

**ALASKA STATE LEGISLATURE  
HOUSE SPECIAL COMMITTEE ON FISHERIES**

January 29, 2013

10:03 a.m.

**MEMBERS PRESENT**

Representative Paul Seaton, Chair  
Representative Eric Feige  
Representative Lynn Gattis  
Representative Bob Herron  
Representative Craig Johnson  
Representative Kurt Olson  
Representative Jonathan Kreiss-Tomkins

**MEMBERS ABSENT**

All members present

**COMMITTEE CALENDAR**

OVERVIEW: DEPARTMENT OF FISH AND GAME INVASIVE SPECIES PROGRAM:  
2013 STATUS REPORT

- HEARD

OVERVIEW: PACIFIC NORTHWEST ECONOMIC REGION INVASIVE SPECIES  
WORKING GROUP

- HEARD

OVERVIEW: TSUNAMI MARINE DEBRIS IN ALASKA

- HEARD

OVERVIEW: JAPAN TSUNAMI MARINE DEBRIS: INFORMATION AND ACTIONS

- HEARD

**PREVIOUS COMMITTEE ACTION**

No previous action to record

**WITNESS REGISTER**

CHARLIE SWANTON, Director  
Division of Sports Fish

Alaska Department of Fish & Game (ADF&G)  
Juneau, Alaska

**POSITION STATEMENT:** Provided an overview of the invasive species program being conducted by the Alaska Department of Fish & Game (ADF&G).

TAMMY DAVIS, Invasive Species Coordinator  
Division of Sport Fish  
Alaska Department of Fish & Game (ADF&G)  
Juneau, Alaska

**POSITION STATEMENT:** Responded to questions, during the departmental overview on invasive species.

MATT MORRISON, Executive Director  
Pacific NorthWest Economic Region  
Seattle, Washington

**POSITION STATEMENT:** Provided an overview of the Pacific NorthWest Economic Region (PNWER) invasive species working group.

ELAINE BUSSE FLOYD, Acting Director  
Division of Environmental Health  
Department of Environmental Conservation (DEC)  
Anchorage, Alaska

**POSITION STATEMENT:** Provided the overview of the tsunami marine debris in Alaska on behalf of DEC.

PETER MURPHY, Alaska Coordinator  
National Oceanographic and Atmospheric Association (NOAA)  
Marine Debris Program  
Seattle, Washington

**POSITION STATEMENT:** Provided an overview of the Japan tsunami marine debris on behalf of NOAA.

## **ACTION NARRATIVE**

[10:03:12 AM](#)

**CHAIR PAUL SEATON** called the House Special Committee on Fisheries meeting to order at 10:03 a.m. Representatives Herron, Feige, Kreiss-Tomkins, Gattis, and Seaton were present at the call to order. Representatives Olson and Johnson arrived as the meeting was in progress.

### **Overview: Department of Fish and Game Invasive Species Program: 2013 Status Report**

10:06:18 AM

CHAIR SEATON announced that the first order of business would be an overview of the invasive species program from the Department of Fish and Game (ADF&G).

10:07:09 AM

CHARLIE SWANTON, Director, Division of Sports Fish, Alaska Department of Fish & Game (ADF&G), introduced the topics to be covered in the overview, which are: what constitutes an invasive species; the effects invasive species impose on state resources both economically and biologically; the species of concern including the history of infestation, response actions, and status of two, high priority species - *Didemnum vexillum* (D.vex) and Northern pike; statewide monitoring efforts; and prevention and outreach conducted by ADF&G. Referring to slide 3, titled "Invasive Species," he defined the topic, paraphrasing the information, which read [original punctuation provided]:

[An invasive species is] an organism introduced outside its native range that can damage environments, cause economic hardship, or pose risk to human health. Not all nonnative species can sustain populations in their new environment. They require an agreeable host environment; few to no natural predators, parasites or diseases; an abundance of food that lacks defenses against the newcomer; and the ability to out-compete native species in similar trophic levels.

