

# Out of the Fog 2

## the Thursday report

Saint John, New Brunswick, Canada

November 3, 2000

### Friday Highlights

- ❖ *Theme-based breakout groups: salt marsh restoration, TEK and historical data capture, water quality monitoring, aquaculture siting and development, community-based management requirements*
- ❖ *Cross-boundary breakout groups*
- ❖ *So what is GOMINFOEX?*
- ❖ *Historical environmental tour of Saint John*
- ❖ *The watering hole session*

### Why are we here?

It fell to facilitator Bill Crossman to sum up the purpose of OOTF 2: "We have an overall goal to develop a plan to move the idea of exchange forward," Bill said, noting that "We shouldn't get too caught up in the issues of OOTF 1, we need to advance information exchange. "Everything is open as long as we're moving forward. Do we want a lead entity?

Can we find ways to identify willing people and partnerships? There are some issues, though, we might want to put to an end."

Bill stressed that the objective of the theme sessions is not to focus on the themes per se, but to put participants in an area that they are familiar with so that something can come out of it. "We want to make sure that we don't waste our time and that we end up further along than where we were with OOTF 1."

Everything is on the table, Bill emphasized; organizers have not ruled out that we do nothing more than what we're doing now. But maybe we really do need a large central system that everything goes through – or even something in between.

### A bit of background: Paul Boudreau sets the scene

Paul Boudreau of DFO reviewed the history of GOMINFOEX, which started two years ago at the first Out of the Fog workshop, after many previous initiatives that had all fed into it. There was a strong interest in doing a better job of usefully exchanging information within the "fog of too much stuff" on the web.

Since then, the action committee has met quarterly and have undertaken a number of tests and experiments such as putting up a website and a listserv.

GOMINFOEX's vision is to "maximize the benefits to coastal communities of the Gulf of Maine from available environmental information". "This includes all of us," Paul said. "Environmental information sits in books, in our heads, on our hard drives, and we need to get access to all the sources!"

Paul stressed that he hopes this meeting will look at the broader picture. *What are we after and how do we achieve it? How can we build on things we already know how to do?* We need to have a broad discussion of what can we achieve, and in what time scale – and we may have to remind ourselves not to get too distracted by the latest and greatest bells and whistles of the Internet.

He pointed out how fast technology is changing: who knows where we'll be in ten years? Introducing his son Ben, and Ben's friend Danny, he noted that to them, the Internet is a fun and useful tool that addresses their needs; they come home and talk on ICQ and MSN while downloading music from Napster. For them their uses are frequently exercised and the information they want is clearly

identified. They are examples of successful application of web technology.

The top three uses of the net are for financial information, genealogy, and the sex trade – but Paul's interest is not in any of those, but in how he can do a better job of managing the marine coastal environment.

*What is information and how does it get provided?* "Just putting it on the web is insane, we're missing pieces", he emphasized. Technology is not the problem – something more is still missing.

People are the most important piece, he said. People who see this as a priority; people who see that this can only be done co-operatively; and people who are able to dream about the possibilities.

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## *A missing piece? Involving the business sector*

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Norval Collins, president of an environmental planning company, reminded the group of the potential role of the private sector, positioned as a player between government and community groups. Businesses tend to respond immediately to issues; they are driven by money, and can make things happen in a short time frame.



This can make business a very effective ally – if you can avoid the obvious problems, like the taint of bias. How do we involve the private sector, and can we make sure it moves us towards our goals?



Cross-border issues can mean that we run into difficulties with information exchange when government agencies are included. Private sectors can bridge these differences because they don't care that there is a border.



The Gulf of Maine is a special case because it is international; we need to take advantage of expertise, money, and cross-border interests. So many issues are more easily addressed by the private sector, especially by knowledge-based companies.

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There is room in GOMINFOEX for including the private sector and showing that alternative ways work.

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## And so the work begins: a report from the opening plenary

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Bill Crossman, facilitator, reminded the group that the purpose of the plenary was to make sure that participants had the correct themes for tomorrow's breakout discussions on how a method of information exchange should be designed. The purpose, Bill said, was to give everyone an opportunity for input before the he break-outs began.

