HOOK, LINE AND THINKER

The Newsletter of the Fishermen and Scientists Research Society

Issue: 2008-3 **Summer 2008**

NS FISHERIES SUPPORTS FSRS LOBSTER RESEARCH

By Patty King, General Manager, FSRS

The Nova Scotia Department of Fisheries and Aquaculture has provided funding to the Fishermen and Scientists Research Society (FSRS) for two of its lobster research projects. The funding is from the Department's Lobster Science Program. The FSRS has received $15,000 for the Lobster Moult and Quality Project, to be used to help pay the vessel charter expense reimbursement fee for the vessels doing the study.

We also received $25,160 for the Lobster Collector Project which is studying settlement of young-of-year lobster. The project is a collaboration of fishermen, the FSRS, DFO Science Branch, Rick Wahle of the Bigelow Laboratory for Ocean Science in Maine and the Nova Scotia Department of Fisheries and Aquaculture. Implemented last year as a pilot

NS Fisheries and Aquaculture Minister Ron Chisholm presents FSRS General Manager Patty King with cheques for $40,160 for lobster research.

• Inside this Issue •

project in Lobster Bay in Southwestern Nova Scotia, the funding from NS Fisheries enabled us to expand the project this year. In addition to deploying collectors in Lobster Bay, we deployed them in Port La Tour, Prospect and Big Bras d'Or. We were also able to help support the expansion of the Guysborough County Inshore Fishermen's Association's lobster collector project by providing them with additional collectors for their project.

NS Fisheries and Aquaculture has been a strong supporter over the years of the work we do, recognizing its value in helping ensure a sustainable fishery through collaborative science and communication between fishermen and scientists. On behalf of the FSRS members, I would like to extend our sincere thanks to Minister Ron Chisholm and his Department for their continued support and on-going contributions to the FSRS.

4th Annual Lobster Science Workshop

Crowne Plaza Moncton Downtown Hotel
Moncton, New Brunswick
November 4-5, 2008

Atlantic Veterinary College Lobster Science Centre and the Coastal Zones Research Institute (NB) are pleased to be co-hosting the 4th Annual Lobster Science Workshop at the Crowne Plaza Hotel in Moncton on November 4-5, 2008. The theme for the upcoming Workshop is **"Growing the Resource: Lobster Enhancement and Health Strategies"**. This theme should ensure great and positive interactions among all participants.

This year we will have two keynote speakers; Martin Mallet, Director of Homarus Inc. in Shippagan, NB, and Michael Tlusty, Director of Research at the New England Aquarium in Boston, MA. Martin will be sharing his experience with the artificial reefs for better habitat, and the lobster hatchery and seeding projects, while Michael will give us an overview of the lobster and shell disease research undertaken at the New England Aquarium.

Special room rates of $139 (single) at the Crowne Plaza Hotel for workshop delegates. There is a limited number of rooms available; reserve early by calling 1-866-854-4656 and mention the group code **LOB**.

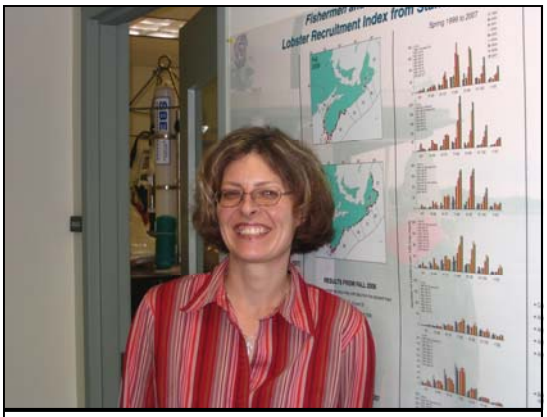
Registration fees:	$35 before Oct 20th (includes lunch) $50 after Oct 20th (includes lunch)
Banquet:	$50 before Oct 20th $65 after Oct 20th

For more information or to register, call
902.894.2884
or visit:
www.LobsterScience.ca/workshop

TURNING A NEW PAGE

By Carl MacDonald, Research Biologist, FSRS

As the fall approaches, everyone prepares themselves to leave their summer vacations behind and get back to work or school, whatever the case may be. This fall, I am turning a new page and will be taking a seven month leave of absence from my position as Research Biologist with the Fishermen and Scientists Research Society. From September 3rd, 2008 to March 31st, 2009, I will be working with the Department of Fisheries and Oceans on a contractual basis. I will be working as a marine policy research analyst within the Policy and Economics Branch of the Department of Fisheries and Oceans. This employment opportunity will provide me with different insight into the current issues facing the commercial fishing industry. After the contract, I will have a better understanding of marine policy and further experience liaising with government departments.