MR. SWANTON said that, for the most part, invasive species thrive due to the absence of natural predators. The effect of invasive species on native species, as outlined on slide 4, is that they out-compete native species for habitat, food, and space; degrade or destroy habitats required by native organisms; upset ecosystem functions, such as food webs, and predator/prey interactions; limit commercial, recreational, and subsistence activities such as fishing, hunting, wildlife viewing, and boating. The pathways for introduction, commonly referred to as vectors, illustrated on slide 5, include: human-mediated via shipping, [movement of] recreational vessels and gear, floatplanes, floating infrastructure, release of unwanted animals and plants, illegal stocking, aquaculture transfers and escapees. He cited the Atlantic salmon appearing in recent years in the waters of southeast due to net pen farming practices on the Pacific coast to the south of Alaska. He said

that, as movement of goods and services increase, the potential for non-native species to be introduced increases as well. Elaborating on methods for invasive species to be distributed, he added that there are natural pathways; however, the dumping of unwanted pets through aquaria, not cleaning boats and gear between visits to infested recreational areas, or, in the case of Northern pike, intentional transport, often via bucket, from an area of natural population to non-native waters, are common means of introduction. The presence of Northern pike in 120 lakes of Southcentral, Alaska, is a product of illegal stocking by so called bucket biologists who desire certain fishing opportunities and who take matters into their own hands; a long seated problem. Another species of concern is the European green crab larvae, which could transport into Alaskan waters via ocean currents, as populations have appeared in the waters of British Columbia, Canada. He reported that the boards of fish and game have placed a prohibition on felt soled fishing boots, which is a primary vector for certain aquatic species in the contiguous United States. Pointing out slide 6, Director Swanton described *Didemnum vecillum*, *D.vex*, and said this invasive, colonial tunicate has been discovered in Whiting Harbor, Sitka, Alaska. It is an aggressive marine invader that grows rapidly on natural and man-made substrata, and has few known predators. *D.vex* has been introduced globally and can be found coating pilings, docks, piers, and aquatic infrastructures. Further, he said, it has the ability to encase mollusks and other shellfish, cover the sea floor, smother eel grass, and create a virtual monoculture in intertidal, subtidal, and deep sea habitats. The most notable host area in the United States is George's Bank, Maine, where it covers an area greater than 100 square miles. Reviewing the history of *D.vex* in Alaska, slide 7, he said that, since 2010 when it was first identified in Whiting Harbor, ADF&G has followed a course of action toward its eradication. Initially a press release was held. From 2010 to present, the department has catalogued responses and conducted outreach presentations for, and distributed information to, aquatic farmers, agencies, stakeholder groups and the general public. Beginning in 2010 and continuing through 2012, ADF&G completed three surveys to map the distribution of *D.vex*, as well as coordinated response teams, and decommissioned an infested aquatic farm. The herring sac roe fishery was closed in the Whiting Harbor area for 2011 and 2012. Also in 2012, the subsistence roe on kelp harvest was prohibited along with other product harvesting in the infested area. The public has been advised to avoid the area entirely since 2010. The legislature provided funding in 2012 specifically to combat the tunicate. He reported that of the

\$500,000 capital improvement project (CIP) funding received, the department has expended about \$32,000 for the 2012 extensive dive survey and mapping. Additional plans include the creation of a description for the eradication work, which will then be released to the public for bid to engage a private contractor. Follow-up work by the department is also planned to ensure that the eradication process is successful.

[10:16:44 AM](#)

DIRECTOR SWANTON moved on to slide 8, describing how the systematic dive surveys of 2011 were conducted and to explain the distribution mapping of D.vex in the infested waters outside of Whiting Harbor. The tunicate has established itself on cobble, rock and boulder substrata, the rip rap that comprises the cause way, and on some kelp. In response to a committee member he clarified that the color shaded maps indicate the percentage of coverage by the D.vex, not counts of individual creatures.

DIRECTOR SWANTON described the major cleanup activity to bag and remove lantern nets, during the months of August and September in 2011. A major clean-up effort, to remove an aquatic farm infrastructure from the water in November, 2011, saw participants from a wide array of organizations, which included: City of Sitka, Department of Natural Resources, University of Alaska Southeast (UAS), Sitka Tribe, State Emergency Response Commission, U.S. Fish and Wildlife Service (USFWS), U.S. Forest Service (USFS), Sitka Sound Science Center (SSSC), Bureau of Land Management (BLM), U.S. Coast Guard (USCG), and local volunteers. He directed attention to slides 9 and 10 to illustrate a sample of the debris that was removed. In August 2012, another, more comprehensive, dive survey of Whiting Harbor was undertaken and similarly mapped, slide 11, and he pointed out the concentration of the D.vex around the aquatic farm infrastructure. The detailed map is necessary in order for a contractor to bid on the project. He outlined the best means for success in combating the infestation, which includes: communication with experienced international experts; keeping abreast of new research and technologies to use for eradication; working to get the permits from the appropriate agencies; state and federal agency collaboration; and communicating with the public. The scope of the work is near completion and the RFP is expected to be posted in early spring with the eradication to begin in the summer. There will be three years of post-treatment monitoring by the department to ensure success.

