

# Coastal Fishery of Japan

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Votive picture of seine net in 1883

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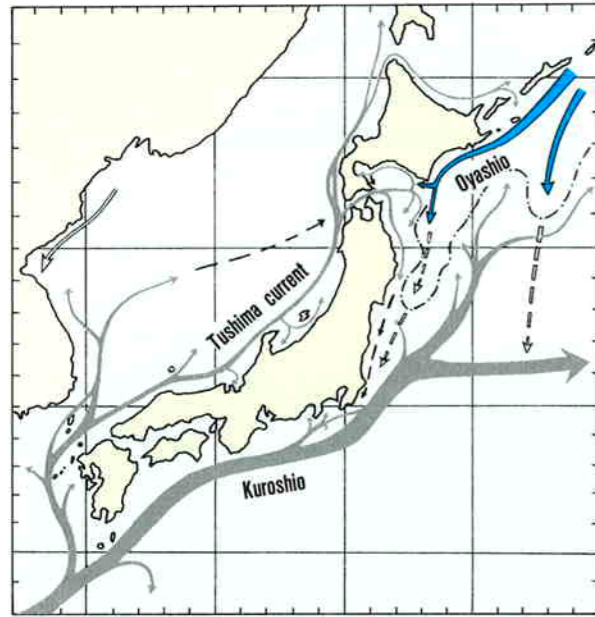
Fisheries Agency

# Fishing and fish-eating people

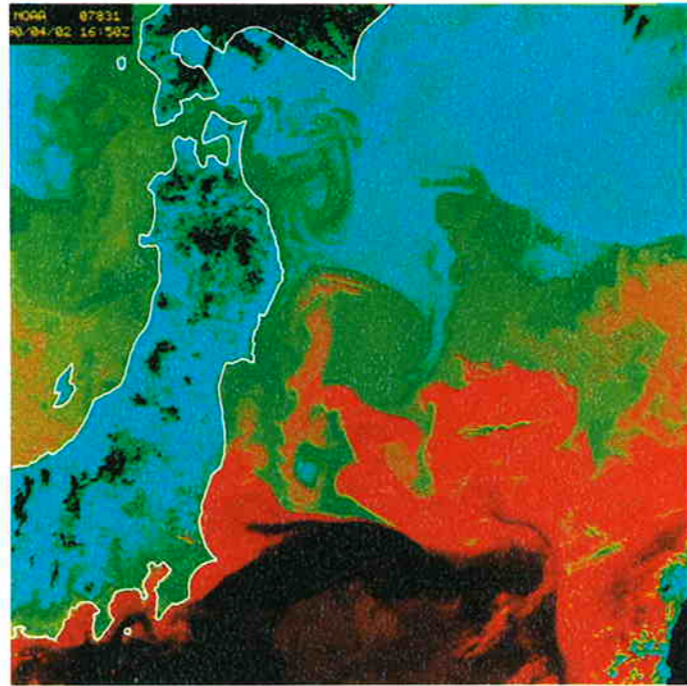
The sea surrounding Japan is where the warm Kuroshio Current from the south and the nutrient-rich Oyashio Current from the north meet.

As a result, a wide variety of fish, shellfish and algae grow in abundance throughout the year.

From the beginning of time the Japanese people have lived with the sea with fishing being one of the main means of living, constantly developing versatile coastal fishing industries which has been carried on to now. Indeed, the coastal sea has provided the major dietary source for the Japanese people. From now on, Japan should seek a positive balance between environmental protection (including wild life protection) and the effective use of the fishery resources when promoting its coastal fishery industry.



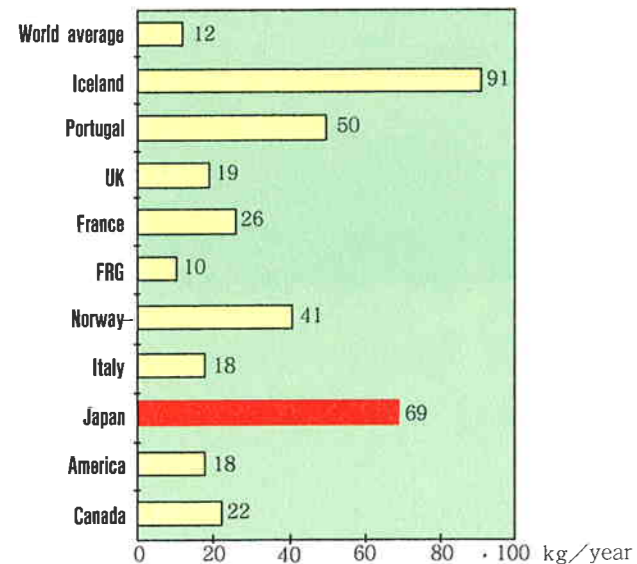
The Ocean currents around Japan :



