A GREENPEACE REPORT

The Future of Atlantic

HERRING

In New England

The Promise of Abundance or Invitation to Plunder?

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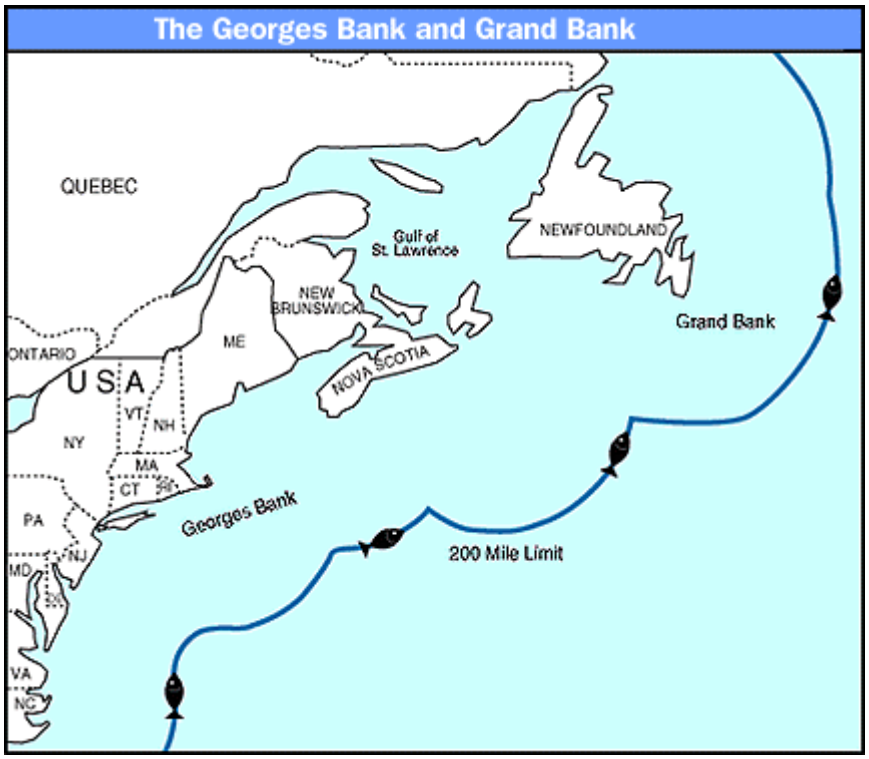
Introduction: The Future of Atlantic Herring in New England

The "Red Herring": A Promise of Abundance or an Invitation to Plunder?

Over the past decade, overfishing has led to the decline of numerous New England groundfish species and caused havoc in the fishing industry. The fishermen's need to make a living and the National Marine Fisheries Service's need for expedient alternatives in a time of crisis has resulted in redirection of fishing effort to "under-utilized" species which have no management protections.

Map of the Georges Bank and the Grand Bank



Promises of abundance for under-utilized species have become a familiar refrain. Time and again fisheries managers have encouraged fishermen to pursue these species without first designing proper management guidelines to prevent overfishing in federal waters, as required in the Magnuson-Stevens Sustainable Fisheries Act. The all-too-predictable result has been the rapid depletion of fisheries for monkfish, dogfish, bluefish and large Atlantic sharks, to name a few.

Although a fishery management plan (FMP) does not guarantee that fisheries will not be overfished, the absence of any controls invites over-capitalization and overfishing. It has ultimately led to more crisis management and new hardship for the fishermen who were encouraged to redirect their effort to unmanaged species like monkfish in the first place.

As many fishermen will attest, an ounce of prevention would have been worth a pound of cure. Instead, federal and regional fisheries managers once again waited until after these stocks began to plummet rather than acting to prevent a new crisis.

Today, virtually the only fish species considered relatively healthy and available in large numbers are forage fish such as mackerel and herring. Both play a key role in the marine food web, serving as important prey for many species of groundfish, tunas, seabirds and marine mammals. Herring in federal waters has no management plan, yet the Fisheries Service is recommending expanded fishing for herring on Georges Bank as yet another substitute for overfished stocks. Instead of words of caution, fisheries managers are advertising estimates of all-time high abundance and recommending total allowable catches of herring that exceed the record-setting catches of the foreign factory trawlers in the late 1960s.

Promises of herring and mackerel abundance are inviting factory trawl companies back to the waters of the Northwest Atlantic for the first time since the 1970s, when the herring stocks on Georges Bank were fished to the point of collapse by Soviet and European factory fleets. There are already plans for at least one large domestic factory trawler to fish for herring and mackerel in New England waters, and others are showing an interest.

The lack of adequate environmental safeguards and management guidelines is an inducement to plunder the resource once again. But many fishermen on the East Coast have joined Greenpeace to prevent history from repeating itself. Together we are working to ensure that New England waters remain free from factory trawlers and that an ecologically responsible herring management plan is established that stands a chance of providing U.S. fishermen an economically sustainable future.

Part One: The New England Herring Fishery - Past, Present and Future

Domestic Sardine Fishery

The traditional New England fishery for Atlantic herring has taken place primarily along the inshore waters for over 400 years. [1] Development of a canning industry in New Brunswick and eastern Maine in the 19th century was based on the fishery for juvenile herring “sardines,” which recorded landings of 80,000-90,000 metric tons in the 19th and early 20th century and again at mid-century. Nearly 50 sardine canneries were in operation on the Maine coast in the late 1940s and early 1950s. Today only six canneries are still operating, supplying nearly 36 percent of the U.S. sardine market.

Most of the catch was formerly taken by stationary weirs and seine traps along the coast, a technique already practiced by the Indian tribes and expanded by European settlers. The fixed gear fishery for juvenile herring once caught as much as 60,000-70,000 metric tons a year in Maine, but coastal schools of young herring have all but vanished in recent decades. Since the 1980s, most of the U.S. catch has been taken by midwater purse seine

and trawl nets fishing for schools of adult herring offshore in the Gulf of Maine. Landings from Maine and New Brunswick tripled to over 100,000 metric tons from 1983 to 1990 before leveling off.