Responding to Chair Seaton, he clarified that the eradication work is to begin the summer of 2013.

[10:22:04 AM](#)

DIRECTOR SWANTON described the invasive northern pike that have been introduced into the Southcentral area. He reviewed the distribution of this fish stating that northern pike are not native to areas south and east of the Alaska Range; that they were first illegally-introduced to Southcentral in the 1950s; pike continue to spread and are still illegally transplanted; now inhabiting more than 150 water bodies in Southcentral. Northern pike are known to be highly predatory on juvenile salmonids as well as nearly anything that moves, swims, or floats on the water and can reduce or eliminate wild and stocked fish populations. The department has devised a management plan for invasive northern pike, slide 14, which was completed in 2007; updates to the plan will be completed in 2013. A strategic planning committee was formed in 2010 and meets biennially to prioritize projects. Six of the top eight priorities are currently underway. The first phase of the Soldotna Creek project is set to begin in 2013. Director Swanton said Alexander Creek is of particular interest as it has been a very viable salmon sport fishery; however, it is now the largest pike eradication project in the state. Controlled gill netting was started in 2007, and, due to incremental funding from the legislature, suppressive work has been on-going for the last two years. He reported that in 2011 approximately 4,100 large pike were removed and in 2012 about 2,900 were captured. These statistics indicate that the effort is beginning to make a dent in the northern pike population of the Alexander Creek drainage area; eradication will require more time and continued effort. The department has conducted research on the pike, establishing their diet and movement patterns. Using radio telemetry tracking devices, the department can plan suppression efforts appropriately. Another method of detection utilizes the DNA of a watershed to determine if a species is present, and allows the department to measure success levels. Eradication means complete removal of an entire population from an individual freshwater system using Rotenone, a chemical which works on the cellular level to disrupt the intake of oxygen and thereby kills fish. Since 2008, ADF&G has successfully eradicated pike from five lakes in the Kenai Peninsula and Anchorage areas utilizing Rotenone. Stormy Lake, the largest treated, underwent eradication in 2012, and plans are to begin the first phase of the Soldotna Creek eradication, which is a series of interconnected lakes and presents more of a challenge.

10:27:31 AM

DIRECTOR SWANTON directed attention to slide 18, titled "Monitoring for Invasive Species," and said ADF&G staff, as well as citizens, serve as monitors in certain locations. The department developed and facilitates a hands-on science and public education training program. Through monitoring and investigation crayfish have been identified in Buskin Lake. These small freshwater crustaceans are indigenous to the eastern and southern United States. The department began trapping them in 2012 and this effort will continue through 2013. Staff will routinely scout for invasive species while engaging in other field work, which is a cost effective approach. Monitoring is primarily for quagga and zebra mussels. The locations being targeted are Glennallen, Kenai Peninsula, Richardson Highway, Fairbanks, and Anchorage. A platewatch for pacific coast tunicate is a method of monitoring whereby a plate is placed in a specific location and whatever grows on it can be identified. Platewatch locations are Gustavus, Homer, Kodiak, Seward, Sitka, and Ketchikan. European green crab has been identified in British Columbia, and the department is monitoring for the arrival of that species, as well. Addressing slide 20, "Prevention & Outreach," he said that:

Before they were considered a serious concern, Alaska had good regulations in the books to prevent organisms from being introduced into new habitats. We've spent a fair amount of time educating the public [through] various modes of communication and we continue to do that. ... In 2013 ADF&G and the USFWS will work with custom and border protection officers who are the first line of defense against quagga mussels as folks bring boats into the country.

10:30:50 AM

REPRESENTATIVE JOHNSON asked what is included when considering working with the border patrol.

TAMMY DAVIS, Invasive Species Coordinator, Division of Sport Fish, Alaska Department of Fish & Game (ADF&G), responded that, up to this time, the department has worked with border protection to complete boat inspections and decontaminations. The patrol does not inspect 100 per cent of the boats crossing the border and the department is urging that they do so, which

would allow decontamination to be at the point of entry, rather than a designated location within the state.

REPRESENTATIVE JOHNSON inquired whether border stations have areas to perform the decontamination.

MS. DAVIS replied no, and said that the department is working with USFWS to jointly purchase a decontamination unit to position at the border, however, the border patrol cited inadequate storage space and staff time as concerns for receiving the unit and undertaking the task of full decontamination. To a follow-up question, she said that if a boat is checked and determined to be harboring an invasive, it is not allowed to enter the state; thus far, one boat has been turned back.

