi act as adaptive components of the plants, conferring habitat-specific stress tolerance, which allows plants to expand across differing microhabitats. In addition, symbiotic plants are less affected by density dependent competition than non-symbiotic plants allowing them to establish at higher densities. Ongoing work will examine the role of fungal symbionts in plant invasions.
3. USGS scientists have initiated efforts to establish an early detection program for New Zealand mudsnails on the Klickitat River, a tributary of the Columbia River.
4. USGS scientists have started a project that will examine the biology and ecology of the Amur goby in the Columbia River in an effort to refine search efforts and potential control options.

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

5. USGS scientists are analyzing data collected to assess the status of crayfish populations in Columbia River Reservoir to determine whether invasive crayfish species have been introduced.
6. USGS scientists have started a project that will examine the biology and ecology of Asian carp to assess their potential to infest the Columbia River and to focus early detection efforts.
7. Habitat restoration has been used by USGS scientists as an effect means of controlling non-native sailfin molly and mosquitofish, while promoting native Ash Meadows pupfish.
8. Research in cooperation with the University of Washington has determined that the WFRC's Solid Phase Laser Scanning Cytometer offers a very promising technique to identify, quantify and assess the viability of phytoplankton in ballast water samples.
9. EPA - USGS joint Pacific Coast Ecosystem Information System (PCEIS) Developments:
  - a. The U.S. Environmental Protection Agency – Western Ecology Division (EPA/WED) and U.S. Geological Survey – Western Fisheries Research Center (USGS/WFRC) have cooperatively developed a spatially-explicit information system — the *Pacific Coast Ecosystem Information System (PCEIS)* that provides georeferenced distributions of native and nonindigenous estuarine species on the Pacific Coast. The foundation of this effort began with the species distributions collected by EPA's Western Coastal Environmental Monitoring and Assessment Program (Western Coastal EMAP, see Nelson *et al.*, 2005; <http://www.epa.gov/owow/oceans/nccr/>). To date, Western Coastal EMAP generated site-specific data for over 1500 benthic and fish species in Oregon, Washington, California, and Alaska. With subsequent data mining from other taxonomic and monitoring sources, *PCEIS* has grown to contain information on over 8,000 native and nonindigenous invertebrate and fish species in more than 200 estuaries on the Pacific Coast. For each species, *PCEIS* provides georeferenced distributions down to the scale of sub-estuary/tributary along with taxonomy standardized to the Integrated Taxonomic Information System (ITIS, <http://www.itis.usda.gov>), standardized species habitat profiles, and biogeographic range. For nonindigenous species, additional information, such as date of first record and potential vectors, is provided.
  - b. Detailed Habitat forms are under development to capture habitat information in a queryable form. This will provide a mechanism for query and export of multiple species lists based on general habitat types for future research and modeling use. These forms are forming the basis for the development of templates for Pacific Rim countries under a contract with PICES.
  - c. Template development for the North Pacific Marine Science Organization (PICES): The EPA and USGS are developing database templates for invasive species data collection and retrieval in the Pacific Rim countries of Russia, China Japan, Korea, Canada, and the US. The initial thrust is to populate the database(s) with each country's nonindigenous bivalves.
  - d. A taxonomy contract from EPA has been awarded to AquaMarine Environmental Services to classify a large set of unclassified species in PCEIS.
  - e. An EPA student contractor has been making great strides in "cleaning up" the species and references in the current internal version of PCEIS.
  - f. Data from PCEIS on distribution of *Abarenicola pacifica* was given to Dr. Sarah Woodin to evaluate whether its distribution has changed due to climate change.

**Member Updates for the Western Regional Panel Meeting,  
Hawaii, September 11-13, 2007**

- g. USGS and EPA have begun preliminary modeling exercises using outputs from PCEIS using a nonparametric multiplicative regression (NPMR) niche modeling approach. NPMR has several potential advantages over other niche models including the ability to predict abundance as well as distribution.
10. American shad, *Alosa sapidissima*, are non-native anadromous clupeids that have become the most numerous anadromous fish in the Columbia River over the last 70 years, with adult counts at Bonneville Dam being as high as 5 million fish during recent years. American shad adults, perhaps over 20 million, enter the lower Columbia River during April-June for spawning. Juveniles outmigrate in vast numbers primarily during July through early winter, and evidence suggests that many overwinter in the estuary. However, there is little known about their impacts on the Columbia River ecosystem.