In recent times, the offshore purse seine fleet in Maine, consisting of 10-15 licensed boats, most of which are under 50 feet in length and independently owned, has accounted for the bulk of the catch. [2] Mid-water trawlers re-entered the fishery in the early 1990s as the demand for herring on the international market outstripped the declining herring production of the North Sea. In 1995, mid-water trawlers accounted for over half of the herring landed in Maine. [3]

Arrival of the Foreign Factory Fleets

In the 1960s, a large international fishery for adult herring commenced when foreign factory ships arrived on Georges Bank, Nantucket Shoals and Jeffrey's Ledge in the Gulf of Maine. From 1965-1972, the total number of foreign ships fishing for groundfish and herring from Georges Bank to Cape Hatteras, North Carolina, increased from about 450 to over 1,000. Much of the fishing effort was directed at herring by Soviet, Polish and German stern trawlers and side trawlers. [4]

Lacking any management controls, a feeding frenzy ensued. During 1961, the Soviet herring fleet on Georges Bank totalled 100 vessels and landed 67,000 metric tons. [5] By 1965, 200-250 Soviet vessels were fishing for herring, hake, haddock and cod on Georges Bank. Herring catches rose to over 150,000 metric tons. [6] In 1967, vessels from Germany, Poland, Japan, Romania and Canada joined the Soviet fleet on Georges Bank and Jeffrey's Ledge. [7] Landings rapidly peaked at nearly 480,000 metric tons in 1968 — not including bycatch and discards. Catches from the large Georges Bank stock dwarfed the smaller herring fisheries from other regional spawning stocks, reaching an all-time high of nearly 375,000 metric tons. Overfishing led to the complete collapse of the Georges Bank herring stock by 1977, which did not begin to recover until the mid-1980s.

Since the late 1970s, only the Gulf of Maine/New Brunswick herring fishery has remained productive, accounting for as much as 90 percent of the landings in the last decade. [8] However, the steady decline of herring sardines along the coast suggests that the stock is already over-exploited.

Promise of Abundance or Invitation to Plunder: Is the Future of Herring Becoming a Replay of the Past?

Directed fishing by foreign ships has not occurred on the east coast since they were expelled from U.S. waters out to the 200-mile limit following the passage of the Magnuson Fishery Conservation and Management Act of 1976.

However, the recommendation of the Atlantic States Marine Fisheries Commission (ASMFC) to set the 1997 New England herring allowable catch at the unprecedented

level of 540,000 metric tons greatly exceeds the harvesting capacity of the domestic herring fleet and opens the door to foreign factory trawlers under the provisions of the United Nations Law of the Sea Treaty. Under the terms of the Law of the Sea agreement, nations incapable of harvesting their entire allowable catch for a given species must make the surplus available to other nations with the capacity to catch it. [9] Once herring has an Fishery Management Plan (FMP), the New England Council's declaration of any surplus would require it to approve applications for directed fishing by international vessels.

The biggest immediate threat to New England fisheries may actually come from the large, overcapitalized U.S. factory trawler fleet fishing off Alaska, whose fish-catching capacity greatly exceeds what the fisheries will bear. Already efforts are reportedly underway by Irish interests to purchase the 220' Elizabeth Ann, a Seattle-based factory trawler currently controlled by the Norwegian subsidiary American Seafoods, for the east coast herring and mackerel fisheries. [10]

One thing is certain — by setting such a high catch quota, the region's fisheries managers are effectively laying out a welcome mat to both domestic and international factory trawlers and setting the stage for over-exploitation of the fisheries.

Notes

1 Kevin H. Kelly and John R. Moring, Maine Cooperative Fish and Wildlife Research Unit, "Atlantic Herring," Biological Report 82(11.38), April 1986.
2 ASMFC, Draft Atlantic Herring Fishery Management Plan, Nov. 1993: 66.
3 Maine Department of Marine Resources landing statistics, Feb. 19, 1997.
4 Atlantic States Marine Fisheries Commission, "Final Environmental Assessment and Preliminary Fishery Management Plan for the Atlantic Herring Fishery of the Northwestern Atlantic, June 1995: 11-12.
5 ibid.
6 ibid.
7 ibid.
8 ibid.
9 UN Convention on the Law of the Sea, Articles 61 and 62, in effect on November 16, 1994.
10 Atlantic Pelagics Council, Letter to Mid-Atlantic Fisheries Management Council, May 14, 1997.

Part Two: Promise of Abundance - Why Foreign Fishing Companies Want to Return to New England

Renewed Interest in Herring from Abroad

In the cash-strapped New England fishing economy, the resurgence of formerly overfished herring stocks on Georges Bank is seen by some as a boon that could create new opportunities for boats restricted from groundfish and also for shore-based plants which process the catch.

The advertisement of highly abundant stocks of herring and mackerel has generated much interest from the international community as well. Already various countries including

Russia, Lithuania, and Poland have shown an interest in participating in joint ventures, internal waters processing (IWP) agreements, and even directed fishing.

Unable to fish directly within the U.S. 200-mile Exclusive Economic Zone (EEZ) up to now, some countries have re-established a foothold in the herring fishery through IWP agreements, which allow U.S. fishermen to catch the herring and deliver it to a foreign processor ship anchored within the three-mile boundary of state waters. Since there is little demand for herring as a food fish in the United States, the IWP agreements provide ready access to the European market. At four to five cents a pound, however, it takes millions of pounds of herring to turn a profit.

Beginning in 1985, ships from eastern Europe and the former Soviet Union began processing as much as 12,000 metric tons per year of herring in New England waters. Out of concern that uncontrolled IWP agreements could deplete recovering herring stocks, an annual IWP review process was proposed by the Atlantic States Marine Fisheries Council (ASMFC) in 1989 and adopted by the region's governors in 1990.

The approval of agreements has met with growing opposition from domestic fishermen. The steady decline of juvenile herring on the Maine coast has raised concern about any increase of herring fishing in the Gulf of Maine. On behalf of the Maine herring industry, the state of Maine has fought approval of new IWPs in the Gulf of Maine. Earlier this year, New Jersey denied the IWP applications submitted for 1997. Fishermen in Massachusetts have also expressed concern over plans for new IWPs, arguing that the agreements are encouraging too much fishing effort on herring stocks.

From Internal Waters Processing To Directed Fishing: How Foreign Investment In The Gloucester Herring Corporation Is Buying Access To Factory Trawlers

When the Georges Bank groundfish and herring stocks collapsed in the 1970s, the international fleet shifted back to the North Sea and surrounding waters. Now those North Sea stocks are overfished and the European Union has cut the offshore herring and mackerel quotas by 50 percent for the second year in a row to protect the stocks. New England herring is a tempting target for owners of Europe's overcapitalized and highly mobile factory trawler fleets, who specialize in low-value, high-volume factory fishing and require high volumes of "resource" to remain profitable.

Parlevliet & Van der Plas, a Dutch partnership, is one of the foreign interests looking for greener pastures in New England. Parlevliet & Van der Plas operates six large factory trawlers in Europe, landing 440,000 million pounds of herring annually in recent years. [1] The company has contributed to the decline of European herring stocks in the North Sea and the English Channel. It fiercely opposed the recent cuts in the North Sea herring and mackerel quotas, which have been imposed by the European Union. Now Parlevliet wants to finance a herring venture based in Gloucester, Massachusetts.