Shannon Scott-Tibbetts, Acting FSRS Research Biologist

During my leave, Shannon Scott-Tibbetts and Jeff Graves will be taking over the duties of the Research Biologist. Expect to see one or both of these capable FSRS employees at upcoming fishery meetings. Both of these fine employees have been working for the FSRS for over 10 years.

In conclusion, I have always been interested in the research conducted by the Society and plan to keep in touch during my leave. I thank the FSRS for allowing me to grow and further myself in the marine fisheries field. As well, I am just a phone call or an e-mail away if my assistance is required during my leave.

Patty's Picks

www.marinebiodiversity.ca/COINAtlantic/

COINAtlantic (Coastal and Ocean Information Network for Atlantic Canada) an Atlantic Coastal Zone Information Steering Committee (ACZISC) initiative "to develop, implement and sustain a network of data providers and users that will support secure access to data, information and applications, for decision-making by coastal and ocean managers and users of coastal and ocean space and resources."

www.gulfofmaine.org/esip/

Ecosystem Indicator Partnership - A committee of the Gulf of Maine Council of the Marine Environment to develop "indicators for the Gulf of Maine and integrate regional data for a Web-based reporting system for marine ecosystem monitoring".

www.envnetwor.smu.ca/

Community Based Environmental Monitoring Network that assists individuals, community groups and organization with various aspects of environmental monitoring.

ECOSYSTEM INDICATORS AND TOOLS IN THE GULF OF MAINE

By: Christine M. Tilburg, ESIP

The Gulf of Maine Council on the Marine Environment (Council) has been focusing American and Canadian attention on the Gulf of Maine for almost two decades. The Council's work in the Gulf is part of a long-range goal of maintaining and enhancing environmental quality. One of the steps in sustaining the quality of life in the Gulf of Maine is maintaining vigilance over the entire ecosystem, including human communities. To balance this equation, the Council has formed an Ecosystem Indicator Partnership (ESIP) to tackle this issue by determining and reporting on priority indicators. ESIP is formed of over 100 scientists, planners, academics, and others working on six focus areas: coastal development, climate change, contaminants, eutrophication, fisheries/aquaculture, and aquatic habitats.

Indicators were rigorously determined through a consensus process and were required to satisfactorily answer the following questions: Is the indicator scientifically valid? Is the indicator responsive to change? Does a cause and effect link exist? Are accurate data available? Is the indicator relevant to users? Is the indicator comparable regionally? Is the indicator useful at different scales? Is the indicator comparable to established thresholds or targets? and Does the indicator represent something other than a measurement?

One of the first steps towards answering these questions was to obtain a thorough understanding of what data is available regionally. To do this, ESIP created the Monitoring Map (available on the ESIP webpage at www.gulfofmaine.org/esip/map). This web mapping tool allows users to locate monitoring in each of the six ESIP focus areas along with the location of nearby sites and information about data parent organizations.

