

# Member Update Reports for the Western Regional Panel Meeting

September 11-13, 2013

Portland, OR

## FEDERAL MEMBER REPORTS

**Name: Linda Shaw**

**Organization: National Marine Fisheries Service**

Title: Habitat Biologist

Mailing address: PO Box 21668

City: Juneau

State: AK

Zip: 99801

Email address: linda.shaw@noaa.gov

Phone: 907-586-7510 Fax: 907-586-7358

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Continued State-wide Coordination Calls
2. National Fish and Wildlife Foundation partnered Grant on Didemnum vexillum/impacts
3. Working on marine invasive BMPs and Arctic oil and gas activities
4. Continuing to support green crab and tunicate monitoring
5. Smithsonian Environmental Research Center to hold marine invasive bioblitz in Ketchikan in late September

**Name: Cynthia Tait**

**Organization: U.S. Forest Service**

Title: Regional Aquatic Ecologist

Mailing address: 324 25<sup>th</sup> St

City: Ogden

State: UT

Zip: 84401

Email address: ctait@fs.fed.us

Phone: 801-625-5358

Fax: 801-625-5756

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

### **REGION 1** (Montana, n Idaho, North Dakota)

- Flathead NF collaborated with Crown of Continent partners on AIS spiral-bound outreach material: "Aquatic Invasive Species Threatening the Crown of the Continent." In addition, USA and Canada are collaborating on AIS issues; a multi-partner COC invasive species workshop was held last February in Kalispell.
- We continue to contribute funding via the SW Crown of the Continent to assist Montana Fish Wildlife and Parks with rotating boat inspection stations near and on Forests.
- Flathead NF continued to work with FWS on non-native lake trout eradication to reduce effects on resident bull trout populations in Swan Lake.
- Bitterroot NF and Montana FWP cooperated on a roving boat washing station in the Bitterroot Valley of w. Montana.

### **REGION 2** (Colorado, w Wyoming, SD, NE, KS)

The Region transfers funds through an agreement to Colorado Parks and Wildlife for boat inspections and decontaminations on Forest Service waterbodies. The CPW has begun contracting private firms instead of hiring temporary employees; this has proven successful, increasing efficiencies for both agencies and supporting local companies. However, a 25% decrease in funding has limited FS efforts on other AIS, including New Zealand mud snails, didymo, and bullfrogs.

### **REGION 3 (AZ, NM)**

- Tonto National Forest has engaged with Arizona Game and Fish Department's invasive species team and hosted a forest-wide training in January 2013. They also hosted a multiagency boat inspection event at Bartlett Lake in June 2013.
- The Tonto National Forest is instituting AIS language into their Marina Operating Plans for concessionaires.

### **REGION 4 (UT, NV, s. ID, w. WY)**

- The Regional Office awarded new funding (\$300,000) for the next three years for AIS inspection and outreach seasonals and AIS monitoring, through partnerships with Utah Department of Wildlife Resources, Idaho Department of Agriculture, and Wyoming Department of Game & Fish. Local Forests have contributed to signage, AIS surveys, seasonal AIS Outreach specialists, program management, and training.
- *Fire guidance and protocols*: The RO provides AIS preventative guidance on the Region 4 website, including regional distribution data (as spatial data accessible for download) for ~ 10 aquatic invasive species for the 2013 field season.

[http://www.fs.usda.gov/detail/r4/landmanagement/resourcemanagement/?cid=fsbdev3\\_016101](http://www.fs.usda.gov/detail/r4/landmanagement/resourcemanagement/?cid=fsbdev3_016101)

- The National Wildfire Coordinating Group is developing interagency protocols for preventing inadvertent spread of AIS by fire operations. The guidebook will be national, not regional, in scope and should provide consistency across agencies as well as sound science. ETA = Spring 2014.

### **REGION 5 (California & Hawaii)**

- Mendocino NF treated reed canary grass at Howard Lake to improve habitat for trout and other aquatic species which are losing pool volume to ingrowth of invasive plants.
- Yuba River Ranger District partnered with the Sierra County Firesafe and Watershed Council to expand AIS public awareness, including handouts, posting additional signage, and personal boater contact, at several reservoirs and main access roads to the Lakes Basin.
- Within the process of re-licensing hydroelectric projects (FERC), the FS and other resource agencies are mandating inclusion of AIS prevention and monitoring protocols. These methodologies will be required for the life of the license, likely 30 years. Licensees will use the monitoring protocols on surveys of surface waters, veligers, and artificial substrates.

#### Lake Tahoe Basin Management Unit:

- Basin-wide American bullfrog breeding location assessment (13 sites surveyed, 6 breeding locations determined).
- Eurasian water milfoil assessment in Taylor and Tallac Creeks and wetlands.
- Eurasian water milfoil removal at the mouths of Taylor and Tallac Creek.
- Outreach:
  - ~150 5<sup>th</sup> graders participated in a long-term project to monitor effects of removing or controlling bullfrogs.

- Native species festival – outreach on invasive species and a demonstration in Taylor Creek of diver-assisted hand pulling removal procedures.
- Along with several partners, removed invasive brook, rainbow, and hybrid trout from the headwaters of Upper Truckee River for Lahontan Cutthroat Trout recovery.

**REGION 6 (Oregon & Washington)**

- Reviewed available AIS public outreach material for PNW Forests and recommended best for audiences of different ages.
- Inserted AIS management language into our Regional Fire Equipment Contracts requiring contractors to come to fires with clean equipment and authorizing inspection.
- We identified water sources infested with AIS so that fire and road managers could avoid them.
- Developed FS Law Enforcement Officer support for AIS issues that will lead to a PNW Region AIS Order, helping with the states’ AIS outreach on FS lands.

**REGION 10 (Alaska— Chugach National Forest)**

- *Reed Canary Grass treatments:* Two patches of reed canary grass at a 1 acre pond, which provides overwintering habitat for juvenile coho salmon, were sprayed with a mixture of Aquamaster and Activator 90 (a surfactant). Three other sites were sprayed, mowed, and/or tarped. Sites will be monitored and, if needed, additional treatments will be applied.
- *Elodea surveys:* Fish crew identified and surveyed lakes that were frequented by float plane traffic connecting to Eyak Lake, a source of elodea. Elodea was found at several other lake sites. In FY12-13 we started educating float plane pilots (by personal contact as well as fliers posted at float plane docks and businesses) about elodea and how it spreads. In addition, elodea fliers aimed at boaters were placed at all boat launches.

**TRIBAL MEMBER REPORTS**

**Name: Blaine L. Parker**

**Organization: Columbia River Inter-Tribal Fish Commission**

Title: Invasive Species Coordinator

Mailing address: 700 NE Multnomah Street, Suite 1200

City: Portland

State: Oregon

Zip: 97232

Email address: parb@critfc.org

Phone: 503-238-0667 Fax: 503-235-4228

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Conducted ANS survey for invasive crayfish species in the lower John Day River, Oregon August 2013
2. Invasive Species Outreach presentation at the White Salmon Riverfest & Symposium July 2013
3. Participated in the Oregon’s Rapid Response Exercise at Prineville Reservoir, Oregon April 2013
4. Attended and participated in the CRB ANS meetings in October 2012 and February 2013
5. Maintained communications with tribal staff and Commissioners regarding ANS concerns in the Columbia River Basin.

**STATE MEMBER REPORTS**

**Name: Tammy Davis**

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

Title: Invasive Species Program Lead

Mailing address: P.O. Box 115526

City: Juneau

State: AK

Zip: 99801

Email address: tammy.davis@alaska.gov

Phone: 907-465-6183 Fax: 907-365-2772

Website: <http://www.adfg.alaska.gov/index.cfm?adfg=invasive.main>

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Control and eradication of northern pike in Southcentral waters, investigate methods for assessing eradication success with eDNA.

Control and eradication of northern pike continues to be a primary focus of the Alaska Department of Fish and Game (ADF&G) invasive species program. In partnership with U.S. Fish and Wildlife Service, local governments, and local stakeholders, ADF&G has ramped up its treatment of lakes with nonnative northern pike, increased outreach to the public, and continued to work toward understanding control options for populations of northern pike in a large, complex river system.

In early September 2012, ADF&G was able to scale up our experience with rotenone applications for a treatment of Stormy Lake, on the Kenai Peninsula. In the past, Stormy Lake provided suitable habitat for Arctic char, rainbow trout, coho salmon, and stickleback populations. Previously productive sport fisheries were affected when northern pike became established in Stormy Lake. The Swanson River connects Stormy Lake to Cook Inlet. Demonstrating a level of salinity tolerance, northern pike have been harvested by gillnets in Cook Inlet. Monitoring is ongoing, at this point; no northern pike have been detected in Stormy Lake. Arctic char that are genetically distinct to Stormy Lake were collected, and juveniles were raised in a hatchery in order to reestablish native fish populations to the lake. It is expected that fish from the Swanson River will recolonize the lake as well.