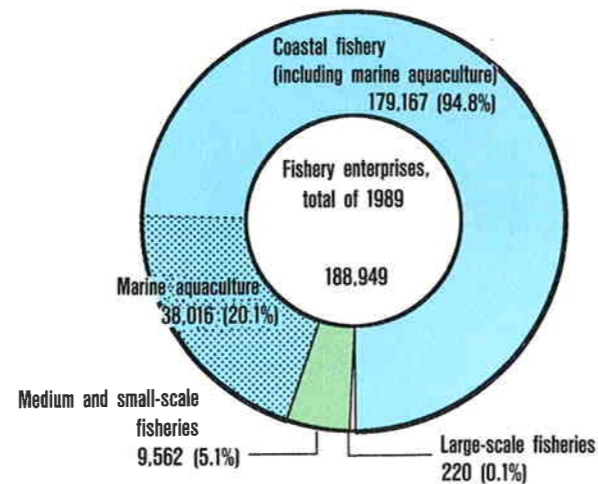
Junction of the Kuroshio and Oyashio Currents  
Satellite photograph : (Red=Kuroshio, Blue=Oyashio)

Japanese consume more sea food and algae than Europeans and Americans.

Sea foods and algae have been recognized as very healthy foods recently.



Annual per capita supplies of edible fishery products in the world  
(Average of 1984 to 1986):



The number of fishery enterprises in Japan:

Japan's fishing industry is predominantly coastal. The coastal fishery is the core of the Japanese fishery industry and increasing in importance every year.

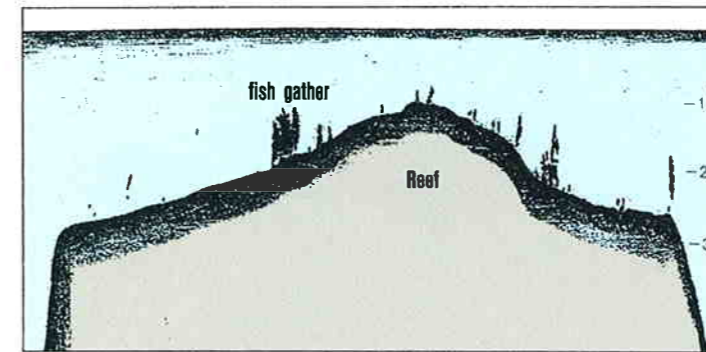
# Where do fish gather ?

Fish do not inhabit the entire ocean. Fishermen must deal with the Nature, forecast the weather, know the ocean currents and the habits and ecology of fish and algae, besides acquiring fishing skills, accumulate experience, to finally become a professional. The coastal fisherman not only knows the fishing ground like his own garden but also carefully protects the environment to enhance the growth of fish and algae.

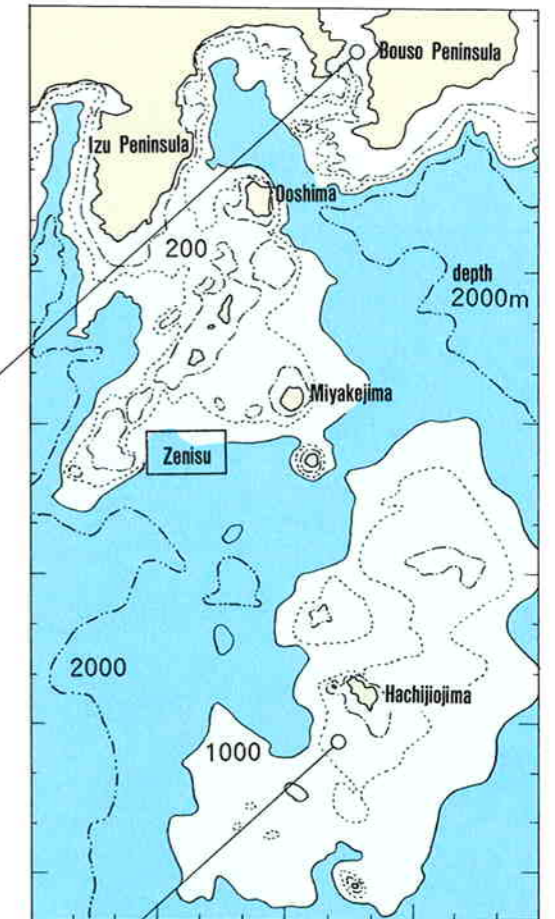
## Reef:

Risen sea bottoms with shallow seas are called reefs. Fish finders indicate that fish gather on and around reefs thus constituting good fishing grounds.