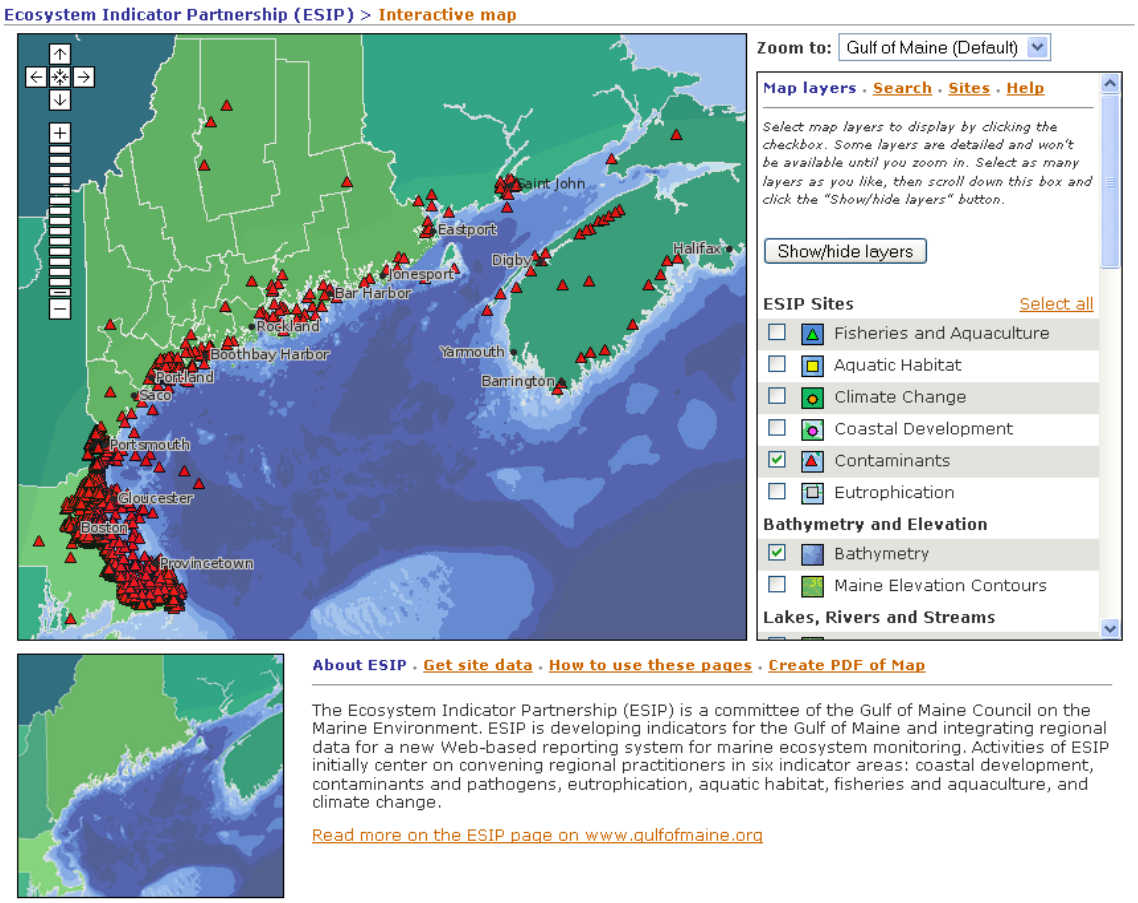


Figure 1: ESIP Monitoring Map

Once ESIP members were able to determine the relative availability of various indicators, a suite of indicators was selected for each of the focus areas. For example, four priority indicators were selected for climate change: sea surface temperature, sea level, air temperature, and precipitation. As another example, the fisheries and aquaculture subcommittee selected five indicators: mean length of all fish sampled, economic value of fisheries, proportions of stocks at or above targeted abundance or biomass, production/ leased areas per area for finfish/shellfish/integrated aquaculture, and the economic value of aquaculture. During the winter of 2008, ESIP will release a fact sheet detailing out each of the indicators selected for the subcommittees. Following this, ESIP will commence producing information on status and trends of these indicators.

For readers that would like to see the various datasets prior to ESIP's status and trends reports, ESIP has produced a state-of-the art web tool called the ESIP Indicator Reporting Tool. This tool contains datasets and layers that are automatically updated on a weekly basis - thus providing the user with fresh data. Currently the tool houses data from Gulfwatch, Mussel Watch, and GoMOOS buoys along with selected data layers on point sources of contamination and eelgrass extent. The Indicator Reporting Tool is available at www.gomoos.org/esip and is currently under revisions to make it more user friendly and contain a larger set of data.