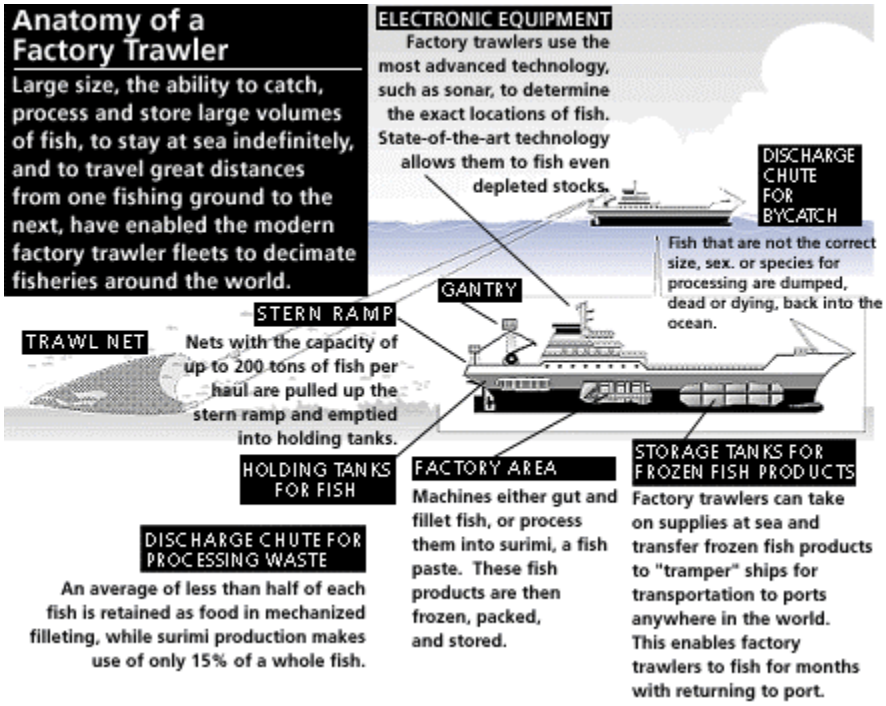
Using a $400,000 federal grant, a "consortium" of local interests banded together to form the Gloucester Herring Corporation (GHC) and began discussions with the Dutch

company in May, 1995 on a plan to catch, process and sell New England herring to the international market. [2] Frank Elliott of Elliott Shipping, along with Gloucester Mayor Bruce Tobey and Gloucester Fisheries Commissioner Vito Calomo, have led the charge for a herring and mackerel processing plant on the Jodrey State Fish Pier, which they say will create over 200 permanent jobs. [3] According to reports, the facility would be the biggest of its kind in New England, processing more than 50 million pounds of herring a year. [4]

The original GHC plan was billed as a way to provide Gloucester fishermen with new fishing opportunities. It envisioned employing as many as eight retrofitted fishing trawlers from Gloucester. However, the plan also called for the use of two large (250') factory trawlers which would be owned by the processing plant. Equipped with high-powered engines, large trawl nets, and on-board processing machinery, the ships would dwarf Gloucester's average trawler. [5]

The use of factory trawlers with on-board processing and cold storage could eliminate opportunities for shore-based processing plants, many of which have shown an interest in expanding the herring processing capabilities. Four local Gloucester plants (Star Fisheries, K&J Fisheries, Gloucester Marine Fisheries, and John B. Wright Fish Company) initially invested in the GHC and agreed to retrofit their plants for herring. K&J Fisheries is reported to have spent $5 million already. [6] In addition, K&J Fisheries retrofitted two of its vessels to catch and store herring to meet the market demand anticipated by the GHC.

Diagram of a Factory Trawler



In the most recent version of the GHC plan, at least one 369' factory trawler operated by a limited partnership under the name American Pelagic Fish Company also would fish for herring and mackerel, with a range extending over the whole region. [7] Originally built in Tacoma, Washington for use as an incinerator ship, the $40 million conversion cost is being financed in part by unidentified partners with access to foreign markets and "substantial expertise" in this kind of technology. Renamed the Atlantic Star, the vessel is now being outfitted with processing and freezing equipment in shipyards at Bergen, Norway for the herring and mackerel fisheries in New England — despite the apparent prohibition on foreign rebuilding contained in the federal Anti-Reflagging Act of 1988.

The Atlantic Star is nearly three times longer than the largest fishing vessel in Gloucester and has nearly 10 times the horsepower. [8] Such enormous ships can achieve the industrial economies of scale necessary to turn a profit in low-value, high-volume fisheries. According to the Atlantic Star's general manager, plans call for the ship to process fish delivered from U.S. catcher boats as well as its own catch from offshore areas which are inaccessible to the smaller domestic boats, with a processing capacity of approximately 250 metric tons of herring and mackerel a day. [9] The Atlantic Star has already received the federal fishery permits required to fish for herring and mackerel. After much opposition from the community, however, the GHC proposal was rejected by the State of Massachusetts. But the supporters of GHC are still fighting to enlist the Atlantic Star in this fishery. [10]

The fact that the Atlantic Star is part of the consortium's plan failed to come to light until Wednesday, March 26, 1997, when a meeting was held at the City Hall in Gloucester to answer the public's questions about the partnership. A subsequent public meeting also revealed that local investment in the project actually purchased only a two percent interest in an entirely different company called the Gloucester Herring Processing Company. In reality, this new company is bankrolled and controlled by Parlevliet (88 percent) and Tom Tammes, a shipping company executive from Holland (10 percent)11 This was a far cry from the impression given by the Gloucester Herring Corporation in earlier public statements, which implied that the GHC was primarily a partnership of local businesses. Amid mounting opposition from the Gloucester community, the owners of the Atlantic Star are reportedly also looking to New Bedford, Massachusetts and Nova Scotia for alternative contracts.

The Gloucester Herring Corporation made earlier promises that local boats would be used to catch the fish, but the March 26 revelation of at least one large factory trawler threatens this possibility. It invites others looking for fishing opportunities, including factory trawlers from the overcapitalized Seattle-based fleet fishing off Alaska. Already there is talk of negotiations by Irish interests to purchase the American Seafoods-owned Elizabeth Ann, a 220' factory trawler currently based in Seattle.

Notes

1 Gloucester Daily Times, February 25, 1997.
2 Commercial Fishing News, October 1996.
3 Boston Globe, April 13, 1997.

4 Gloucester Daily Times, 2/25/97.
5 Gloucester Daily Times, Tuesday, February 18, 1997.
6 Commercial Fishing News, October 1996.
7 Mike Love, General Manager F/V Atlantic Star, letter to the Mid-Atlantic Council, April 28, 1997.
8 Based on NMFS specs for the Kathleen and Julie II and III, from the NMFS website.
9 Mike Love, General Manager F/V Atlantic Star, letter to the Mid-Atlantic Council, April 28, 1997.
10 William Myrhe, Preston Gates Ellis & Rouvelas Meeds, Attorneys for Atlantic Star, letter to Gloucester Mayor Bruce Tobey, June 10. 1997.
11 Gloucester Herring Corp. business plan submitted to Mass. Finance Development Agency.