[10:32:55 AM](#)

CHAIR SEATON noted that several states have quarantine procedures for vessels entering, requiring as much as 30 days of dry storage, and he asked if ADF&G has reviewed the effectiveness of such a standard.

DIRECTOR SWANTON answered no. A comprehensive look has not been completed; however, collaboration is occurring with the various government associations, along with the appropriate exchange of information. In regards to establishing a tailored method to allow boats to enter the state, he said a plan is still being formulated.

[10:34:21 AM](#)

REPRESENTATIVE HERRON inquired about the state's information campaign and whether the department has partnered with outside organizations to fight these invasive species.

DIRECTOR SWANTON indicated that a wide variety of media/materials have been generated and information is also made available on the department's web page. Radio interviews, news releases, and magazine articles have been, or are, steps that ADF&G has taken and considers helpful.

REPRESENTATIVE HERRON inquired whether there has been any success in apprehending violators regarding the illegal transport of northern pike.

DIRECTOR SWANTON responded that, to his knowledge, no one has been brought up on charges; however, it is a class A misdemeanor and thus punishable by up to a \$10,000 fine.

REPRESENTATIVE HERRON suggested that the legislature could consider funding a bounty on northern pike.

DIRECTOR SWANTON said the bounty suggestion has been raised but poses a number of problems, and he opined that it may not prove to be effective. A variety of regulatory measures have been tried, such as the lowering or removal of bag limits to encourage anglers, and still the pike persist. He noted that past bounty measures, regarding other species, have not necessarily been helpful.

REPRESENTATIVE HERRON asked if there are any invasive species impacting Chinook salmon populations.

DIRECTOR SWANTON offered that indications of pike effects on Chinook salmon are present in the Alexander Creek system, although to what extent has yet to be determined. Pike are endemic to most of the Interior where cohabitation successfully exists due to evolutionary conditioning. As an example, he said, pike are sight feeders, thus the smolt they prey on have adapted to migrate at night as a natural avoidance technique; a behavior that has evolved over time to allow these species to successfully co-exist.

[10:40:57 AM](#)

REPRESENTATIVE KREISS-TOMKINS asked whether there are documented, successful tunicate eradication processes and, if so, what does it entail and will ADF&G be implementing a similar model in Whiting Harbor. Regarding northern pike, he inquired if the population will remain suppressed for a period of time or does the department expect efforts to continue in perpetuity.

DIRECTOR SWANTON, in regard to pike, responded that the program with Alexander Creek began in 2006 and the department has slowly implemented changes because the biologists are learning the best methods to use. Tagging the fish has been important and provided information on movement that allows ADF&G to more effectively address the problem. Knowing how to proceed in the future is still a difficult question, but he said the hope is to eliminate enough pike so that other species can rebound. The inquiry about suppression is difficult to clearly answer, as it's almost an ongoing, adaptive process. In some cases,

however, if suppression efforts stopped, pike would rebound to whatever level the environment could support.

MS. DAVIS said there is a report of one, completely successful colonial tunicate eradication in a small, manmade, recreational diver's reef, off the coast of Washington state. The tunicates were hand pulled from the structure, as the populations were relatively small; not a feasible option in Whiting Harbor. Unfortunately most eradication efforts have been on piers, docks, and boats rather than the sea floor. New Zealand attempted an expensive, cumbersome approach to vacuum the seafloor that ultimately didn't work. The department has been criticized for moving slowly, but it is a new and complex challenge and ADF&G is taking a methodical approach to avoid ineffective, rash decisions/actions.

REPRESENTATIVE KREISS-TOMKINS inquired if the scope of work has been established for eradication in the coming summer.

DIRECTOR SWANTON stated that the department is in the midst of that process.

[10:46:08 AM](#)

CHAIR SEATON asked for clarity on how the RFP is expected to work: is the agency defining the method and means being bid on, or are contractors proposing the method and means to the department.

DIRECTOR SWANTON answered that the intent is to be fairly restrictive with regard to the eradication methods, and the intent is to ensure the greatest degree of success. Funds spent thus far have been to lay the ground work for what needs to be completed.

CHAIR SEATON recalled that the previous legislature passed two years of funding, totaling approximately \$900,000, for planning a rapid response. He said if rapid response is identifying an area, preparing an RFP, and soliciting ideas from contractors, it may come under question, and suggested a detailed discussion regarding this topic for a future committee hearing.