Continued efforts to inform the public about northern pike impacts include hosting public meetings in areas where ADF&G plans for rotenone applications and outreach efforts. Public meetings have proven to be a good way to get public buy-in to use of chemicals to eradicate invasive fish. New signs have been posted at Stormy Lake and several other water bodies on the Kenai Peninsula to inform the public of the work that has been done to re-establish native fish populations and requesting their help to keep northern pike out. ADF&G's Salmon in the Classroom includes northern pike educational materials in the curriculum for teaching students about Pacific salmon.

In May 2011, annual control-netting began in Alexander Creek, a tributary of the Susitna River, where northern pike have nearly eliminated native fish populations. Control netting is done during the northern pike spawning period and last year over 3,000 fish were removed.

ADF&G has been working with USGS staff to employ eDNA technology to improve detection of northern pike where they are not native. USGS has developed mitochondrial DNA markers for northern pike and co-occurring species from water bodies of the Kenai Peninsula. Field tests will be employed this fall. Identifying the sensitivity limits of eDNA testing will help assess if this technology can be applied to detect pike when in low abundance. The objective is to use eDNA to monitor for northern pike- as a tool to assess eradication efforts and as a means to increase the number of lakes that can be screened annually with a reduction of mortality to non-target species.

2. Respond to *Didemnum vexillum* in Alaska waters near Sitka.

ADF&G was allocated funds from the Alaska legislature to attempt to eradicate the invasive tunicate *Didemnum vexillum* from Alaska waters. ADF&G worked with a rapid response team made up of federal, state, university and stakeholder groups from the point of detection of the tunicate in 2010 through 2012 when dive surveys were completed, and eradication planning started. In August 2012, a second dive survey of Whiting Harbor was completed to giving the department a more developed understanding of the *D. vexillum* distribution.

In the spring of 2013 buoys were deployed in Whiting Harbor to request boaters to avoid the area because of the presence of an invasive species and a request for proposals (RFP) was issued. The RFP garnered zero proposals. Presently, the department is looking at various alternatives to address the *D. vexillum* population.

3. Collaborate with agencies and organizations statewide to increase education and outreach, communicate monitoring efforts, and encourage control and eradication of *Elodea* spp. in freshwaters of the state.

In the fall of 2010 *Elodea nuttallii* was detected in Chena Slough near Fairbanks. In 2011, *Elodea* spp. was found in several water bodies in the Anchorage area. Next, *Elodea* spp. was found in 2012 during the Stormy Lake rotenone treatment (discussed above). To date, a total of sixteen water bodies have varying levels of infestation of *Elodea canadensis*, *Elodea nuttallii*, and in some locations a hybrid is dominant. The Alaska Department of Natural Resources has the lead on freshwater invasive plants with ADF&G providing assistance in response planning, and outreach. The department has been working with a contractor to develop signs to inform the public on ways to reduce the potential of introducing aquatic invasive species (ANS). Signs will be in line with the Stop Aquatic Hitchhikers signs and include common messaging and graphics as employed by Western Regional Panel (WRP) partners. Water bodies infested with invasive species will be posted; some high use water bodies will receive kiosks to provide broader information about ANS and more detailed information about the specific invasive species present.

4. Collaborate with regional and statewide efforts to improve and standardize efforts on outreach and monitoring for aquatic invasive species through existing consortiums.

In addition to the WRP, the department has been working with the Pacific NorthWest Economic Region invasive species committee, the Alaska Invasive Species Working Group, and Western States Invasive Species Coordinators toward standardizing messaging, and methods for detection and monitoring for invasive species. The efforts of regional partner agencies have been effective means to increase awareness and improve planning in Alaska.

5. Increase awareness about invasive species threats to Alaska through outreach and education.

With the cooperation and efforts of state, federal, local governmental and local stakeholder agencies and organizations the Alaska public has more exposure to information about invasive species in the last year than in previous years. As the public becomes more knowledgeable and conversant about invasive species in general, we are experiencing an increase in reportage of invasive species. When ANS reports are received, ADF&G either responds in order to validate the report, or forwards the report on to the proper agency for response.

With continuing limitations on resources to the invasive species program, there is increased reliance on ADF&G Sport Fisheries Division staff to investigate reports, monitor after detection has been confirmed, and disseminate information to the public in their area. In 2012 and the spring/summer of 2013 ADF&G staff monitored for crayfish on Kodiak Island, investigated reports of goldfish,

snakeheads, red-eared slider turtles, Pacific chorus frogs, and Atlantic salmon and countless calls about terrestrial and aquatic weeds.

**Legislation: HB 89: An Act relating to the rapid response to, and control of, aquatic invasive species and establishing the aquatic invasive species response fund. This bill will need to pass through the 2014 legislative session in order to become law.**

- The bill mandates state agency cooperation establishing rapid response and management plans to address incipient populations of AIS.
- Provided approval when consistent with state laws, to apply chemical, biological, mechanical or physical methods to control or eradicate AIS.
- Allowed ADF&G to apply for suspension of or emergency, quarantine, public health, crisis, or other exemptions to applicable environmental laws and regulations.
- AIS control and eradication would be given priority over other activities regulated by ADF&G in areas where an incipient population of AIS was targeted.
- All state agencies will cooperate to control or eradicate the occurrence of AIS.
- The state would be held harmless should private property be affected by AIS.
  - The state will consider affects to private property when planning.
- An AIS response fund would be established in the general fund with appropriations to pay for response to AIS as identified in the bill. Appropriations could not be lapsed.

**Name: Tom McMahon**

**Organization: Arizona Game and Fish Department**

Title: Invasive Species Program Coordinator

Mailing address: 5000 W Carefree Hwy

City: Phoenix

State: Arizona

Zip: 85086

Email address: tcmahon@azgfd.gov

Phone: 623-236-7271

Fax: 623-236-7366

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Continued our “Don’t Move a Mussel-Now It’s the Law” outreach campaign by replacing existing boat ramp signage with a new and improved design to help boaters understand the clean, drain and dry message. We also continued advertising on the radio and on billboards our DMAM message along the lower Colorado River market and in the N. Phoenix metro area along interstate 17.
2. Along with the cooperation from the Lake Havasu Marine Association, we have added an informational sticker with information and instructions on how to properly clean, drain and dry recreational watercraft and equipment leaving the Lake Havasu area. The sticker is free and is designed to fit the tongue of a boat trailer.
3. Increased our “Pull the Plug” law outreach efforts by printing cards which reminds boaters to pull their boats plug when leaving the vicinity of an infested water. In addition to the cards, our AIS program held a total of 4 weekend outreach events (2 at Lake Pleasant and 2 at Lake Havasu) to remind boaters about the current law and their responsibilities. The first weekend consisted of just

the AIS program staff talking to boaters, then two weeks later the AIS program staff, along with uniformed AGFD law enforcement officers, talked to boaters about the “Pull the Plug” law.

4. On February 5, 2013 we held our first AIS Training Workshop in Lake Havasu City. The announcement for the workshop went out to all marinas, boat dealerships, boat repair/detail shops and other businesses who dealt with the boating public. In addition, in 2012/13, the AIS Program supported and taught three (3) Watercraft Inspection Training-Level II (WIT II) classes at Pleasant and Havasu.
5. On June 21, 2013, along with the Cave Creek Forest Service office (Tonto Forest) at Bartlett Lake (not a quagga mussel infested lake), we held the first Decontamination/Inspection Day. We only talked with nine boaters entering the lake, but will schedule further Decon/ Inspection days events in the future.

**Name: Martha Volkoff**

**Organization: California Department of Fish and Wildlife**

Title: Senior Environmental Scientist

Mailing address: 1416 9<sup>th</sup> Street, Suite 1260

City: Sacramento

State: CA

Zip: 95814

Email address: Martha.Volkoff@wildlife.ca.gov

Phone: (916) 651-8658

Fax: (916) 653-2588

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Revise state management plan. Efforts are underway to identify plan actions that have been completed by a variety of agencies and stakeholders and solicit input from agencies and stakeholders about what actions should be included in the upcoming revision.
2. Creating of a statewide Quagga and Zebra Mussel Infestation Prevention Program funded by an additional fee collected alongside vessel registrations. The Program was created by legislation, which institutes a fee on registered watercraft and establishes a grant program. Funds collected will be dispersed to agencies to implement prevention programs. Emergency regulations are in development, and the fee will begin to be collected in December 2013. The full legislation text is available at [http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab\\_2401-2450/ab\\_2443\\_bill\\_20120923\\_chaptered.html](http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_2401-2450/ab_2443_bill_20120923_chaptered.html)
3. Water agency summit. California Department of Fish and Wildlife staff hosted a meeting of representatives from the state, local, and federal agencies for the purpose of sharing information and tools necessary to prepare and implement quagga and zebra mussel prevention programs at their local waters and to encourage collaboration between agency staff.
4. Sport Fish Restoration Act funded research to assess the risk boaters and anglers pose for spreading quagga mussels from infested reservoirs. The study had three components: 1) boater/angler use of waterbodies and boat/equipment cleaning habits; 2) laboratory experiments on the ability of quagga veligers to survive in small volumes of water and moist conditions; 3) an evaluation of whether ambient air temperatures and relative humidity are equal to temperatures and relative humidity inside of enclosed spaces in watercraft.