Profile One: Parlevliet and Van der Plas - Gloucester Isn't the Only Game in Town

Parlevliet and Van der Plas began in 1950 as a small fishing partnership in the Dutch town of Ketwijk, on the North Sea. According to a company brochure, the company relied on local North Sea fishermen to supply its fish at first, but later purchased large herring trawlers which could range farther offshore. [a] Today Parlevliet and Van der Plas owns six large factory trawlers, each more than 250 feet long and capable of processing half a million pounds a day.

Parlevliet and Van der Plas participate in a Dutch marketing conglomerate known as "The Group," comprised of four factory trawler companies supplying seafood to 70 countries. In all, 21 Dutch "supertrawlers" range across Atlantic fishing grounds, boasting a total catch of 500,000 metric tons per year. [b] Declining North Sea herring and mackerel stocks and cuts in the quotas have prompted The Group's factory trawl owners to look increasingly for distant water opportunities. In recent years the supertrawler Tetman Hette has fished in Namibian waters and the Geertruid Margreta has fished in Mauritania, while other boats have been dispatched to herring fisheries north of Iceland. [c]

The proposed venture with the Gloucester Herring Corporation is not the only one sought by Parlevliet and Van der Plas. The company has similarly bargained for access to a piece of Germany's herring quota. One venture involved a wholly-owned subsidiary of the company located in Rostock, Germany. It received subsidies worth 12 million DM earmarked for creating jobs in the former East Germany, and used the money to buy its way into the fishery. But the venture created just 41 jobs. More recently, Parlevliet offered investment money to develop a processing plant in Sassnitz, Germany, a Baltic town on the island of Reugen. As in Gloucester, the partnership has promised to use local vessels and fishermen to catch the fish and create many more jobs in the processing factory. But the plans for the plant included a processing capacity of 50,000 metric tons, much larger than the local fishing fleet could fill. [d]

After questioning by townspeople, it was revealed that even though the company promised to use local boats they also intended to bring in their own high-tech trawlers because the processing factory needs more fish than the local fishermen can supply. In order to clear the way for the entry of their vessels, Parlevliet requested experimental fishing permits for two pair trawlers over 120' in length with 2000-horsepower engines.

To expedite its request, the company also requested a change in the legislation which limits the size of vessels fishing in the region to 800 horsepower and prohibits the use of pair trawls. [e] The partnership's newest factory trawler, the 350' Helen Mary, was reportedly built for use in the Baltic Sea. The Helen Mary is capable of processing 37,000 metric tons of fish a year and capable of catching the entire German share of the Baltic Sea herring quota — 98,000 metric tons — in 50 days. But the shallow waters of the Baltic would cause the ship's giant trawl net to scrape the seabed in many parts of the herring grounds, a practice prohibited in the Baltic Sea. Last fall, the Helen Mary showed up in the English Channel for the herring roe fishery upon her return from Mauretania.

Increasingly, corporate factory fleets like those belonging to The Group dominate fisheries and markets around the world. Modern supertrawlers like the Helen Mary can steam to any ocean in search of fish to meet supply contracts. Competition for scarce resources drives these vessels to migrate from home waters in search of new resources and markets, but in the truest sense these ocean nomads have no home. Mobility is the key to access to the resource, allowing factory trawlers to escape quota restrictions and depleted stocks in one ocean by buying licenses and reflagging their ships in countries around the globe — in some cases using public tax dollars set aside for job creation in local fishing communities.

Notes

a Gloucester Daily Times, Tuesday, February 25, 1997.
b Fishing News International, February 1996.
c Fishing News International, February 1996.
d Sassnitz Mayor's Office for Economic Development, public hearing comments, February 27, 1997 and pers. comm. with Mr. Martin of the Provincial Ministry for Agriculture in Mecklenburg-Vorpommern.
e Mr. Martin, representative of the Provincial Ministry of Agriculture and Mr. Kahlfuss, head of the Provincial Fisheries Association.

Profile Two: The Rapid Expansion of American Seafoods - From Sea to Shining Sea?

Founded in Seattle at the height of the U.S. factory trawler building boom in the late 1980s, American Seafoods has become the most powerful fishing company in the North Pacific. In the overcapitalized and fiercely competitive factory trawl fishery for Alaskan pollock, American Seafoods has succeeded by buying out weaker competitors and bankrupt vessels. With the recent buyouts of three more competitors and the purchase of nine additional factory trawlers in the last year, American Seafoods now operates 16 of the big ships and has consolidated its control over as much as 40 percent of the fish-catching capability in the largest fishery in U.S. waters.

Ironically, the company with the all-American name is actually a wholly-owned subsidiary of a Norwegian-owned multinational fishing conglomerate, Aker/Resource Group International (RGI). The insatiable appetite for resources to supply Aker/RGI's global processing and marketing enterprise has prompted American Seafoods to expand its base of operations to the Russian Far East, where the company manages 9 state-of-the-

art supertrawlers for the Vladivostok-based Trawling Refrigerator Fleet. American Seafoods has opened offices in Argentina as well, and is now seeking to overturn a court decision resulting from efforts by Greenpeace and local Chilean fishermen which barred the entry of the company's newest supertrawler, the American Monarch, in Chile's offshore whiting fishery.

With ownership control of shipyards and processing plants in Europe, and fishing operations on four continents, Aker/RGI has become a world-wide catcher, processor and marketing giant. Its fleet of American Seafoods-operated factory ships in the United States, Russia, and South America catch somewhere between 800,000 and 1.3 million metric tons of seafood a year. [a] As much as 70 percent of American Seafoods' revenues and most of its catch are reported to come from its Alaskan pollock catch. [b]

Now the Norwegian processing company Frionor has purchased a processing plant in New Bedford — Frionor USA. Frionor recently merged with Norway Seafoods, the holding company formed in 1994 to manage Aker/RGI's burgeoning seafood business. American Seafoods is the largest and most important of Norway Seafoods' fishing operations, hence a major source of raw material for Frionor. Another company with partnership ties to American Seafoods since 1993, Norwegian-based DNHS, has acquired the rights to market products from a Gloucester processing plant. [c]

American Seafoods' presence on three continents and the establishment of Frionor's beachhead in New Bedford aptly demonstrates how the fishing trade is increasingly being transformed into a globalized extraction industry dominated by multinational corporations. Given the enormous catching capacity of its Seattle-based fleet and the steady decline in North Pacific pollock stocks over the last decade, it may be only a matter of time before American Seafoods tries to bring some of its factory trawlers into the east coast's herring and mackerel fisheries.