REPRESENTATIVE GATTIS interjected that the fishermen of the Southcentral area, which she represents, are hurting. She said she is looking for more science and informative data. Considering the pike issue, she summarized what she has learned in this hearing: that there is an attempt towards control and

it is working somewhat. An overall conclusion for eradication appears to be missing from this report, she said.

10:50:51 AM

CHAIR SEATON, considering systems with heavy pike predation such as Alexander Creek and Shell Lake, he asked whether salmon escapement goals are adjusted for this factor.

DIRECTOR SWANTON said, to his knowledge escapement goals have not been adjusted, based on the presence of pike.

CHAIR SEATON noted that 20 percent of the salmon habitat has been lost in these areas, and asked to have the topic brought for a future discussion and include input from the area biologists.

10:52:47 AM

CHAIR SEATON returned to the report of crayfish in Buskin Lake, and asked what the major concern is and how extensive is the impact: are the crayfish competing with anything else in the lake, is the response due to economic and ecological conflict, or is there concern because they are not native to the area.

DIRECTOR SWANTON said that the department was taken aback when they were initially reported. There is concern for the fact that they are not endemic to the system, and may be competing on the trophic level. However, for the most part concern is due to the fact that this is not an endemic species and requires eradication on that basis.

10:54:09 AM

REPRESENTATIVE HERRON echoed the concern of previous committee members, to wit: the previous legislature funded a bill for rapid-response to aquatic invasive species. Given the memorandum of understanding (MOU) that exists with the Department of Natural Resources (DNR) heading it up, the efforts for a rapid response may be on a slow track, he opined.

10:54:49 AM

REPRESENTATIVE JOHNSON referred to the D.vex surveys for 2011 and 2012 and asked if the infestation has grown significantly or has the method and ability to count the creatures improved.

DIRECTOR SWANTON responded that the species has not grown but the surveys report different information. The 2011 survey was to determine if the species was present or absent. The 2012 survey was more thorough and provided more in-depth information, including: the area infested, how extensive is the coverage, and where the concentrations existed; information important to plan the removal process.

[10:55:55 AM](#)

REPRESENTATIVE JOHNSON asked if there is any commercial value to European green crab.

DIRECTOR SWANTON offered that there is not, despite their resemblance to a small Dungeness crab.

[10:56:23 AM](#)

CHAIR SEATON opined that Alaska has been extremely lucky in regards to *D.vex*, resulting in a minimal closure as opposed to the impact that a larger distribution would have on the herring industry.

**Overview: Pacific NorthWest Economic Region Invasive Species Working Group**

[10:57:41 AM](#)

CHAIR SEATON announced that the next order of business would be an overview from the Pacific NorthWest Economic Region (PNWER) invasive species working group.

[10:58:24 AM](#)

MATT MORRISON, Executive Director, Pacific NorthWest Economic Region, explained that the invasive species working group was established in 2003, and credited Senator Fred Dyson, Alaska State Legislature, with bringing it about. Every state has been encouraged to create a similar counsel and to work in collaboration in order to form best practices eradication strategies. He reported that in Idaho, for example, the Boy Scouts administer an effective monitoring program. Although there are a number of invasive species to consider, he said that today's report primarily addresses the Quagga and Zebra mussel situation and the perimeter approach that is being employed. The Quagga and Zebra Mussels are tiny, fresh water mollusks that are native to Eastern Europe and Russia, but which have been

spreading through North America since the 1980's. Once introduced, it has never been possible to entirely rid a watershed of their presence. The individual mussels can produce up to one million eggs per year, which then distribute throughout a watershed. The Great Lakes is an area that has been especially inundated, and continues to struggle with the consequences of the invasion effecting the fish habitat, piping systems, and fresh water drinking systems. In Southern California, the Metropolitan Water District is expected to spend \$8-\$10 million per year to remove the mussels and repair the damaged infrastructure; this figure does not include the costs for control efforts. He directed attention to a slide with a map indicating that PNWER is the last uninfected region in North America. He reported that the highest infestation area is Lake Mead, Nevada. A following slide indicated results from an Idaho inspection station, identifying where the recreational boaters originate around the contiguous United States. Four of the five PNWER states conducting inspections report a total of approximately 83,000 water craft and found 108 that were infested with the shell fish. The issue is that the invasion will not abate and it is an expensive problem once it becomes established in an area. Mr. Morrison said that PNWER suggests a perimeter approach, and Alaska has some protection through the programs that are set up in British Columbia, Canada, as well as Washington, Oregon and Idaho. He reported that PNWER has been working with the local fish and game departments to setup a regional pilot program. It has been estimated that, should the invasion enter the Columbia River Basin watershed, the annual control measures required for the federal hydropower facilities would cost \$23 million; not including drinking water, fish hatcheries, and other systems that would also require attention. Cold water or freezing conditions pose no problem to the proliferation of these mollusks. He suggested that preventative measures be taken and include a passport flyer, which would be a handout at the Customs Border Patrol (CBP) stations with a goal that all boats crossing the border would receive one, and particular attention could be given to boats arriving from infested regions. The Great Lakes states are currently spending \$40.5 million per annum, for zebra mussel control. Prevention is far cheaper but requires a coordinated, regional effort. Continuing, he recommended several policy actions that would help provide a defense against mollusk invasion, beginning with expansion of the 2011 multi-state agency staff memorandum of understanding (MOU). The MOU could include a high risk perimeter pilot program, based on the Idaho passport program. Additionally, establishment of a real-time data tracking system would allow data sharing throughout the region for tracking of