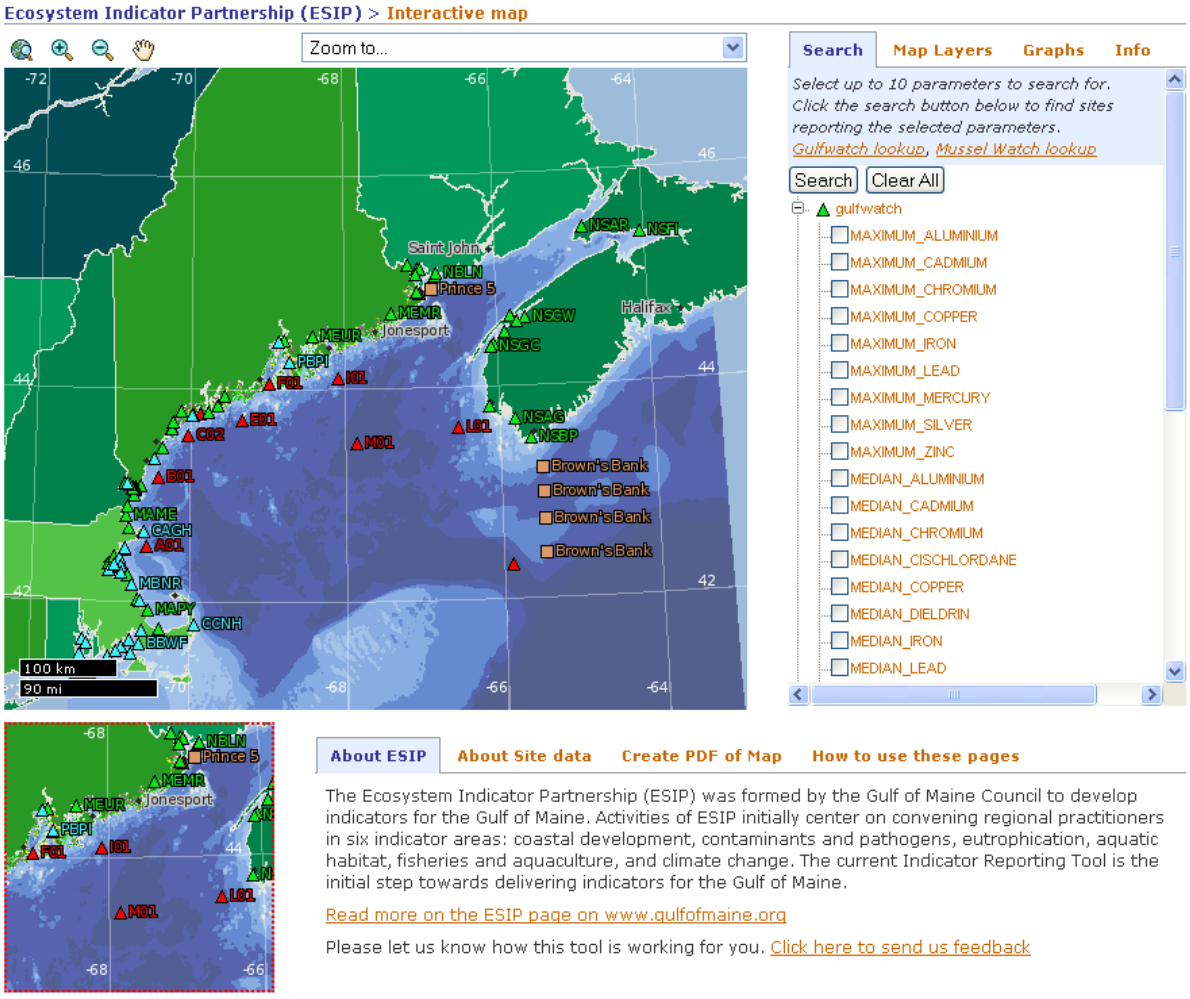


Figure 2: Indicator Reporting Tool

Through the efforts of the indicator development plus the addition of useful and updated web tools, ESIP is well on its way towards providing people in the region with information on the valuable and diverse ecosystem that is the Gulf of Maine. For more information on these projects, please contact the ESIP Program Manager: Christine Tilburg at ctilburg@securespeed.us.

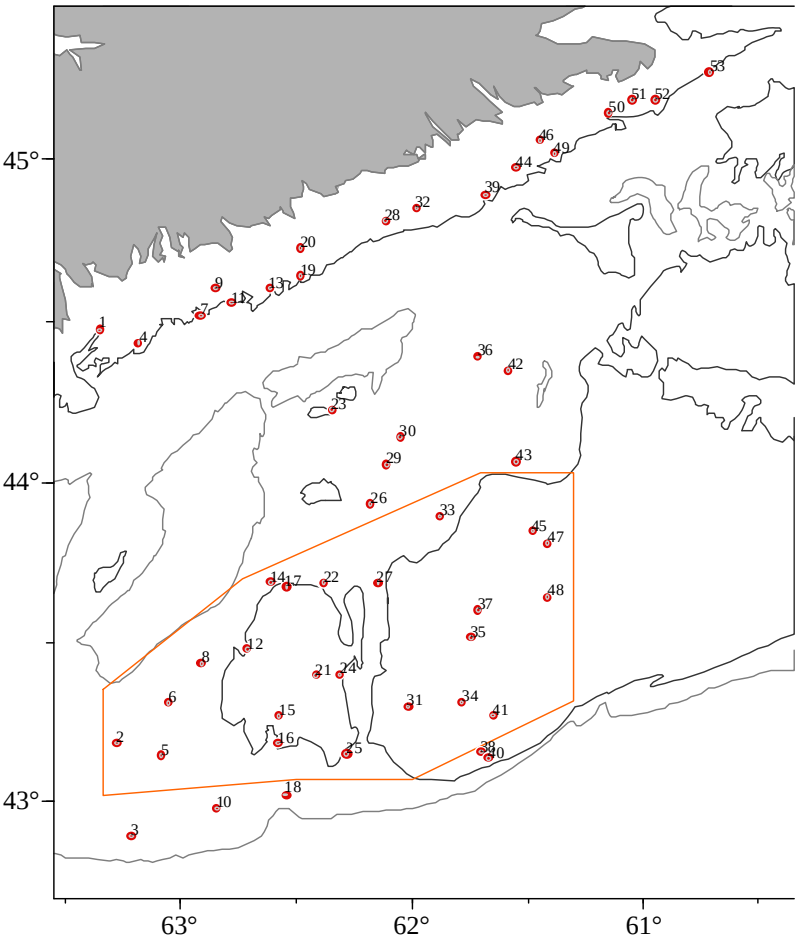
2008 4VSW SENTINEL MONITORING PROGRAM UPDATE

