

# **INCORPORATING ECOSYSTEM CONSIDERATIONS INTO FISHERIES MANAGEMENT: LARGE SCALE INDUSTRY PERSPECTIVES**

Bernt O. BODAL

## **EXECUTIVE SUMMARY**

Internationally, the large-scale industry is a diverse group of both shore-based and at-sea harvesting and processing operations. As with all elements of the fishing industry, the performance of large-scale fisheries is controlled by various degrees of governmental and institutional constraints. The record shows that the degree of responsible fisheries practised in any sector of the fishing industry largely depends upon the level of responsibility within government and regulatory institutions, and a commitment to responsible fisheries by the fishing industry.

There are a number of reasons why some fisheries have attracted larger vessels, such as remote fishing grounds, the large size of the resource, the perishable nature of the fish, the need for capital-intensive production equipment, and the harsh and dangerous fishing conditions. In this production environment, only large-scale fisheries are able to deliver seafood at cost-effective prices. Without the economies of scale of the large-scale seafood industry, this healthy source of protein would either be left in the water or affordable only to the wealthy.

Greenpeace and other NGOs have repeatedly attacked the large-scale sector as unsustainable and “strip mining” the seas. However, in the North Pacific under USA jurisdiction, the facts dispute this notion. Fisheries in this region are widely regarded as some of the most responsibly and conservatively managed fisheries anywhere in the world. With a track record of nearly 30 years of commercial fishing activities, none of the 63 species of groundfish in the USA North Pacific are classified as overfished or even approaching the overfishing level. Bering Sea pollock, the largest fishery in the USA, is currently at a high biomass level, 10 million metric tons. The allowable harvest rate of Bering Sea pollock in 2001 is well below the acceptable biological catch of 1.85 million tons, and about half of the MSY harvest rate.

The primary reason that these fisheries are healthy and sustainable is due to the responsible application of the precautionary approach in the calculation of quotas and in the overall management of the fishery since the inception of the 200-mile EEZ in the late 1970s. In addition to precautionary levels of allowable catch, harvests are monitored closely and reported on an ongoing basis. In the Alaskan pollock and Pacific whiting fisheries, the large-scale fleets are required to have two federal fishery observers aboard at all times, who collect fishery data on 99% of all hauls. One hundred percent of all fish caught are weighed on flow scales and catch data is reported daily to the National Marine Fisheries Service (NMFS), the agency responsible for in-season monitoring of the fishery. Both regulatory and voluntary

by-catch controls are important tools that have been employed for over 20 years. The large-scale fleet in the North Pacific has the ability to respond rapidly to changes in by-catch and is able to relocate to areas of lower by-catch. This is demonstrated by an overall by-catch rate of 0.6% in the pollock fishery, the lowest of the world's major fisheries.

Management in the USA North Pacific has implemented marine protected areas to protect habitat. In an effort to protect fish and crab habitat in the eastern Bering Sea, areas closed to bottom trawling encompass 30 000 square miles, or about 25% of the available fishing area. Other ecosystem principles employed include prohibitions on fishing for forage fish stocks in the North Pacific, to protect these important prey species for seabirds and marine mammals. Further, NMFS conducts research on and manages not only targeted fish stocks but also non-targeted species of fish, seabirds, and marine mammals, and takes into consideration the interrelationships between these species and the physical and chemical forces of the marine environment.

The large-scale fleets in the Pacific Northwest and Alaska have been supportive of conservative ecosystem-based management. They are all aware that their economic viability is dependent on sustainable resources, and hence they share a long-term commitment to healthy resources.