The goal of this project is determine whether American shad provide positive benefits or are detrimental to efforts to restore Columbia River fisheries. This project will provide information on the role that juvenile and adult shad play as competitors for forage, as forage themselves, and as potential vectors of disease that may influence the productivity of salmonid populations. While little is known about American shad in the Columbia River, this project will build upon extensive research from the east coast of North America where efforts to restore American shad runs to rivers have been underway for decades.

The project includes coordinated activities to address three objectives; 1) shad as potential competitors of juvenile salmon for forage, 2) the role that shad play as prey for juvenile salmon (a potential positive effect) and as prey supporting growth of native and introduced predators of juvenile salmon (a potential negative effect), and 3) the role that shad may play as vectors of disease that poses a potential threat to the restoration of salmonid populations. Field, laboratory, and modeling tasks will begin in 2007 and will continue through 2009. Field sampling activities will require fish collection permits from the states of Oregon and Washington, and sampling done at juvenile collection facilities at dams will require coordination and approval from the Army Corps of Engineers. The project proponents will consult with NOAA Fisheries staff regarding the need for permitting under the Endangered Species Act.

---

**Organization: USFWS/CALFED Non-native Invasive Species Program (NISP)**

Louanne McMartin, Non-native Species Program Watershed Coordinator  
4001 N. Wilson Way  
Stockton, CA, 95205  
Email address: [louanne\\_mcmartin@fws.gov](mailto:louanne_mcmartin@fws.gov)  
Phone: (209)946-6400 ext. 337  
Fax: (209)946-6355

**ANS activities for the past year:**

**Bay-Delta Authority Non-native Invasive Species Program Update**

The Stockton Fish and Wildlife Office provides coordination and leadership to the Bay-Delta Authority Ecosystem Restoration Program's (ERP) Non-native Invasive Species Program (NISP). Highlights of program accomplishments (Fall 2006 through Summer 2007) are listed below.

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

- NISP has promoted the use of Hazard Analysis Critical Control Point (HACCP) planning for natural resources managers as a planning tool that identifies potential risks associated with operational logistics and specific pathways that could introduce non-targets during routine activities. NISP provided HACCP trainings within the agency and to California Department of Water Resources Interagency Ecological Program. Thus far, we have assisted in the development and review of 31 HACCP plans.
- The NISP co-chairs California's NIS Advisory Council (NISAC), which meets to discuss NIS issues and priorities and enhance collective response to new introductions in California. NISAC is in the process of requesting the ERP Implementing Agency Managers to develop and implement HACCP across restoration activities such as species monitoring, habitat restoration, barrier removal, and levee repairs.
- The NISP continues to provide NIS technical assistance and coordination to watershed groups working to develop restoration plans, programs and projects. Watershed group meetings are attended and NIS presentations have been given to 20 groups. We have provided over 22,000 NIS brochures and information at watershed events and through mailings to assist watershed groups in their outreach efforts.
- NISP is planning watershed symposia in three CALFED regions for the purpose of gathering watershed organizations and interested parties involved with the conservation and management of water resources to initiate peer-to-peer discussions of NIS issues and exchange practical information on control and eradication of NIS species. Symposia will include:
  - ❖ case studies of successful efforts to control/eradicate NIS.
  - ❖ resource materials to improve effectiveness in the field.
  - ❖ networking opportunities with practitioners, researchers and government officials.
  - ❖ hazard Analysis and Critical Control Point (HACCP) training.
- Two populations of Florida watersnakes (*Nerodia fasciata pictiventris*) have become established in California. NISP chairs the newly formed multi-agency *Nerodia* Working Group to address issues surrounding the management, eradication, or control of *Nerodia* populations in the western states. Short-term goals include eradication of the southern California population, support the listing of *Nerodia* as a restricted genus under Section 671 of Title 14 of California's Code of Regulations, and conducting outreach to the pet trade and other groups to raise awareness about this species and educate the public on being a responsible pet owner.

---

### **Organization: U.S. Fish and Wildlife Service**

Mike Stempel, Assistant Regional Director, Fisheries, Region 6

P.O. Box 25486, DFC

Denver, CO 80225

Email address: [mike\\_stempel@fws.gov](mailto:mike_stempel@fws.gov)

Phone: 303-236-4510

Fax: 303-236-8163

### **ANS activities for the past year:**

This is the compiled FWS report from Regions 1, 2, 6, 7, and the CNO which are all contained in the Western Regional Panel geographic area.

