

ALASKA INVASIVE SPECIES WORKING GROUP

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AISWG Progress

In April, the Alaska Invasive Species Working Group formed and drafted a Memorandum of Understanding. After undergoing revisions amongst the AISWG, it was agreed to move forward with the approval and signatory process.

Over the summer, the draft MOU was presented to the State of Alaska for consideration. The Natural Resources Commissioners sub-Cabinet was unable to meet to discuss the AISWG MOU. Rachael Petro took the MOU to the governors' office, and was given the go-ahead to start getting signatures from state commissioners and departments individually.

The Alaska Natural Resource Commissioners will review the MOU, and are expected to submit changes by September 8. The following week, the AISWG will begin getting signatures from participating agencies. Rachael Petro will get signatures from state agencies, Michael Shepherd from federal agencies, and Michele Hebert will coordinate getting signatures from Non-Governmental Organizations.

The second meeting of the AISWG will take place in Anchorage on October 24. In preparation for the meeting, the working group is identifying meeting objectives, and current accomplishments. Further planning of the October meeting agenda will be discussed at the monthly AISWG teleconferences, and updated on the website and listserv.



Photo by Chris MacQuarrie

Ambermarked birch leafminer (*Profenusa thomsoni*)(ABLM) is a significant pest of urban birch trees. Laval feeding causes a blotch mine on the upper leaf surface. Multiple larvae often feed inside one leaf, removing all the photosynthetic tissue. Severe infestations result in brown trees and early leaf fall. ABLM does not cause tree mortality, but repeated infestations can weaken birch trees, increasing susceptibility to fatal secondary pests and diseases. ABLM is native to Europe and was introduced to North America in the early 1900's likely via nursery stock, and spread westward.

Please see *About the Cover* on pg. 7

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"As a colleague always reminds me, doing nothing is a management strategy also - in the case of purple loosestrife [it] means the end of your natural area - and this may be the most important thing you can impress on folks."

-- Techniques from The Nature Conservancy (TNC) Stewards for the eradication of Lythrum salicaria and Phragmites australis in wetlands, edited by Mandy Tu



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Invasive Species research activities from around Alaska

This issue of the newsletter focuses on invasive species research activities being conducted throughout Alaska. Submissions were solicited over the listserv, and represent a fraction of all activities underway.

National Park Service

The National Park Service is working on a project with NASA to model the potential spread of white sweetclover (*Melilotus alba*) and narrowleaf hawksbeard (*Crepis tectorum*), across burned lands in Interior Alaska. The parks threatened by these species include Denali National Park and Preserve, Yukon-Charley Rivers National Preserve, and Gates of the Arctic National Park and Preserve.

NPS and other surveys are contributing field data and observations of the species' presence or absence from the parklands as well as the matrix of land between them. NASA will prepare the habitat model using the Invasive Species Forecasting System as well as MODIS imagery that provides relevant information about wildfires.

For more information contact:
 Jeff Heys, Exotic Plant Management Team Liaison
 National Park Service, (907)644-3451
Jeff_Heys@nps.gov



The second documentation of *Melilotus alba* invading after wildfire in Alaska: a month after the Parks Highway Fire of 2006, near Nenana, seedlings are already colonizing the burn. Photo supplied by Jeff Heys.



NPS/NASA project participants discuss what the Parks Highway finding will contribute to the modeling effort. Photo supplied by Jeff Heys

Alaska Department of Fish and Game

Invasive Pike

ADF&G continues to build on invasive pike projects carried out over the last several years on the Kenai Peninsula. Pike (*Esox lucius*) population reductions via gill net are continuing on Sevena and Derks lakes (within the Soldotna Creek drainage) and survey netting efforts are underway to determine if pike are present in other local lakes. (Continued on pg. 3)



Northern Pike eating another pike. Photo supplied by Bob Piorkowski, ADF&G

Research Activities continued

Invasive Pike, ADF&G continued

An array of stream and lake water quality data is being collected to help determine the most feasible pike control methods to use in the future. Unsubstantiated reports of yellow perch (*Perca flavescens*) are being investigated. Rob Massengill is the project leader, and can be reached at 907-262-9368.

