



**Gulf of Maine
Council on the
Marine Environment**

**Fundy North
Fisherman's
Association**

CONFERENCE

REPORT

THE FUTURE OF SCALLOP ENHANCEMENT

April 24, 1998

Musquash Fire Hall

Musquash, New Brunswick

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THE FUTURE OF SCALLOP ENHANCEMENT

CONFERENCE REPORT

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May 1998

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THE FUTURE OF SCALLOP ENHANCEMENT

Fundy North Fisherman's Association and Gulf of Maine Council

ABSTRACT

The Fundy North Fisherman's Association sponsored a one day conference on the future of scallop enhancement to address the Gulf of Maine Council habitat priority goal: Restoration of Shellfish Habitat. The conference brought together members of Government, Industry, Aquaculture, Science and Conservation groups. Speakers from each group presented papers discussing their priorities and concerns. Following the paper presentations, facilitators provided a workshop environment to further develop stakeholder issues. The conference concluded with summations from each workshop group and a list of issues that require follow-up.

INTRODUCTION

In both Canada and the United States, citizen groups, community and local government organizations and volunteers play an important role in insuring the vitality of the Gulf of Maine (GOM). The Gulf of Maine Council on the Marine Environment (GOMC) recognizes the critical role played by these organizations in the Gulf of Maine region in achieving their habitat priority goals. The Fundy North Fisherman's Association sponsored a one day conference on the future of scallop enhancement to address the Gulf of Maine Council priority goal number 1: Restoration of Shellfish Habitat.

The conference objectives were to initiate discussion on:

- scallop enhancement
- orderly development
- harvesting
- ecological implication, and
- identify areas for more study
- identify areas for negotiation
- educate all stakeholders about the needs and concerns of others

Speakers from Government, Industry, Aquaculture, Science and Conservation groups presented papers discussing their priorities and concerns. Following the paper presentations, facilitators provided a workshop environment to further develop stakeholder issues. The conference concluded with summations from each workshop group and a list of issues that require follow-up.

The Fundy Fishermen's Association has 75 paid members of whom about one-half hold scallop licenses. They fish from Deer Island to Saint Martins in Area 36 of the Bay of Fundy.

PRESENTATIONS

THE RESEARCH PERSPECTIVE

Dr. Shawn Robinson, Researcher, Government of Canada, Fisheries and Oceans, Biological Station, St. Andrews presented a 35 mm slide overview of their research work in scallop enhancement. His presentation started with an overview of the whole scallop life cycle from scallops growing on the bottom to bagged scallop meats. Shawn showed the major scallop species and where they are found around the world. A bottom depth profile showed larvae and the fine mesh nets used to harvest the spat. The typical scallop predators were highlighted. A NASA satellite photo showed chlorophyll patterns for the Gulf of Maine.

The major Japanese scallop areas were shown, stating that they started scallop enhancement as far back as 1964. Charts clearly showed increases in scallop population due to enhancement. Japanese scallop production is impressive. Other countries are experimenting with scallop enhancement: France, New Zealand, USA, Australia, Ireland, Mexico, and Chile.

Shawn showed slides of scallop production that went far beyond the hobby farming level. The whole process hinges around juveniles; no seed; no crop. Do we let 'mother nature' produce them, or do we produce them ourselves? One scallop sorting machine shown sorts 100,000 animals per hour.

Shawn's research has monitored the Passamaquoddy Bay for 9 years and it demonstrates a consistent spat supply is available. Photos showed the spat collection techniques of bags and mesh and rope. Shawn stated that the fisherman is going to have to have a greater understanding of what is happening in the bay. Fishermen need to know the movement of larvae with the water circulating patterns in the bay. They need to know the type of bottom; where best to put the spat. Mud bottom has little to offer for spat attachment, where as rocks and ledge may harbour predators. Gravel bottom seems to be the most favorable bottom conditions for spat growth and survival. Shawn suggests that fishermen should map their areas, block them out and rotate their use.