vessels coming into the area, which would include inspection results for each vessel. Also, legislation is necessary to provide funding to maintain inspection and cleaning stations, which are currently minimal. State funding is also needed to create a regional organization that would be responsible for facilitating the sharing of inspected vessel information. He stressed that it is imperative to have a means for tracking vessels and information sharing, and provided an example of two heavily infested barges bound for Lake Washington, Washington, being appropriately stopped at the Idaho border due to interstate agency communication. He underscored that the current effort is not able to do a good enough job to guard the perimeter. Further infrastructure of inspection and decontamination facilities is necessary along with specialized training. Finally, he invited members to the 2013 PNWER Annual Summit, held this year in Anchorage, July 14-18, and said he is looking forward to working with the committee on the issues and ensuring a coordinated effort for protection of the perimeter.

[11:07:40 AM](#)

CHAIR SEATON noted that a jackup oil rig from Singapore arrived with non-native mussel shells, but it had fortunately been in dry dock and was transported to Alaskan waters via barge. However, another jackup rig came from lower British Columbia, to Cook Inlet, via wet tow and an inspection/decontamination procedure has not been established for this type of structure.

#### **Overview: Tsunami Marine Debris in Alaska**

[11:10:26 AM](#)

CHAIR SEATON announced that the next order of business would be an overview of the tsunami marine debris in Alaska, provided by the Department of Environmental Conservation (DEC).

[11:11:01 AM](#)

ELAINE BUSSE FLOYD, Acting Director, Division of Environmental Health, Department of Environmental Conservation (DEC), directed attention to the first slide entitled "Tsunami-Generated Marine Debris Background," and paraphrased the bullet points, which outlined that in March of 2011 a devastating earthquake and tsunami hit Japan. The Japanese government estimates that 5 million tons of debris was swept into the Pacific Ocean. While an estimated 70 percent sank almost immediately, the remaining 1.5 million tons floated off the coast of Japan and was caught

by wind and ocean currents. The composition of the materials is anything typically found in urban areas, homes, and fishing communities, such as: Styrofoam, buoys, bottles, jugs, household items including appliances, rigid urethane insulation, wood from destroyed buildings and homes, entire fishing and boating docks, floats, bumpers, and nets. The National Oceanic and Atmospheric Administration (NOAA) models indicate that debris will reach U.S. and Canadian shores for the next several years. The high-windage, or lighter debris, is carried by the wind and has been arriving much sooner than expected, while the low-windage, or heavier debris, is carried by the ocean currents and slower to come to land. She said that in June of 2012, DEC contracted with Airborne Technologies, Inc. (ATI) to obtain a detailed, baseline aerial survey. The survey covered 2,500 miles of coastline resulting in over 8,200 high resolution images beginning in Southeast, north along the Gulf of Alaska, through Prince William Sound (PWS), around the Alaska Peninsula, and across Bristol Bay. Every image was individually ranked for density and debris type, and underwent data analysis, as well as Geographic Information System (GIS) mapping. About 15 types of debris were identified and imbedded as part of the data analysis. The information can be accessed via the NOAA or DEC websites. She presented a slide of an Alaska map to relate the flight route that was taken to complete the survey.

[11:16:26 AM](#)

REPRESENTATIVE HERRON asked which area has seen the highest impact.

ACTING DIRECTOR FLOYD responded that tsunami debris was prevalent throughout but perhaps most prolific in the areas around Kodiak Island, Cook Inlet, and PWS.