One of such reefs called Zenisu in Izu Peninsula is known as an excellent spawning ground for mackerel. Recently, many sport fishing boats gather in this area to catch larger fish like amberjacks.



Fish school gathering around reef



(Map showing the sea around Zenisu)

## Current rip:

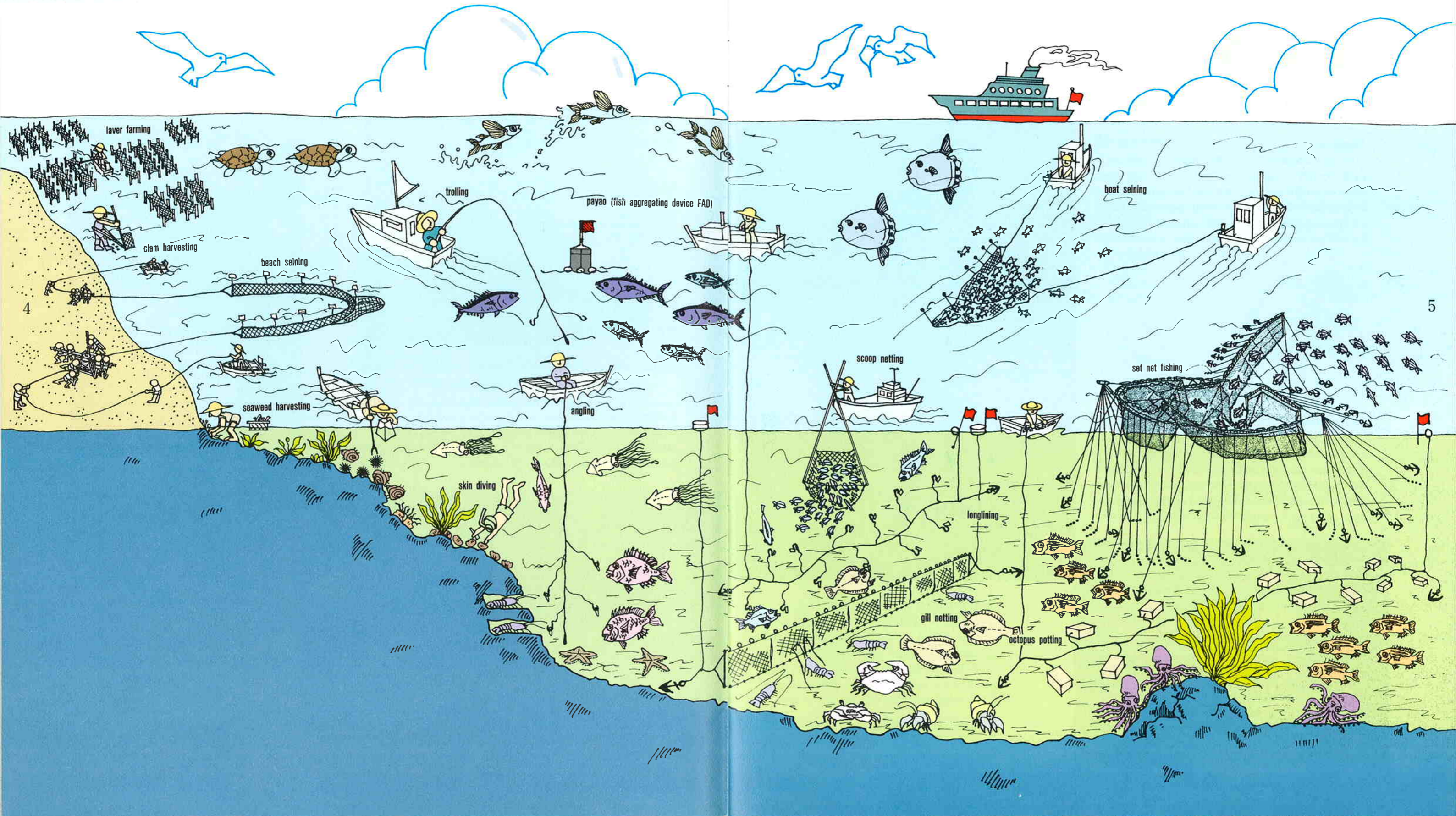
Migratory fish often gather at current rip which is caused by meeting of two different types of current such as warm and cold currents or off-shore and coastal currents.