Notes

a Fishing News International, October 1995 and July 1996; and Odin official documentation and information from Norway, September 1996.
b David Whitney, Anchorage Daily News, April 13, 1997
c DNHS Fishing Company profile on the Worldwide Web. (Web site no longer available as of October 2000)

Part Three: Avoiding Boom and Bust Fishery Development - The Need for an Ecosystem-Based Approach to Herring Management

Avoiding the Mistakes of the Past

The failures of marine fisheries management are painfully evident in New England. In large part the failure can be attributed to an absence of adequate management: inadequate controls on fishing effort, insufficient data on total catch and discards, disregard for habitat degradation from fishing gear, and extensive impacts of bycatch on depleted and protected species have all contributed to the current fisheries crisis. With little or no regard for maintaining fish stocks at levels of abundance adequate to sustain them, the list of overfished species grows.

But the failure of existing management is also very much the result of outdated thinking about fishery productivity based on Maximum Sustained Yield (MSY) models. These so-called "single-species" models attempt to maximize the yields of wild fish stocks as if they were so many bushels of corn or board-feet of timber. The models assume that fishery production can be controlled solely by regulating the amount of fishing mortality on individual stocks in isolation from their interactions with all other species in the marine food web. But single-species modeling and stock assessments have failed to prevent overfishing. Indeed, such approaches have consistently failed even to recognize the warning signs of overfishing until it is too late.

The failure of single-species management stems from an inability to recognize the ecosystem processes required to sustain fisheries. In reality, marine ecosystems are complex, highly variable and poorly understood. We now know that many fish populations — and particularly herring — can vary unpredictably from year to year and decade to decade depending on environmental and ecological processes which are beyond human control. Unregulated and high-volume fishing for species such as herring will amplify the ecosystem effects of natural fluctuations in abundance and increase the risk of stock collapse.

Despite the absence of a Fishery Management Plan (FMP) and large uncertainties about regional stocks, the management advice of the Northeast Fisheries Science Center is to encourage increased herring fishing at this time — particularly on stocks on Georges Bank, Nantucket Shoals and Southern New England. [2] Yet it was precisely the lack of a management plan that resulted in overfishing and herring stock collapse during the era of the distant water factory trawlers.

Without a sound fishery management plan, the herring fishery is destined to suffer the same fate as other unmanaged fisheries of the past and also of the present. In the 1990s, for instance, the monkfish and dogfish bonanza has led to overcapitalization, uncontrolled overfishing and rapid depletion. In a few short years the monkfish fishery has gone from boom to bust, creating new hardships for the fishermen who turned to

monkfish as an alternative to overfished cod, haddock and flounder. For Atlantic herring, the time for action is now — while the stocks are relatively healthy and before more fishermen enter the fishery.

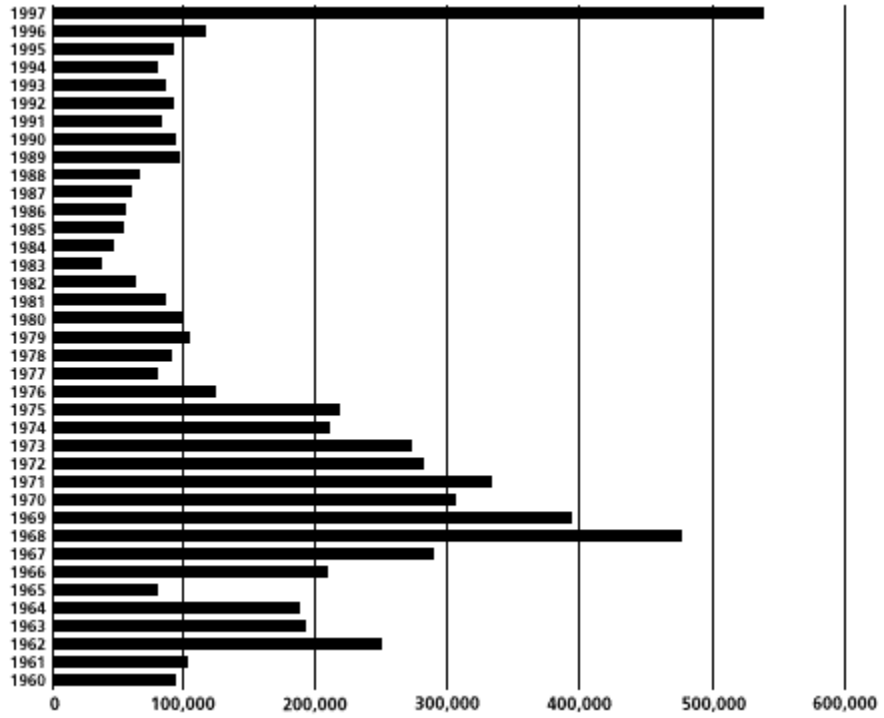
Toward the Goal of Sustainability: Essential Elements of a Federal Herring FMP

The first Northwest Atlantic herring management plan was drawn up in 1972 by the International Commission for the Northwest Atlantic Fisheries (ICNAF). By then, New England's herring fisheries were already in serious decline and politically motivated catch limits did nothing to halt that trend. In 1976 the United States withdrew from ICNAF with Congressional passage of the Magnuson Fishery Conservation and Management Act. The newly created New England Fishery Management Council developed an FMP for herring in 1978, but by then the Georges Bank herring stock had collapsed. Major flaws and disagreements with the Atlantic herring plan convinced the federal Department of Commerce to withdraw approval in 1982.

Western Athletic Herring Landings 1960-1996 and Recommended Total Allowable Catch for 1997

Despite all the scientific uncertainty, currently fishery managers are recommending a fishing level for herring in New England which would surpass the amount of fish caught by factory trawlers at the height of the fishery in 1968. The stocks declined dramatically within five years and the fishery was shut down shortly after.

Bar Graph of Reported Western Atlantic Herring Landings 1960-1996



Data source: Atlantic States Marine Fisheries Commission AHTAC, Reported Western Atlantic Herring Landings 1960-1996

In 1983, the New England states began development of an interstate herring FMP under the aegis of the Atlantic States Marine Fisheries Commission (ASMFC). Although the plan only covers herring within state waters, it has formed the basis for discussions of a federal FMP to manage herring in the U.S. EEZ out to 200 miles. But the existing ASMFC plan is seriously deficient in many respects and lacks provisions to comply with the amended Magnuson-Stevens Sustainable Fisheries Act of 1996.

A federal FMP for herring is needed now to avoid repeating the cycle of boom and bust that results when fishery managers create expectations that cannot be sustained. Essential elements of any responsible management plan should include, at the minimum, provisions which would prevent overfishing, set precautionary catch limits, account for predator/prey requirements, protect fish habitat, and minimize bycatch and waste.

