

# DEEP BLUE

## Facing the Ocean of Issues in the Marine Environment

by Lynn Lee

**It is hard to appreciate that which lies beneath the ocean waves. There is an intensity of life that puts this terrestrial world to shame.** For many, even though we are surrounded by saltwater, the ocean is just something we look at and admire - its changing colour, the patterns of wave and wind that move across its surface. Some people do have a strong connection to the sea by virtue of culture, livelihood or the time spent as children at the seashore. But by the same token, many don't think about what goes on beneath its surface, for in those deep blue waters, spineless creatures, fishes and mammals thrive in ecosystems that are the most ancient on the planet.

Because the marine environment is largely unknown to us on land, we must actively think about it to begin to understand and appreciate it. Unlike salmon which bridge the gap between marine and freshwater environments, coming back every fall to their spawning streams and reminding us of their presence, most marine creatures spend all their lives in the sea. At low tide we catch a glimpse of the intertidal creatures which have adapted to survive "harsh" land conditions but these represent only a fraction of the creatures thriving. Thinking about marine conservation is paramount if we are concerned about the well-being of our marine environment and the creatures that call it home. There is so much we do not know about the sea, yet human pressure to further exploit the sea continues to grow.

The BC provincial government has declared the province open for business, ready to sell and take investment on natural resources. In the past year alone, there has been intense pressure from the province to open up Hecate Strait and Queen Charlotte Sound to offshore oil and gas development. A huge wind farm is being proposed in Hecate Strait to supply power to the mainland and the North Coast is targeted for salmon aquaculture development. Pilot projects farming oysters and scallops are already operating. Commercial fisheries are still active, tourism and recreational fishing developments are on the rise and logging companies are seeking foreshore leases for log booming sites and barge landings as they look to log old-growth forests in remote areas of the Islands.

On a positive front, Bill C-10, an Act respecting the National Marine Conservation Areas of Canada, has been given Royal Assent through Parliament, issuing in a new era of marine conservation and allowing the proposed Gwaii Haanas National Marine Conservation Area Reserve to move ahead. A Fisheries and Oceans led Marine Protected Area around the Bowie Seamount off the west coast of Haida Gwaii is also under discussion. Fisheries management practices are slowly changing with increasing public input and entwined through all the issues and initiatives are subsistence food gathering that has been in practice on Haida Gwaii for thousands of years.

The crux of marine conservation is this - we need to protect the natural biological diversity in the ocean within the context of human uses.

### ISLANDS POINT

**As an Islands community how important is the ocean to us? That question was answered when the provincial government threatened to lift the moratorium on offshore oil and gas development.** The Islands communities resounded with an overwhelming "No." Diane Brown and Jenny Cross said it best at the Provincial Oil and Gas Task Force consultation in Skidegate last November. They opened their hearts to talk about their connection to the sea. They brought with them beautiful, priceless plates of clean food from the seas and prepared to pour oil on it, likening this act to the devastation the oil industry can have on the environment. As Jenny stood poised with an open container of oil, tears welled in her eyes and in the end, she could not purposefully spoil the precious food.

Their action is the Island sentiment towards offshore oil and gas development and the sanctity of what the sea offers. The Council of the Haida Nation issued a press release with the Tsimshian Nation saying they do not support lifting the oil and gas moratoriums. In their press release they said that technology has not changed enough to accept the risks of offshore oil and gas development - they are not prepared to risk the natural marine heritage for the promise of a few dollars.

Southeast of Rose Spit, there is a proposed offshore wind farm with 300 individual windmills located 500m apart, covering an area of 80km<sup>2</sup> in Hecate Strait. The proposed project is to supply power to the mainland and, despite the fact that the proposed wind farm is located off these shores, Islanders only heard about the project after a press release was issued by the federal government. The proposal was signed by Prime Minister Chretien, perhaps in an attempt to show good faith for the Kyoto Accord to reduce "greenhouse gas" emissions.

Each windmill would extend 80 m above sea level with blades 36 m long, turning slowly all day and night. Although it is alternative energy and is the direction we need to move, there are still many questions and concerns that need to be considered. What is the extent and magnitude of impacts for seabirds and other birds using Hecate Strait as a migration corridor? What are the consequences for fish and marine mammals considering changes that will be made to the local physical oceanography? How will the electrical fields around cables on the sea floor affect creatures whose behaviour depend on sensing the earth's magnetic fields?

For the Islands, there is little to no direct benefit from this wind power project. When asked, a Uniterre company representative indicated that it would be totally impractical, and compared our energy needs to that of plugging a toaster directly into a main power line along the highway.

## **SALMON**

**Salmon farms are opening up on the North Coast. Open-net cage salmon farms are being planned across Hecate Strait in Kitkatla and are already operational near Klémtu.** There are many serious issues associated with farming of salmon. There is evidence that they concentrate disease and parasites in the waters in and around the cages, reputedly causing outbreaks of sea lice on wild juvenile fish. It is also known that those diseases and parasites occur in the wild so salmon farmers are adamant that they are not the culprits. But Alaska has taken the lead and banned salmon farming from its waters, fearing for the health of wild salmon. Recent reports from Norway, where open-net cage salmon farming has been operating much longer than in BC, show regulations that require new salmon farms to be based on land instead of in open-net cages.