[11:17:14 AM](#)

ACTING DIRECTOR FLOYD continued to the slide titled "Observations Relating to Amount, Location and Composition of Tsunami Marine Debris in Alaska," and confirmed that a significant increase in volume was evident with a large volume of high-windage items. She said that the composition of the debris was used to identify it as being tsunami generated, which included: oyster buoys, rigid urethane insulation, common Japanese household items, and white Styrofoam. Attention was drawn to photographs of debris that the contractor, the nonprofit group Gulf of Alaska Keeper, collected during 2012, primarily depicting the large amounts of white Styrofoam. She

presented a slide with charts of red and blue indicators to illustrate the combined changes in amount of high-windage debris comparing a five year average of pre- and post-tsunami data collected in 2012. The report is by specific types of debris, including: buckets, plastic drums, hard plastic buoys, and beverage and non-beverage bottles. The comparison illustrates that the amount of debris found post tsunami "exploded," she said. The control used was the low-windage current driven debris indicator for combined rope and line fragments that are current driven. The pre- and post-tsunami data are nearly equal as the low-windage items have yet to come to rest. As the subsequent slide illustrated, bears play with and shred the Styrofoam and buoys, compounding the clean-up effort. Continuing to the next two charts, she pointed out that the Styrofoam debris soared in 2012, far beyond the five year average prior to the tsunami. She underscored that every one of the coastal pictures, portrayed tsunami debris. As previously mentioned, the Gulf of Alaska Keeper organization was commissioned to provide clean-up in 2012, but the effort began late in the season following the procurement process, and was concentrated on the PWS area. Other debris observations indicate: storm surges move debris farther up a beach, wind carries it inland, and the heavier debris is just now arriving.

[11:22:47 AM](#)

ACTING DIRECTOR FLOYD said that there are a number of issues that will persist, and provided a slide titled, "Concerns Related to Marine Debris." The concerns include: the unknown total quantity to expect and the composition of what is arriving, although a 30 percent increase has been estimated; potential toxicity of components, and disbursement; potential impact of small Styrofoam pieces on marine and terrestrial life; possibility of smothering sensitive habitats; invasive species, which have been reported from other states; safety risks involved in the removal due to the treacherous coast line, weather, remoteness, sea conditions, and wildlife; and potential navigation risks due to large debris. Thus far, she said radiation has not been present in any of the debris, which may be attributable to the fact that the radioactive water leak from Japan's Fukushima nuclear reactor developed after the debris was in the ocean and miles away. She assured the committee that inspections of Alaskan beach debris by the Department of Health and Social Services (DHSS) radiological health physicists have turned up no levels of radiation above the norm. Regarding what to expect in consideration of cleanup costs, she said the first time a beach is cleaned includes removal of items that may have

been accumulating for decades and represents a costly effort as opposed to follow-up cleaning to do a sweep of the newly arriving tsunami generated debris, albeit just as time intensive. Employing landing craft, crew costs, hiring of helicopters and planes, and disposal fees are all costs to be factored in. An initial \$50,000 grant, received from NOAA, paid for the partial sweep, about 25 miles of coast in PWS, fall of 2012, and focused on Styrofoam, oyster buoys, plastics, and other pieces that could be more easily removed. The state funded the \$200,000 aerial survey and data analysis. A \$5 million goodwill gesture from Japan is in the hands of NOAA, and each of the five effected states and two territories will initially receive an equal, incremental share. The remainder will be allocated on an as needed basis. Alaska can demonstrate that it has extensive coast line that is more expensive to access than the other four states, and the expectation is for NOAA to allocate appropriately. For clarification she named the areas sharing the \$5 million: Washington, Oregon, Alaska, California, Hawaii, Guam and one other American territory.

[11:30:23 AM](#)

ACTING DIRECTOR FLOYD said that a prioritization and planning meeting was held January 17, 2013, with state and federal partners, as well as Native corporation leaders, in preparation for the 2013 field season of debris removal. The considerations for establishing priorities, and other outcomes, will be reported at the Alaska Forum on the Environment, February 4-8, 2013, held in Anchorage.

**Japan Tsunami Marine Debris: Information and actions**

[11:32:11 AM](#)

CHAIR SEATON announced that the final order of business would be an overview of the Japan tsunami marine debris, from the National Oceanographic and Atmospheric Association (NOAA).