Shawn discussed the hatchery concept noting that it was a large operation that takes scallops to 0.5 inches size by feeding them algae and then placing them on sea beds. He said that wild spat collection wins 'hands down'; the scallop have grown and survived in the wild to this point in time and further survival is more likely.

Shawn's presentation set the stage for the following presentations.

Leslie-Anne Davidson, Scallop Technician, Government of Canada, Fisheries and Oceans, Science Branch, Maritimes Region works in the Gulf of Saint Lawrence regions touching New Brunswick, Prince Edward Island and Nova Scotia. She gave an impromptu presentation on projects in her area and described their efforts to find spat.

Leslie highlighted three important aspects of her work:

- Know the biology
- Know the techniques
- Know the conflicts with other types of fisheries

One of her projects is spat collection. Where do they find spat? High counts were found off Richibuctio and all the way north along the coast of New Brunswick as well as off Souris, PEI, Bay George, NS and not far from Sydney off Cape Breton Island, N.S. Low counts were found between Cape Tormintine and

Borden. The collection bags were heavy with siltation and there may have been little bag area for the spat to attach. One of the best known scallop beds is in that area.

Leslie described some of the features of the Botsford Fishermen's Association scallop enhancement project. She likes their approach. See the report Lana has.....????
Their proposal addresses the environmental concerns. It answers the scientific questions like monitoring spawning and the bottom. They measure ??? what every week and are purchasing a camera to photograph the bottom. She cautioned that money has to be provided, you cannot work alone and advised working with the province.

Leslie mentioned some of the costs of scallop enhancement. One of the cheapest spat collection methods is to put net on a rope. Direct reseeding from the net and rope collection is the cheapest handling approach following initial collection. One of the projects she is affiliated with has a scallop sorting machine that cost \$40,000. She noted that the scallop hatchery concept is the most expensive approach.

There is opportunity for conflict with other fisheries. In her area, there are more lobster fishermen than scallop fishermen. There may be money in scallop enhancement for lobster fishermen???? You could have a lottery to decide who fishes scallop in an area. They could be paid to fish scallops with the crop going to a cooperative. With 209 licensed lobster fishermen for her area, it would be chaos if they all geared up to go scallop fishing.

FISHER PERSPECTIVE

Fisherman and Fundy North Fishermen's Association Treasurer Gregory Thompson outlined the associations initiatives in scallop enhancement during the last x???? years. The association started with 75 bags to collect spat ??????? Only 25 survived. 50 bags were lost, probably by various means; none specifically known to the fishermen. The collectors counted about 500 scallops per bag. This was considered to be an average collection return for a spat ????? harvest. The fishermen made furred mesh nets for ????. They found that they had to keep the mesh quite clean. A larger mesh size than that used for the initial experiment is being considered. If the scallop are left in the bags, the fishermen found that the scallops stopped growing. However, they did harvest about 50 scallops that were greater than 3 inches in size.

The fishermen participating in the scallop enhancement experiment wanted 2 seeding areas declared closed by the government for a period of ?????? Closure did not happen. Through a bureaucratic mix-up, the designated and seeded areas remained open. Other fishermen legally fished the designated areas even though they were requested not to fish those areas by the scallop enhancement participating fishermen. Fishermen want to make money. They do this by killing scallops in the scallop harvesting season. ?????? Getting an agreement from all the fishermen not to fish the designated areas is a big stumbling block. There are approximately 300 fishermen licensed and available to fish scallops. Unfortunately, among the 300 fishermen, there are different attitudes toward scallop enhancement; not all of them are enthusiastic and supportive of the project.

Gregory described three models that should be considered to promote scallop enhancement.

- The volunteer model - individual fishermen, working independently or in concert set out spat collection bags, retrieve the collection bags, sort the scallops ?????, and dump them on known scallop beds.
- Company model - fishermen obtain ownership of an area.
- Joint Community Management Board model - set fees; set harvesting rules.

The company model of dividing up the bottom immediately prejudices conflict. Fishermen want the freedom to fish anywhere in their designated zone. Once the idea of property rights is introduced, anyone

can become a property owner and property then becomes saleable. ??? Property can then end up in the hands of the rich and powerful. This model will not get the consensus of the fishermen.