A participant noted that she had three basic questions of clarification, which had possibly already been covered in OOTF 1, but nonetheless needed to be canvassed. These were:

- 1) Has there been any thought given to identifying who the clients might be? Were there any limits? Was it feasible to be so broad-based?
- 2) Has the concept of **information** been defined? What does environmental information mean? How broad is this?
- 3) What is the best way to ensure broad access to information? It appears to have been decided that the Internet is the way to go. But access problems remain; many fishermen living in small remote communities cannot easily get onto the Net, for example.

Bill acknowledged that it was true that OOTF 1 participants, and the Action Committee, had settled on the Net as the primary method of information exchange. As far as who clients were, he felt that the best definition came from the survey conducted by the New England Aquarium, as reported through OOTF 1.

Paul Boudreau added that these questions had been asked by many people throughout the years; as far as he was concerned their answers were rooted in people's different, but not necessarily competing, views and needs. He quipped that at the Action Committee meeting Thursday morning the old tale of the five blind people describing an elephant had arisen – but this conference was here to **deal** with that elephant, not necessarily to describe it! As far as he is concerned, if someone has a need for information, they should count as a client – this is supposed to be an open process. A **client is anyone who is interested**.

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### *A client is anyone who is interested.*

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As for the third question, in his view 'environmental information' should be interpreted at its broadest. It all depends, he said, on what people want and need.

Courtenay Coles suggested that the focus should be on **people**, not paper or electronics; the key is bringing the people who have information together with those who need it. Another participant suggested that "That elephant's actually made of Silly Putty – it keeps on changing shape!" Another felt that the key was **synergy**; how to capitalize on traditional effective means of information sharing, like the Gulf of Maine Times, with the Net. We need to look at what makes traditional print media effective, and how to integrate that with electronic media.

The question of fishermen and others in remote areas was reiterated – are there alternate means for them to access that information? Bill Ayer acknowledged the concern, but pointed out that in New Brunswick, at least, over 50% of homes not have net connections, and there are 228 public access centres across the province. Sarah Werner noted that there were still lots of people like her mother, however, who is an interested citizen who loves reading the Gulf of Maine Times, but who will never, ever use a computer.

Courtenay pointed out that Maine schools had all been networked, but many teachers were resistant to using the technology. "Until you have both the technology there, and a human being to teach people how to use it, [broad use in remote areas] is not going to happen." However, Bill Ayers noted that in his view, fishermen were very keen to adopt electronic gear, if they saw it as essential to their business, citing sonar, fishfinders, and GPS systems.

Bill Crossman suggested that these questions had been quite thoroughly canvassed during OOTF 1, and said that if people had further points they wished to raise on the issues, to talk to members of the Action Committee .

Will Hopkins noted that there seemed to be a common assumption among many participants that somehow we have information and technologies that we are going to need to teach people – a top-down model.

In his view, however, information exchange is a peer-to-peer concept. The technology doesn't matter as long as the source of the information is credible. "It's not about convincing fishermen to use the Net", he said, "but facilitating an exchange of information that someone has, and someone else might find useful."

Bob Branton described the Gulf of Maine Biogeographic Information System project (GMBIS), funded for 2 years by NOPP/Sloan Foundation. GMBIS is a joint initiative of USC(LA), BIO, ARC in St. Andrews), and System Science Applications (SSA).

GMBIS will take existing DFO and NMFS (National Marine Fisheries Service, USA) research surveys, databases and satellite imagery archives, and describe the area from west of Cape Cod up to Sable Island from both the physical and biological aspects. A GIS called EASy is under development, to present the resulting information in a variety of simple-to-use

themes. Groundfish will be one of the initial main focuses.

There is considerable information on the GMBIS initiative at <http://kiefer4.usc.edu/gmbis/index.htm>.

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Bill Crossman shifted the focus to a consideration of the themed breakout groups proposed for Friday morning.

## Aquaculture

At least three groups of people are interested in aquaculture siting information: regulators, the public, and research-