[11:32:55 AM](#)

PETER MURPHY, Alaska Coordinator, National Oceanographic and Atmospheric Association (NOAA) Marine Debris Program, indicated that some of his information may overlap with that of the previous speaker, and stated that he would focus more on the worldwide aspect of the tsunami debris. He then provided a background for the NOAA Marine Debris Program, which included: establishment in 2005, within the Office of Response and

Restoration, which also handles oil spill response, and other HAZMAT (hazardous materials) related duties; mandated by the federal Marine Debris Research, Prevention, and Reduction Act of December 2006, which describes the mission to focus on marine debris and remain dedicated to leading and promoting research, prevention, and reduction of debris through activities nationwide; and he noted that throughout the nation, including Alaska, work is accomplished due to a team effort with the involvement of many different groups. He provided a slide, titled, "Marine Debris in Alaska" to illustrate the historic paths of the winds and currents and how they carry a significant amount of oceanic debris to Alaska's shoreline on an annual basis. As the global currents converge, debris from one distant region, or hemisphere, is transferred to another. It is usually the winter storms that contribute the bulk of the debris on Alaska's coastline, however remote. He directed attention to an example project, a collection completed in 2007 with the help of the nonprofit group Gulf of Alaska Keeper, which concentrated on a two mile stretch of beach and removed over 20 tons of debris. This represents a significant amount of litter collecting on a yearly basis, he opined, and will now have the addition of the arriving tsunami debris. With Slide 4, "Tsunami Marine Debris - What is it?" he provided two photographs of the wide range of items that were washed out to sea, including a wide array of household items, entire houses and boats. Items move at different rates, due to size and weight, and some even degrade or breakup at sea. Lumber can be colonized and consumed by marine life, whereas plastics cannot. Moving to slide 5, "Marine Debris - Early Sightings," he explained that the photograph was taken of debris at sea, two days after the tsunami. These early images indicate the debris concentrated in long bands, stretching for miles, and abundant enough to be visible via satellite imagery. By mid-April the debris was dispersing and no longer visible by satellite. He explained that slide 6, "Modeling Where will the debris go, and when?" illustrates how, through the combination of ocean currents and winds, the debris that is not consumed by the ocean eventually finds land. Items that ride low in the water move with the currents and lighter, higher floating objects are carried faster by the wind. The succeeding slide, titled "Modeling," shows a chart, dated Monday, 1/7/13, of the on-going, monthly updated model. The 8,000 computer simulated particles are used to track movement and project eventual landings of the debris. He offered the caveat that debris consumed by the ocean is not accounted for in the model. Reporting on the four known docks that were washed to sea, he said one arrived in June, 2012, on the Oregon coast, one was sighted near the main Hawaiian islands

in September, 2012, and a third one has arrived on the coast of Washington state, December 2012. Thus, even debris of similar size, composition, and shape, departing from close proximity, can travel at varying rates to different locales.

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MR. MURPHY continued to slide 8, "Sightings," to provide a map of actual reported sightings. The map was compiled from information provided to NOAA via an e-mail account created specifically to gather sighting reports. Confirmed versus possible tsunami debris is color coded. He said that, to date over 1,500 reports have been submitted, resulting in 20 confirmed objects, which require additional steps to assure origin. As depicted on slide 9, "Tsunami Marine Debris - Actions," he said detection occurs via high resolution satellite, as well as opportunistic aerial, and marine vessel sightings. Due to the scale of the objects in conjunction with the scope of the northern Pacific Ocean, it is important to refine where to focus attention. Efforts are to target areas close to shore on a consistent basis while continuing the previously described modeling technique. Where possible, beach monitoring is being conducted in a standardized method in order to identify changes, such as increased amounts of Styrofoam or light floating debris. Some parts of Alaska have baseline data dating from 2008. He reported that action planning and preparedness is being handled at the regional level, as well as on-going communication decisions in order to disseminate appropriate information. Slide 10, "Marine Debris Detection," is a color coded map that illustrates the highest concentrations of marine debris detected on the shoreline from an aerial view. Continuing to slide 11, "Planning Preparedness," he said that each state must work with their own resources and needs and NOAA works with states individually to translate prioritization data into useable outputs. In summary, slide 12, "Tsunami Marine Debris - What we know," he said that the tsunami debris added to an existing problem; it is likely that much of the debris sank near shore off the coast of Japan; the debris is dispersed, and not in large concentrations or fields; 20 sightings have been confirmed as of 1/24/13, with many more unconfirmed. He said to keep in mind that the presence of confirmed debris indicates that unconfirmed debris may be of the same origin and the noted increase in Styrofoam, buoys and high-floating debris during the 2012 field season can be attributed as Japanese debris.

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CHAIR SEATON thanked the committee participants.

**ADJOURNMENT**

There being no further business before the committee, the House Special Committee on Fisheries meeting was adjourned at 11:53 a.m.