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Bluenose Inn, Bar Harbor, Maine
Meeting Summary • May 21 and 22, 2003

Panelists in attendance: Nancy Balcom, CT Sea Grant Extension Program; Jim Carlton, Williams College – Mystic Seaport; Gretchen Fitzgerald, Ecology Action Centre and NEANS Panel contract staff; Willard Harman, NY State Federation of Lake Associations; Michael Hauser, VT Department of Environmental Conservation; Sandra Keppner, US Fish and Wildlife Service; John McPhedran, Invasive Species Program; Leslie Mehrhoff - G Safford Torrey Herbarium University of CT; Marshall Meyers, Pet Industry Joint Advisory Council; Wayne Millington, National Park Service; Charles O'Neill; NY Sea Grant Extension Program & National Aquatic Species Clearinghouse; Jeremy Pare, NE Interstate Water Pollution Control Commission; Judith Pederson, MIT Sea Grant Program; Ronald Pierce, Department of Fisheries and Oceans; Amy Smagula, NH Department of Environmental Services; Jan Smith, MA Bays National Estuaries Program; Susan Snow-Cotter, MA Office of Coastal Zone Management; Jim Straub, MA Department of Environmental Management; Donna Turgeon, National Oceans and Atmospheric Administration; and Lisa Windhausen, Lake Champlain Basin Program.

Other participants and guests: Jason Baker, MA Coastal Zone Management; Cynthia Boettner, US Fish and Wildlife Service and the New England Invasive Plant Group; Ann Bove, VT Department of Environmental Conservation; Shippen Bright, Maine Lakes Conservancy Institute; Christopher Deacutis, Narragansett Bay Estuary Program; Jennifer Forman, NEANS Panel contract staff; Paul Gregory, ME Department of Environmental Protection; Linda Gregory, Acadia National Park; Karen Hahnel, ME Department of Environmental Protection; Theodore Kaufman, ME House of Representatives; Andrea Locke, Department of Fisheries and Oceans; Mark Malchoff, Lake Champlain Sea Grant Project; Robin Seeley, Cornell University; Maggie Shannon, Congress of Maine Lake Associations; Elizabeth Stephenson, University of Maine Orono; Charles Summers, Senator Olympia J. Snowe's Office; David Towle, Mount Desert Island Biological Laboratory; Megan Tyrell, MA Office of Coastal Zone Management; Dana Wallace, ME Department of Marine Resource (retired); William Wallace, Barnstable County's Cape Cod Coop Ext & WHOI Sea Grant; Shannon Weigle, MA Bays National Estuary Program; Sarah Whitney, Great Lakes Commission; and Dean Wilkinson, Department of the Interior Office of the Secretary OS/SIO/NISC

Contract Staff: Michele Tremblay, ANS Program Manager (naturesource communications) and Jennifer Ford (Ecology Action Centre)

Wednesday, May 21, 2003

Introductions and Updates

Susan Snow-Cotter welcomed everyone to the meeting. Unfortunately, co-chair Tim Sinnott was unable to attend. Thanks were given to Michele Tremblay for organizing the meeting and Paul Gregory for arranging media attendance at the Rapid Response Workshop held on May 20.

Dean Wilkinson gave an update on the National Aquatic Invasive Species Act reauthorization. Two bills have been introduced in the house, HR1080 (the larger bill) and 1081, a 2nd title to the act specifically to support research on invasive species. In the Senate, the two have been combined, and the primary cosponsor is Senator Collins of Maine. The bills in the House have been referred to the Transportation and Infrastructure, Resources, and House Administration Committees. In the Senate the bill is in the Environment and Public Works Committee. Last month, Resources held a broad oversight hearing on invasive species. The main opposition to new legislation came from private property rights advocates.

Action Item: Dean suggested that it might be useful to have some key people attend upcoming committee hearings, and that it is possible to have a supportive senator bring up specific questions.

Dean Wilkinson also gave a National Task Force Update. There are two new co-chairs, Mimi Parker from US Fish and Wildlife, and NOAA Deputy Assistant Secretary of Commerce Tim Keeney, both of whom have worked in the NEANS region in the past. Sharon Gross mentioned that the Task Force has revised their committee structure, will be looking for regional representatives for the committees (Prevention, Monitoring, Control, and Research). A new draft green crab management plan will be noticed in federal register for public comment. The Task Force has decided to bring the heads of the regional panels together, probably immediately prior to next Task Force meeting.