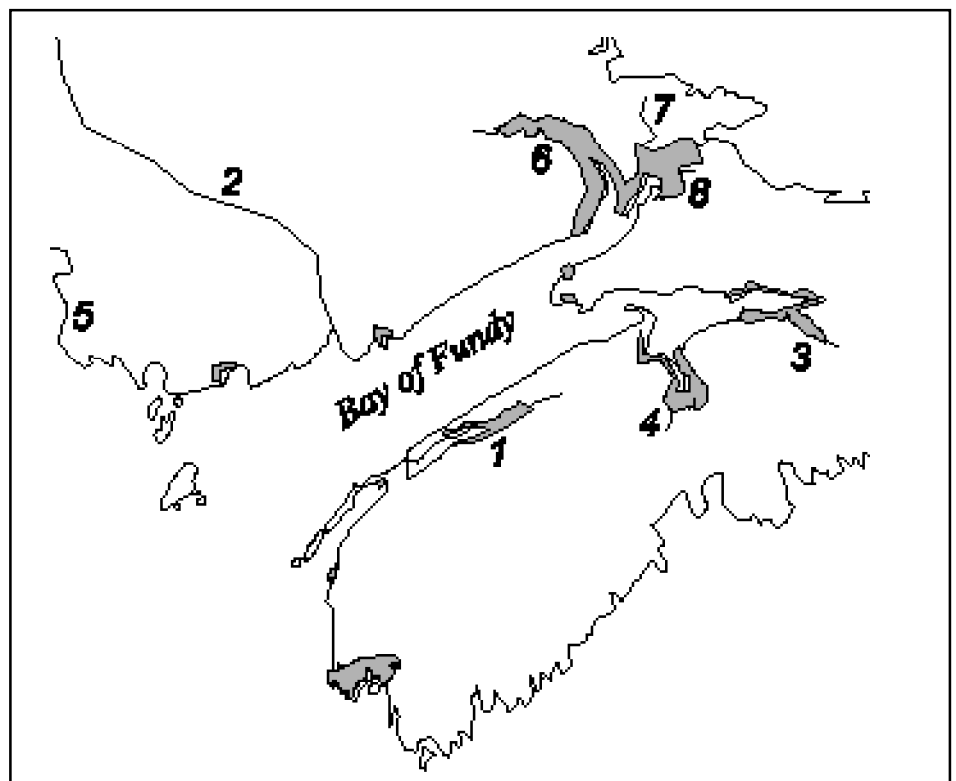
ers. Each wants different information, and may need in different formats. The challenge is to identify **what** is needed, by **whom**, and in **what format**. Data needs with regard to aquaculture issues include information on hydrographic, benthic, and fisheries characteristics, as well as other marine uses.

Different jurisdictions provide different amounts of information: in the United States, almost everything in the permitting record is available. In Nova Scotia, site-specific information is distributed, although not business plans, and public hearings are held. In New Brunswick, only site locations are available, and an annual compendium of non-site-specific monitoring data, although this is changing.

## Salt Water Marsh Restoration

Canadians are more focused on marsh conservation, with few restoration sites, unlike the USA. The Gulf of Maine Council has looked at the issue, with Kim

*Principal salt marshes around the Bay of Fundy, and the major rivers: 1. Annapolis, 2. St. John, 3. Shubenacadie, 4. Avon, 5. St. Croix, 6. Petitcodiac, 7. Tantramar, 8. Missaguash.*



Hughes from New Brunswick Department of Environment charged with compiling the data.

His conclusion: information exchange is **not** working with regard to this issue, though the Council is working to improve this. Issues include locating sites, the difference between the Canadian marshes at the head of the Gulf and those further to the south, finding out how data is exchanged between users, and differing data needs.

Other key actions include a shift of resources into salt marsh work by NOAA, and an initiative by Environment Canada, DFO, NS and NB DOEs, the Ecology Action Centre and the Conservation Council of New Brunswick, as part of the Global Program of the Gulf of Maine Action Project.

The use of a meta-data bank from Environment Canada has eliminated worries about interchange formats, etc., making it possible to simply provide

pointers to where to get the information. The idea of having one person as a regional co-ordinator has been suggested, and the Council is considering this. It could be a way to get the business sector involved.

## Traditional Ecological Knowledge (TEK)

The salt marsh issue led into the discussion of the TEK theme, through the mention of the existence of diaries of generations of people who maintained dykes and aboiteaux. Ted Ames reviewed work he has done on mapping fishing patterns from the 1930s in an effort to establish existence and location of local cod stocks in the Gulf. He sees the traditional knowledge as key to understanding the fish patterns and how they evolved.

He also noted that fishermen had been

surveyed from Ipswich By to the American side of Fundy to determine spawning grounds, and that this was the kind of long term information that could be a powerful tool. Nonetheless, he warned that there are limits to TEK methods, and areas to avoid for that sort of study; like anything else, there are catch-22s.