# Coastal Fishery of Japan

Japan's coastal fisheries sustained by long tradition

Language is closely linked with the culture of society. Countless number of grasses and trees as well as fish and shellfish are named in the original Yamato Japanese language, such as Iwashi(sardine), Saba(mackerel), Tai(sea bream), Ebi(shrimp), Ika(squid), Tako(octopus) and Hamaguri(clam). The same fish is often called in different names according to growth stages, for example, yellowtail is called starting from juvenile stage : Mojako, Tsubasu, Wakashi, Inada, Warasa and finally Buri. This illustrates the historical close association of the Japanese people with fish and shellfish, so much so it has become a part of the Japanese culture.





**Ancient fishing hook made from deer horn**

**Present days fishing hooks**

**Angling:**

This is the oldest form of fishing. The fisher detects the gathering fish or the movement of current by a subtle touch on the fishing line. Baits and fishing devices have evolved over the years. In 1989, there were 42,530 enterprises engaged in this form of coastal fishing.

**Gill netting:**

Fish passage is blocked by a long floating net, which entangles fish. Where the current is strong, the net is set and hauled when the current slackens.

A variety of fish is caught, such as flatfish, shrimp and lobster. There were 27,061 enterprises engaged in this form of fishing in coastal areas in 1989.



**Boat seining**

Two boats proceed in the same direction as the current towing a net between them. Small pelagic fish such as whitebait, anchovy, and sand lance are the main catch. The current rip is an indicator of a prospective fishing ground. 2,957 enterprises were engaged in this form of fishing in 1989.



**Scoop netting:**

A V-shape scoop net called an Azo made of 10 to 12 meter cypress logs or bamboo frame is used. It is extended from the bow of a fishing boat. When the school of fish is found, the boat rushes to the scene and casts the net to scoop them up. Sand lance and krill are the main catch. Feeding sea birds or current rip indicate a prospective fishing ground.

**Payao fishing:**

Payao is an artificial floating reef which attracts migrating fish such as skipjack and tuna which can then be fished. This form of fishing is conducted mainly around the Okinawa Islands.





**Set net fishing:**

The net is set at a fixed coastal fishing ground to catch seasonally migrating fish as they pass through. Fresh fish best in season can be caught but the catch fluctuates according to the stock size and to changes in the current.

7,163 enterprises were engaged in this form of fishing in 1989.

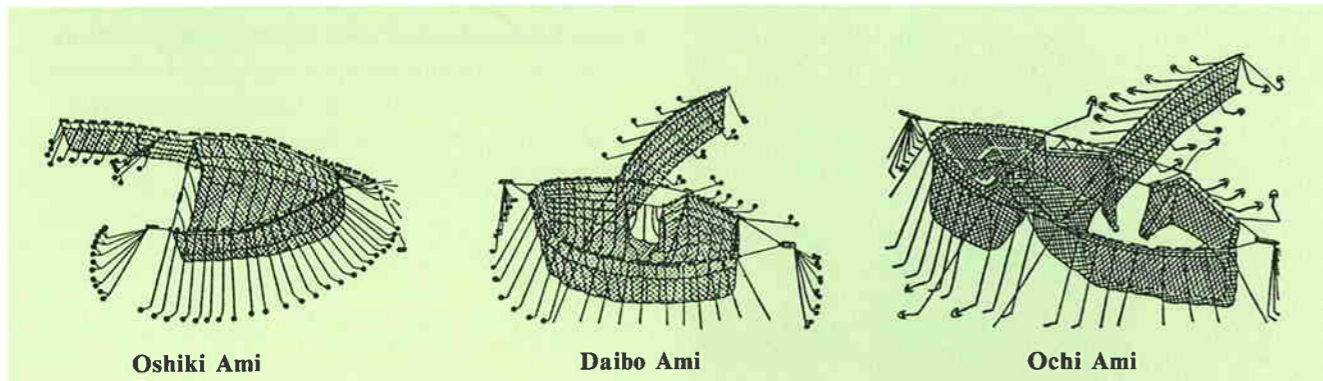
**Shellfish and Seaweed harvesting:**

This fishing is conducted in reefs and tidal flats close to the shore and therefore is very vulnerable to land fill and water pollution. In 1989, 17,649 (shellfish harvesting) and 11,253 (seaweed harvesting) enterprises were engaged in this operation.