Submitted by Bob Piorkowski

US Bureau of Land Management

BLM is contracting for two invasive plant inventories in 2006. In the Fairbanks District, Alaska Natural Heritage Program (AKNHP) is surveying the Taylor Highway from Tetlin Junction to Eagle, the Steese Highway from the beginning to Circle and a portion of the Dalton Highway from the Yukon River to Coldfoot.

Additional tasks in the contract include hand pulling small outlier infestations and establishing monitoring plots on BLM managed lands. This work was prescribed by Burned Area Emergency Response (BAER) teams in the form of Emergency Stabilization and rehabilitation (ES&R) Plans for 20 fires.

The goal of this work is to prevent weeds from moving into the burned areas. AKNHP staff are also conducting an inventory for invasive plants on the Campbell Tract, a BLM parcel on the east side of Anchorage. Ben Seifert in the Glennallen Field Office is also collecting weed inventory data, on parts of the Richardson and Denali Highways.

An additional weed inventory was conducted near Nenana on the Parks Highway to develop ES&R plans to protect the BLM managed lands that burned along the Parks Highway this year. The data from these surveys will be entered into AKEPIC this fall or winter and final reports on the surveys are due this winter.

Submitted by Jeanne Standley, BLM



Dan Gilson (PWSRCAC) setting crab monitoring gear

US Fish & Wildlife Service and Prince William Sound Regional Citizens' Advisory Council

Green Crab Monitoring

Since 1999, the Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) has been monitoring for the presence of European Green Crabs (*Carcinus maenas*) in Port Valdez. The Smithsonian Environmental Research Center (SERC) provided the training and original equipment and it has been ongoing ever since under Project Manager Dan Gilson.

When the results of a 2004 SERC study, jointly funded by the U.S. Fish and Wildlife Service (USFWS) and PWSRCAC, indicated that green crabs were capable of thriving in many Alaska waters, Dan began investigating options for expanding the monitoring network with the support of the USFWS. Dan has now provided equipment and training to educators, students, and citizens in Cordova, Homer and Kodiak. By early fall, Dan will have also traveled to Unalaska and Tatitlek to set up citizen green crab monitoring efforts.

Study results for the 2004 SERC report on green crabs, as well as other non-indigenous species studies performed for PWSRCAC can be found at:

<http://www.pwsrcac.org/projects/NIS/studies.html>.

This summer, Dr. Greg Ruiz (SERC) initiated a collaborative effort to develop a citizen-based network to monitor for invasive tunicates in coastal Alaska waters. Discussions are underway to see how these two citizen-based monitoring programs might dovetail in this and future years.

Submitted by Dr. Dennis Lassuy, USFWS

Research Activities continued

National Marine Fisheries Service

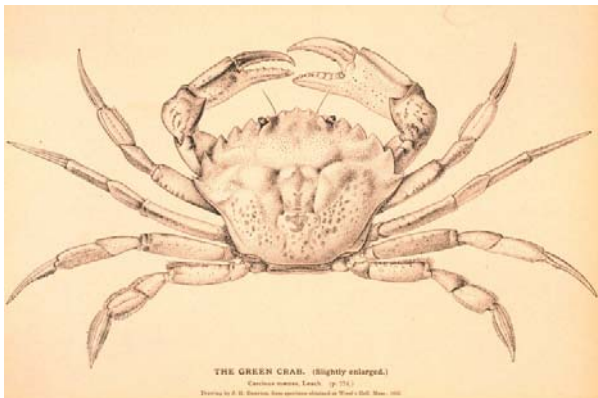
Habitat Capability Modeling for European Green Crab in Southeast Alaska, British Columbia and Washington State Using the Shorezone Project

The National Marine Fisheries Service is sponsoring a research project to develop a habitat capability model for the invasive European green crab in Southeast Alaska, British Columbia and Washington State using the Shorezone coastal mapping project.