## Water Quality Monitoring

WQM was high on the list when the web survey results came in. What can we learn about improving methods of information exchange through the WQM experiences? Sean Brilliant cited CNET, the Coastal Network of the Gulf of Maine, a loose network of community groups driven by six or so people, as successful at building capacity and sharing information around any form of environmental quality monitoring.

He noted that community-based groups around the Gulf were becoming more organized about information exchange, but warned that this goes well beyond 'data', to technologies, tools, program evaluations it is an exchange of **ideas**. Regulators are starting to see the value in community-based data, but there can be a catch-22; if you are collecting data to try to compare two sites, or doing habitat assessments, for example, you need some sort of quality assurance and standardized methods, and this is often problematic.

## Community-based Management Requirements

Sean decided to play devil's advocate, and confessed that he does not care very much about broader information exchange; his focus is on the local community. He sees value in the broader issues of the Gulf of Maine primarily from a 'lessons learned' perspective.

ACAP SJ is willing to share its information and results when asked, but at the same

*Community-based water quality monitoring sites, ACAP Saint John*



time does not go out of its way to advertise data availability; there simply isn't much immediate value in that for their organization.

Although the idea of standardizing across boundaries is important in many contexts, it has little to do with what's being done at their local level. He did note that if someone were to develop easy-to-implement guidelines so that information could fit into a database somewhere, ACAP SJ would certainly consider their use.

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Maria Recchia pointed out that from her experience at the Centre for Community-based Management, information exchange has been very valuable, especially face to face meetings with people from Nova Scotia, New Brunswick, and Maine. For them, personal exchanges are much more important than data. The Centre has begun a timed listserv discussion on democratic structures in community-based management, modelled on those held by the Fundy Forum.

Bill Ayer pointed out that you cannot solve regional problems without information. There are vacuums in mapping, gaps in local descriptions. Bob Branton noted that too heavy a focus on local data collection

and local techniques could mean that a lack of sufficient rigour to convince regulators.

David Coon, from the Conservation Council of New Brunswick, said that for many issues face to face meetings and traditional media like the Fundy Fishermen are most effective, useful, and convenient.

Where the hitch comes in is when you get a bit more advanced in terms of what you need, noting that this was a good argument for effective integration of TEK with science. He stressed the necessity of bringing the knowledge back to the community, so there are no insurmountable obstacles to using it. Non-digital base maps warehoused in two locations in the province aren't particularly helpful!

Jon Percey urged the consideration of longevity and history of data, reminding the group that many researchers worked in isolation – if they die or retire the data become useless. Bob Granton noted that DFO is currently surveying its researchers to find out precisely what they do have.

A participant warned that there were downsides to community-based data collection, citing the reluctance of mobile gear boats to gather information, fearing that the data might then fall into the hands of environmentalists. It was also noted that there could be problems with the wilful misinterpretation of data for self-interested spin-doctoring, which happens both with government and with community groups.

Participants agreed that a theme that had been originally proposed, Framework Data Development and Support, actually spanned a number of different areas. It was agreed to roll its discussion into each of the five break-outs, as it was an overarching question relative to interfaces. It was strongly urged that participants focus on building a conceptual framework to respond to their needs from the bottom-up, rather than seeing standards and

technical questions become critical issues yet again.

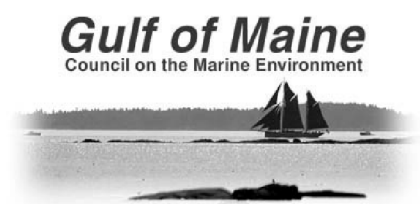
Paul Schroeder presented a series of key points that had been sparked by the day's discussions. They included:

- **geography:** how does the geography of the GOM influence our work?
- **policy and rules:** are these obstacles, inhibiting access to information – this issue bears on all the themes
- **outreach to the public and schools:** what are the best media we can think of to carry this initiative forward?
- **inreach:** how to overcome barriers to the resources and knowledge that are held by others?

He noted that committee members had also thought of a number of overriding issues that could be discussed within the context of the other breakout themes, including:

- choices of media: how to develop appropriate channels
- existing information: how to optimize the use of what is already out there, not focusing on creating more
- private data practices: whether through hoarding, or laziness
- frameworks: how can we create advocacy for more consistent building of datasets on a regional and national basis?