Limited information and scientific uncertainties necessitate a precautionary, ecosystem-based approach if there is any real hope of achieving the goal of sustainability. Uncertainties abound but one thing is clear: failure to manage in an ecologically responsible fashion will doom efforts to achieve an economically sustainable herring fishery.

Prevent Overfishing

National Standard 1 of the Sustainable Fisheries Act requires that management measures shall prevent overfishing while achieving the optimum yield from each fishery, i.e., the yield based on all relevant social, economic and environmental considerations.

In New England, where overfishing has reached crisis proportions for many commercial species, the prospect of a burgeoning herring fishery presents a serious test of the ability of regional fisheries managers to learn from past mistakes.

- **Set Conservtive Exploitation Rates in the Face of Uncertainty**

For 1997, the Atlantic Herring Technical Advisory Committee for the ASMFC recommends an allowable herring catch of 540,000 metric tons — far higher than the record-setting catches of the late 1960s and early 1970s, after which time the major spawning stocks on Georges Bank and Nantucket Shoals collapsed.

The 540,000 metric ton allowable catch is based on the ASMFC's estimate of surplus spawning stock available to the fishery. But behind that figure is a great deal of uncertainty about actual herring abundance or the reliability of a stock assessment which treats regional spawning stocks as part of one generalized stock "complex."

The precision in the 1992 estimate of 2.8 million metric tons was plus or minus 40 percent — meaning the actual number could be anywhere between 1.7-3.9 million metric tons of adult "biomass." [3]

The Fisheries Service's own stock assessment review committee cautioned that there was low precision in the 1996 estimate of 2.2 million metric tons, with an 80 percent confidence that the actual size of the stock complex is between 1.5 and 3 million metric tons. [4]

Depending on whether one uses the low or the high estimate, the ASMFC recommended allowable catch of 540,000 metric tons for 1997 would translate into an exploitation rate ranging anywhere from 10 percent to 33 percent — a large margin for error with drastically different outcomes.

Therefore, given the large uncertainties about size, distribution, and age structure of the spawning stocks, large natural fluctuations in herring populations, and the importance of herring to the food web, as a precaution, *Greenpeace recommends that the fishery not exceed the expected 1997 domestic fishing needs in the absence of a federal fishery management plan*. This is particularly true since the Gulf of Maine stock may already be overexploited. Therefore, great attention should be given to the spatial distribution of the catch and measures should be taken as required to prevent localized pulse fishing and stock depletion.

- **Maintain Regional and Sub-Regional Spawning Stocks**

Owing to the regional distribution of spawning grounds and the high level of natural variability in herring survival from year to year, estimates of total stock abundance are very imprecise and trends in the production of young fish are hard to determine. Smaller regional and sub-regional spawning grounds (such as the one on Jeffrey's Ledge, in the Gulf of Maine) are particularly vulnerable to being overfished and rapidly depleted even if the total catch remains below the quota for the entire New England stock "complex." *Greenpeace recommends that fisheries managers should operate under the precautionary assumption that these widely distributed spawning grounds are necessary to support a large overall population*. [5] Protection of regional spawning stocks will also serve to protect and support herring predators in a given area by insuring against localized depletions of the herring prey base. Since many species of fish, marine mammals and birds rely on herring for some part of their diet at some times of the year, maintenance of localized herring stocks may be essential to ensure the foraging and breeding success of local predator populations.

- **Maintain Herring Spawning Stocks At A High Percentage Of Their Estimated Unfished Biomass**

Despite the formidable uncertainties already discussed, the overfishing definition recommended by the ASMFC would allow the herring stock complex to be reduced to only 20 percent of its Maximum Spawning Potential (MSP), which is the spawning

potential that would exist in the absence of any fishing. This high-risk exploitation strategy is calculated to take 25 percent of the exploitable population every year. [6] When mortality from predation and other natural causes is included, the total annual mortality may well exceed 50 percent of the stock every year.

Existing single-species management defines overfishing only within the context of the fishery, in isolation from its interaction in the ecosystem. Accounting for predation rates is vital for at least two reasons: (1) to arrive at a more accurate estimate of stock abundance and population dynamics, and (2) to understand the ramifications of various fishing strategies for the marine food web and herring predators. Even if an individual stock of fish can withstand a high level of exploitation indefinitely, that does not mean that the exploitation rate is sustainable within an ecosystem context.

As a precautionary means of insuring against errors in estimates of stock size, unpredictable fluctuations in abundance, or damage to the herring food web, *Greenpeace recommends that exploitation strategies should aim to take a conservative percentage of the estimated spawning stock biomass*. Such a strategy will allow the stock(s) to fluctuate naturally without risking depletion of spawning age groups and stock collapse. It will also leave a larger percentage of herring for recovering species such as the groundfish stocks which prey on herring.

- **Use of Total Allowable Catch (TAC) Limits to Control Fishing Mortality**

The ASMFC herring management plan envisions a more or less complete lack of control over the amount of herring landed by domestic boats. No management limit on the catch is anticipated unless the stock drops below the threshold of 20 percent of Maximum Spawning Potential:

"Because the resource is currently under-utilized, no limits on the domestic harvest are necessary at this time…In the event that the stock becomes over-exploited (when the 20 percent MSP level is exceeded or when total harvest exceeds total ABC), adult and juvenile catch limits may need to be imposed and allocated to each area according to guidelines which will be developed by the Plan Development Team following the adoption of this…plan." [7]

This is a recipe for disaster. The overfishing threshold is a level that should never be reached. Waiting until after that threshold has been exceeded to apply management controls is precisely the mistake made with New England's groundfish. The result is today's fisheries crisis and economic hardship for the region's fishermen.

The science of TAC-setting is controversial, involving a great deal of inference and guesswork from limited data. Despite these obstacles, *Greenpeace believes catch limits could establish a bright line and a measure of control over how much herring is caught*. Setting firm TACs will also help to constrain over-investment in new fishing capacity—a common problem in newly developing fisheries—by defining the scope of opportunity as well as the limits of the resource.

Protecting Essential Fish Habitat

Identifying and protecting essential fish habitat is a requirement of the newly amended Magnuson-Stevens Sustainable Fisheries Act. All existing and new FMPs must have information on known locations and condition of habitats. Regional fisheries councils are empowered to adopt gear restrictions, areas closures and other measures as needed to protect habitat. Seafloor sonar mapping of Georges Bank and other key fishing grounds, along with local knowledge of historic spawning sites, provides the New England Fishery Management Council an excellent basis for establishing a Herring Habitat Plan which identifies prime herring habitats, evaluates their status, and develops measures to ensure that they remain in good condition.