By Carl MacDonald, Research Biologist, FSRS

The Fall is upon us, and the 14th annual 4VsW Sentinel Monitoring Program is about to begin. Starting September 1st, three longline fishing vessels contracted by the Fishermen and Scientists Research Society will participate in a groundfish survey executed fully by the fishermen themselves. The fishermen will survey 53 predetermined stratified random stations. The 4VsW monitoring program area encompasses the inshore waters from Sambro to Canso and the offshore waters including Emerald and Western Banks (Figure1).

Figure 1.

2008 Sentinel Surveys Station Locations



Following the 4VsW Survey protocols, the longline fishermen set 1500 number 12 circle hooks baited with mackerel. The fishermen are responsible for gathering all the scientific fisheries information as well as oceanographic information via the use of CTD's and minilog temperature recorders. The fishermen must record where they set their gear, how long the gear fished, numbers of hooks that were snarled - if any. They also record all species caught on the hooks, the number and weight of each species caught, and the length, sex, and stage of sexual maturity of the fish. The fishermen also remove the fish otoliths (used to age the fish) and remove the fish stomach if there are contents inside. All this work is completed by the fishermen on relatively small fishing vessels, 35 to 50 feet in length. To add to all this, the fishermen have to watch for hurricanes, ship traffic, and other fishing vessels and gear. Over the last decade, the survey was executed to perfection. The fishermen deserve a great deal of credit. Table 1 shows the three longliners employed to survey the chosen strata in the 2008 4VsW Sentinel Monitoring Project (Table 1).

Table I: 2008 Sentinel Survey Participants.

Name	Vessel	Home Port
Paul Drew	On A Mission	Sambro
Richard Jewers	Scotty 'N' Sisters	Ecum Secum
Jerry Creamer	Darcy Dean	Canso

Preliminary analysis of the 2007 catch results compared to the last 4 years indicated cod and haddock in the areas surveyed showed slightly higher catch rates. As well, in 2007 participants caught a record number of barndoor skates, 208 in total number or 3811 pounds. As in previous years, the fishermen released alive all 208 barndoor skates.

Table II includes the catch data from all sentinel sets completed in 2007. Kept weights and discarded weights are in round pounds. Total numbers of fish captured are the sum of the kept and discarded fish. Only dogfish, sculpins, skate, invertebrates and undersize halibut are allowed to be discarded. Commercial groundfish (cod, haddock, white hake, pollock, cusk, and redfish) which were badly damaged by seals, dogfish or sand fleas - i.e. no tail or no head were discarded and weights estimated by finding the average weight of that species for that set.

Table II. 2007 4VsW Sentinel Monitoring Project Catch Results from all 53 Stations.

Species	Kept Wt. lbs.	Discard Wt. lbs	Number Caught
Cod	5065	27	1695
Haddock	2760	18	1539
White Hake	2334	0	455
Red Hake	568	11	555
Silver Hake	2	4	7
Cusk	250	0	45
Pollock	3	0	1
Offshore Hake	0	5	2
Redfish	18	3	21
Halibut	616	485	69
Turbot	0	2	1
Wolfish	0	20	11
Barndoor Skate	0	3811	208
Thorny Skate	0	206	38
Winter Skate	37	14	8
Porbeagle Shark	160	80	3
Blue Shark	0	128	3
Hagfish	0	1	1
Longhorn Sculpin	0	4	7
Shorthorn Sculpin	0	1	1
Monkfish	311	0	39
Toad Crabs	0	2	2
Snow Crab	0	1	1
Lobster	0	13	1
Whelks	0	2	13
Purple Starfish	0	5	16
Sea Urchins	0	1	2

NEW TO THE FSRS LIBRARY

***Looking for a particular book, article, report, video, or journal? Check out the FSRS Library now available on our web site at* http://www.fsrs.ns.ca/fsrs/library.php.**

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"On The Water's Edge. A short film featuring marine life and birds found along our coastline." Sherkin Island Marine Station

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THE COMMUNITY-BASED ENVIRONMENTAL MONITORING MARINE MONITORING PROGRAM

By Chelsea Adams, Marine Community Monitoring Coordinator, Community-Based Environmental Monitoring Network

The Community-Based Environmental Monitoring Network (CBEMN) has been established to further existing relationships with community groups and foster new ones primarily around Nova Scotia, but also within the other Atlantic Provinces.