Bill Crossman noted that there was still some work to do before breaking into theme groups the next morning; there will be a short plenary at 8:30 am.



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## OPEN PUBLIC SESSION: Fishing the Internet

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Bill Crossman opened the public sessions by explaining that the Out of the Fog 2 workshop aims create an information exchange process that groups can use to increase the effectiveness and efficiency in which to acquire information. The most effective way is the Net; thus, tonight's session is called "Fishing the Internet."

### e-Atlas

Chris Greene was the first to present, describing his work with e-Atlas (<http://atlas.islandinstitute.org>), a public interface to environmental data. The work in the project stemmed from the involvement from GOMINFOEX and over the last month, they have felt comfortable giving out the URL.

Chris gave a background of the Island Institute and then went on to discuss the project. The purpose of e-Atlas is to provide a window through which visitors can wholly examine the Gulf of Maine, to inspire people with meaningful stories that describe a unique natural region, to bring together sampling of data, to provide resources for smaller institutions,

and to provide a map-based directory of institutions and projects.

The project is based on a 1995 publication which used satellite imagery to describe common ecological principles throughout the region. There is a focus on telling interesting stories.

The audience of e-Atlas is broad. It is the K-12 educators and students, resource managers, fishermen, conservationists, and policy makers. It touches on themes such as fisheries, watersheds, estuaries, marine mammals, landforms, oceanography, find a project, and find a map.

The fisheries portion of the site includes a selected 8 species that is felt are indicative of different themes. For instance, the life cycle, history, and locations of herring are given. One can zoom into a map to get further information until the area at the bottom of the page becomes a table of raw data. There are also interactive maps of watersheds.

### Internet Circuit Rider

Courtney Coles, the Internet Circuit Rider, was the next to present. She began with a background of the Gulf of Maine Aquarium

, which is virtual, not operational. It holds a wide range of information, from lobster research to site-specific data.

About two years ago, the Aquarium decided to put someone in the field to working with teachers and help them with the Internet; this is Courtney's job. She works with teachers, students, and non-profit organizations on using communications technologies. She stated that during her travels, it is natural to pick up knowledge. This facilitates resource exchange. The work is still in progress.

The Gulf of Maine Aquarium is now fundraising to make an aquarium on the Portland waterfront, which will have high tech and low-tech public interface.

### Cobscook Bay Clam Industry Restoration and the Bay of Fundy Resource Centre

Will Hopkins of the Cobscook Bay Resource Centre and Bill Crossman of Bay of Fundy Resource Centre jointly presented this session.

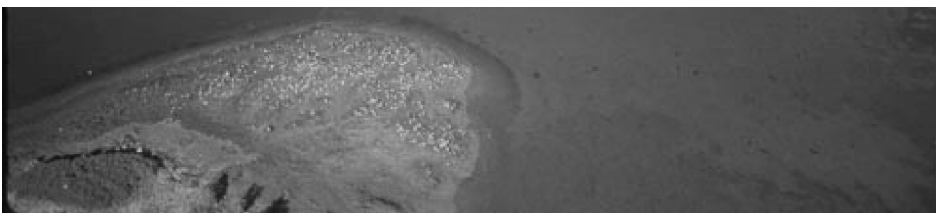
Will said the Cobscook Bay Research Centre in Eastport, Maine came to being because people started asking questions, such as "What happened to the clam industry, and what is the water quality?" The Centre decided to look at the clam industry and unwrapped a few information gaps.

An outside expert came in and said that they should take one piece of the problem, write it down on paper and identify a one year action plan and budget. They looked at the list of things wrong but couldn't find a workable item. The whole problem was interconnected!

From this came the Cobscook Bay Clam Industry Restoration project, and lots happened. Water quality monitoring

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*Salmon aquaculture in Cobscook Bay*



began, using volunteers more effectively. They found that funding existed in Maine for projects such as the proposed project for clam restoration. However, the industry still wasn't working, and they needed people to put attention on issues that **they** were interested in.

Maps of Cobscook Bay show lots of activity on the Maine side, but there is hardly any showing on the Canadian side. Will noted that if the centre were a Canadian company, the reverse would most likely be true. He then asked for Canadian help in filling in the gaps.

They have discovered that working with information exchange is two-way. Not a whole lot is passive. We need to create data **and** access data; an organization needs to know what the people need to better understand.