The community management model is used in the ground fish fishery; but it is too restrictive to permit the concept to work properly. ???explain. Both the provincial and federal authorities must share their power and empower the fishermen in the ground fish fishery and the scallop fishery. The fishermen need power to levy fees to cover the cost of enhancement. They need the power to restrict fishing in designated areas. For example, fishermen raise money for their respective warfes and others can use those warfs and not pay their share of the repair and upkeep cost. To date, there has been no recourse for the participating fishermen. Apparently, a case could be made in small claims court; however, they cannot _____ while under claim. There is just not the freedom to run the business in a business like manner.

Is there a willingness to make a community management board work? After 30 years in the fishing business, it would seem that parties should be getting closer to cooperating; but , it is not apparent yet.

Gregory concluded that scallop enhancement works in other places in the world and he is convinced that they can make it work here. He emphasized that the fishermen must be on side to make it work; alas, fishermen, and he is a fisherman, are not willing to give up their freedom for more money.

The following question and answer session provided some interesting and forthright comments. The question was asked, “how much more money?” The return might not be more money; it might be a sustainable scallop fishery that provides just a reasonable return on investment.

The salmon aquaculture was cited as an example of the company model. It began with small operators and now is owned by 2 companies! The expressed feeling was that if the fisherman gives up his/her independence, they become a laborer, for more money. Each fishing community has a character and the fishermen make that character. Not everyone wants to be in a cooperative. Once you set up a cooperative, you have “us” and “them”. Somehow, a cooperative has to be inclusive. Very few fishermen are unhappy with their life style.

The question was asked, “what area is envisioned for scallop enhancement?” Ideally, the Bay of Fundy. Grand Manan might be considered a separate area. Fishermen can go anywhere in their fishing zone; but the fishermen of a given area who traditionally fished a given area would set the rules for fishing in that area. Fishermen coming in from outside that area would have to fish by the rules established for that area.

REGULATOR PERSPECTIVE

Jim Jamieson represent the Federal Government as the regulator. He approached scallop enhancement as an approach to doing business. He told the fishermen that if they commit to the idea of scallop enhancement, then they have to get the mindset and approach to make it happen. He feels that things have come a long way in scallop management on the Bay of Fundy; prices are higher, scallop averages are consistent.

From his vantage point, he sees the following problems:

- trying to get interested parties
- there is a lot less government
- there are fewer resources
- there is a lot less funding
- the government cannot deal with individuals
- the government must deal with groups

Jim cited the mid-bay fleet as an example of how scallop enhancement can work. What is this?????????

He sees it as a two way street. The Department of Fisheries must sign-on. If they put up roadblocks, it will have too much impact. ??????

Jim asked, “how can you move forward? What model can you use?” He stated that they can accomplish what you want to do now with the legislation that is presently in place. There will be a problem if you start to collect fees. Those fees will go into the general revenue and the question is, “how and when that revenue will be reallocated to the fishery?” New fisheries legislation is before the government now that may impact how the fishery is governed.

Jim stated that the Department of Fisheries will not enforce rules that the associations make. It is not going to happen. The fishermen involved have to play a major role. If you are collecting spat, you are fishing. You need a license. Who is eligible? What is the criteria for eligibility? Legislation is already in place to allow licensing. Certain groups have priority.

Jim spoke to the idea of restrictions. There could be restrictions on the license; closure of areas; restrictions in areas; a district 36 lobster fisherman cannot fish in district 35. He then stated that enforcement becomes the problem.

Jim viewed scallop enhancement as opportunity to think beyond what has been done in the past and take steps. What comes next? He felt that some level of coordination, cooperation and _____. Jim was asked how he saw individuals and companies working together. He stated that groups themselves have to do the work. He, as government, is not going to sit in the middle.

Jim cited an experience with the owner-operator concept restriction of putting the license holder in the boat. Apparently the companies did not like this idea at all. The majority of the mid bay fleet is company operated.