5. The State of California Ocean Protection Council (<http://www.opc.ca.gov/about/>) funded the California Ocean Science Trust (<http://calost.org/about/>) to produce 6 aquatic invasive species vector risk assessments and a summary report. Vectors examined include live saltwater bait, live marine seafood, commercial fishing vessels, recreational vessels, marine aquaculture, and the marine ornamental/aquarium trade. More information about the project and the reports are available at <http://calost.org/science-initiatives/?page=aquatic-invasive-species>.

**Name: Elizabeth Brown**

**Organization: Colorado Parks and Wildlife**

Title: Invasive Species Coordinator

Mailing address: 6060 Broadway

City: Denver

State: CO

Zip: 80020

Email address: Elizabeth.Brown@state.co.us

Phone: 303-291-7362

Fax: 303-291-7104

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Watercraft Inspection and Decontamination (WID) – Colorado’s aggressive mandatory boat inspection, decontamination and education program entered its 6th year in 2013. CO is on course for approximately 400,000 inspections this year and anticipating reaching over 2.2M educational contacts for ANS!

Zebra and Quagga Mussel boat interceptions are up this year with 14 to date (64 total since 2009). Two boats with false dark mussels were also intercepted in 2013.

Standing water decontaminations are way up due to changes in protocol that require decontaminations for watercraft that are undocumented (no seal and receipt) and have un-drainable features (e.g. ballast, I/O or inboard engines).

Electronic data collectors have been deployed to WIDS with more than 3,000 inspections per year and all containment sites. [www.ansutility.com](http://www.ansutility.com)

2. Updated WID Procedures and Training Curriculum – A working group consisting of experienced watercraft inspection and decontamination specialists from state, federal and local governments and private industry combined the State Parks and Wildlife ANS protocols into a single training curriculum with a trainer’s manual. The following publications were included in the updated WID Procedures Training Curriculum:

- Colorado Watercraft Inspection Handbook: Official WID Procedures. February 2009.
- Colorado ANS Watercraft Decontamination Manual. 2011.
- Colorado Boat Compendium for ANS Inspectors. 2012.

- WID Procedures Containment Manual for Waters Positive for ANS. 2012.
- Colorado ANS Pocket Guide, 2nd Edition. 2012.

The updated WID Training Curriculum has six modules; (1) introduction and Overview of State ANS Program, (2) ZQM Biology, (3) Other ANS Biology, (4) Watercraft 101, (5) Inspection, (6) Decontamination. Each module consists of a powerpoint presentation that follows along the text book, a practice or hands-on session and review.

CPW is in the process of converting the files into online e-learning modules for the 2014 season. Specialized e-learning modules are newly being developed to teach advanced mussel biology, law enforcement and biologist's disinfection protocols.

The updated curriculum and e-learning modules will be made available to other states or entities to use or adapt for their WID Programs.

3. Sampling and Monitoring – Due to budget reductions, two sampling crews were eliminated this year - the population mapping and hatchery crews. We have managed to maintain the work focused on zebra and quagga mussel early detection in lakes and reservoirs.

CPW completed the online sampling database which has been in development for several years. It is now fully functional and working. Additional reports do need to be created.

4. Risk Assessment Update - The former Colorado Division of Wildlife's Aquatic Staff created a risk assessment in 2008 which ranked lakes and reservoirs with public boating recreation for risk of a zebra mussel introduction. This risk assessment is the foundational element in which statewide priorities are set for resource allocations in relation to sampling and monitoring, and watercraft inspection and decontamination (WID). It is being updated at this time:

- We now have a complete set of statewide inspection data which includes boater demographics that will allow us to rank reservoirs for risk of an introduction based on both out of state use, and in-state boaters using positive or suspect waters in Colorado.
- The CPW ANS Sampling and Monitoring Technicians have been collecting water quality data, which is being analyzed by water quality experts at the Colorado Division of Public Health and the Environment. This will provide us with a complete set of data for habitat suitability analysis to determine the risk of establishment.
- Coupling the reservoirs risk of introduction with risk of establishment will provide an updated overall ZQM risk for each reservoir.

CPW is a data-driven agency with respect to decision making. An updated risk assessment is needed in order to re-evaluate allocations as a fully merged ANS Program, and to make decisions regarding resource allocations in 2014 and beyond.

The final product is expected to include a short 3-5 page report, a spreadsheet or list of water bodies with both the original and new risk ranking. An appendix will be included that contains a water quality profile page for every lake and reservoir CPW monitors, and a WIDS profile page for every Authorized Location in Colorado (not just CPW sites). The appendices will also include a series of relative maps.

5. Merger and Budget – Colorado Division of Wildlife and Colorado State Parks were merged into a single agency now known as the Colorado Parks and Wildlife on July 1, 2011. The ANS Program has been fully merged and is now functioning as a single unit within the Aquatic Section.

There is currently a 25% cut to ANS (\$1M) being proposed as part of a larger \$10M reduction in agency expenditures. This proposal is being heard by the Parks and Wildlife Commission the same week as the WRP meeting in Portland. A final plan is expected to be made final in November 2013.

**Name: Lloyd Knight**

**Organization: Idaho State Department of Agriculture**

Title: Administrator, Division of Plant Industries

Mailing address:

City: Boise

State: Idaho

Zip:

Email address: lloyd.knight@agri.idaho.gov

Phone: 208/332-8664

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Approximately 40,000 watercraft inspections from 15 stations on routes entering the state.
2. 600 veliger samples taken from waterbodies across the state; 200+ substrate samples

**Name: Jessica Howell**

**Organization: Kansas Department of Wildlife, Parks, and Tourism**

Title: ANS Coordinator

Mailing address: 1830 Merchant St.

City: Emporia

State: Kansas

Zip: 66801

Email address: jessica.howell@ksoutdoors.com

Phone: (620) 342-0658

Fax: (620) 342-6248

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

**1. Commercial bait program**

We continue to monitor Kansas all bait shops for prohibited species, unsecure water sources, and diseases. New regulations also require that all purchased bait must be accompanied by a detailed receipt.

**2. On-going zebra mussel detection and monitoring**

We continue to monitor (Portland samplers and/or plankton tows) all department waters for the presence of zebra mussels.

**3. Support research**

We are supporting multiple research projects on aquatic nuisance species. One project focuses on the effectiveness of current treatments for killing zebra mussel veligers that may be present during fish transportation. Another project is assessing which early detection method (eDNA, plankton tows, Portland samplers, etc.) is most effective in a suspected zebra mussel water. Our third project

is trying to determine food habits of white perch and large predatory fish in reservoirs with white perch. There is also research focusing on refining eDNA as an early detection method for Asian carp.

#### **4. Launch a new ANS outreach campaign**

We implemented a new outreach campaign that was developed last year. It includes a zebra mussel watch card, an informational brochure about ANS that explains “Clean, Drain, Dry,” and several items to hand out with either a “Don’t Dump Bait” logo or the Stop Aquatic Hitchhikers logo. A media kit was produced to inform the public and press and includes two radio ads, a video PSA, a bait fish regulation article, and a logo. The media kit was distributed to media outlets and is available for download on our website at [www.protectKSwaters.org](http://www.protectKSwaters.org).

#### **5. Expand outreach efforts**

We continued to disseminate ANS information using a variety of media outlets, including a large section in fishing regulations dedicated to ANS, newspaper articles, internet ads, radio ads, gas tank toppers, zebra mussel infested propeller cases on display at various offices, etc. ANS literature and displays were distributed to Kansas marinas, all KDWP offices, state parks, and nature centers. We also distributed ANS literature to Kansas boaters and bait shops. All informational signage at ANS Designated Waters was updated with more visually captivating signs while awareness signs at all KS lakes were maintained. This year an outreach crew was hired to conduct 100th Meridian boater surveys at 32 KS waters multiple times throughout the summer.