Action Item: Dean will notify Susan when the Task Force begins looking for regional representatives for their committees.

Chuck O'Neill reported that the Invasive Species Council is in the implementation phase of their National Plan, working on early detection and rapid response. The Pathways Committee has come up with a very comprehensive list of pathways. The Communication, Education, and Outreach Committee wants to generate materials on the economic impacts of invasive species, for use in education, lobbying, etc., and are choosing which species to work on. The Council is also working with the National Agriculture Library on the invasivespecies.gov website, to make it more user-friendly. Bills currently in the house will codify the Council. The next ISAC meeting will be in June.

NEANS Panel Business - Michele Tremblay, ANS Program Manager

The meeting summary from the December 2002 Panel meeting was accepted. We would like to hold the next Panel meeting in early November in Connecticut. The only scheduling conflict raised was with the North American Lake Management

Society meeting, November 4-8. Amy Smagula suggested that we could hold our meeting in conjunction with theirs, at Foxwoods in Connecticut.

Pet industry outreach update – *Shannon Weigle*, MA Bays Program

The Mass Bays Program has created a flyer for pet industry. Aquarium and aquatic gardening groups have agreed to help distribute the flyer. The flyer is really nice, and they will make 25,000 copies to distribute via pet stores, and are developing a website with additional info and a survey. They will distribute the pamphlet when the website is ready.

Action Item: The flyer is available upon request from the Mass Bays Program and could easily be modified for other states. Also, they are looking for people to give presentations about this, and to write an article about live release for an aquarist magazine.

Maine Lake and River Protection Sticker Program update – *John McPhedran*, ME Department of Environmental Protection

In Maine, they have developed a program with two stickers, a \$10 sticker for a resident boat, and \$20 for a non-resident boat. You have to buy the sticker each year to launch any motorized boat. They have raised over a million dollars this way, mostly from resident boats. Sixty percent of the funding goes to DEP, mainly to work on invasive plants, and some money is used for education and outreach. They have found really high compliance and support. They also give small grants to local groups for inspection and education, and hand removal of freshwater invasive plants. The state is responding to the first hydrilla infestation in the state, with in-lake control, inspection, and education. They may be able to eradicate the infestation, but may not because of permitting issues. It was raised that the legislation used to enact this program is available from the NEANS website, as a resource for other states or provinces.

Early Detection and Rapid Response Workshop update – *Jay Baker*, MA Office of Coastal Zone Management

The workshop had 50 participants and 4 speakers. We developed consensus on a very basic rapid response framework. We agreed on the following goal statement:

“Through this planning effort, the NEANS Panel seeks to provide guidance and technical support to develop ANS rapid response protocols. The goal of these protocols is to identify new ANS infestations in time to allow risk mitigation efforts to be taken and where feasible, to eradicate, through implementation of environmentally-sound measures, before they can become permanently established.”

On the morning of the 21st, breakout groups identified tasks for the NEANS panel. We have established a steering group to head this up.

Action Item: Michele will generate proceedings of the workshop.

Round Table

Shannon Weigle, Massachusetts Bays Program

Mass Bays has received money from Sea Grant to do multilingual outreach on aquarium and live seafood releases. The proceedings from the “Eyes on the Estuary” workshop are available on www.massbays.org.

Gretchen Fitzgerald, Ecology Action Centre (EAC)

Last fall MSX disease was discovered in oysters in the Bras D’Or Lakes, and we have been using this invasion to push for stronger regulations on ballast water (the likely pathway). The EAC’s Committee on Marine Bioinvasions has been working on the ballast water management annex for our region, which would discourage ballast water discharge in designated vulnerable areas, and discourage uptake in harbors with invasive species problems. The Canadian shipping industry representatives have been protesting these provisions. The Committee has done other outreach, held a panel discussion on invasive species through the Nova Scotia Institute of Science, and are working to increase Canadian participation in the NEANS Panel.

Willard Harman, NY State Federation of Lake Associations

There has been some progress in the development of biocontrol methods for Eurasian milfoil, using arthropods. Researchers have discovered that if we have enough piscivorous fish eating the insectivorous fish which eat these arthropods, then the arthropod populations can be maintained at a high enough level to reduce milfoil.

Jim Straub, MA Lakes and Ponds Program

The program is hoping to submit a bill for a sticker program like Maine’s. They need better funding but have organized lots of training between state agencies, and have trained many people who spend time on and around lakes to monitor weeds

Ron Pierce, Department of Fisheries and Oceans (DFO)

The Canadian Council of Fisheries and Aquaculture Ministers, a group of provincial and federal ministers, has convened a special national task force on aquatic invasive species. This group is part of a national invasive species plan, and is charged with implementing the national action plan.