Clam harvesting:

**Seaweed harvesting:**



Oshiki Ami

Daibo Ami

Ochi Ami



**Octopus potting:**

Octopus is trapped in a pot or box placed at the sea bottom using its habit to dwell in rock opening. It is said to be difficult to trap octopus during May to July when they move around extensively seeking foods.



**Laver (Nori) farming:**

Laver culture was started in the Bay of Tokyo some 300 years ago and has now spread throughout the nation. At the beginning sticks or bamboo were used to grow the alga on. Today, horizontally extended Nori culture net is used which together with other technical innovations has remarkably increased recent Nori production. In 1989, 13,477 enterprises were engaged in laver culture.

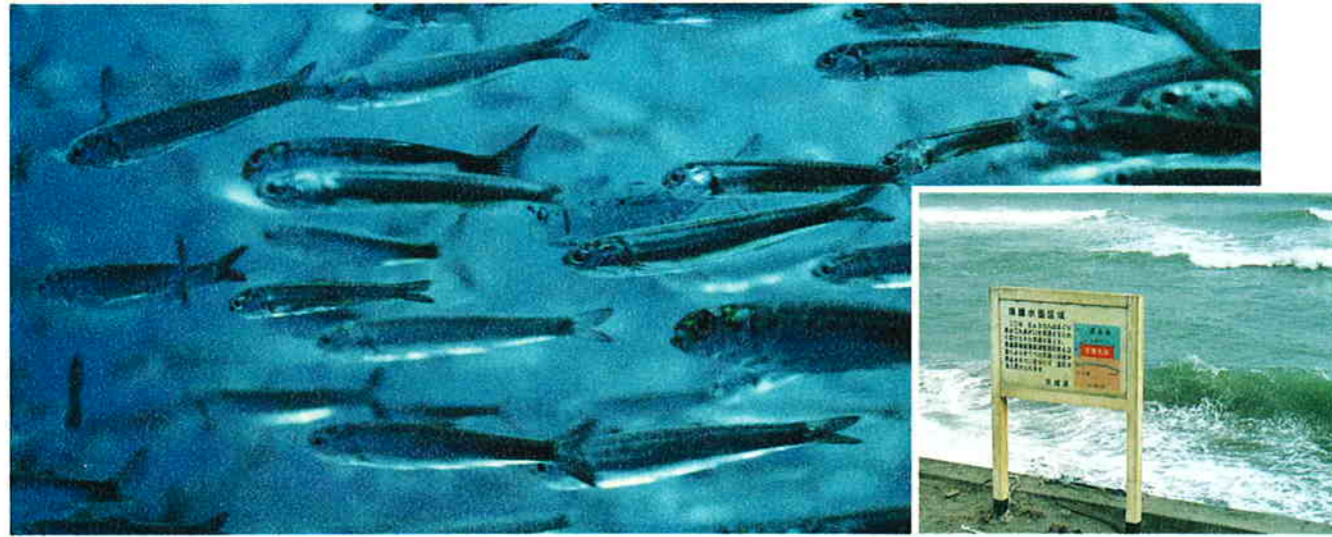
# Let's leave a rich sea to our children

Marine resources are one of our greatest assets. Let us conserve, protect and leave the rich sea to the future generations. We should not overfish the resources for it is our duty to pass on to our children.

## (1) Preserve rich sea by the natural power

### Protected waters:

To maintain and enhance marine resources, 63 protected waters have been designated throughout the nation under the Marine Resources Protection Law as of 1991.



### Seaweed bed:

Seaweed beds are important fish breeding, spawning and feeding grounds.



### Wild life protection:

Fishermen volunteer to protect wild life (Releasing young sea turtles)



### Fish gathering forest:

Forest is a green dam. It prevents the washing of soil and sand, stores rain water, and provides ideal environment for the fish and shellfish in the coastal waters. Though Japan is mountainous, it is endowed with rich forests sustained by a warm, wet oceanic climate. These forests have protected Japan's rich coastal fish and shellfish resources.

### Beach clean-up:

Fishermen volunteer to conserve fishing grounds.