**Name:** Allison Begley

**Organization:** Montana Fish, Wildlife & Parks

**Mailing address:** 1420 E 6<sup>th</sup> Avenue, PO Box 200701

**City:** Helena

**State:** MT

**Zip:** 59620

**Email address:** [abegley@mt.gov](mailto:abegley@mt.gov)

**Phone:** (406) 444-1267 **Fax:** (406) 444-4952

**2013 LEGISLATURE:** HB586 revised the AIS Act establishing a statewide management area, adding the Department of Transportation to the active departments, defined equipment that could be inspected in addition to vessels, and provided \$1.58 million to FWP and Natural Resources & Conservation for the prevention and control of AIS in Montana. The Governor’s Office also released their Blueprint for AIS in Montana, which included consolidating the authority for all AIS to FWP, including aquatic plants to FWP from Agriculture.

**WATERCRAFT INSPECTIONS:** FWP has established 20 inspection crews: 8 highway stations on the border, 4 internal highway inspection stations, and 8 crews that operate at boat ramps on popular waterbodies. As of July 16 watercraft inspection crews have inspected a total of 24,000 boats. Inspectors have intercepted 11 Dreissenid mussel-infested boats. Other AIS that have been found include cases of Eurasian watermilfoil (EWM), illegal bait, illegal live fish, and numerous cases of non-EWM aquatic vegetation and standing water. All in all, inspectors have found over 350 violations so far.

**FWP EARLY DETECTION AND MONITORING:** Waterbodies surveyed in Montana are prioritized based on: previous years’ work, angler/boater pressure, water quality data, risk of introduction, etc. AIS early detection and monitoring includes: invertebrate and macrophyte sampling, and plankton sampling for

veligers (samples processed at the FWP lab in Helena). Priority locations for sampling include the 10 state, 3 federal, and 12 private hatcheries. Sampling is ongoing for 2013, and will also include lake surveys for aquatic plants.

**DREISSENIID VELIGER LAB:** Montana's lab is processing the majority of plankton samples for the Missouri River Basin. In 2012 this included almost 800 samples processed for 7 states. Similar numbers are expected for 2013. More than 200 samples have already been received.

**BAIT:** Montana FWP is currently reviewing bait practices and regulations. There is a concern that current bait practices may increase the risk of importation of invasive species and/or pathogens into the State or increase the spread within the state, in addition to potentially impacting native minnow populations.

**Name: James Dominguez**

**Organization: New Mexico Dept. Game and Fish**

Title: AIS Coordinator

Mailing address: 1 Wildlife Way

City: Santa Fe State: NM

Zip: 87507

Email address: james.dominguez@state.nm.us

Phone: 505-476-8163

Fax: 505-476-8131

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Hired a full time AIS coordinator (Feb 2013). Previous AIS Coordinators for NMDGF were working on AIS activities on a part-time basis.
2. Hired 4 (1/4 time) seasonal positions to conduct Watercraft inspections. 2 individuals were placed at Navajo Reservoir and 2 individuals were placed at Ute Lake. These two waterbodies were selected based on their proximity to infested waters, the number of visitors to the park and the fact that these two waterbodies have been least affected by drought. Since June 8, 2013:

**Navajo Reservoir:**

Approximately 4,300 inspections

No watercraft found with adult Zebra or Quagga Mussels

Approximately 40 hot water decontaminations (standing water from high risk waters)

Education materials distributed to watercraft owners

**Ute Lake:**

Approximately 3,000 inspections

1 watercraft found with dead adult Zebra mussels (owner notified NMDGF)

Approximately 30 hot water decontaminations (standing water from high risk waters)

Education materials distributed to watercraft owners.

**Other waterbodies:**

Additional watercraft inspections at Elephant Butte Reservoir, Caballo Reservoir, Heron Reservoir, Eagle Nest Lake, Lake Roberts, and Brantley Reservoir during holiday weekends and randomly selected days to determine boater use and risk associated with Aquatic Invasive species introduction. US Army Corps of Engineers is also conducting watercraft inspections at several NM waterbodies. 1 hot water decontamination has taken place.

3. Monthly early detection monitoring on various NM waterbodies for veligers using vertical plankton tow methods and deployment of substrate samplers for adult ZM/QM. All results thus far have come back negative for ZM/QM (April thru September).
4. Development of an Incident Rapid Response Plan for Dreissenid Mussels (Draft)
5. James Dominguez and Matt Peralta attended the Pacific States Marine Level II WIT for Zebra and Quagga mussels and have certified 10 additional NMDGF employees as Level I WIT.

**Name: Fred Ryckman**

**Organization: ND Game and Fish Department**

Title: ANS Coordinator

Mailing address: 406 Dakota Avenue

City: Riverdale

State: ND

Zip: 58565

Email address: fryckman@nd.gov

Phone: 701.770.0920

Fax: 701.654.7503

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. An ANS status review and impacts report was compiled and is available as a fisheries division report. Overall, with the exception of common carp, few infestations and minimal ANS impacts to date in ND. This report is available upon request.
2. Initiated a statewide inventory and assessment of crayfish, in part to determine whether rusty crayfish are present in ND. Their presence has been suggested but never confirmed. a report compiling the results of this effort should be completed by early 2014.
3. Initiated a fairly extensive information/education effort through a consortium of private support groups. This multi-media effort included magazine print ads, newspaper press releases, and TV and radio advertisements across the entire state, outdoor advertisements at gas stations and bait shops, and billboards at select sites on major highways entering eastern ND.
4. A review and update of the official ND ANS list was completed. This effort resulted in the addition of a single species to the list (didymo). Another species which may be added to the list for 2014 is faucet snail, which has recently been listed in MN due to impacts it has caused - particularly to some species of waterfowl.
5. The contents of the ANS tab on the NDG&F website was revised and updated, as part of an overall NDG&F website upgrade. The ANS tab will be periodically revised, as needed, in order to provide as much current and pertinent information as possible to those who use this site. The NDG&F ANS tab address can be accessed at: <http://gf.nd.gov/ans>

**Name: Rick Boatner**

**Organization: Oregon Dept. of Fish and Wildlife**

Title: Invasive Species, Wildlife Integrity Coordinator

Mailing address: 4034 Fairview Industrial Ave. SE

City: Salem

State: OR

Zip: 97302

Email address: rick.j.boater@state.or.us

Phone: (503) 947-6308

Fax: (503) 947-6339

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Expanded to five AIS watercraft inspection stations in the state. Inspection stations are located on our southern and eastern borders in Gold Beach, Ashland, Klamath Falls, Lakeview, and Ontario. Ashland inspection station opened in February all the other station opened as schedule. As of 8/8/13 inspection team conducted 4,309 inspections which include 147 decontaminations (13 hot wash).
2. As of 7/1/13 the program has moved from eight limited duration seasonal watercraft inspectors and two FTE to 12 permanent seasonal positions and two permanent FTE.
3. Improved working relationship with county law enforcement and now have law enforcement working on a more regular base at each of the check stations. Even with increase law enforcement presents for mandatory watercraft inspection, non-compliance rate is staying around 30%.
4. Conducted an "Oregon Dreissena Rapid Response Plan" table top exercise which was will attended by various state, federal and local agencies.

**Name: Mike Smith**

**Organization: South Dakota Department of Game, Fish & Parks (SDGFP)**

Title: AIS Coordinator

Mailing address: 20641 SD HWY 1806

City: Ft. Pierre

State: SD

Zip: 57532

Email address: mikejo.smith@state.sd.us

Phone: (605)223-7706

Fax: (605)223-7717

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Implementation of the SD Least Wanted campaign. In the spring SDGFP contracted with a marketing firm to develop and design a marketing strategy and outreach materials for AIS awareness. The campaign has been a huge success so far. Preliminary data shows nearly a 90% awareness rate among anglers surveyed in the annual AIS boater survey. ([www.sdleastwanted.com](http://www.sdleastwanted.com))

2. Purchase and use of a mobile boat decontamination unit. Through funds from the Missouri Basin 100<sup>th</sup> meridian team, South Dakota Walleyes Unlimited, and the SDBASS Federation, SDGFP was able to purchase a Landa ECOS 7000 portable decontamination unit. The unit allows for heated pressure washing of boats, as well as complete water containment, reclamation and filtration. This unit has been used at multiple clean boat events to educate boaters on proper decontamination procedures.
3. Continued revisions and additions to AIS regulations. Staff recommendations to the SDGFP Commission resulted in the addition of Western Mosquitofish, Purple Loosestrife, and Red-Rimmed Melania to the prohibited list. Additionally language was clarified to allow conservation officers to issue citations for any aquatic vegetation (AIS or native) found on a trailered watercraft.
4. Public Asian carp displays. Silver carp were successfully captured and held in aquaria through multi-day outreach events such as the SD Outdoor Expo and the State Fair. Large numbers of people were able to view the fish and staff had the opportunity for unique outreach with the fish on hand. Asian carp cleaning and cooking demonstrations were performed at the end of the events.
5. Youth participation events. Two AIS presentations were done at the Missouri River Watershed Education Festival in Yankton, SD. This event brings over 500 local middle-school students to the bank of the Missouri River for a day in the outdoor classroom. The first included general AIS information and a boat wash station that allowed the students to become boat inspectors/decontaminators. The second was an Asian carp station that gave them hands-on experience with Bighead and Silver carp. Staff were able to collect and keep large specimens of both species in touch tanks for easy access by the students. The carp station was by far the loudest and most popular of them all!