Recent changes in USA law have allowed the large-scale sector to pursue new avenues, such as harvesting cooperatives, in which quotas are assigned to vessels, thus ending the race for fish. In an era when most fisheries throughout the world are heavily overcapitalized, managing harvesting effort with Olympic-style quotas, where vessels must compete against each other as frantically as possible, waste and inefficiency are all too common. In certain fisheries, harvesting co-ops have proven to be far superior to Olympic quotas as a management tool. Co-ops have led to reductions in by-catch while at the same time providing increased recovery of processed seafood product: an impressive 36% increase in the pollock fishery. Harvesting cooperatives also result in spreading catch effort more evenly over space and time, decreasing the potential for localized depletion of resources. Because co-ops allow for individual accountability, and hence a meaningful role in managing the resource, co-op members are willing to support, both logistically and financially, scientific research to improve resource assessments, increased monitoring, and testing of innovative fishing practices. For instance, the Pollock Conservation Cooperative contributes US\$ 1.4 million annually to fisheries research.

In the USA North Pacific, the large-scale fishing industry, and American Seafoods, are very supportive of good scientific information and understand that sustainable fisheries, such as the eastern Bering Sea pollock fishery, are only possible with good data on stock status and fishery removals. Integrating additional ecosystem data into existing fishery management plans is an ongoing process and will require careful and comprehensive analysis. However, in many parts of the world, this is already being done and these efforts should continue as long as clear, measurable benefits to the environment and stakeholders can be demonstrated. With the right incentives, the fishing industry can provide positive, creative energy for responsible management practices and fishery research.

## **Introduction and background**

[1] Greetings, my name is Bernt Bodal, Chairman and Chief Executive Officer of the American Seafoods Group. I have been involved in the seafood industry for the last 25 years. For 17 years, I was the captain of crab and groundfish vessels off the coast of Alaska. From 1994 to 1998, I was President of American Seafoods Company and was instrumental in helping to grow the company and its affiliates into a fleet of over 30 vessels, with offices in the USA, Argentina, Chile and Russia.

[2] Today, the American Seafoods Group comprises American Seafoods Company and American Seafoods International. American Seafoods Company owns and manages 7 USA-flag catcher-processors that operate in the groundfish fisheries in the USA North Pacific. American Seafoods is a founder member of both the Pollock Conservation Cooperative and the Pacific Whiting Conservation Cooperative. American Seafoods International is a value-added processor of retail seafood products, which include the Frionor, Bayside Bistro, and Arctic Cape product lines. Our customers include every segment of the food service market, from restaurants and cafeterias to schools, health care facilities, business and industry, hotels, catering, country clubs and cruise lines.

[3] What I have been asked to speak about today is the perspective of large-scale fishing interests regarding the incorporation of ecosystem considerations into fisheries management. I would like to focus on the following:

- (i) What the large-scale industry is, why it exists, and its importance to the rest of the industry and the economy.
- (ii) Some examples of successful fisheries management systems that already apply the precautionary approach and consider ecosystem principles, with demonstrable and impressive results.
- (iii) Suggest harvesting cooperatives as alternatives to the traditional quota management systems that have had such a poor track record over the years.
- (iv) Distinguish between nearshore and offshore ecosystems, and the differential impact of different types of fisheries on each.
- (v) The impacts of incorporating ecosystem considerations into fisheries management.

## **Reasons for large-scale fishing operations**

[4] Large-scale fishing operations play an important role in fishing communities throughout the world. They are a diverse group of both shore-based and at-sea harvesting and processing operations. There are a number of reasons why some fisheries have attracted larger vessels.

- (i) Remoteness of fishing grounds.
- (ii) Harsh and dangerous fishing conditions.
- (iii) The large size of the resource.
- (iv) The perishable nature of the catch.
- (v) The need for capital-intensive production equipment.

[5] In this production environment, only large-scale fisheries are able to deliver seafood at cost-effective prices.

### **Importance of the large-scale seafood industry**

[6] Of all the protein produced for human consumption, seafood is recognized more and more as the best source of protein for human health. Without the economies of scale of the large-scale seafood industry, this healthy source of protein would either be left in the water or would be affordable only to the wealthy.

[7] The large-scale sector also provides employment for a significant portion of workers in the seafood industry, and is an important source of trade for countries.