- **Herring Spawning Area Protection**

The ASMFC's final draft interstate herring FMP, presented in November, 1983, implemented seasonal fishing closures on spawning herring aggregations:

"The rationale for a prohibition on fishing during the spawning period was based on a widely held concern among the scientific community, as well as industry, that unrestrained fishing on spawning aggregations of pelagic species such as herring may lead to stock collapse. The dense schooling behavior of herring immediately prior to and during spawning make fish extremely vulnerable, especially to gear types such as pair trawls and purse seines, leading to very excessive levels of fishing mortality. Moreover, with disruption of normal behavior patterns, surviving fish may not necessarily spawn successively." [8]

Spawning closures are also a means of protecting essential seabed habitat during the critical incubation period in order to avoid disruption to eggs settling on benthic substrate. Incubation of eggs requires 10-15 days at temperatures between 8-13 C. as well as high oxygen concentrations in order to develop. The eggs are easily dislodged from the substrate or suffocated as the result of turbulence or mechanical disturbance. For that reason, ASMFC recommended (1993) that "the use of bottom-tending gear (e.g., otter trawls and dredges) be prohibited in designated spawning areas during spawning closures." Greenpeace supports the continued use of seasonal spawning closures to prevent roe-stripping or decimation of densely concentrated spawning aggregations, as well as to protect egg beds during incubation.

- **Gear Impact Assessment**

To minimize habitat degradation and bycatch of other commercially valuable and non-valuable species, Greenpeace recommends a gear assessment for all gear types in the fishery should be conducted to determine their impacts and identify the appropriate gear and scale to be used for the herring fishery.

Reducing Bycatch and Waste

A new National Standard 9 was added to the Magnuson-Stevens Sustainable Fisheries Act of 1996 which requires regional fisheries councils to minimize bycatch and waste in U.S.-managed fisheries. Given that the offshore herring fishery is likely to be prosecuted primarily by midwater trawls using small-mesh nets, and that herring habitats overlap those of groundfish, the impacts of bycatch on species currently regulated under the multispecies groundfish FMP could become extensive. In a multispecies fishery, where every tow may haul up many different species, the use of small-mesh herring trawl nets in a high-volume operation may result in high levels of incidental bycatch for depleted species such as cod, haddock, flounder and monkfish in some areas and at some times.

Greenpeace recommends that as part of the gear assessment performed under the Herring Habitat Plan, high bycatch rates should be identified and necessary gear modifications, time and area closures, or prohibition of gear types should be enacted to reduce bycatch. Many species of threatened and endangered marine mammals, birds, and turtles are also at risk. Every effort must be made to ensure that bycatch of these species is as close to zero as possible.

Notes

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Profile Three: Accounting for Predator/Prey Relationships - Defining Overfishing in an Ecosystem Context

Herring is a plankton-feeder preying on tiny marine crustaceans and larval fish. As an important prey item for many other animals, herring transfer energy from primary and secondary production to higher levels of the food web. They are preyed upon by many other species of fish, especially cod, pollock, haddock, silver hake, striped bass, mackerel, tuna, salmon and dogfish, as well as short-finned squid. In fact, it may be no coincidence that the decline of groundfish stocks in the 1980s followed on the heels of the collapse of herring stocks in the late 1970s.

"A principal source of herring egg mortality is predation by groundfish, e.g. cod and haddock. Hempel (1971) estimated that on North Sea spawning grounds, one haddock ate the spawn of one herring each day of the spawning season. On Georges Bank, Caddy and Iles (1973) observed an estimated 8% of the spawn was removed by predators. McKenzie (1964) reported that haddock in area off Black Point, Nova Scotia ate large quantities of herring eggs, and apparently were the main egg predator. On Georges Bank in 1970, herring eggs made up 28% of the weight of haddock stomach contents (Langton and Bowman 1980). [1]

Analysis of food habits of Georges Bank and Gulf of Maine fishes in the 1960s and 1970s in relation to fluctuations in herring and mackerel stock sizes, disclosed that herring accounted for 30% of the total weight of food eaten by Atlantic Cod. [2]

Worldwide: 18 species of whales, 23 dolphins, 6 porpoise, 6 sea lion and 25 species of seal are reported to rely on small pelagic forage fish such as herring and mackerel. [3] Many marine mammals devour herring when available, since its high fat and energy content makes it an excellent food source. A study of the stomach contents of the harbor porpoise from the Bay of Fundy concluded that "Atlantic herring was the most important species, contributing 80% of the total caloric intake, with some spatial and temporal variation." [4]

Bottlenose dolphins, cited as one of the species which preys on herring off the northeastern United States, may consume over 8 million kg (16 million pounds) of prey annually. [5]

Many seabirds prey on herring as well, including the common murre, thick-billed murre, common tern, roseate tern, common loon, cory's shearwater, manx shearwater, Atlantic puffin, northern gannet, double-crested cormorant, and great cormorant. [6] Dense schools of young herring are particularly important to some seabirds during the critical chick-rearing months. In years when herring fail to appear, bird colonies may experience nearly complete chick mortality.

A steep reduction in the herring prey base will have negative consequences for at least some of the fish, marine mammals and seabirds which rely on herring for some part of the year. The decline of juvenile herring on the east coast of Maine, for instance, may be adversely affecting seabird reproduction in the area. Survival of seabird chicks observed in 1996 on Petit Manan Island off the northeastern coast of Maine were the lowest observed since monitoring began in 1983 and changes in foraging behavior of adult birds have been reported. The absence of whales which used to appear in the area every year is also thought to be a result of the decline in small herring. [7]

Notes

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Part Four: Rising Tide - The Growing Opposition to Factory Trawling

Grassroots Organizing and Legislative Action

It is not surprising that Gloucester's fishermen question the wisdom of Gloucester Herring Corporation's (GHC) plan to bring factory trawlers back to New England. To many, corporate financing from abroad and plans for factory trawlers portend a takeover of the fishery. Large-scale factory trawling on local fishing grounds eliminates opportunities for smaller, independent vessel owners and contributes little to shore-based, value-added manufacturing of fish products because processing is done on board. The product is often delivered to the buyer at sea, or landed in distant ports. If the fishing grounds are overfished, the ships move on and escape the consequences.

That's why coastal fishing communities from the British Isles to India have protested the presence of these ships in their traditional fishing grounds, as did New Englanders when foreign factory fleets decimated herring and groundfish stocks in the 1960s and 1970s. By the early 1970s, U.S. fishermen were landing only 10 percent of the total groundfish catch off New England; the rest was taken by foreign factory ships. It is easy to understand why many in New England fear that history is about to repeat itself.

Citing numerous concerns about the effect of modern supertrawlers on New England's herring stocks and fishing communities, the New England Fishery Management Council passed a motion on April 16 recommending that the region's draft herring plan be amended to limit harvesting vessel size to a maximum length of 160 feet and 2500 horsepower. The Council also recommended that any future herring management plan prohibit fishmealing, a reduction process by which the catch is ground up for industrial use.