The model will integrate physical and biological coastal habitat attributes collected by the Shorezone project with an understanding of green crab life requisites and habitat use. Maps showing areas most susceptible to green crab colonization will be displayed in GIS. Areas within the study area in Washington and British Columbia that are already colonized with green crab will allow for "testing" of the model predictions and further refinement of habitat use on the west coast.

Sensitive areas, such as mud flats utilized by migratory shorebirds, and mariculture sites will be compared to model predications to identify potential "hot spots" and assess the potential risks of a theoretical green crab invasion of southeast Alaska.

For more information contact Linda Shaw of the National Marine Fisheries Service at 907-586-7510.



European Green Crab, *Carcinus maenas*
Illustration provided by Linda Shaw

US Fish and Wildlife Service

Atlantic Salmon Colonization Risk Assessment

Large numbers of Atlantic salmon have escaped from fish farms into the Pacific Ocean, and peer-reviewed evidence suggests successful reproduction and rearing may have begun to occur in nearby British Columbia. Despite these findings, there remains wide variation in opinions on whether Atlantic salmon present an ecological risk to Alaska's native wild salmonids. Therefore, the U.S. Fish and Wildlife Service, in collaboration with the Alaska Cooperative Fish and Wildlife Research Unit, has initiated an Atlantic salmon colonization risk assessment for Alaska waters.

Risk assessment is rapidly growing in its popularity as an analytical tool in the interpretation of management decisions and their consequences. The methods used vary widely with both the species of interest and the data that are available as inputs to the assessment. For example, estimation of "propagule pressure" has been used to interpret the pattern of fish colonization in the Great Lakes; a "Genetic Algorithm for Rule Set Prediction" (GARP) approach that has recently been used to predict *Micropterus* (bass) invasion patterns in Japan; life history strategy as a factor in risk susceptibility was the subject of a recent article in the Proceedings of the National Academy of Sciences; and the national ANS Task Force has published a structured "Generic Nonindigenous Aquatic Organism Risk Analysis Review Process" (which can be viewed at: <http://anstaskforce.gov/gennasrev.htm>).

For the Atlantic salmon project thus far, an annotated bibliography on risk assessment methodology and Atlantic salmon life history has been prepared which will be used to select the most appropriate methodology, and serve as metadata to be used in the risk assessment. (continued on page 5)

Research Activities continued

Atlantic Salmon Colonization Risk Assessment, USFWS continued

The goal of the current project is to: 1) interpret available information (e.g. number, location, life stage, etc.) on Atlantic salmon that have been released or have escaped from net pen culture on the Pacific coast; 2) based on this and other pertinent information, develop a description of the risk that such releases may result in Atlantic salmon successfully colonizing Alaska streams; and 3) describe the risks such colonization may present to Alaska's native salmonids.

The scope of this project is limited to an analysis of the risks faced in Alaska waters. However, the results are likely to be of great interest to all States along the West Coast, where varying levels of concern have been expressed with Atlantic salmon escapees and a range of regulatory actions are being considered. A final report of the risk assessment findings is due in December of 2006.

Submitted by Dr. Denny Lassuy

US Fish & Wildlife Service

Whirling Disease Risk Assessment

Myxobolus cerebralis, the cause of whirling disease in trout and whitefish, has become a serious management concern in the decline of salmonid populations in several western States, and it continues to expand its range. This has driven research toward understanding ecological relationships between the parasite, hosts (salmonids and Tubifex worms), and the environment in an effort to identify means to prevent the spread of *M. cerebralis* or reduce its effects.

In Alaska, there was little information on the potential for parasite establishment if it were introduced, and only limited parasite monitoring data. Therefore, an agreement was entered into in the summer of 2004 for a multi-year effort working with Oregon State University,

Montana State University, the Oregon Department of Fish and Wildlife, and the Alaska Department of Fish and Game, with additional funding provided by the Whirling Disease Foundation. The goal of the work is to determine the likelihood of whirling disease being introduced and becoming established in Alaska.