### **The record in the USA North Pacific**

[8] As with all elements of the fishing industry the performance of large-scale fisheries is controlled by a variety of institutional constraints. Healthy, responsibly managed fisheries in any sector of the fishing industry are dependent upon the degree of responsibility practised by government and regulatory institutions, and on the commitment of the fishing industry.

[9] Greenpeace and other NGOs have repeatedly attacked the large-scale sector as unsustainable and “strip mining” the seas. However, at least in fisheries conducted in the USA North Pacific, the facts do not support these claims. We are extremely proud of our management system in the area. We believe it is one of the finest examples of ecosystem-based management anywhere in the world, one that is widely regarded for its responsible and conservative fisheries management. With a track record of nearly 30 years of commercial fishing activities, none of the 63 species of groundfish in the USA North Pacific are classified as overfished or even approaching the overfishing level. Bering Sea pollock, the largest fishery in the USA, is currently at a high biomass level of 10 million metric tons. The allowable catch of Bering Sea pollock in 2001 is 1.4 million metric tons, well below the acceptable biological catch of 1.85 million metric tons, and about half the MSY level of harvest.

### **Elements contributing to sustainable fisheries in the North Pacific**

[10] The primary reason that these fisheries are healthy and sustainable is the responsible application of the precautionary approach in the calculation of quotas and in the overall management of the fishery since the inception of the 200 mile Exclusive Economic Zone in the late 1970s.

[11] In addition to precautionary levels of allowable catch, harvests are monitored closely and reported on an ongoing basis. In the Alaskan pollock and Pacific whiting fisheries, the large-scale fleets are required to have two federal fishery observers onboard at all times, who collect fishery data on 99% of all hauls. One-hundred percent of all fish caught are weighed on flow scales and catch data is reported daily to the U.S. National Marine Fisheries Service (NMFS), the agency responsible for in-season monitoring of the fishery. To be effective, total harvest (including discarded fish) must be monitored and enforced to prevent exceeding sustainable levels.

[12] Both regulatory and voluntary by-catch controls are important tools that have been employed for over 20 years. The large-scale fleet in the North Pacific has the ability to respond rapidly to changes in by-catch and is able to relocate to areas of lower by-catch. This is demonstrated by an overall by-catch rate of 0.6% in the pollock fishery, the lowest level recorded among the world’s major fisheries.

[13] Management in the USA North Pacific has implemented marine protected areas to protect habitats. In an effort to protect fish and crab habitats in the eastern Bering Sea, areas closed to bottom trawling encompass 30 000 square miles, or about 25% of the available fishing area.

[14] Other ecosystem principles employed include prohibitions on fishing for forage-fish stocks in the North Pacific, to protect these important prey species for seabirds and marine mammals. Further, NMFS conducts research on and manages not only targeted fish stocks but also non-

targeted species of fish, seabirds and marine mammals, and takes into consideration the inter-relationships among these species and the physical and chemical forces of the marine environment.

### **Industry support of fishery management**

[15] The large-scale fleets in the Pacific Northwest and Alaska have been supportive of conservative, ecosystem-based management. They understand that their economic viability depends on sustainable resources, and hence share a long-term commitment to healthy resources.

### **Harvesting cooperatives**

[16] Recent changes in USA law have allowed the large-scale sector to pursue alternatives to Olympic quotas, such as harvesting cooperatives in which quotas are assigned to individual vessels, thus ending the race for fish. In an era when most fisheries throughout the world are heavily overcapitalized, Olympic-style quotas force vessels to compete against each other as frantically as possible, which results in waste and inefficiency. In certain fisheries, harvesting cooperatives have proven to be far superior to Olympic quotas as a management tool. Co-ops have led to reductions in by-catch while at the same time providing increased recovery of processed seafood product, an impressive 35% increase for the UAS pollock fishery. This means that out of every 100 tons of pollock harvested, we are producing an additional 35 tons of product compared to production under the former Olympic system. Harvesting cooperatives also result in distributing catch effort more evenly over space and time, decreasing the potential for localized depletion of resources.