## **Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007**

**Paul Heimowitz – R1 (OR, WA, ID, HI)**

[paul\\_heimowitz@fws.gov](mailto:paul_heimowitz@fws.gov)

**503-736-4722**

- Continued to work with the PSMFC to lead the zebra/quagga mussel rapid response planning effort for the Columbia River Basin, including arrangements for a table-top exercise scheduled for late October 2007. USFWS also helped coordinate a response to a potential quagga mussel inoculation of Wildhorse Reservoir at the upper reaches of the Columbia/Snake watershed.
- Initiated risk evaluation and outreach efforts addressing the potential invasion of Asian carp into the Pacific Northwest. A risk evaluation report will be finalized and posted on-line later this year.
- Co-organized a regional nutria management workshop, provided funding for a research project evaluating nutria impacts in the Northwest, and took on the role as vice-chair of the national nutria control and management plan workshop.
- Provided support for completion of an invasive marine algae control barge developed by the state of Hawaii.

**Denise Walther - CNO (CA, NV)**

[denise\\_walther@fws.gov](mailto:denise_walther@fws.gov)

**209-946-6400 (x342)**

- Supported integration of HACCP into natural resource activities in California Nevada Operations (CNO). Presented overviews of the HACCP process to USFWS Ecological Services staff in Sacramento and at the Southern California Academy of Sciences meeting. Provided HACCP training to California Department of Water Resources Interagency Ecological Program and Arcata Fish & Wildlife Office.
- Provided technical assistance in support of inter-agency efforts to prevent the spread of quagga mussel within and outside the Lower Colorado River Basin.
- Coordinated the implementation of the National Management Plan for the Genus *Eriocheir* (Mitten Crabs) and the National Management Plan for the Genus *Caulerpa*. Activities included updating the implementation tables and setting up a mitten crab listserve (<https://www.fws.gov/lists/listinfo/mittencrab>).
- Funded a project with California State University, Fresno Foundation to develop an early detection network to identify larval stages of Chinese mitten crab.

**Bob Pitman and Dave Britton – R2 (AZ, NM, OK, TX)**

[bob\\_pitman@fws.gov](mailto:bob_pitman@fws.gov) and [david\\_britton@fws.gov](mailto:david_britton@fws.gov)

- Through Cooperative Agreement with the University of Texas-Arlington, provided scientific and technical assistance for responses to the zebra/quagga mussel invasion of the Colorado River and interagency coordination through the 100<sup>th</sup> Meridian website.
- Developed and supported an ANS Hotline with 24 hour phone service providing immediate digital messages to Regional Coordinators and allowing quick responses to threats or to prevent invasions.
- Collected data and maintained a database of sample locations for presence/absence of zebra/quagga mussels in the west accessible through the internet on the 100<sup>th</sup> Meridian website.

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

- *Stop Aquatic Hitchhikers!* signs were distributed and posted through partnership with the states of Arizona, New Mexico, Texas, Oklahoma and the White Mountain Apache Nation.

### Tina Proctor – R6 (ND, SD, KS, NE, WY, MT, UT, CO)

[bettina\\_proctor@fws.gov](mailto:bettina_proctor@fws.gov)

(303) 236-4515

- HACCP training and planning spread to all Ecological Services offices in Region 6 by November 2007. These are the state FWS offices which deal with endangered species, environmental contaminants, federal projects and many other issues.
- The New Zealand Mudsail Management and Control plan was approved by the ANS Task Force in May. Funded staff at MSU to improve and expand the website.
- Served on core planning group, Colorado ANS Steering Committee (CANS), to create Colorado ANS management plan by late spring, 2008.
- Worked with others to plan 100<sup>th</sup> Meridian Colorado River Team meeting in January in Las Vegas to develop responses to the quagga mussel invasion in the lower Colorado River lakes.

### Denny Lassuy – R7 (Alaska)

[denny\\_lassuy@fws.gov](mailto:denny_lassuy@fws.gov)