The network, housed within the Department of Geography at the Saint Mary's University campus, Halifax Nova Scotia, serves as a location that members of the community can contact with questions or comments. Frequently asked questions include; how to monitor/measure the environmental quality of the ecosystems in their community, how to "access" scientific and social scientific data related to the environment and how to use this data and utilize technology as a tool to further their understanding of their communities.

The network has access to academic and scientific resources related to environmental and ecosystem issues, an equipment bank with the latest technologies and methods for environmental quality monitoring and data on environmental legislations and regulations. The network's staff is available to assist in setting up a monitoring program, as well as offer equipment and training to interested citizens and community groups. We are currently working with several groups monitoring water quality, including; temperature, pH, conductivity, total dissolved solids, dissolved oxygen, salinity, and measuring suspended sediment samples.

The Community-Based Environmental Monitoring Network is proud to have launched their Marine Community Monitoring Program in June of this summer. There are over 50 community-based organizations in association with the CBEMN, none of which monitor their marine environment. Ironically, most groups are stationed on the coast. The CBEMN took the initiative to start community-based marine monitoring in Nova Scotia because there is no record of a similar program in all of Canada.

The unique program has been in progress for over three years and was introduced to the public earlier this summer. The program is focused around a Marine Community Monitoring Manual which was developed off of the Western Australian Manual, by various students employed by the CBEMN. It has been developed as an easy, simple read for monitoring of the marine environment. Monitoring protocols are divided into three environments; physical, biological and social. Within each environment, there are various stand-alone documents for specific monitoring subjects. Each protocol rates the amount of; equipment, skills, time and frequency needed for the monitoring item. The program also uses Google Maps as a tool for marine monitoring groups to interact with one another and share information. The project is a work in progress and in constantly being edited to insure up-to-date, improved information.

On the morning of Saturday June 21st, CBEMN hosted their first Marine Monitoring Manual Workshop at St. Mary's University, Halifax. The workshop's purpose was to introduce the networks Marine Community Monitoring Manual and launch the Marine Monitoring Program to environmental organizations and interested individuals around Atlantic Canada. The workshop consisted of a brief power point presentation on the manual, an introduction to Google Maps followed by an interactive discussion and lunch.

Approximately 44 individuals representing over 32 groups from New Brunswick, Nova Scotia and Prince Edward Island participated in the workshop. A majority of attendees were from non-profit environmental groups, however; governmental departments and concerned individuals also contributed towards the make-up of the workshop. Each participant received a complimentary copy of the MCMM and was encouraged to register with the program.

The goal of the program is to initiate marine monitoring in the Maritimes. The network is currently researching similar monitoring programs, globally to continue to improve on their current program. A report on the topic should be released in early January, 2009.

To receive a copy of the Marine Community Monitoring Manual (MCMM) or if you have any questions regarding the program, please contact the Marine Community Monitoring Coordinator, Chelsea Adams, at Chelseadams@gmail.com or Sarah Western CBEMN Community Liaison at environmental.network@smu.ca. Or visit us online at www.envnetwork.smu.ca .

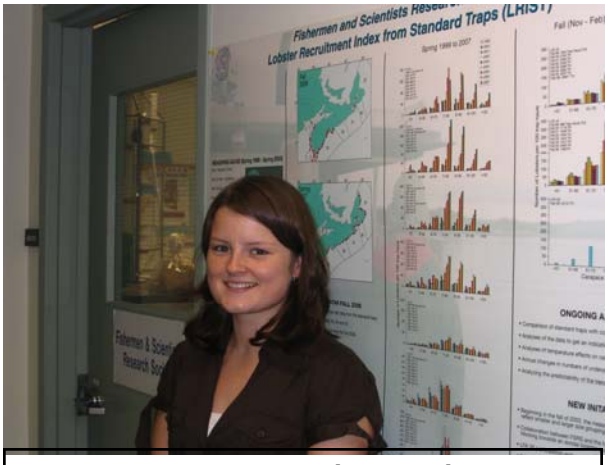
NEW FISHERIES TECHNICIAN JOINS FSRS TEAM

By Tricia Pearo, Fisheries Technician, FSRS

Hello, my name is Tricia Pearo and I am the new FSRS Fisheries Technician, helping out Jeff Graves and Shannon Scott-Tibbetts in Carl MacDonald's absence.