Andrea Locke, Department of Fisheries and Oceans, Gulf Region

Andrea has been involved in a three-year study of green crab spread in the Southern Gulf of St. Lawrence. They are investigating their movement and impacts on the ecosystem, including eelgrass. There is also a *Styela clava* research group, studying this tunicate which had a massive population increase in PEI in 2001, and has become a serious problem for mussel farmers. There is also a project out of DFO in Moncton studying vectors of transport for aquatic species, which aims to develop HACCP for marine coastal users. They will run experiments later in the summer, mostly on invertebrates, to investigate the effect of different behaviors by boat owners and others. The tunicate *Ciona intestinalis* has also been creating problems for mollusk aquaculturists in the region. Review of eastern Canadian marine non-indigenous species is ongoing.

Nancy Balcom, CT Sea Grant Extension Program

Connecticut has received funding from Sea Grant to create a state management plan. They are also studying the hull fouling of boats that go along their coast.

Mike Hauser, VT Department of Environmental Conservation

They have hired Lisa Windhausen as the Aquatic Nuisance Species Coordinator for the Lake Champlain Basin Program. They have received funding to start implementing the Lake Champlain Management Plan.

Chuck O'Neill, NY Sea Grant

In Lakes Erie and Ontario, research and outreach on avian botulism has begun. While the botulism is native, there is evidence that it has been enhanced by the presence of non-native zebra mussels and gobies. New York Sea Grant has funding to revisit the economic impact of zebra mussels in their entire North American range, and do to a water chestnut outreach and education program in New York and New England. Tim Sinnott is updating the NY State Management Plan.

Action Item: NY Sea Grant is looking for educational material for their new website.

Amy Smagula, NH Department of Environmental Services

A new law in New Hampshire has increased their funding for prevention and education on invasives, and will allow them to give research grants. They are funding a big project staffing lake access sites for inspections and education. Legislation establishing a sticker program (as in Maine) was passed by the Senate, and is currently in the House. They are also working with Dartmouth College, to develop a genetic rapid assessment tool which distinguished between native and invasive species of milfoil. The North American Lake Management Society conference will be held in New Hampshire in November.

Shannon Weigle, MA Bays National Estuary Program

A representative from the New England Aquarium will be joining the NEANS Panel.

Jim Carlton, Williams College, Mystic Seaport

Jim has completed a second edition of the Checklist of Introduced and Cryptogenic Marine and Estuarine Organisms from Nova Scotia to Long Island Sound. He feels that the listing of introduced species is comprehensive, but the number of cryptogenics could be much larger. A detailed monograph should be available at the end of the year.

The following additions to the Roundtable were given on Thursday, May 22:

Donna Turgeon, National Oceans and Atmospheric Administration

Many groups at NOAA have been working on invasive species issues. They have developed a dynamic database, including many sources of data on coastal species. There is good potential for NEANS own data management efforts, led by Jay Baker, to be integrated with their system.

Cynthia Boettner, Invasive Plant Atlas of New England and New England Invasive Plant Group

The New England Invasive Plant Summit is upcoming, details are available from <http://www.newfs.org/invsumm.htm>. The Silvia O. Conte Biodiversity Preserve is developing a zebra mussel management plan. Action Item: They are looking for examples and input on zebra mussel plan.

Marshall Meyers, Pet Industry Joint Advisory Council

The Great Lakes Panel is developing a large campaign to educate aquarium hobbyists about the risks associated with releasing their pets into waterbodies. The campaign will include ads and stories in magazines, and point of purchase materials such as fish bags and pamphlets, distributed via pet stores (including Wal-Mart) and manufacturers. The project will incorporate a very large proportion of the aquarium trade across much of the nation.

Judith Pederson, MIT Sea Grant College Program

Judy has a graduate student working on putting hitchhikers material up on her website, including introduced and cryptogenic species. She plans to include information from Rhode Island and the Gulf of Maine.

Lisa Windhausen, Lake Champlain Basin Program

For Earth Day, they held an event in which Governors and Quebec officials resigned the MOU and endorsed opportunities for action for Lake Champlain. Aquatic nuisance species are a priority in these items. They are revising their management plan, and projects this year include: water chestnut management, zebra mussel monitoring, non-chemical sea lamprey control, and a bait fish guide green list for the region.