**Name: Earl Chilton**

**Organization: Texas Parks and Wildlife Department**

Title: Aquatic Invasive Species Program Director

Mailing address: 4200 Smith School Road

City: Austin

State: Texas

Zip: 78744

Email address: earl.chilton@tpwd.texas.gov

Phone: 512-413-5120

Fax: 512-389-4405

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Initiated a zebra mussel monitoring program in cooperation with University of Texas at Arlington and Dr. Robert McMahon.
2. Began a restoration project on the South Llano River that involved reduction of invasive plant species populations in and around the river. The first species targeted was elephant ear, which was virtually eliminated from an 8-10 miles stretch of the stream, including the source infestation. Chinaberry and *Arundo donax* are the next targeted species.

3. Spent over \$600,000.00 on control of various invasive aquatic and riparian plant species including giant salvinia, hydrilla, water hyacinth which were the three most problematic to date.
4. Began construction of two new giant salvinia weevil rearing facilities near Jasper Texas, and have plans for two smaller facilities to be built during fall 2013.
5. Annual budget was increased by \$750,000 per year to approximately \$1.3 million.

**Name: Jordan Nielson**

**Organization: Utah Division of Wildlife Resources**

Title: Aquatic Invasive Species Coordinator

Mailing address: 1594 W. North Temple, Ste. 2110, PO Box 146301

City: Salt Lake City

State: UT

Zip: 84114-6301

Email address: jordannielsen@utah.gov

Phone: 801-850-1221

Fax: 801-538-4709

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. **2013 Utah Aquatic Invasive Species (AIS) Program Summary:** Detailed information about the Utah Aquatic Invasive Species Plan and the ongoing program to combat the invasion of quagga and zebra mussels in Utah can be found at <http://wildlife.utah.gov/dwr/invasive-mussel-plan.html>.
2. During the 2013 Legislative session Utah Division of Wildlife Resources (UDWR) was funded with \$1.35 million to carry out a statewide AIS program in FY2013 (July 1, 2011 thru June 30, 2012). Additionally, funding partners and programs again provided substantial funds (\$575,015) to assist.
3. A cooperative agreement was made between Utah Division of Wildlife Resources and Utah Department of Transportation to stop all boats entering the State of Utah from the South on I-15 at the Port of Entry. To date, we have inspected 1,174 boats, of which two have been encrusted with mussels and several decontaminated with hot water. WE have also conducted law enforcement checkpoints to inspect boats for AIS at Big Water, UT, outside of Lake Powell, and at Bear Lake. No encrusted boats were encountered but hundreds of boaters were contacted and educated regarding AIS issues in Utah. Such checkpoints will continue throughout the Fall of 2013.
4. The 2013 boating season is still underway, but accomplishments are expected to be similar to 2012. The 2012 report can be found at <http://wildlife.utah.gov/dwr/learn-invasive-mussels.html>, under the topic of "AIS Summaries" for 2012. A short synopsis of the report follows:

During the 2012 boating season Utah Division of Wildlife Resources and its partner agencies intercepted 241,915 pre-launch boats at 41 different waters statewide. More than 6,095 of the boats needed decontamination due to their previous 30-day use history on *Dreissenid* affected waters. Forty-nine of the boats were found to be encrusted (one or more mussels) with live quagga or zebra mussels.

Ongoing early detection efforts in 2012 and up to now in 2013 showed no evidence of *Dreissenid* veligers in over 100 tested water bodies, including two waters (Red Fleet Reservoir and Electric Lake) where veligers were detected in 2008, and Sand Hollow Reservoir where a

single alive adult quagga mussel was detected in 2010. However, quagga mussel veligers were discovered in Lake Powell in late 2012 and adult mussels were discovered in March of 2013.

5. Work with other AIS species is ongoing. UDWR biologists are working on the possibility of using milfoil weevil for Eurasian watermilfoil control. The development of an eDNA assessment protocol for New Zealand Mudsail has shown success in the lab, and refinement to the process continues.

**Name: Beth Bear**

**Organization: Wyoming Game and Fish Dept.**

Title: Aquatic Invasive Species Coordinator

Mailing address: 528 S. Adams

City: Laramie

State: WY

Zip: 82070

Email address: Beth.Bear@wyo.gov

Phone: 307-399-6553

Fax: 307-745-8720

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

#### 1. Legislation

- Several species were added to the prohibited list of AIS which now includes: zebra and quagga mussels, New Zealand mudsnail, Asian clam, rusty crayfish, brook stickleback, Asian carp (bighead, silver, black), snakeheads, hydrilla, Eurasian watermilfoil, and curly pondweed.
- From March through November, any watercraft entering Wyoming must have an AIS inspection before it can launch in the state. This requirement also applies to water hauling trucks, fire fighting equipment, and any conveyance capable of transporting AIS.
- At all times of year if a watercraft has been in a zebra/quagga mussel water within 30 days, it must be inspected before launching in Wyoming.

#### 2. Outreach

- Outreach in 2013 has focused on educating boaters about new inspection requirements. Boaters have been notified through direct mailing, newspaper ads and articles, radio ads, website updates, and regulation booklets.
- New outreach for the 2013 year is a "Don't Let it Loose" aquarium/pet brochure which will be sent to all 4<sup>th</sup> graders in Wyoming in the fall.
- Since 2010, over 49,000 different boaters have been contacted during inspections and have received an AIS educational message.

#### 3. Watercraft Inspections

- In 2012, 38,705 inspections were conducted at 35 waters, eight regional offices, and two Port of Entries. A total of 251 high risk inspections were conducted and 104 resulted in decontamination. Four of those watercraft contained dead invasive mussels.
- In 2013 watercraft inspections shifted to 15 locations at Port of Entries and other border locations. From mid-April through July 31st, over 27,000 watercraft inspections have been conducted. Of these, 870 have resulted in a high risk inspection and 289 watercraft have been decontaminated. To date, 12 watercraft have been intercepted with attached mussels; on all but one watercraft the mussels were dead.

#### 4. Monitoring

- 63 waters were surveyed for aquatic invasive species during 2012.  
All samples were negative for larval zebra/quagga mussels.  
Curly pondweed was found in three locations.  
Asian clam were confirmed in one location.  
New Zealand mudsnails were confirmed in three locations.
- 2013 monitoring has begun with 65 waters planned for sampling this season.

5. More information can be found at [wgfd.wyo.gov/AIS](http://wgfd.wyo.gov/AIS).

### **CANADIAN MEMBER REPORTS**

**Name: Cindy Sawchuk**

**Organization: Government of Alberta / Crown Managers Partnership**

Title: Strategic Advisor

Mailing address: #210, 800 Railway Ave

City: Canmore

State: Alberta Zip: T1W1P1

Email address: [Cindy.Sawchuk@gov.ab.ca](mailto:Cindy.Sawchuk@gov.ab.ca)

Phone: 403 678 1879

Fax: 403 678 5505

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

Alberta implemented a new aquatic invasive species (AIS) prevention program in 2013, modeling after the other successful programs in the Pacific North West states and provinces. This first season is considered a prototype, focusing on SW Alberta, where lessons learned from it may be applied to create a broader AIS strategy for the entire province, and for the Crown of the Continent Ecosystem. The 5 program areas implemented were based on recommendations from a multi-stakeholder risk analysis completed in September 2012 and are as follows:

1. Alberta has adopted the message Clean Drain Dry. Communications and outreach materials were produced and distributed, as well as signage at provincial park boat launches. Training sessions for AIS and watercraft inspections took place across the province this summer, with over 200 participants from Government, municipalities, watershed groups, First Nations and Irrigation Districts becoming certified in Level 1 WIT.
2. A watercraft inspection program commenced in June 2013 targeting boaters arriving into Canada near two international borders on Highways 2 and 4, and on one border between British Columbia and Alberta on Highway 3. Boat launch inspections also took place in several provincial parks in SW Alberta on long weekends. As of end of August, approximately 400 watercraft were inspected in this pilot, and the program will be adjusted for the 2014 boating season. This was funded by the Government of Alberta and Blood Tribe First Nations. Boaters were surveyed, and asked to commit to Clean Drain Dry behaviour. All inspections were voluntary.
3. 1-855-336-BOAT (2628) was activated as an aquatic invasive species hotline in Alberta. It is active across Canada and the US for public inquiries, reports and sightings, and agency to agency reporting. Please use 1-855-336-BOAT (2628) for any sightings or AIS reports relevant to Alberta.
4. A risk analysis based on calcium and pH levels in almost 500 lakes and reservoirs was completed spring 2013, showing that the majority of Alberta's water bodies are at moderate to high risk of a

dreissenid establishment should an introduction occur. A monitoring program for dreissenid veliger sampling began in summer 2013, as well as passive sampling with the use of artificial substrates. With the cooperation of the irrigation districts, irrigation infrastructure monitoring is also occurring.