NB GOVERNMENT PERSPECTIVE

Marianne Janowicz, Sustainable Development Specialist, represented the Department of Fisheries and Aquaculture at the workshop. Marianne felt that the reason for the interest in scallop enhancement was quite simple and somewhat sad. “The scallop resource no longer supports the expectations of the fishermen. And fishermen want to do something to augment that resource.”

Three sectors of government were represented at this conference and Marianne stated that they were there to:

- Identify some of the issues and questions that our department would like to hear discussion on.
- Listen to those involved in or planning scallop enhancement projects; the steps government take will depend on the project plan.
- Convey to the fishers what the Department of Fisheries and Aquaculture would like to see answered and included in scallop enhancement pilot project proposals.

Marianne expressed some of the concerns of the Department of Fisheries and Aquaculture and hoped to hear discussion and possible resolution on:

- Public versus private property rights at enhancement sites .
- Who will have the right to harvest the scallops in the grow-out area.
- The overall objectives of scallop enhancement.
- Industry’s vision and Department of Fisheries and Oceans enforcement. What are the alternatives to protecting the site during the grow-out period?
- Industry’s vision and Department of Fisheries and Oceans science commitment to enhancement.

- The biological questions. What is the purpose of scallop enhancement? Is it to improve the abundance of scallops or to create a harvestable biomass for a limited group of license holders.
- A structure of accountability for enhancement projects.

The type of scallop enhancement project is a concern. Is it an aquaculture project with a lease and license? Are property rights invested in an organization or community? Or, should it remain in the public domain with gentlemen's agreements and/or a Department of Fisheries and Oceans enforced closure protecting the growing scallops? She stated that the Resource and Planning Section of the Department of Fisheries and Aquaculture is designated to take the lead for this type of project. There is no indication at this time that scallop enhancement groups want proprietary rights to sea bottom.

On the question of who would have rights of harvest at scallop enhancement sites she thought that the answer may differ for various parts of the province. Marianne sees this component as one of the most important components of the total vision of the project. It must be stated from the onset. Who will benefit? The vision must also include clear identification of the biological, resource and economic objectives of the project.

Consensus is critical. Governments need a clear picture to effectively direct their response to these initiatives. Consensus will save time and energy and keep the goodwill flowing. All who might be impacted must be involved. Scallops are a public resource. Scallop enhancement affects the public resource. The Fundy North projects covers a relatively small area; but affects some 300 scallop license holders---they all have access under their License, to fish that area at least for some portion of the year.

Marianne felt that Fundy North seems to be on the right track in terms of informing the larger group of their intentions. They went to the Inshore Scallop Advisory Committee, advised that committee of their intent, obtained approval to go ahead and agreement that scallopers would stay out of the enhancement project area for now.

Biological questions are a concern to the Department of Fisheries and Aquaculture. "How do we know that scallop enhancement will actually augment or improve the existing population or create a new population group within an area? What proof or understanding of scallop lifestyle do we have? How do we know that the natural density of scallops in an area can be successfully augmented?"

"Knowing that the area once had a larger populating times not necessarily answer that question. As you know, bottom conditions change, sedimentation changes, rocks move or are moved, water quality changes, phytoplankton levels change in areas over time, currents change, wind events differ from year to year. Some of these factors will influence spat abundance and settlement as well as grow-out conditions."

Scallop enhancement projects today are merely experiments. How much of a gambling is it? We will learn more about scallop behavior, habitat and life-cycle but stress that until we have more answers, scallop enhancement should not be a substitute for good management and a comprehensive conservation plan.

Is it possible to have a successful scallop enhancement project without displacing other species that use the same ocean bottom? What will be done to the ecosystem, to the organic processes that are happening on that bottom if diversity is changed in order to protect one introduced species? A precautionary approach should be endorsed.

What is known about the impact on settlement and resulting populations in the areas where spat is collected? Spat production, dispersion and survival seems to be better understood. Moving some of the spat and caring for it would seem to increase its potential for survival. Survival depends on such factors as: feed available in the new site versus where nature took it; predators; wind and current.