(907) 786-3813

- Alaska is at a tipping point where climate change, a growing role in global commerce, and a heightened pace of infrastructure and resource development could spark a wave of ecologically, economically and culturally harmful invasions—but has lacked a coordinating body to address these shared concerns. In FY07, the Service helped enable formation of a new all-taxa statewide invasive species forum, the Alaska Invasive Species Working Group, whose mission is “to minimize invasive species impacts in Alaska by facilitating collaboration, cooperation and communication among AISWIG members and the people of Alaska.”
- Under the 100<sup>th</sup> Meridian Initiative, the Service in Alaska provided trailered watercraft inspection training for U.S. Customs and Border Protection personnel at the Alaska-Canada Highway Border Inspection Station—Alaska’s primary entry point for vehicular traffic, including trailered boats headed for Alaska’s wild salmon streams.
- A partnered study of whirling disease risks in Alaska produced some remarkable results. The presence of the whirling disease pathogen, *Myxobolus cerebralis*, was confirmed for the first time. It was found at a state hatchery and immediately led to changes in stocking strategy from this facility by our leading partner, the Alaska Department of Fish and Game. While the pathogen was confirmed, there was no clinical evidence of the disease. The study concluded the most likely pathway for parasite dissemination is human movement of fish (within state spread) and recreational activities (new introductions).

---

### **Organization: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northwest Fisheries Science Center**

Blake E. Feist, Ecologist

2725 Montlake Blvd E

Seattle, WA 98112

Email address: [blake.feist@noaa.gov](mailto:blake.feist@noaa.gov)

Phone: 206-860-3408

## **Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007**

Fax: 206-860-3335

### **ANS activities for the past year:**

1. Continued to participate as a member of PICES Working Group 21 on "Non-indigenous Aquatic Species". Responsible (along with others) for various inventories of NIS and infrastructure of NIS research and coordination within PICES nations.
2. Secured additional funding from National Sea Grant Program for larval green crab expansion modeling research. Set-up formal collaboration between NWFSC, University of Washington and NOAA's Pacific Marine Environmental Laboratory (PMEL) researchers.
3. Developed preliminary models of larval green crab dispersal patterns along the CA, OR and WA coasts using NOAA ROMS ocean circulation data. Models used hindcasts of ocean circulation patterns from 1996 – 2004 and take into account larval green crab life history stage.
4. Continued research looking at the consequences of *Spartina alterniflora* organic matter on estuarine food webs, using stable isotope analysis.
5. Attended and presented paper at Marine Bioinvasions conference in Cambridge, MA.
6. NOAA green crab research coordinator for the West Coast of the U.S.
7. NWFSC NIS Point of Contact

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

### INTERNATIONAL MEMBERS

---

#### **Organization: Province of British Columbia Ministry of Agriculture and Lands**

Gary Caine, Senior Biologist  
2500 Cliffe Avenue  
Courtenay, British Columbia, V9N 5M6  
Email address: Gary.caine@gov.bc.ca  
Phone: (250) 897-7545  
Fax: (250) 334-1410

#### **ANS Activities for the past year:**

##### **National**

BC continues to participate in national level programs and strategies to deal with the threat of aquatic invasive species (AIS) through the Canada Council of Fisheries and Aquaculture Ministers' AIS Task Group. Highlights of this year's program activities and accomplishments include:

1. The national strategy to address the threat of AIS has been implemented, and the Task Group has developed a transition strategy and terms of reference for the creation of a National AIS Committee (NAISC). This committee provides the forum for exchange of AIS information, enhances national and interjurisdictional planning, cooperation and coordination; reduces duplication and overlap, and liaises with other groups responsible for implementing an overarching Invasive Alien Species Strategy for Canada that includes AIS, terrestrial plant and plant pests and wildlife protection.
2. Amendments to the *Canada Fisheries Act*. Proposed amendments to the *Fisheries Act* were tabled as Bill C-45 in the last Parliament. If Bill C-45 is passed, new provision for AIS will help to clarify authorities under federal jurisdiction and introduce new authorities such as the ability to control the import of AIS. Key elements include:
  - Prohibition on the import, export, or transport of AIS unless authorized under regulations;
  - Prohibition on the release of AIS into waters frequented by fish unless authorized under regulations;
  - Authority to destroy AIS;
  - Authority to make regulations; and,
  - Contraventions, penalties and fines.
3. The Task Group continues to make progress on three key priority areas: Engaging Canadians, early detection and rapid response, and risk assessment. National workshops were held in 2006-2007 through the national Centre for Expertise in Aquatic Risk Assessment (CEARA). CEARA also engaged socio-economic experts to begin discussions on assessing risks to economies and social well-being. Funding was obtained again to continue work on educational and public outreach projects through the Environment Canada AIS Partnership Program.