Bill Crossman spoke of the inshore fishery and the resource crisis a couple of years ago. Fishermen were flooding DFO offices and doing street demonstrations.

Policy and regulatory changes came about, and fishermen realized that as a community together they had some power. They thought about what to do next, and from this came the Bay of Fundy Resource Centre.

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The basic premise is that the centre must be community-based. There is no trick to managing the centre; people come as individuals and there is good representation from the community.



*all around the Gulf: where participants at this meeting are based*

One area in which the Centre excels is at GIS, with a full time employee. They also look at community-based research and TEK. Bill stated that fishermen **can** collect data; in fact, he believes that out of that can come a distribution of fishing boats that are collectively potentially more useful than boats from BIO.

### Maine Department of Marine Resources

Seth Barker of the Maine Department of Marine Resources presented on information sharing and GIS, using Internet examples in order to give attendees a flavour of different mapping themes.

Seth noted that geographic industries have learned a great deal in order to give

people what they need – and to make money. New and better interactive mapping is continually being developed.

Seth introduced a plethora of Net sites, from simple maps, to topographic maps, maps which include GPS information, maps with aerial photos, maps with nautical charts that you can plug their GPS into and see where your boat is.

Even simpler sites can information on lakes in tab area, or groundfish trawl surveys, or the construction of bathymetry of the Gulf of Maine.

All of these provide a direct graphic delivery of information. In closing, Seth stressed the continuing need of good graphics. Conveying the meaning you want may take time and thought.

A different tool?  
ecological art

Aviva Rahmani, ecological artist, described the role that ecological art can have in today's world. She uses her skills to work with the environment, beginning with the concept that man is not the centre of the universe, but rather a part of it. An ecological artist is involved more with process than with product. They can say and do things that many people can't; they can be more dramatic and take more risks. How can ecological artists help scientists?

## Don't forget ...

☼ *If there are any questions, concerns or issues raised that you feel need to be more clearly addressed, please see Joanne Cook or Maia Jensen. They are working out of the conference office in the coat-check room. And, if you have a presentation, please give us a copy.*

## Out of the Fog 2: The Thursday Report

is brought to you by:

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## The very beginning: Peter McKelvie and Bill Ayer

Workshop facilitator Bill Crossman, Research Coordinator of the Bay of Fundy Marine Resource Centre welcomed participants and introduced Peter McKelvie, President of ACAP Saint John. Peter spoke of primitive man and the development of civilization; information exchange began when someone first picked up a stick, and laid it on the ground to show others where the good hunting was. Information is our most important tool; we may have resources, but without the information, they are meaningless.

Peter described his work at ACAP and the importance to him of information exchange. He said that we can build the capacity to absorb information, like a floppy disk. The data stored on the disk is only powerful if we have the tool, the PC, to interpret it as well as the intellectual capacity to understand it. Information in its essence is the capacity to understand, communicate, and act!

## *Information is our most important tool*

Bill Ayer, Director for Sustainable Planning for the New Brunswick Department of the Environment and Local Government, spoke next. He congratulated ACAP, Gulf of Maine Information Exchange (GOMINFOEX), Paul Boudreau of DFO, and the Gulf of Maine Council for putting on the workshop.

Bill remembered when people were first called together for the first meeting of the Gulf of Maine Council in the early 90s. The council were facilitator, encouraging and working with people to make things happen — they actually set up an email account which was later graduated to real

time data (EDIMS)!! Now, we have GOMINFOEX, its website, BoFEP, two Gulf of Maine Action Plans and a third in construction.

## *The New Brunswick Department of the Environment and Local Government has its own experience in “coming out of the fog”*

Bill stated that the “business of communications can not be overemphasized”: how do we communicate? what do we do with this type of process? Are we doing enough?

A letter from The Hon. K. Jardine, who was unable to attend the conference, emphasized that government has a key role in making citizens aware of environmental issues, and that the Web is becoming a way of life and the government must be part of this revolution and meet the needs of its citizens. Communication is all-important, whether it be face to face, over the phone, by written word, email, or on the web.

The Department of the Environment and the Local Government has their own experience in “coming out of the fog”, Ayer noted. There has been work on ENVY, an environmental database; the development of web links for watershed groups throughout the province; and partnerships with the NB Salmon museum, the NB Nature Trust.

“The day is not far away when you can turn on the computer and with the click