“If we take spat from St. Andrews Bay, where it settles fairly well and the scallop resource has been fairly stable over the years, are we disrupting the stability of the resource there?”

Marianne suggested possible solutions to how the scallops would be protected from human predators while they are growing and the public versus private property rights problem. One, the Department of Fisheries and Oceans enforce a closed area. Two, closure by agreement---a gentlemen's agreement. Three, the area is leased. The conclusion and method should be very clearly stated in the vision of the project.

Marianne cautioned that Department of Fisheries and Oceans commitment and involvement in scallop enhancement is an important and should be determined up front. To what extent is the Department of Fisheries and Oceans prepared to do enforcement of closed areas for scallop enhancements? Is the Department of Fisheries and Oceans prepared to provide scientific support to projects so that at the end of the project some of the scientific/biological questions have been answered?

The definition of a scallop enhancement site is a concern. Is it a grow-out site? Is it a spat collection site? Is it a seeding site? Is it all over-winter site? Are there several components and several sites involved in a scallop enhancement sited? These questions must be answered in a scallop enhancement plan.

Another concern of the Department of Fisheries and Aquaculture is conflict. How do reduce or avoid gear conflict? A proposed site maybe used for lobster fishing, groundfish fishing, and other fishing or boating activity. Would non-dragging fishing activity be prohibited? The scallop enhancement plan must address the conflict aspects because it will help define the consultative process required for the proposal.

What structure for accountability will the organization/community create for the protect? Will there be a development committee that oversees the project and makes recommendations as the project progresses.

The following are the components that the Department of Fisheries and Aquaculture would like to see in scallop enhancement project proposals. These components would also be necessary funding is sought. They are used as input and needed for approvals from committees that the department sits on as a stakeholders, approvals from the Department of Fisheries and Oceans and approvals from the larger community. A project proposal should address these issues and questions:

- Have clearly defined objectives
- Have realistic and measurable goals
- Identify the overall methodology for the study
- Include scientific monitoring and assessment
- Include economic monitoring and assessment
- Identify who and how these scientific and economic requirements will be met
- Identify the harvesting plan including who will be eligible to harvest
- Include details of the consultative process that has or will occur
- Identify how the grow-out area will be protected and how gear conflicts will be avoided
- Identify the structure of accountability for the project

Obviously, these issues and questions need thought and detailed clarification.

CONSERVATIONIST PERSPECTIVE

David Coon, Policy Director, Conservation Council of New Brunswick presented the principles behind their concerns about scallop enhancement.

The Council views scallop enhancement in these terms:

- Scallop enhancement is not divorced from management

- Scallop enhancement is not divorced from other species
- Scallop enhancement is not divorced from habitat
- All of these need compromise

The Conservation Council advocates Community Based Management because, only the community knows what the geographic community is really about. If the community were to write the rules on how to fish, when and where to fish, it would have more long term effects than what is occurring today. However, they feel that fishermen are not free right now and referred to the quota system to so limits fishermen. The Conservation Council likes the idea that the Fundy North Fishermen's Association is looking at scallop enhancement rather than a private company. Yes, fishermen who live around here want to kill scallops to feed their families; but they are not some company from afar.

Community Based Management is only going to work if they have the authority to establish the rules and the authority to enforce them. Authority has to be given and not changed in mid-stream. David feels that government at such a time and such a level of detail that it becomes a mess. Government are there to insure the public good, but have not done a good job. Managing at the community level can do this job better. He cited the Nova Scotia example of fishing under a Community Board as one example of management with more advantages than those under the Department of Fisheries and Oceans.

Who can fish where? If a local board sets the rules on how, when, and where, the question is not who. It is a matter of being trustees of the resource; not ownership. How, when and where is essentially what the federal government is supposed to establish; but this responsibility and authority needs to be established at the local level. Fundy North Fishermen's Association has an advisory board that meets and advises their association. Members of the board are from various walks of life. Of course, government has to be comfortable with the Community Based Management concept. A scallop enhancement proposal must include the responsibility and authority transfer to the community because it is so important. Tinkering with the present system will not work.