Initial work has identified areas of highest risk in the Southeast and Southcentral Alaska based on proximity to roads, ports, human populations, angler traffic, salmonid rearing facilities, wild trout populations, and water temperatures capable of sustaining *M. cerebralis*.

The host Tubifex species has been found in hatchery sediments from the Cook Inlet Basin, but it is not yet known where Tubifex and susceptible fish hosts overlap in the wild in Alaska. Initial findings also indicate that some of the Tubifex found in Alaska are from a lineage (IV) never before described in North America. The lineage type is important because they vary in susceptibility to *M. cerebralis* and thus in the level of risk they may present in the spread of whirling disease. Study results are due in the Fall of 2006.

Submitted by Dr. Denny Lassuy



Trout with scoliotic vertebra caused by whirling disease
oregonstate.edu/dept/salmon/projects/salmon-parasites.html

Research Activities continued

Alaska Department of Fish & Game

Alaska Aquatic Plants Guide

The ADF&G invasive species program has begun work towards developing an Alaska Aquatic Plants guide. Project costs will be reasonable as the project contractor from the Center for Lakes and Reservoirs-Portland State University has secured all rights (photographs and

verbiage) to Washington State Aquatic Plants Guide. Cooperators on this project also include the USFWS, USFS, NPS, AKNHP and the UAF Museum. Once completed, this guide will give the citizen-naturalist and agency staffer a valuable tool for identifying aquatic plants, both native and non-indigenous) in Alaska waters.

Submitted by Bob Piorkowski.

Invasive Species in the News

Atlantic salmon caught in Cook Inlet traced to Washington

HATCHERY: First ever in Inlet, but hundreds picked up in Alaska.

The Associated Press

Published: August 23, 2006

KENAI -- An Atlantic salmon caught near Kasilof in July had escaped from a private hatchery in Washington state, according to state wildlife officials.

The fish was the first documented Atlantic salmon in Cook Inlet, but the origin of the fish remained unknown until lab tests focused on its otoliths-- small, rounded bonelike structures found in the inner ears. The structures develop unevenly depending on the fish's growth rate, forming rings like those akin to tree rings.

The fish found off Coho Beach had very even growth rings, indicating it had received regular feedings, like salmon raised in hatcheries and farms, according to Bob Piorkowski, invasive species program coordinator for the Alaska Department of Fish and Game.

With the help of the Washington Department Fish and Wildlife, the Alaska agency determined the fish had likely escaped from a private hatchery near Scatter Creek in Rochester, Wash.

While inspecting the otoliths, Fish and Game discovered what is called a thermal mark, meaning it had been briefly exposed to higher than normal temperatures that leave a distinguishing mark on otoliths. Washington

requires Atlantic salmon raised in state waters to undergo such marking to help in identification should a fish escape.

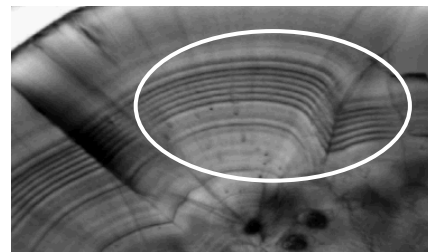
Piorkowski said the mark found on the otolith could have been caused by something other than the thermal exposure, but it is unlikely.

The Washington hatchery's last major escape occurred in spring 2005 when 4,500 one- pound fish were released, Piorkowski said. A hatchery official said, however, the salmon found in Cook Inlet likely escaped in May when fish were loaded onto a transfer barge, Piorkowski said.

Atlantic salmon can jump higher than Pacific salmon.

Alaska prohibits raising farmed Atlantic salmon, but nearly 600 specimens of the species have been documented in state waters. One out of every 100 Atlantic salmon raised on fish farms in British Columbia and Washington escapes, according to Piorkowski.

The concern for many is that Atlantic salmon could spoil native salmon stocks through colonization, interbreeding, predation, habitat destruction and competition.