##### **Provincial**

1. Zebra Mussel Alert: On May 8, 2007 WA DFW in Olympia, WA advised BC that a houseboat originating from the Missouri River and bound for Vancouver Island, BC was detained at the Ridgefield port of entry due to the presence of zebra mussels on the hull

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

and trailer. Both were decontaminated and released. This was the third of such boats that were purchased by the operator of resort at Sproat Lake, near Port Alberni, BC.

On May 10, 2007 a Fisheries Officer from Fisheries and Oceans Canada attended the resort and inspected the three boats. The first vessel arrived at the end of March, the second at the end of April, and the third on May 10. The first vessel did not have any inspection certification. The last two vessels had Washington State Zebra Mussel Inspection Certification slips. The Fisheries Officer inspected the vessels and found no obvious signs of contamination inside and out. Pockets of water in the vessels were chlorinated and the water disposed on the upland. The Officer determined under the conditions of transport and inspection that the risk of importing zebra mussels was minimal. The new vessel owner has agreed to work with the local authorities to manage at a high level until confirmed otherwise.

2. Provincial Fisheries Program (submitted by Sue Pollard, Ministry of Environment)
  - Finalization of the provincial Fisheries Program Policy on “Management of Unauthorized Introductions of Non-Native Freshwater Fish Species”, and a supporting procedural framework that outlines the decision-making process and where new procedures need to be developed (nearing completing).
  - Initiation of a provincial 3-year Compliance Strategy to address unauthorized introductions of alien fish species, with particular focus on sportfish species. Provincial funding has been secured to develop the plan and undertake supporting activities for three years. This was identified as the top Fish and Wildlife compliance issue provincially.
  - Collaboration with Fisheries and Oceans Canada (DFO-Pacific Region) and CEARA to develop six draft Risk Assessments for freshwater fish species identified as high-risk in BC.
  - A regional Eradication Program is planned to apply rotenone to a single small lake in the Shuswap drainage in the Interior to eradicate illegally introduced yellow perch populations. The project is awaiting the necessary permits and certificates. This would be the first rotenone project in BC in over twenty years.
  - Ongoing survey work conducted in the spring and summer in the Quesnel drainage near Prince George, BC confirmed three year-classes of non-native smallmouth bass. Spawning activity was observed in the Beaver drainage. This is the first report ever of smallmouth bass in the Quesnel/Mid-Fraser region.
  - The provincial *Wildlife Act* is under review. Alien species importation, possession, transport and trade have been identified as priority issues for consideration by the Minister of the Environment.
3. BC and other provinces have collaborated with Transport Canada, Environment Canada, the Ontario Ministry of Natural Resources and private partners to produce brochures and stickers advising boaters of the need to take precautions to prevent the spread of AIS through boating and angling activities. A generic template was developed and then used to create regional-specific advisories for each Province and Territory. Production of an informational DVD on AIS and what can be done to control them is in progress.
4. Under Environment Canada's AIS Partnership Funding Program, staff biologist of the Ministry of Agriculture and Lands assisted the BC Shellfish Growers Association in producing an interpretive guide for identifying and reporting AIS in British Columbia marine waters. This is a spiral-bound illustrated guide to invasive tunicates and the European green crabs that are present, but not yet a problem in BC waters. Workshops for shellfish grower, scientists, environmental groups and the public were held in coastal

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

communities on the BC coast from Prince Rupert in the North to the lower mainland and the east and west coasts of Vancouver Island.

---

### **Organization: Alberta Sustainable Resource Development**

Scott Millar, Strategic Advisor, Corporate Business Support  
4<sup>th</sup> Floor, Great West Life Bldg., 9920-108 St  
Edmonton, Alberta, T5K 2M4  
Email address: scott.millar@gov.ab.ca  
Phone: 780-427-7758\*  
Fax: 780-644 4682

### **ANS activities for the past year:**

- 1. Continued development of a rapid risk assessment tool for invasive plants and aquatic species.** The Alberta Risk Assessment Tool is intended to be a simple to use means of ranking invasive terrestrial plants and aquatic species by the risk they pose to the environment, economy, and society. The tool asks the user a series of questions relating to the biological characteristics of the species, its introduction potential, and its potential environmental, economic, and social impacts. Each question also has guidance on how to answer and rationale for why the question is important. The user selects an answer from a drop-down menu; each answer corresponds to a numerical score that is used in the risk calculation. For each question, a user can also identify their level of confidence in the answer they provided; this allows for the identification of weak points or gaps in knowledge.