Jan Smith and Judith Pedersen, MIT Sea Grant

In 2000, they received funding for a New England Rapid Assessment to look at eight estuaries in New England, doing two or three sampling sites within each estuary. This summer they will continue to look at sites with permanent dock, revisiting some sites, and adding some new ones. The surveys are designed to maximize detection of invasive species and therefore are not random. Judy is assembling a team of taxonomists to help with identifications. In the last study they found 240 species, 24 of which were introduced.

Action Item: Dean Wilkinson added that the National Task Force wants to generate collection protocols and would welcome input.

Committee Meetings

Panelists and others broke into Committee meetings for the remainder of the day.

Thursday, May 22, 2003

Committee updates

Ballast Water: The 1st regional ballast water workshop was held in September last year; they generated agreement to move ahead on a regional management plan. These proceedings should be out soon. A key issue identified was finding a safe exchange area for ships going up the coast. They are holding a second ballast water workshop October 27-28 in Halifax, with scientists and shipping community, to address this issue. It has been hard to get information about shipping traffic, but the intern (Ben) has been helping.

Action Item: *The Ballast Water Committee will keep working on a regional ballast water management plan. Anyone who wants to attend the workshop in October should contact Judy.*

Communication, Education, and Outreach: Amy Smagula will replace Nancy Balcom as co-chair of this committee. They will use some money to distribute Shannon's pamphlet in schools. We have a NEANS display, we will try to send it around, but states can request their own copy. The CEO Committee has two interns, one worked on display board, and will do work on species. The other, Elizabeth Perry, is doing web updates. The hydrilla cards will be done soon.

The CEO Committee thanked Nancy Balcom for all the work she'd done as co-chair.

Action Items: *We will put the NEANS display up at the NALMS conference. The CEO committee will generate a generic template for press releases that can be sent to states so they can insert the appropriate names etc. for their state, and send to their media when NEANS wants to release something. Paul Gregory (Maine DEP) will help us liaise with media, including distributing the Rapid Response Workshop proceedings. The CEO Committee will plan a 2nd media event around pet release in September or October, when Shannon Weigle returns from maternity leave.*

Policy and Legislation: In December PLC identified six actions. A list of ANS legislation in our region was completed and posted on the NEANS website, but we need to add an introductory disclaimer.

Action Items: *The list should also be reviewed, and expanded to include emergency response laws and regulations, which may involve hiring a legal consultant. Some continuing actions are: expanding Committee membership to include all states, giving a presentation at NEWIPCC, and encouraging NAISA reauthorization. Jeremy will look at water quality standards that apply to ANS outside New England. New actions for the Committee include working with the Science and Rapid Response Steering Committees on workshops, and look at what MOUs may need to exist among states that share water bodies to facilitate rapid response. It would also be good to add Canadian laws and regulations to our list.*

Science and Technology: The priority invasive species list compilation has been done by Jen Forman, collecting the lists of species that states consider invasive and the criteria they use, and control techniques and BMPs. This has been really well done,

and it's almost complete. Jay has been forwarding database development. A Steering Committee for regional rapid response planning was formed this morning.

Action Item: They will try to flesh out a rough plan for moving forward on rapid response planning in the Northeast in next few months, pass it around, and bring it to the Great Lakes Panel meeting in July. The Science and Technology Committee will also develop a list of taxonomists in the region and ask about their criteria for designating invasive species. This can be used as a contact list for rapid response.

ANS criteria and species list update – Jen Forman, NEANS Panel Contract Intern
Jen compiled lists of priority invasive species from the Northeast Region, and the criteria they used to make the list. More than half of the species listed are freshwater plants, 28% are wetland plants, and 19% are marine species. This is probably because there aren't many priority lists for marine systems. Marine species were mostly invertebrates, while in freshwater, higher plants were dominant, followed by fish. The ten species listed most often were all higher plants. Most species were only listed in one or two regions.

Jen passed out her list, but there was significant concern about the possibility of it being misunderstood (as a list of species present in each area), so the lists were passed back. The Science and Technology thanked Jen for this substantial undertaking.

Action Item: Jen will expand this list to include where each species was listed and distribute it again.

Data management updates – Jay Baker, MA Office of Coastal Zone Management and Les Mehrhoff, Invasive Plant Atlas of New England.

Jay Baker has been working with Fisheries and Oceans Canada on database development. The database will include geographic data and life history information, especially on marine species, and groups can upload data to the system. Jay will have more information by next meeting.