Sockeye salmon otolith with thermal marks
<http://npafc.taglab.org/tempcycle.asp>

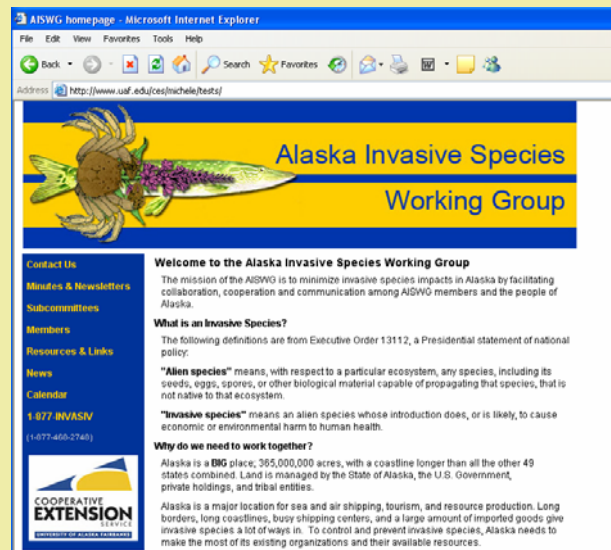
AISWG Website

The AISWG website is currently being produced and hosted by the University of Alaska Cooperative Extension service. This site is intended to be a resource for AISWG members, and people interested in Alaska invasive species issues. The website contains contact information, calendar of activities, information on the Alaska Department of Fish & Game **1-877-INVASIV** hotline, meeting minutes, and more.

The address for the site is anticipated to be:

www.alaskainvasives.org

Registration of the address by the University of Alaska Fairbanks is still underway.



About the Cover continued

In the late 1990's ABLM was identified as the cause of significant defoliation of urban birch trees in Anchorage, Alaska and surrounding areas. ABLM can be controlled by the Ichneumonid parasitoid *Lathrolestes luteolator*. *L. luteolator* females lay a single egg inside developing ABLM, these eggs remain dormant until the larvae pupates, then hatch and develop, emerging the following summer as adult parasitoids. *L. luteolator* is native to North America but is not found in Alaska. A joint biological control project between the United States and Canadian Forest Services was initiated in 2003 to collect *L. luteolator* in Canada for introduction into Alaska. In 2003 the pre-

release life history and distribution of leafminer in Anchorage was evaluated and collections made of *L. luteolator* parasitized ABLM larvae near Ft. Smith and Hay River, Northwest Territories, Canada. These larvae were allowed to pupate in tubs at CFS facilities in Edmonton, Alberta and overwintered, then shipped to Alaska in spring 2004 for final rearing in Anchorage.

Submitted by Michele Hebert from: **Aesthetic pests of urban birch: Biological control of birch leafminer in Anchorage, Alaska.** Chris J K MacQuarrie, David Langor, Edward H. Holsten, John Spence, Scott Digweed, and Daryl Williams.

http://esa.confex.com/esa/2004/techprogram/paper_17269.htm

Upcoming Events

Monthly teleconferences for Marine and AISWG Groups. Meetings announced via listserv and website.

AISWG Meeting October 24, Anchorage

Subcommittee updates, further discussion of council activities and goals

CNIPM Meeting October 25 and 26, Anchorage Annual Meeting.

Listserv Address

To subscribe to the listserv, contact either:

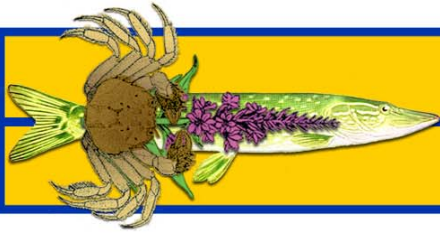
ffmah@uaf.edu or fndmj@uaf.edu

Visit the list and sign in at:

<https://lists.uaf.edu:8025/mailman/listinfo/aisc-l>

Submit list postings to: aisc-l@lists.uaf.edu





ALASKA INVASIVE SPECIES WORKING GROUP

"Alien species" means, with respect to a particular ecosystem, any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem.

"Invasive species" means an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Executive Order 13112, Feb 3, 1999



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