[17] Further, because co-ops allow for individual accountability, fishermen have a stake in assuring sustainable resources. Co-op members are willing to support, both logistically and financially, scientific research to improve resource assessments, increased monitoring, and testing of innovative fishing practices. For instance, the Pollock Conservation Cooperative contributes US\$ 1.4 million annually to fisheries research, and the Whiting Co-op has sponsored scientific resource surveys since 1998.

### **Large-scale fisheries, nearshore ecosystems**

[18] Large-scale fisheries do not necessarily have greater impacts on the ecosystem than those of smaller-scale fisheries. Some fisheries, such as pollock, typically occur farther offshore, with effort spread out over time and area. The USA pollock fishery harvests with pelagic gear only, so there are no negative impacts to the ocean floor habitat. The incidental harvest of non-target species, or by-catch, is negligible. Fisheries with fewer and larger vessels facilitates highly effective monitoring and enforcement.

[19] In contrast, many small-scale fisheries take place close to shore. Nearshore marine ecosystems are fragile and generally more easily affected than offshore ecosystems. Breeding sites for seabirds and marine mammals occur in these nearshore environments, and species interactions are often more complex than they are farther offshore. Small vessels are limited to fishing close to shore and, over time, could cause localized depletions and disturbance of nearshore organisms. A good example of this is the foraging habits of Steller sea lions in Alaska. Satellite monitoring data indicates that the vast majority of these foraging trips take place within 10 miles of nearshore rookeries and haul-outs in Alaskan waters. Based on this data, the nearshore, small-boat fisheries could be more of a threat to the continued survival of Steller sea lions than are the large vessel fisheries operating farther offshore. Further, small boats are less able to accommodate independent observers to monitor catches and collect scientific data. As we all know, poor data leads to poor resource management.

### **Impacts of incorporating ecosystem considerations**

[20] Management actions based upon new knowledge about the ecosystem should not be taken frivolously and should only be implemented when clear, measurable benefits to the environment can be demonstrated. The precautionary approach has two meanings. Most people think about being more cautious in the face of uncertainty, but precaution also means not taking action when we are unsure about whether or not that action could do more harm than good.

[21] Inevitably, conflicts between different components in the ecosystem will arise and actions will affect these components differently. At some point, determining the value of, and prioritizing, these components is unavoidable, and there are no easy answers. But there is one strategy that clearly does not work in addressing these conflicts. NGOs will need to change their relationship with industry and government agencies, from adversarial to collaborative. Lawsuits interfere with legitimate research, which can result in more harm to resources than good. If the millions of dollars each year that NGOs spent on lobbying and lawsuits were instead spent on research, we could solve many of the most serious problems threatening marine ecosystems today.

### **Conclusion**

[22] To be successful, seafood businesses of the future must ensure that natural resources are managed to be sustainable and productive over the long term. Since our very livelihood and future is heavily dependent on healthy fishery resources, nobody has a stronger commitment to sustainable fishery management than does the fishing industry. In the USA North Pacific, the large-scale fishing industry, and American Seafoods, are supportive of good scientific information, and understand that sustainable fisheries – such as the eastern Bering Sea pollock fishery – are only possible with good data on stock status and fishery removals, and an understanding of their effects on the ecosystem. We have found that harvesting co-ops are an effective alternative to traditional fishery management systems, allowing greater individual accountability and slowing down the frantic race for the fish.

[23] Integrating additional ecosystem data into existing fishery management plans is an ongoing process that requires careful and comprehensive analysis. Conclusions should not be reached hastily and should be supported by scientific facts.

[24] Industry has a vital and active role in supporting research and management efforts. Indeed, without input from and cooperation with stakeholders, incorporating ecosystem principles into fishery management is doomed to fail. Fisheries scientists should seek and encourage this cooperative relationship with industry. Any fishery management system must carefully balance sound conservation objectives with the interests of fishermen and fishing communities. With the right incentives, the fishing industry can provide positive, creative energy to responsible management practices and fishery research.