I have a Bachelor of Science Degree in Biology from Mount Saint Vincent University. I am originally from Whycocomagh, Cape Breton and have a keen interest in the fishing industry and fisheries research.

Some of the projects I will be working on are Lobster Sea Sampling, Lobster Moult and Quality and Lobster Larvae Collector Retrieval. I look forward to working and meeting with FSRS members and project participants.



Tricia Peraro, FSRS Fisheries Technician

YOU'RE INVITED…
FSRS 16TH ANNUAL CONFERENCE
FEBRUARY 20 – 21, 2009

The Fishermen and Scientists Research Society (FSRS) is holding its 16th Annual Conference on February 20 – 21, 2009 at the Best Western Glengarry Hotel in Truro, NS. The conference will include a range of workshop sessions, the Scientific Program Committee Report and Workplan for 2009/2010, and the Annual General Meeting. Possible workshop topics include:

- Climate Change and Its Impact on Fisheries.
- Ocean Tracking Network – What Is It and How Can Fishermen Use the Data Collected.
- Using Lobster Blood Samples to Study Reproductive and Nutritional Status.
- Inshore Ecosystem Project – Draft Ecosystem Overview and Assessment Report (EOAR) Overview, and the Science Behind Integrated Management: The EOAR as One of the Tools.

There is limited space available for additional workshop sessions. If you have an idea for a workshop topic, please contact Patty King at 902-876-1160 or pmdservices@eastlink.ca.

The Scientific Program Committee Report and Workplan session will include:

- Shellfish Working Group Report
    - Update on the Lobster Recruitment Index (LR) and Commercial Trap Sampling (CTS) Projects
    - Lobster Collector Project Update
    - Lobster Moult and Quality Project Update
- Groundfish Working Group Report
- Ecosystem Working Group Report
- 2009/10 Workplan

Watch for more details in the next issue of Hook, Line and Thinker and on the website at www.fsrs.ns.ca. We hope you can attend. See you there!

Call for Posters/Displays

In addition to the workshop sessions, the conference will include Posters and Displays. To reserve booth or poster space, contact Patty King or complete the Poster/Display Reservation Form on page 13.

POSTER/DISPLAY RESERVATION FORM

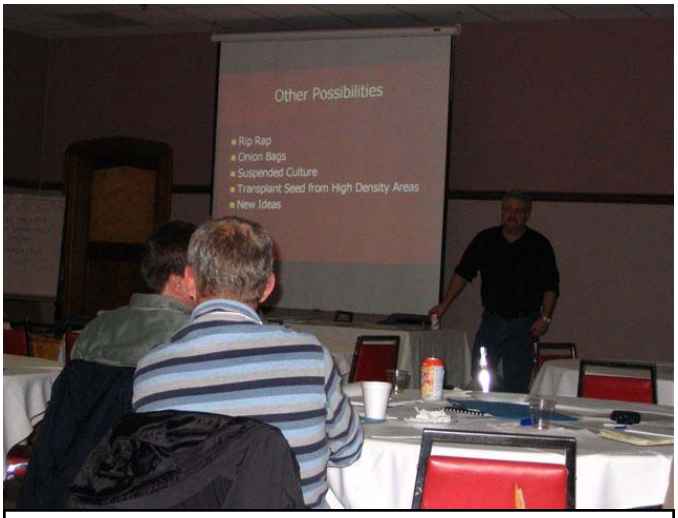
Please return completed form to Patty King by December 31, 2008
Fax: 902-876-1320; E-mail: pmdservices@eastlink.ca

Organization	
Address	
Contact Name	
Phone	Fax
E-mail	
Posters	
Title	
Authors	
Brief Abstract	
Dimensions ___ feet wide x ____ feet high	
Displays	
Brief Description of Display	
Dimensions ___ feet wide x ____ feet high x ____ feet deep	
Setup Requirements Table ____ 3' x 6' skirted table (check if required) Power Outlets ____ Power outlets required (standard 120v, indicate number of outlets required)	
Other Requirements (Please specify)	

FSRS CONTRACTED TO FACILITATE CLAM WORKSHOP

The Fishermen and Scientists Research Society (FSRS) has developed a reputation over the years of delivering quality productive workshops and conferences. Our effectiveness in facilitating workshops, and our reputation for being able to keep discussions on topic and generate results, were key factors in being awarded a contract from the Nova Scotia Department of Fisheries and Aquaculture to facilitate their NS Soft Shelled Clam Enhancement Workshop. The FSRS team, led by FSRS General Manager Patty King, included Julie Sperl and Martina Kluge.