5. A Ministerial Order was signed in late August 2013, enabling those designated as Fishery Officers in Alberta to take necessary actions if Zebra and Quagga mussels are found or suspected, including decontamination and quarantine, whether on a vehicle, watercraft, aircraft or railway car.

**Name: Candace Parks**

**Organization: Fisheries Branch, Manitoba Conservation and Water Stewardship**

Title: Aquatic Invasive Species Specialist

Mailing address: Box 20, 200 Saulteaux Crescent

City: Winnipeg

State: Manitoba

Zip: R3J 3W3

Email address: Candace.Parks@gov.mb.ca

Phone: 204 945-7787

Fax: 204 948-2308

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Purchased two decontamination units for use with the Watercraft Inspection Program and as an educational tool in presentations to recreational users as well as at fishing tournaments.
2. Continued with the Watercraft Inspection Program at the Emerson International Border. This 10 year program has worked due to the relationship with CBSA staff and their willingness to have Watercraft Inspectors set up at the border.
3. Participated on the National Aquatic Invasive Species Committee which has been the vehicle used to help develop and provide feedback into the proposed federal AIS Regulatory Intent document.
4. Continued ongoing zebra mussel monitoring of the Red River near Emerson. To date no zebra mussel veligers have been identified in the samples taken.
5. Produced 600 STOP AIS signs to be installed at boat launch sites throughout the Province.

#### **OTHER MEMBER REPORTS**

**Name: Karen McDowell**

**Organization: San Francisco Estuary Partnership**

**Title: Environmental Planner**

Mailing address: 1515 Clay Street, Suite 1400

City: Oakland

State: CA

Zip: 94612

Email address: kmcdowell@waterboards.ca.gov

Phone: 510-622-2398 Fax: 510-622-2501

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. SFEP participated on the America's Cup Invasive Species Task Force to develop BMP's for boats coming to view the 34<sup>th</sup> America's Cup (AC34) and its preliminary races. The AC34 staff included the recommendations of the Task Force into their permit requirements and were supposed to implement the clean boating program in 2012 (World Cup Races) and 2013 (America's Cup Races). The Clean Boating Program was not implementing in 2012, but distribution of materials and promotion of the Clean Boater Program was implemented in 2013. The invasive species section was cut down significantly from what the Task Force Recommended, but was still deemed to meet minimum levels of compliance. Attendance and the number of visiting boats have been much lower than originally expected, so the overall risk of introduction lower than originally anticipated. You can click on the links below to view the Clean Boater Pledge and the final Clean Boating Guide.

<http://www.americascup.com/boater-pledge>

[http://cdn.sparkart.net/americascup/content/documents/AC\\_Boaters\\_Guide\\_11x17\\_Final.pdf](http://cdn.sparkart.net/americascup/content/documents/AC_Boaters_Guide_11x17_Final.pdf)

2. The California State Lands Commission's Marine Invasive Species Program continues to develop their ballast water program and their vessel biofouling program. Visit their web site to for updates:  
[http://www.slc.ca.gov/spec\\_pub/mfd/ballast\\_water/Ballast\\_Water\\_Default.html](http://www.slc.ca.gov/spec_pub/mfd/ballast_water/Ballast_Water_Default.html)  
[http://www.slc.ca.gov/spec\\_pub/mfd/ballast\\_water/2013\\_MISP\\_Biennial\\_Report\\_Final.pdf](http://www.slc.ca.gov/spec_pub/mfd/ballast_water/2013_MISP_Biennial_Report_Final.pdf)
3. The San Francisco Estuary Invasive Spartina Project continues their efforts to remove Spartina in San Francisco Bay. Check out their web site for updates: <http://www.spartina.org/>

**Name: Jeff Adams**

**Organization: Washington Sea Grant**

Title: Marine Water Quality Specialist/Aquatic Invasive Species Coordinator

Mailing address: 345 Sixth St., Suite 550

City: Bremerton

State: WA

Zip: 98337

Email address: jaws@uw.edu

Phone: 360-337-4619 Fax: 360-337-4864

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. West Coast Sea Grant Regional AIS project – Efforts by the West Coast Sea Grant team continue to implement and evaluate programs working with teachers on AIS education and stewardship, Western lake managers on Quagga/zebra mussel prevention and management and with collaborators on invasive species management prioritization tools.
2. Green crab habitat identification and monitoring – As part of the Oregon, Washington, BC green crab team, suitable green crab habitats in the Salish Sea are being identified and prioritized. Selected sites are currently being explored, examining the wrack line for crab molts. A public outreach effort will soon follow, requesting beach-goes to look for green crab molts at priority sites and submit images to a public forum.
3. Whole-lake volunteer crayfish removal – with Julian Olden of the University of Washington, we're encouraging residents of Pine Lake Washington to trap crayfish, removing red swamp crayfish and returning signal crayfish. [depts.washington.edu/oldenlab/pine-lake](http://depts.washington.edu/oldenlab/pine-lake)

4. Japanese Tsunami Debris modeling and monitoring – The watch for AIS on Japanese Tsunami Debris continues with unusual finds continuing to surprise. As models suggest a reduction in debris, broader monitoring for potential colonization of species is on the horizon. Materials such as Oregon’s Japanese *Tsunami Marine Debris: Key Aquatic Invasive Species Watch*, provide resources for continuing outreach and monitoring.
5. Finally, thanks for the privilege of representing Coastal Academia for the past several years. With a Sea Grant position now in the WRP, I will be participating as a member of the West Coast Sea Grant AIS team, and leaving the Coastal Academia position open hopefully for a research academic who can bring a more direct perspective of the broader Coastal research efforts to the table. Thanks again, but I’ll see you around!

**Name: Robert F. McMahan**

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

Title: Professor Emeritus

Mailing address: Box 19498, Department of Biology, The University of Texas at Arlington

City: Arlington

State: Texas

Zip: 76016

Email address: r.mcmahan@uta.edu

Phone: 817-272-2412

Fax: 817-272-2855

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. I completed the research and submitted the final report on my QZAP research project (Title: *Implementation of a Monitoring and Early Detection Program for Zebra Mussel Invasion of Texas Aquatic Habitats*). The research involved development, testing and application of a cost-effective zebra mussel risk assessment and early detection monitoring system for 14 water bodies in northeastern Texas. Risk assessment involved determination of surface water pH, O<sub>2</sub> concentration, calcium concentration and hourly recording of surface water temperature (1-1.5 m depth) during summer months. The results indicated that four of the 14 water bodies had a low risk of zebra mussel invasion due to calcium concentrations being at or below the mussel’s tolerated 12 mg Ca/L. Five of the 14 water bodies were assigned a moderate risk of zebra mussel invasion because average August surface water temperatures were within 1°C of the zebra mussel’s incipient long-term upper lethal limit of 32°C. The remaining five of the water bodies, including the mussel-infested Lake Texoma (used as a positive control), were assessed as having a high risk for zebra mussel infestation. The early detection monitoring system tested consisted of vertical-tow plankton net samples examined for the presence of mussel larvae (veligers) immediately in the field under a dissecting microscope. Plankton samples were then fixed with 70% alcohol and returned to the laboratory for more intensive examination with cross-polarized light microscopy. Concurrently taken plankton samples, also preserved on 70% alcohol, were sent to Pisces Molecular, LLC, Boulder, Colorado, for qPCR testing for dreissenid DNA. Juvenile mussel settlement monitors consisted of 6 by 8 inch nylon scouring pads deployed vertically at a depth of 1-1.5 m. qPCR testing and vertical plankton net tows revealed the presence of zebra mussel larvae in Lake Ray Roberts on the Trinity River System in the Spring of 2012. Juvenile zebra mussels were confirmed to have settled on hard substrata in the Lake by July 2012 and adult mussels have been found throughout the lake in the spring and summer of 2013 indicating establishment of a second, sustainably reproducing, zebra mussel population in a

Texas water body. In contrast, while weak positive qPCR signals for zebra mussel larvae were detected in nine of other 12 uninfested water bodies during at least one sampling period over the course of the study (i.e., Spring 2011, Fall 2011, Spring 2012), none are yet known to be infested with zebra mussels. In only two water bodies with positive qPCR signals have either zebra mussel larvae or settled juveniles subsequently been discovered and none of the 12 are known to have established, sustainably reproducing, zebra mussel infestations in spite of intensive search efforts. This project demonstrated that the dreissenid risk assessment and early detection monitoring system developed in this study were both cost-effective and applicable to Texas water bodies. The Texas Parks and Wildlife Department has funded an expansion of this dreissenid risk assessment and early detection monitoring system to 23 Texas water bodies in 2013. A copy of the final report on this project can be obtained by requesting it from Robert F. McMahon at [r.mcmahon@uta.edu](mailto:r.mcmahon@uta.edu).