The relative simplicity of the tool allows a decision on response to an invasive species to proceed without waiting for a detailed risk assessment; many of which take a year or more to complete. It also allows the tool to be used by a broader suite of interests, from invasive species experts to rural municipality staff to homeowners. And, the integrated nature of the tool allows an assessment of the overall risk posed by a species and an assessment of the potential risk to different land uses (e.g., agriculture versus protected areas).

To date, the prototype tool has been built and circulated for comment. In early 2007, we assembled a panel of experts to provide some comment and direction for revision of the tool. All agreed that the prototype tool was an excellent foundation for what will be a unique invasive species risk assessment tool. The tool is presently being revised to incorporate the input provided by the expert panel. The intent is to complete these revisions by late 2007.

- 2. Initial scoping of an Alberta Invasive Alien Species Risk Management Framework.**

We are currently working on the development of an IAS management framework for Alberta. Once complete and implemented, the framework will:

- Promote partnerships with municipal and federal governments, and key stakeholders;
- Enable proactive & cost-effective use of existing resources;
- Improve policy and program alignment;
- Minimize the environmental, social and economic impacts of IAS; and
- Enhance understanding & awareness of IAS and their impacts

## Member Updates for the Western Regional Panel Meeting, Hawaii, September 11-13, 2007

- 3. Continued operation of the Alberta Inter-departmental Invasive Alien Species Working Group.** The working group currently consists of representatives from the ministries of Agriculture & Food; Tourism, Parks, Recreation & Culture; Environment; Sustainable Resource Development; and Infrastructure & Transportation. The mandate of the working group is to coordinate, align & consolidate legislation, policies, programs, communications, and partnerships related to IAS; and to provide recommendations on the implementation of Canadian National Strategy and its associated action plans.

---

### **Organization: Manitoba Water Stewardship**

Wendy Ralley, Water Quality Specialist  
Suite 160, 123 Main St.  
Winnipeg, Manitoba, R3C 1A5  
Email address: wendy.ralley@gov.mb.ca  
Phone: 204-945-8146  
Fax: 204-948-2357

### **ANS activities for the past year:**

- 1. Public Education:** Manitoba continues its efforts towards educating the public against further introductions of AIS into the province. Activities include: Zebra Mussel and AIS Inspection Program; development of brochures, fact sheets, give-aways, displays, road signage etc; provide informational packages to fish derby organizers; work with commercial fishers and bait fishers.
- 2. Monitoring:** While monitoring for AIS during the late open water season in 2006 indicated no new species were found, during the spring and summer of 2007, 2 new species were discovered:
  - a. Asian Tapeworm was from Emerald Shiners (collected in 2006) taken from the Red River as part of an overall monitoring program for fish parasites. Studies are currently focusing on the distribution of the parasite in Lake Winnipeg in emerald shiners since it is the most common cyprinid in the lake, plays an important role in the transmission of the parasites, and is a major source of food for other fish.
  - b. In late July 2007, rusty crayfish were found in Falcon Lake, a popular lake in one of our provincial parks. It is estimated that they have been in the lake for approximately 4 to 5 years. An intensive survey of the lake and surrounding waterbodies was conducted to find the extent of dispersion, but no other lakes were found to have rusties. It was expected that rusty crayfish would enter the province via the Winnipeg River which drains Lake of the Woods in Ontario, where rusties have been established since the early 1960s.
  - c. Manitoba and the Department of Fisheries and Oceans will conduct extensive sampling of the Winnipeg River in 2007/2008 for rusty crayfish, black algae (*Lygnbya wollei*), and spiny water flea (which is expected to enter Manitoba waters within the next 2 years).
- 3. Policy Development:** It is anticipate that the Manitoba Fisheries Regulation under the federal Fisheries Act will be amended this year to include an extensive list of prohibited fish species. While this amendment has been in the works for 3 years, it is expected to become law this fiscal year.

**Member Updates for the Western Regional Panel Meeting,  
Hawaii, September 11-13, 2007**

In anticipation of the rusty crayfish into Manitoba waters via the Winnipeg River, the provincial government placed a total ban on possession limits for crayfish in an effort to reduce the risk of unintentional transfer. It is now illegal to possess crayfish in Manitoba without a permit.

Manitoba has formed the Invasive Species Council of Manitoba, and while there are many agencies representing 'weeds' and other terrestrial plants, we are please to be invited on this Council. The Council will be a good springboard for public education access, and grant proposals.

The province continues to buy back numerous bait blocks from commercial bait fishers in an effort to reduce the risk of introducing rainbow smelt into other waterbodies in Manitoba.