Current salmon fisheries management is wrought with contradictions. The North Coast Chinook troll fishery was closed in early June based on evidence that a significant percentage of the troll caught fish originated from endangered West Coast Vancouver Island Chinook stocks. Yet at the same time, recreational fishing including fishing lodges continue to fish without any assessment of their impacts on those same fish. And in spite of a fifteen year old provincial moratorium on development of new fishing lodges along the BC coast, new seasonal floating lodges continue to appear along the west coast of the Islands.

If the migration routes of these salmon are generally known and there is an issue around endangered stocks, why can't there be closures in the areas necessary but allow for commercial and recreational fishing to occur in areas which would not impact stocks of concern?

## **ROCKFISH**

**Stock assessments from fisheries management agencies in both BC and Washington state show that the exploitation rate for each inshore rockfish species must be under 1 percent of its population in order to maintain a total mortality rate – fishing plus natural causes – of less than 2%.** The problem is that there is insufficient stock assessment data to generate

rockfish population estimates with any level of confidence for any part of the coast. Given that, how can we manage for separate fish species, never mind managing for ecological integrity?

In an attempt to address the lack of confidence in the management of rockfish, a small number of Rockfish Protected Areas were designated in the past few years by Fisheries and Oceans with input from commercial fishers. More recently, conservation efforts led by the Sierra Club of BC have pushed for even more stringent fisheries management regulations to ensure the survival and sustainability of inshore rockfish.

## **FISHING TECHNIQUES**

**Modern day industrial fishing methods have a huge impact on fish and the marine environment.** On the BC coast, bottom trawling otherwise known as dragging, is the method most harmful to fish habitat. Imagine fish are living in underwater cities on the ocean floor where the variety and abundance of life on the seafloor make up an intricate matrix that is city-like and supports a huge number and diversity of fish. Then imagine the fish trying to survive in the wreckage after the trawl net has destroyed all the buildings and taken the grocery store away.

Bottom trawling is also indiscriminate in the species that it collects. Along with fish they want to catch, trawlers also catch what is known as "bycatch." This is all the fish in the net that aren't the species they want. Prior to management changes in 1997, some of this bycatch, notably halibut, were species that trawlers were not allowed to keep and in the early 1990s, the BC trawl fleet was catching up to 1.5 million pounds of halibut every year, much of which went back over the side of the boat dead. These days, bycatch of all "unwanted" fish can still average up to 50% of the trawl catch.

## **GOING FURTHER OUT**

**We have been using the sea for all time. The use of the sea began with subsistence fisheries for groups of people living along the coast.** Resources were harvested primarily for local use and trade, fishing technology was basic, effective and selective. Relatively large numbers of people were involved in catching, harvesting and processing the catch from the sea. The seasons and patterns of abundance were a part of the living culture.

Indigenous subsistence fisheries were restricted mostly to waters close to the communities. Fish was caught and had to be eaten or processed within days and the number of fish taken at any one time was limited by the size of fishing vessels. Fishing techniques and technology was passed through traditional practice as was the timing and location of fish and shellfish at different times of the year.

With European exploration and colonization of "foreign" lands, fishing pressure was expanded outward to coastal and continental shelf areas. Foreign trade with indigenous communities created greater demand for living marine resources which once were only used for subsistence harvests. Since colonization, the seas around Haida Gwaii have been subject to much industrial activity: commercial sea otter and fur seal hunting, whaling operations, abalone drying stations, clam canneries, salmon canneries, dogfish reduction plants, herring reduction fisheries and more. Many of these activities have led to catastrophic declines and the near extinction of some commercial species.

Through the last century of human history, technological advances have expanded the range and scale of modern global fisheries both in time and space so that today, there is literally nowhere in the ocean which has not been exploited by human fishing activity. Fishing vessels have increased in size and capacity; with refrigeration and freezer capacity vessels stay longer at sea and move further from shore; fish-finding technology allows vessels to accurately locate smaller and smaller schools of fish; and an increased efficiency in fishing gear has reduced the number of people needed to actually fish. We know that with current fishing technology, we are able find the last school of herring and set a net around it.

## **HERRING RUN**

**Herring stocks around the Islands are not faring well.** In the last 10 years, the maximum estimated herring return to the Islands has been less than 20,000 tonnes in any one year, and has averaged closer to 10,000 tonnes over the past ten years. In the heyday of the reduction fisheries in 1956, about 77,500 tonnes of herring from this area were reduced to fish meal and oil. For 4 of the past 10 years, the Haida Gwaii roe herring fishery has been closed and in spite of Haida concerns for the depressed populations and protests about opening a roe herring fishery this year, the commercial fishery went ahead to catch a mere 500 tonnes, 0.6 percent of what was caught in 1956.