2. Choi, W.J., Gerstenberger, S., **McMahon, R.F.**, Wong, W.H. 2013. Estimating survival rates of quagga mussel (*Dreissena rostriformis bugensis*) veliger larvae under summer and autumn temperature regimes in residual water of trailered watercraft at Lake Mead, USA. *Management of Biological Invasions* 4(1) 61-69.
3. Garton, D.W., **McMahon, R.F.**, Stoeckmann, A.M. 2012. Limiting environmental factors and competitive interactions between zebra and quagga mussels in North America. Pages ???-??? in Nalepa, T.F. and Schloesser, D.W. (eds.), *Quagga and Zebra Mussels: Biology, Impacts, and Control*, Second Edition. CRC Press, Boca Raton, Florida. In press.

**Name: Stephen Phillips**

**Organization: Pacific States Marine Fisheries Commission**

Title: Senior Program Manager

Mailing address: 205 SE Spokane Street, Suite 100

City: Portland State: Oregon Zip: 97202

Email address: [Stephen\\_phillips@psmfc.org](mailto:Stephen_phillips@psmfc.org)

Phone: 503-595-3100

Fax: 503 595-3232

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. **Watercraft Inspection Training (WIT):** PSMFC contractors Wen Baldwin and Dee Davis continued Level Two watercraft inspection trainings in Fall 2012 and Spring 2013 Level Two training, delivered over two days at Lake Mead is intensive and designed for professionals in all fields that expect to be actively involved in the inspection and decontamination of trailered watercraft and those who wish to become trainers within their state or work group. This project is funded by USFWS and BPA. <http://www.aquaticnuisance.org/wit>. Additional remote trainings by Dee were also carried out in Arizona (Lake Pleasant and Lake Havasu, with Kami Silverwood/Tom McMahon, AZDGF), Nevada (with Karen Vargas, NDOW), Utah (with Larry Dalton), and BC (With Invasive Species Council of BC). Several Lake Mead Concessionaire trainings were also conducted.
2. **Columbia River Basin Dreissenid Rapid Response Plan Exercise:** PSMFC along with USFWS/PSU (Robyn Draheim) and other state agencies held a rapid response exercise Rapid Response April 2-3, 2013 in Prineville, Oregon. The exercise was of an infestation of Prineville Reservoir. The exercise scenario included a confirmed finding of dreissenid veligers and an adult mussel shell in Prineville Reservoir near Prineville, Oregon. The exercise was conducted over two days. The morning of April

2 consisted of training, including a review of the Rapid Response Plan, a review of ICS, and an overview of the ICS Planning Process. After the training, the participants made Incident Management Team assignments, received a briefing and delegation of authority from the responsible agencies, and completed to planning process to develop the Incident Action Plan for the first Operational Period of response to the infestation. These activities carried through into the next day, and concluded with the “hot-wash,” and closeout. Report can be found at [http://www.100thmeridian.org/Columbia\\_RBT.asp](http://www.100thmeridian.org/Columbia_RBT.asp)

**3. Coordination/Other:** We hosted meetings of the Pacific Ballast Water Group (<http://www.psmfc.org/ballast/>) in April in Vallejo, CA, and Columbia River Basin Teams of the 100th Meridian Initiative (<http://www.100thmeridian.org>); Replaced the publication of “Aquatic Invasive Species News in a Nutshell.” (newsletter editor, Joan Cabreza, retired in Fall 2012) with “AIS News” <http://www.aquaticnuisance.org/>; PSMFC continues to host a website on current dreissenid monitoring sites in the CRB that can be found at <http://crbans.psmfc.org/monitoring.html>; sponsored, administered and presented at May 15 meeting entitled “Preventing an Invasion: Building a Regional Defense against Quagga and Zebra Mussels” (See meeting details and presentations at <http://preventinganinvasion.psmfc.org/>, including the meeting after action document Northwest Defense Against Mussels (NDAM) – Declaration Of Cooperation)

**Name: Bob Wiltshire**

**Organization: Invasive Species Action Network**

Title: Executive Director

Mailing address: 215 E. Lewis, #201

City: Livingston State: MT Zip: 59047

Email address: Bob@stopans.org

Phone: 406-222-7270

As a 501c3 non-profit, the Invasive Species Action Network (ISAN) provides a host of services and programs which all advance our mission of reducing the human caused spread of invasive species. Some of our major accomplishments for the past year are:

International Didymo Conference – In March, 2013 we held this important conference in Providence, RI. Although the federal sequester made things more complicated and difficult, the conference was a huge success. Researchers and managers from around the world gathered to discuss the science and management of this unique alga. This conference was broadly supported with the Northeast Panel, the Mississippi Basin Panel and the Mid-Atlantic Panel all providing significant support.

Fishing Boot Cleaning Stations – In partnership with the Greater Yellowstone Coordinating Committee, ISAN developed two different styles of fishing boot cleaning stations that were installed at approximately 40 fly shops in the Greater Yellowstone Area. These cleaning stations are the cornerstone of a new program designed to insure that nonresidents clean their boots before entering local waters. Although full evaluation will be conducted in the winter of 2013, feedback indicates that this is an extremely effective effort.

Pet Store Outreach – ISAN is conducting an intensive effort to work with pet stores to increase their participation in efforts to reduce the release of unwanted pets. The program has two main focuses; providing shops with information and materials to help them educate their customers and the development of a network of turn-in sites where any unwanted pet can be brought as an alternative to release.

Watercraft Inspection Evaluation – ISAN is conducting watercraft inspection station evaluations (mystery shopper) for Montana and Wyoming. Through this effort we are helping to improve the understanding of the factors which impact on the efficacy of these efforts.

Youth Education – We continue to develop resources and programs to increase the exposure of school children to an invasive species message. During the 2012/2013 school year we conducted 310 classroom programs that reached more than 7,900 students.

Coordination and Facilitation – In addition to Leah Elwell (ISAN Program Director) serving as WRP Coordinator, we provide services that aid in the effective development and implementation of AIS programs. Examples include our work with Montana to write a new state AIS Management plan, and the development of an AIS Management Assessment for Yellowstone Park.

AIS Outreach – In addition to the specific programs detailed above, we continue to conduct many different outreach efforts aimed at various segments of the public. For example, we conduct a program on the Smith River that uses the float permit process to deliver targeted education and action messages to these boaters. Other examples include presentations to civic and community groups, conducting trainings for resource professionals on how to develop social marketing efforts and working with event organizers to include AIS messages in their programs (Butte Folk Festival, Museum of the Rockies 2 fly event, Simms Ice Out, etc.). Finally, we continue to produce the *Clean Angling News*, a monthly newsletter about invasives and we maintain two Facebook pages which provide timely information about invasives.

Other Invasive Species Efforts – In addition to our AIS programs, we are also leaders in developing programs focused on terrestrial invaders. Our Forest Pest Outreach program is widely cited as an effective method of teaching recreationists about the forest pest problem and the imperative of not moving firewood. Similarly, our Riparian Weed Project enlists anglers and boaters in the fight against terrestrial weeds. As with many of our AIS efforts, these programs are targeted efforts which are designed to elicit voluntary behavior change.

In the coming year we will continue to advance these and other efforts. We are always looking for new challenges and new partners and welcome the opportunity to discuss new strategies for addressing invasive species issues.