Les Mehrhoff said that IPANE has changed their website substantially. They are collecting geo-referenced data from herbaria all over New England, and making it available via the web. They have volunteers trained to ID lots of plants, and enter them into the database.

Canadian Task Group on Aquatic Invasive Species – Ron Pierce, Department of Fisheries and Oceans

In response to public pressure, the Canadian Council of Fisheries and Aquaculture Ministers approved the formation of a task group on aquatic invasive species in 2002, with representatives from each province and several federal agencies. The goal of the Task Force is to develop a national action plan on aquatic invasive species. The Task Force is one of four thematic working groups on invasive species that have been created, under the Canadian Biodiversity Convention Office. The Task Forces objectives are to look at how invasives are spread and develop priority actions for pathways. They will also identify legislative gaps. Their focus will be on prevention and BMPs. They plan to present a draft framework of the National AIS plan to federal Deputy Ministers in June, refine this at the 12th International Conference on Aquatic

Invaders in Windsor in June, present it to the CCFAM in September, and begin implementation in September 2004.

The agenda item **Establishing research priorities for invasives in the Northeast** was tabled.

Action Item: Susan asked everyone to submit any ideas they have already.

Working with Lawmakers Panel

Panelists:

- *Ted Kaufman*, Chair ME House Natural Resources Committee
- *Charles Summers*, US Senator Olympia Snowe's Office
- *Shippen Bright*, Maine Lakes Conservancy Institute

Ted Kaufman talked about understanding the state or region each legislator represents, being sensitive to jurisdictional issues, the importance of educating legislators, developing legislative leadership, and building relationships with lawmakers.

Maine passed the Natural Resources Protection Act two years ago, and the jurisdiction was very complicated, several committees were affected. This will always be true with invasive species, so we need to be informed and aware of this, to consult with people early on so they feel consulted and can raise concerns early in the process.

Ted encouraged us to think about socio-economic concerns, be able to explain to legislators how this issue affects their constituents. For example, in order to establish the Maine sticker program, arguments about waterfront real estate value and impacts on outdoor recreational quality (bass fishing) were really key.

Ted explained that when confronted with an unfamiliar issue, his committee holds workshops where scientists and others give presentations. These workshops can be very influential, and he workshops they have (most of their folks are not scientists so they rely on others for info) are where scientists and others inform the committee.

Ted also emphasized the need to develop relationships with particular legislators, educate them about environmental issues so they can be advocates.

Q - What is the best way to approach a representative?

A – From a distance, email with pictures attached, can be effective, but the best thing is to meet face to face with a little key material.

Q- There is a lot of expertise in state agencies, but we can't lobby, so how can legislators make good use of this expertise?

A - Legislators have a good connection to state staff, so they will turn to those agencies for info. State agencies can send in nonprofits and university folks are great.

Charlie Summers wanted to emphasize how a small group of people can really affect state policy. Knowing your representative, their jurisdiction, and political position is really important, and developing a relationship in which they trust you. Personal contact is possible in most states like Maine, but legislators get so many emails they can't respond. Legislators really rely on their staff, and they can help you.

Q – What about advocacy through science, can we affect public policy through scientific reports?

A – Yes, but the report has to get to the office. The most effective thing is to drop it by in person.

Q – Regarding NAISA reauthorization, we have a support letter, is that useful?

A – Yes, but focus on the people you need to sway in order to pass the bill.

Q – Do you have examples of how activists can influence legislators?

A – Changes to workers compensation laws were brought about by business people approaching legislators, they shut down legislature. It's important to “show your passion” and you can try to move things forward even if you can't get everything you want.

Shippen Bright is an experienced lobbyist. He made the point that scientists are respected and knowledgeable, but often awful communicators, so they need to be trained to communicate or else be backed up by people who can. The challenge is to talk to legislators in an interesting and understandable way. You need to be able to deliver your message in 30 seconds, “sweet and simple.” Economics is the “great equalizer,” everybody cares about it. Pitching preventative legislation is very difficult - bring a moral argument, bring an economic argument, bring a visual. Explain how they will benefit from your legislation and make it quantitative.

“Don't use email,” build relationships. It is critical to develop a relationship with legislator's staff, they'll make or break you. The other side of this relationship is that you need to work with them too, and acknowledge it when they do good stuff.

Q – How do we be thorough and scientific in 30 seconds? Do we acknowledge the cons?

A – Charlie recommended breaching the topic with economics, you have to be able to boil down all the pros and cons to a single message.