This year in the Strait of Georgia, the herring population was estimated at about 100,000 tonnes, a number comparable to populations during the time of reduction fisheries in the 1920s. This shows that given the chance, herring populations can rebound. Serious consideration needs to be given to a total closure of the roe herring fishery around the Islands until such time as the populations return to levels of those seen in the past.

Despite the problems with fish populations and fisheries management, in many ways, we are fortunate here on the Islands. There are still fish to fish. And although far from untouched, the marine ecosystems are still healthier than in many other areas of the BC coast. We do not have large industrial processors such as pulp and paper mills pouring toxic wastewater into our environment. Oil rigs and wind farms are not on the eastern horizon and salmon farms have yet to dot our coastline. The impact of the human population on the Islands and surrounding waters is manageable and urban development is not a huge threat to marine biological diversity.

## **FISHING DOWN THE FOOD CHAIN**

**Yet we are still on a path that needs examination and change. We have seen the collapse of the social and economic fabric of East Coast fishing communities with the near extinction of Atlantic cod and other groundfish populations in the North Atlantic.** Here, on the West Coast, the effects of collapsing fish populations has been buffered by the fact that we have a wide variety of species being caught in numerous fisheries. But with the decline of salmon has come the development of "new" fisheries such as abalone, sea urchin, rockfish, sea cucumber, geoduck, prawn, squid and octopus.

These "new" fisheries are not necessarily being managed better than those of the past. Most notorious is the abalone fishery. In less than 20 years, commercial fishing for abalone drove the fishery and species to the brink of extinction. SCUBA diving technology allowed harvesters to collect abalone within all of its habitat range and market prices for the delicacy were so high that both the legal and illegal fisheries were financially rewarded. By the time the fishery was closed, BC abalone populations were so depressed that after 11 years of a total fishing closure, the population has not rebounded. This problem is compounded by continued illegal fishing for abalone that ends up for sale on the black market.

## **ABALONE**

**On the Islands we are moving forward and trying to make a difference to protect the marine legacy that we have inherited.** The Abalone Stewardship Program which developed a Community Action Plan in consultation with all Island communities. A key part of this plan is the Abalone Stewardship Areas. Two areas are proposed, one at the north end of the Islands and another at the south end within the proposed Gwaii Haanas Archipelago Marine Area. In these Stewardship Areas, research is being conducted by the Haida Fisheries Program and Fisheries and Oceans Canada to further understand abalone and their interactions with their habitat. Abalone "condos," the equivalent of artificial reef habitats for juvenile abalone, have been deployed to observe settlement patterns of juvenile abalone. Control baseline sites are being surveyed alongside experimental sites to see if artificially increasing the density or aggregating mature abalone will assist in successfully recruiting juveniles into the population.

## **OLD BUT NEW**

**One of the inherent characteristics of indigenous subsistence fisheries is built-in protected areas.** When Haida people harvested abalone and sea urchins at low tides with a spear they were able to reach about 6 feet into the water. This meant that harvesting was only done in certain areas of their habitat and the remainder was essentially protected from harvesting.

When fishing was limited to coastal waters, many migratory species such as salmon, halibut and black cod, or species with large ranges, could not be fished in all of their habitat, so again, areas were protected from fishing by virtue of limited access.

We need to learn from the past and establish areas of the sea where no fishing or extractive human use is allowed. This will help maintain marine biological diversity. Although there is no guarantee that the absence of fishing will bring these ecosystems back to pre-industrial conditions, they will provide an opportunity for us to learn more about natural functioning marine ecosystems. There are many good reasons to establish harvest refugia, including the often cited fact that they can increase the population of commercial species outside refuge areas and subsequently increase commercial harvests. Marine protected areas, including marine reserves that exclude industrial fishing activities, can be used as an effective management tool to hedge against the risk of fisheries collapse due to fisheries management errors.

Aside from fishing, impacts from other human activities are harder to address with protected areas since the ocean is boundless. In very specific cases such as the proposed Gwaii Haanas Archipelago Marine Area, where there already exists an adjacent terrestrial protected area, localized sources of pollution and nutrient loading is minimal. However, if oil platforms were out in Hecate Strait, waste discharge and oil and chemical spills would equally affect the marine area, whether or not it was part of a protected area.

If we consider the analogy that natural ecological systems are like rubber bands, that they are elastic and dynamic and they have an inherent amount of resilience to environmental stresses. It is like stretching the rubber band and having it snap back to shape. As we continue to stress the environment by removing keystone species and animals at different levels of the food chain through fishing, polluting with chemicals, antibiotics and nutrients, and introduction of exotic species, we make that rubber band shorter. The resulting ecological system is less resilient and less able to deal with environmental changes.

At a marine conservation meeting in Tlell this year, many Haida elders, political figures and concerned citizens voiced their overwhelming support for the creation of an Islands' vision, a Marine Map, for the waters surrounding Haida Gwaii. There is a time for everything, and now is the time to think about what we want for the ocean.

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