The following are excerpts from the workshop report. The complete report is available on-line at http://www.gov.ns.ca/fish/marine/innovations/reports.shtml.



Lew Clancey during his *Clam Reproductive Biology* presentation. (*NS Soft Shelled Clam Enhancement Workshop Report)*

The Nova Scotia Soft Shelled Clam Industry has been facing declining stocks and loss of harvesting areas due to environmental closures for many years. In an attempt to improve clam harvesting in Nova Scotia, an industry workshop, organized by the Nova Scotia Department of Fisheries and Aquaculture (NSDFA), was held on March 18 and 19 (2008) at the AgriTech Park in Truro, Nova Scotia. The workshop focused on past, present and future efforts at enhancing clam stocks in the various areas of Nova Scotia. Topics discussed at the workshop included basic biology, enhancement work completed to date, discussions on future enhancement opportunities, idea generation, and meeting enhancement targets under the confines of regulations and policies.

The workshop began with a presentation by Lew Clancey, NSDFA, on soft shelled clam biology and reproduction. On Day Two, Tom Shields, from the Division of Marine Fisheries, Annisquam River Marine Fisheries Field Station in Massachusetts, gave a presentation on clam enhancement in the Boston area. The presentations provided a good foundation for the discussions which followed. During the discussions, participants addressed the topics of Seed Collection Techniques, Clam Flat Management, Science and Other Issues. For each of these topics they looked at what needs to be done, how should it be done, are there any regulatory considerations and are there any other issues.

Discussion period at the *NS Soft Shelled Clam Enhancement Workshop.* (*NS Soft Shelled Clam Enhancement Workshop Report)*

It was recognized that science is needed and a number of potential initiatives were discussed, including:

- Spawning – Where and when?
- Temperature Monitoring
- Stock Assessment
- Growth Rates – How long does it take to get to market size?
- Growth Rates - How long does it take to reach maturity?
- Understanding the clam life cycle – How long does the larval stage last?
- Sediment – What is the preferred sediment/habitat for clams?
- Sediment - Hydrogen Sulfite level testing
- What is the best size clam to seed – what is the minimum, is there a maximum?
- Survival Rates

Improving communication was identified as an important issue during the Workshop. (*NS Soft Shelled Clam Enhancement Workshop Report)*

Reference

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FSRS WELCOMES NEW MEMBERS

The Fishermen and Scientists Research Society would like to welcome the following new members. We trust that this expansion of the FSRS's membership will prove to be beneficial to all involved.

Olabisi Alamu	Blair Baker	Douglas Baker	Victoria Burdett-Coutts
Melanie Burton	Roderick Cashin	Nick Crimale	Alain d'Entremont
Ayo Famusudo	Ali Farzanfar	R. Joshua Fricker	Loane Jamieson
Gordon Johnston	Bill MacDonald	Ian MacDonald	Ronald MacDonald
John MacInnis	Paul MacIsaac	Jonathan Monahan	Vidar Oresland
Manoaharan Saravana	Lenin Suvetha	SmitaTajne	George Zinck

BEACHCOMBING – What's New in The News

"The Case of the Cod and the Seals" is an interesting article by DFO discussing new research that will enable scientist to get a more comprehensive picture of seal diets using various methods. New research projects such as analysis of fatty acid signatures, analysis of seal stomach slurry for DNA evidence, and seal tagging for tracking their location and diving patterns using satellite telemetry were discussed in the article.

Through these methods, scientists hope to gain a better insight into the complex issue of seals versus cod and the possible impact seals may have on the recovery of the cod stocks.

The article is available on line at:
http://www.dfo-mpo.gc.ca/science/Publications/article/2008/cod_and_seals_e.htm

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www.fsrs.ns.ca

Our newsletter is also available on our web site.

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FISHERMEN AND SCIENTISTS RESEARCH SOCIETY
P.O. Box 25125
Halifax, NS B3M 4H4

Phone: (902) 876-1160 Fax: (902) 876-1320
E-Mail: pmdservices@eastlink.ca
Web Site: www.fsrs.ns.ca

Editor: PMD Services - Christine MacKenzie and Patty King

UPCOMING EVENTS

Fishermen and Scientists Research Society
16th Annual Conference

Best Western Glengarry Hotel
Truro, Nova Scotia
February 20-21, 2009

For more information see page 12 of this issue of Hook, Line and Thinker.

Atlantic Veterinary College Lobster Science Centre and the Coastal Zones Research Institute (NB)
4th Annual Lobster Science Workshop

Crown Plaza Moncton Downtown Hotel
Moncton New Brunswick
November 4-5, 2008

For more information see page 2 of this issue of Hook, Line and Thinker.