David summarized his presentation and stated that they were interested in meeting to further explore how to put scallop enhancement in place.

- Habitat - habitat destruction is going on underneath; don't be fooled
- Trusteeship - trustees need the necessary authority to put rules in place
- Enforcement - the Department of Fisheries and Oceans should not abandon their responsibilities in this area

MESSAGE FROM THE DEPUTY MINISTER

I put this last ??????????????????One step out of order?????????

R.(Bob) W. Gamble, Deputy Minister, Fisheries and Aquaculture, New Brunswick, presented a brief message of encouragement just before lunch. He stated that scallop enhancement was an opportunity to create more income and that scallop fishing was at the root of the communities of the Fundy North Fishermen's Association. He cautioned that "you shouldn't walk off a cliff unless you know where you are going to land" and also "know when to walk away." He displayed an enthusiasm to continue with scallop enhancement investigation, recognizing that there will be minor conflicts; but is confident that those can be resolved.

DISCUSSION FOLLOWING PRESENTATIONS

GROUP DISCUSSIONS

The conference participants divided into three groups to consider the following questions:

- A. Three models suggested for scallop enhancement are:
- Volunteerism
 - Property Rights granted by Government
 - Community Management
- a) Are there other models?
b) What are the pros and cons of each model?
- B. Harvesting Scallop Spat:
- a) Who should be allowed to harvest scallop spat and for what purpose?
b) Who should control the harvest of scallop spat?
- C. Environmental Effects:
- a) What possible detrimental effect on the environment should we be concerned about if enhancement proceeds?
b) What possible conflicts with other users need to be considered?

SUMMARY OF DISCUSSIONS

The three groups came together after two hours of discussion to combine their findings.

The general consensus from all three groups was that the Community Management Model was the most suited for the Fundy North Fishermen's Association. The groups noted that volunteerism is an important component of the Community Management Model at the initial stages of development and implementation.

The pros for the Community Management Model were:

- it is association driven
- the association imposes restraints
- it is a controlled environment
- the association realizes the time value of enhancement
- license holders would have primary regulatory control
- it is local
- resources can be shared
- pool resources to solve problems
- it is flexible
- it allows for expansion

The cons are:

- possibly less profitable than other models
- achieving local fishermen buy in to the model
- voting rights could be a problem; hostile take over of the board of community management

Follow up needs:

- make a proposal to government
- define community
- plan a scale up process; need to hire people; eg. In Australia, scallop enhancement started as volunteerism and they moved to hiring people to sort spat. Sorting spat is labor intensive and automatic equipment is expensive to purchase operate and maintain.
- develop equitable rules eg. Licensed fishermen should have voting control

Question B was tough. Government representatives suggested that a fishing plan, with a stated basis be developed for each year. It must be a coordinated effort on behalf of the fishermen. The fishing plan must be established under the guidelines of a management board or a management board of spat trustees.

The groups recognized that there could be detrimental effects on the environment. The ecology could change for some species. Changes may depend on the level of enhancement attempted. Particular concerns were expressed with the spat aquaculture approach because it could change the ecology of the area. Spat farming connotes the idea of getting rid of predators. The groups felt that any approach should achieve an integrated management where all fisheries are controlled together. Possible conflicts with the lobster fishery were noted. What are these??????

WORLD EXPERIENCE

Dr. Shawn Robinson showed slides that showed successful operations in Japan. A scallop enhancement proposal should probably cite world experience and references to published works that confirm success and discusses problem areas.

WHAT IS BEING DONE NOW?