Legislation has now been introduced (H.R. 1575, H.R. 1855 and S. 1035) that would give both councils' motion the force of law by prohibiting large factory trawlers like the Atlantic Star in the fishery. A delegation of Gloucester residents joined Greenpeace in Washington D.C. to begin that legislative process, with the goal of prohibiting factory trawlers in New England. It soon became clear, however, that many Congressional staffers from the region's delegation were not even aware of the Gloucester Herring Corporation's plans for bringing at least one factory trawler into the area.

At the same time, it has become clear the Gloucester Herring Corporation is actually interested primarily in the mackerel fishery, which is managed by the Mid-Atlantic Council. Mackerel is more lucrative than herring, selling for 40-50 cents per pound compared to 4-5 cents per pound for herring. This latest revelation was confirmed by the Atlantic Star's manager, Mike Love, at a New England Council meeting on April 16. Interest in mackerel has raised concern among the mid-Atlantic mackerel fishermen from New Jersey and New York who fear displacement by the state-of-art factory trawler. As a result, the Mid-Atlantic Council voted on May 15 to prohibit vessels from entering the fishery if they have not landed any mackerel by an as-yet undetermined date, with the intention of prohibiting vessels like the Atlantic Star and diversification of existing fishermen into this fishery.

Working Toward a Common Goal: Community Action For Ecologically Responsible Fisheries

The owners of the 369-foot Atlantic Star are not the only ones using questionable science and political clout to justify their enormous investments in factory trawling behemoths. The National Marine Fisheries Service is considerably behind schedule in implementing the Magnuson-Stevens Sustainable Fisheries Act of 1996, yet the agency was quick to issue a permit for the Atlantic Star even though its presence in U.S. waters may violate much of intent of the legislation to prevent overfishing, minimize bycatch, protect fish habitat and consider the needs of fishing communities.

Gloucester is not the only community and herring is not the only fishery threatened with overfishing by factory trawlers like the Atlantic Star. The debate over herring has become a lightening rod that has galvanized communities throughout the East Coast who realize that the health of the commercial and recreational stocks on which they rely is dependent on the abundance of forage fish such as herring. Environmental and conservation organizations such as the American Oceans Campaign, Cetacean Research Unit, Massachusetts Audubon Society, Conservation Law Foundation, National Audubon

Society, Environmental Defense Fund, Coastal Waters Project, Massachusetts Wildlife Federation, Natural Resources Defense Council, International Wildlife Coalition, the Humane Society of the United States, Massachusetts Wilderness Society, and Greenpeace are also demanding responsible and precautionary management of the herring stocks.

The collaboration between fishermen, community organizations, clergy, ice houses, processing companies, and environmentalists is the remarkable result of a small silver fish. It shows that diverse community interests can actually work together toward a common goal of promoting ecologically responsible principles and practices for fisheries. Such principles are vital to ensure the economic sustainability which fishing communities desire. They form the foundation for new fishery management policies and act as benchmarks by the the National Marine Fisheries Service, the regional fishery management councils, and fishermen.

Greenpeace Recommends: Ten Principles for Ecologically-Responsible Fisheries

In its Principles for Ecologically Responsible Fisheries, Greenpeace challenges Congress, the National Marine Fisheries Service and the fishing industry to develop sustainable, risk-averse fishing policies based on these tenets. Efforts are already underway in a number of communities to implement principles similar to or based on those promoted by Greenpeace. In New England, a number of conservation-minded shoreside processing plants are using criteria to determine from whom they buy their fish. Fishing communities in California and Oregon are beginning to discuss and develop community-based management approaches to their own fisheries. In Maine, fishermen's responses to a poll conducted by the Department of Marine Resources suggested using criteria identical to many of those advocated by Greenpeace in order to improve the way in which Maine manages its marine fisheries.

1. Apply the precautionary principle;
2. Base fisheries management in an ecological perspective;
3. Avoid overcapitalization and excessive industrialization of a fishery via gear restriction, numbers of boat, and/or scale of operation, etc.;
4. Promote gear selectivity in order to reduce bycatch and waste to the lowest possible levels;
5. Protect fish and other marine wildlife habitat;
6. Cut all subsidies for unsustainable fishing practices and technologies;
7. Increase the use of local knowledge and the involvement of fishermen and women in research and management;
8. Ensure that access to fishing and control of the oceans is not privatized;
9. Adopt effective mechanisms for the regulation, monitoring and enforcement of fishing operations;
10. Ensure transparency and full public participation in fisheries management decisions.

Taking Action: Greenpeace's Campaign to Ban Factory Trawlers

In all crucial respects factory trawlers are at odds with Greenpeace principles for ecologically responsible and economically sustainable fisheries. The economic imperatives of the giant factory ships are overwhelmingly at odds with biological imperatives to reduce excess fishing capacity and reduce pressure on over-exploited fisheries. Given the environmental impacts, unsustainable economics, destabilizing effects on long-established coastal fishing economies, and the imperative to eliminate redundant fish-catching capacity in fisheries where they operate, Greenpeace is calling for a ban on these vessels as the most cost-effective and least disruptive way to further the goals of environmentally and economically viable fisheries in U.S. waters.

Eliminating factory trawlers is not a panacea for all of the problems facing U.S. fisheries. However, once factory trawlers have ceased to dominate many of the country's largest fisheries, as well as the political process, the replacement of the "bottom line" mindset with one of environmental, social and economic sustainability can take hold. To this end, Greenpeace calls on the Department of Commerce to develop and implement a plan for the rapid phase-out of factory trawlers in U.S. waters. Such a plan would include:

1. An immediate ban on the entry into U.S. fisheries by foreign factory trawlers;While there are currently no foreign factory trawlers fishing in U.S. waters, a ban should be mandated by U.S. fisheries policy.
2. An immediate prohibition on the introduction of additional domestic factory trawlers in U.S. fisheries;This prohibition would serve to halt the expansion of the factory trawler fleet, preventing further investment in an already overcapitalized industry and setting the stage for the phase-out of existing factory trawlers.
3. An expedited phase-out of the U.S. factory trawler fleet by 2001.By retiring these ships, additional fishing pressure would not be shifted to other domestic fisheries, the overwhelming majority of which are already fully or overexploited; nor would the retired capacity be exported to other nations' EEZs or to international waters. Any attempt to replace the fishing capacity of factory trawlers in a given fishery must in accordance with principles and guidelines for ecologically responsible fishing.

For more information on factory trawling and its impacts on marine ecosystems, see Greenpeace's report, " Sinking Fast: How Factory Trawlers Are Destroying U.S. Fisheries And Marine Ecosystems," which is available online.

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