A – The 30 seconds is the resume, it's how you get their attention. You can talk about complexities if you get to converse.

A – In written communication, brevity is key.

A – Be familiar with what legislators are thinking about, what's on the government page of the newspaper this week.

Managing Purple Loosestrife in Acadia National Park – Linda Gregory, National Park Service

Fifteen years ago, someone had heard about the plant, found it in the park, and decided to pull it up. They established an herbicide program and this continues. The goal has been to minimize its presence and focus on prevention in new areas, and this is working. The commitment to do this every year has been important and keeping good records. Engaging people in monitoring has been really helpful, and they have discouraged people from selling and planting loosestrife. Their list of native plants and where you can get them has been really popular. Linda also emphasized the need

for taxonomists who can identify plants. They want to start training people who monitor water quality to look for invasives.

Q – How do people respond to the use of herbicides?

A – There is really no other effective way to remove loosestrife, so they used Rodeo, spot treating each plant. People tended to be supportive as long as they felt that the program was well thought out.

Spotlight on Species: Green Crab

Panelists:

- *Dana Wallace*, Maine Department of Marine Resources (retired)
- *Megan Tyrell*, Massachusetts Coastal Zone Management
- *Andrea Locke*, Fisheries and Oceans Canada, Gulf Region
- *David Towle*, Mount Desert Island Biological Laboratory
- *Bill Walton*, Woods Hole Oceanographic Institution, Aquaculture Extension

The National Task Force has released a Green Crab Management Plan, mostly dealing with the West Coast, but there may be a role for us.

Dana Wallace started working on green crabs in 1946. The focus for a long time was to protect clam beds from green crab predation. Lately, clam harvests have been really low, which is probably due to both temperature and predation from green crabs. They have designed fences to keep the crabs out of some areas, and generated protocols for estimating abundance.

Andrea Locke works in the Southern Gulf of St. Lawrence (New Brunswick, Nova Scotia, PEI). Green crabs have spread through Nova Scotia from the Bay of Fundy since the 1950s, entering the Southern Gulf in 1994-5. They have spread very quickly in this area. The genetics appear to be different, so there may have been a second introduction via Port Hawkesbury or Halifax. There is a lot of concern because this area has very productive fisheries and bivalve aquaculture industries. In their ecosystem monitoring, they have seen significant drops in fish and invertebrate diversity and abundance, and reduced eelgrass biomass.

Megan Tyrell studies green crab and Asian shore crab interactions, in rocky intertidal communities. There is evidence of strong top-down control of invertebrates on rocky shores by green crabs. Recently, Asian shore crabs have undergone rapid range expansion, and are now dominant some areas. The two invasive crabs compete, having similar feeding preferences. In experiments, Asian shore crabs ate more of most prey species, but both caused declines in mussels, barnacles and *Spirorbis* (a worm that lives on rocks). Andrea concluded that these introductions have probably caused declines in prey abundance, maybe changes in behavior and morphology of prey also.

Bill Walton is looking at methods to reduce the abundance of green crabs. Currently, there is a huge abundance of green crabs in Cape Cod, which reduces populations of economically important bivalves. This includes indirect solutions like barriers around clam beds, chemical and biological control, and the use of larger juvenile shellfish in culture. Direct mitigation includes directed fishery on the crabs (as they do in Europe) and bounties. There is potential to sell them as soft-shell crabs, a lucrative market. In trap experiments, they never reduced green crab abundance, but did increase small clam survival. This may be a better management goal.

David Towle described gene-based approaches to control, which so far are in the conceptual stage. David is interested in the cell's transcriptional process, targeting physiologically sensitive sites (gills, particularly osmoregulative functions, the sodium pump), and certain developmental stages (embryonic stages, molting, and the hormonal processes for this). It is challenging to be species specific. They are looking at genetics of a sodium pump sub-unit amino acid sequence, finding the parts of the sequences that are unique to green crabs. He is also going through a similar process for an amino acid sequence related to hormones for molting, so a goal could be to develop a green crab-specific drug based on this.

Andrea Locke mentioned that a group in Prince Edward Island is running an experimental program on green crab processing. The goal is to suck the meat out with vacuums and market it as a lower quality product (for crab salad etc.) There are nuisance permits so you can sell green crab bycatch to these researchers.

Other business

There being none, the meeting was adjourned by Susan Snow-Cotter.

Meeting summary submitted by Gretchen Fitzgerald, Contract staff