**Name: Mark Sytsma, Ph.D**

**Organization: Portland State University, Center for Lakes and Reservoirs**

Title: Director

Mailing address: P.O. Box 751

City: Portland State: OR Zip: 97207

Email address: sytsmam@pdx.edu  
Phone: 503-725-2213

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:  
(submitted by Robyn Draheim)

1. Veliger sampling and veliger sample processing using microscopy continued at Portland State University's Veliger Microscopy Lab. Portland State University began coordinating veliger monitoring in 2003 and the began microscopy in 2006. More information can be found at: <http://mussels.research.pdx.edu/>
2. OSMB/USFS Boat Wash Station at Tenmile Lake pre- and post- wash station project continues under the guidance of Dr. Angela Strecker. Field observations for post- boast wash station installation wrapped up in August 2013 and a preliminary report should be available in October. This student/survey portion of the project was funded by OSMB.
3. Prineville Rapid Response Exercise. The Oregon Dreissenid Rapid Response Plan was tested (and refined) at a table top exercise focused on Prineville Reservoir (the highest risk body of water in Oregon based on Ca and user data). This was a successful first test of the state's capacity to use the ICS system to develop an IAP for the first 24 hours after the Plan has been "activated". The exercise had enthusiastic participation from members of the Columbia River Basin 100<sup>th</sup> Meridian Team as well as local responders including the Crook County Sherriff's Department, State Parks, and Oregon BASS.
4. Spartina Monitoring. The Center for Lakes and Reservoirs continued its program for Spartina Early Detection in conjunction with ODA this summer. Dense-flowered cordgrass (*Spartina densiflora*) was discovered this week near the west shore of Jordan Cove in Coos Bay, Oregon. This is the first occurrence of this weed known in Oregon; ocean currents likely carried seeds from infestations in neighboring states where it has been highly invasive. Five individual clones were found; four of these were clustered in low salt-marsh habitat in sandy substrate, along with pickleweed (*Salicornia* sp.) and saltgrass (*Distichlis spicata*) and measured less than 30 cm in diameter. A fifth, larger clone (~50 cm diameter) was found approximately 500 m away growing along a rip-rapped shoreline. All plants were flowering, but seeds did not appear ripened. Surveys in the immediate area revealed no additional plants.
5. The Oregon Lake Watch Program got underway this year with 5 citizen training sessions. The OLW is aimed at finding and training citizens who appreciate Oregon waterways (boaters, anglers, campers, property owners, resource managers, etc.) so they can play an active role in protecting lakes and reservoirs around the entire state. Goals of OLW are: EARLY DETECTION OF AQUATIC INVASIVE SPECIES (AIS): to aid the early detection of introduced animals and weeds in order to inform rapid responses to high priority threats like zebra and quagga mussels or hydrilla; and COLLECTION OF LONG-TERM WATER QUALITY DATA: to document simple, but critical measures of water quality (temperature profiles and water transparency) in order to track potential shifts or trends that may be taking place due to climate change, land management in the watershed, etc.; and ENCOURAGING APPRECIATION OF OREGON'S LAKES: to encourage the use and enjoyment of Oregon's many natural lakes and multi-use reservoirs. This project was also supported by the OSMB.

#### **NON-MEMBER REPORTS**

**Name: Dennis Zabaglo**

**Organization: Tahoe Regional Planning Agency**

Title: AIS & Watercraft Programs Coordinator

Mailing address: PO Box 5310

City: Stateline

State: NV

Zip: 89449

Email address: dzabaglo@trpa.org

Phone: 775-589-5255 Fax: 775-588-4527

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Continuing of the Watercraft Inspection Program- all motorized watercraft are required to be inspected and possibly decontaminated prior to launching at Lake Tahoe.
2. Asian clam control project at Emerald Bay (in Lake Tahoe) continues.
3. Weed control work at 6 locations around the Lake.
4. Building partnerships with non-government entities for funding opportunities.
5. Updating Tahoe's AIS Management Plan for ANS Task Force approval in the Fall.

**Name: Leigh Johnson**

**Organization: UC Cooperative Extension - San Diego County**

Title: Coastal Resources Advisor

Mailing address: 9335 Hazard Way, Suit 201

City: San Diego

State: CA

Zip: 92123

Email address: ltjohnson@ucanr.edu

Phone: 858-822-7802 Fax: 858-822-7667

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. Conducted 6 workshops on Aquatic Invasive Species Detection, Identification, Impacts, Decontamination and Reporting Training for 176 employees of Public Works, Watersheds, and Parks Departments in San Diego, Orange, Los Angeles and Ventura Counties, California. Collaborators are Sabrina Drill and Darren Haver, also of UC Cooperative Extension.
2. Created a "deck" of 10 laminated cards (20 sides) on Aquatic Invasive Species Detection, Identification, Impacts, Decontamination and Reporting for Southern California with color photos, weblinks and references as handouts for the above workshops. Cards in the deck are joined by a corner grommet and are fanned out for viewing.
3. Posted 7 blog articles on freshwater aquatic invasive species on Boating Environmental Forum at <http://ucanr.edu/blogs/BoatingEnvironmentalForum/> that together had received 6,580 direct and mobile hits as of Aug. 25.
4. Collaborated on 2 focus groups to obtain advice from boaters and anglers on outreach needs and methods regarding invasive mussels in English and Spanish. Appeared in resulting Spanish language YouTube video, "Mejillones amenazan reservas acuáticas," about invasive mussel impacts and prevention that can be viewed at <http://www.youtube.com/watch?v=bA6Z-pgen5o&list=TLWVky8abdW0>. Collaborators: Ted Grosholz, Jodi Cassell, Sabrina Drill and Greg Giusti of UC Cooperative Extension andCarolynn Culver of CA Sea Grant.

**Name: Carrie Culver**

**Organization: California Sea Grant Extension Program**

Title: Aquatic Resources Specialist

Mailing address: UCSB Marine Science Institute

City: Santa Barbara

State: CA

Zip: 93106-6150

Email address: cculver@ucsd.edu

Phone: 805.893.4530

Fax: 805.893.8062

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

I, along with co-authors Heather Lahr of the California Sea Grant Extension Program and Leigh Johnson and Jodi Cassell of UC ANR Cooperative Extension, completed (Jan 2013) and recently revised (Aug 2013) a technical report entitled "Quagga and Zebra Mussel Eradication and Control Tactics." This report is comprised of six information sheets that cover the following topics:

- Introduction to eradication and control of AIS
- Manual and Mechanical Removal Tactics
- Oxygen Deprivation Tactics
- Chemical Application Tactics
- Emerging Technologies
- Permitting and Regulatory Processes

The Information Sheet Series is intended to assist water managers and others interested in 1) reducing existing aquatic pest populations, and/or 2) preparing for action against newly detected aquatic pest populations in lakes, reservoirs and irrigation canals (not in facilities or associated infrastructure). While much of the information is focused upon quagga and zebra mussels, it also is broadly applicable to many types of aquatic pests including fresh water, brackish water and salt water species. The invasive fresh water mussels serve as a model to illustrate the general concepts and specific steps required for taking action against aquatic invasive species.

These materials are provided for educational purposes only. Although prevention is the best approach, it also is important to be prepared and respond quickly to new infestations and to reduce risks posed by existing infestations.

The technical report and individual information sheets are available online at:

[http://ca-sgep.ucsd.edu/quaggazebra\\_mussel\\_control/eradication\\_control\\_information\\_sheets](http://ca-sgep.ucsd.edu/quaggazebra_mussel_control/eradication_control_information_sheets)

Note, a demographic form asking for affiliation and zip code will pop up upon requesting a copy of the materials. (This information will help with reporting.) If you prefer a hard copy of the Technical Report (limited number available) please contact Carrie Culver.

**Name: Jim Ruff**

**Organization: Northwest Power and Conservation Council**

Title: Manager, Mainstem Passage and River Operations

Mailing address: 851 SW Sixth Ave. – Suite 1100

City: Portland

State: OR

Zip: 97204

Email address: jruff@nwcouncil.org

Phone: (503) 222-5161 Fax: (503) 820-2370

Please provide a description of your top five ANS activities/accomplishments/priorities for the past year:

1. In May 2013, the Council sent a letter to WA Congressman Doc Hastings in support of NV Congressman Joe Heck's legislation H.R. 1823 to add invasive quagga mussels to the list of injurious species under the Lacey Act
2. Other legislation of interest is section 5007 of the Senate Water Resources Development Act (S. 601), which includes a provision authorizing \$30 million for the establishment of watercraft inspection stations in the four Northwest states for the purpose of preventing the spread of aquatic invasive species, including quagga and zebra mussels. In June the Council sent a letter to Rep. Shuster to include similar language to assist with Northwest states' watercraft inspection station programs in the House WRDA bill.
3. Recognizing there is a compelling need to define and implement a NW region-wide prevention and response strategy, on May 15, 2013, the Council partnered with The Pacific Northwest Economic Region (PNWER), Portland State University (PSU) and the Pacific States Marine Fisheries Commission (PSMFC) to jointly sponsor a regional workshop in Vancouver, WA entitled "Preventing an Invasion: Building a Regional Defense Against Quagga and Zebra Mussels." As part of the workshop, Council staff prepared a summary paper of the four Northwest states' 2012 watercraft inspection programs and invasive mussel prevention strategies
4. The Council recently requested the Independent Economic Advisory Board (IEAB) to update its 2010 economic risk assessment associated with the establishment of quagga and zebra mussels in the Columbia Basin <http://www.nwcouncil.org/fw/ieab/ieab2010-1/>. The updated IEAB report is scheduled to be completed in early September 2013 and presented to the Council at its September 11, 2013, meeting in Coeur d'Alene, ID.
5. Council staff has also assisted with regional coordination and information sharing among state, federal, provincial and tribal entities by actively participating on the 100<sup>th</sup> Meridian Initiative-Columbia Basin Team efforts to prevent the spread of non-native species into the Pacific Northwest.

---

w:\jr\ww\ais\npcc wrp non-member report 2013.docx