Review what Greg has done to date and what is happening this year. Fisherman and Fundy North Fishermen's Association Treasurer Gregory Thompson outlined the associations initiatives in scallop enhancement during the last x???? years. The association started with 75 bags to collect spat ???????? Only 25 survived. 50 bags were lost, probably by various means; none specifically known to the fishermen. The collectors counted about 500 scallops per bag. This was considered to be an average collection return for a spat ????? harvest. The fishermen made furred mesh nets for ????. They found that they had to keep the mesh quite clean. A larger mesh size than that used for the initial experiment is being considered. If the scallop are left in the bags, the fishermen found that the scallops stopped growing. However, they did harvest about 50 scallops that were greater than 3 inches in size.

The fishermen participating in the scallop enhancement experiment wanted 2 seeding areas declared closed by the government for a period of ?????? Closure did not happen. Through a bureaucratic mix-up, the designated and seeded areas remained open. Other fishermen legally fished the designated areas even though they were requested not to fish those areas by the scallop enhancement participating fishermen. Fishermen want to make money. They do this by killing scallops in the scallop harvesting season. ?????? Getting an agreement from all the fishermen not to fish the designated areas is a big stumbling block. There are approximately 300 fishermen licensed and available to fish scallops. Unfortunately, among the 300 fishermen, there are different attitudes toward scallop enhancement; not all of them are enthusiastic and supportive of the project.

FEARS

This section summarizes the fears about scallop enhancement expressed by nearly all participants of the conference. There are fears expressed by the regulators, government, scientists, conservationists and the fishermen.

Fishermen fear the loss of independence and giving up to big business. They fear becoming a laborer, for more money. Each community has a character and the fishermen, in any decade over the life of the fishery, make that character. Very few fishermen are unhappy with their life style. A community based management model would keep big business and foreign business out.

Not everyone wants to be in a cooperative. Once a cooperative is set up, you have “us” and “them.” There is exclusion with the idea of group formations. Somehow, a cooperative has to be inclusive.

Fishermen fear that what a number of they put in place may be used and overrun by others who have not cooperated and participated in the project. An example of how wharf maintenance and usage has evolved was cited earlier.

Fishermen fear restrictions in the area they are allowed to fish. Fishermen can go anywhere ??? but many prefer limiting their fishing to the traditional areas fished by their community over the years. They do not like steaming a lot of miles to fish in someone else’s back yard. Their fishing should be good in his own yard.

Fishermen fear no say in the fishery. No say means no control over what they fish and what they do.

Most fishermen fear an upset in nature that would bring with it a reduced fishery or, in the extreme, the loss of the species. Let nature take its course seemed to be echoed about the conference throughout the day.

Fishermen fear conflict. Only a few are interested in scallop enhancement; but, 300 want to fish. There is a problem getting fishermen to “buy-in” or “sign-on.” Fishermen wonder if there are too many fishermen for the available fish stock. They question whether licenses should be bought back.

WHAT IS IN IT FOR THE FISHER?

What is in it for the fisherman? Is it the opportunity to make more income? Or, is it the opportunity to maintain what they have now? Or is it to survive?

The fishermen see themselves as a multi-species fisherman. They want to level out the availability of the various species for year round fishing. They see benefits for their families and the community in which they live.

WHERE DO WE GO FROM HERE?

The opportunity exists for scallop enhancement in this area ??? name area. It would appear to satisfy the representative group we have here if it was developed along the community management inclusive model. It is up to the fishermen to make a proposal if they wish to continue with scallop enhancement. The proposal must define community and enhancement conditions. Any group can make a proposal about how they would like to see it go.

Harvesting

We are under a fisheries management program now. We want an enhanced management program. Could we do enhancement without closing grounds? Greg's group thought it could. Fishermen have to decide these issues themselves. Make Jim and offer. It is going to be a number, or time. You are going to hit a limit somewhere. The fishermen don't want the gold mine/rush effect. They want a sustainable supply.

PRESENTORS

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RELATED WEB SITES OF INTEREST

Gulf of Maine - <http://octopus.gma.org/surfing/ocean/gulf.html>

Gratia Houghton Rinehart Coastal Research Center, Woods Hole Oceanographic Institution - <http://whoi.edu/coastalresearch/>

The Marine Institute's Networked Educational Topics for K-12 - <http://www.ifmt.nf.ca>