### Tidal flat:

Tidal flat purifies the sea. It serves as nursery grounds for shellfish like clams and fry of prawn and flatfish. It purifies the sea water day and night while nursing the fishery resources. People may visit tidal flats to dig clams at spring low tides and will enjoy clear seawater and contacts with various forms of marine life.



## (2) Protective measures against environmental degradation

### Red tide

Red tide is caused by blooms of phytoplankton which change the color of the sea. It kills culturing fish and causes paralytic shellfish poisoning. Currently, the Fisheries Agency is taking the following measures against red tide:

- (1) Dispatch an observation plane to locate the red tide at an early stage, and monitor its movement.
- (2) Check shellfish poisoning incidents, investigate the distribution, color and kind of blooming plankton in collaboration with the fishery cooperatives and inform the local governments concerned accordingly.
- (3) Survey the oceanic condition, sea water quality and sea bed condition at the time of red tide with a view toward establishing forecasting technique for red tide and shellfish poisoning. To prevent fishery damage by red tide and restore fishing grounds devastated by it, the Fisheries Agency is engaged in a research program. It includes development of technologies to restore the quality of seawater and to improve sea bed conditions.



Red tide off the coast of Wakayama

### Measures against oil pollution

Oil pollution represents a highly significant share of the overall marine pollution. Oil leaked into the sea seriously affects not only the lives of fish, shellfish and algae but also marine birds and mammals. Even limited oil contamination retards growth of those animals and spoils them as food because of the odor and taste of oil.

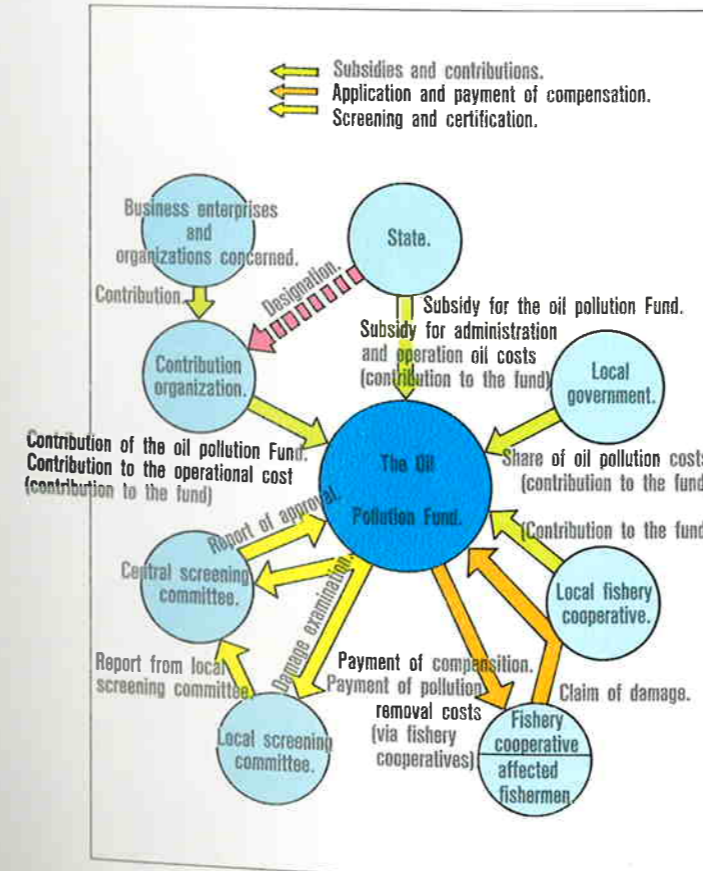
Oil spilled from tankers forms oil balls which drift around the ocean and spoil beautiful beaches and damage coastal fishery.

The Fisheries Agency subsidizes local governments for a part of the cost of oil fences, absorption mats, and other oil pollution fighting equipment, and of chartering aircraft to monitor fishing grounds against oil pollution.



About 900 tons of oil spilled from the "Maritime Gardenia" which ran aground off the Tango Peninsula. (25 January 1990)

DIAGRAM—The funding system to compensate fishery damage from oil pollution.



When fishing damage occurs and the polluter is identified, the sufferers claim against the polluter for compensation. The National Federation of Fishery Cooperatives provides legal advice concerning claim procedures.

When the polluter cannot be identified, the Oil Pollution Fund provides a compensation to the sufferers.

The sufferers should request the Foundation for such relief aid through their relevant fishery cooperative.

The Relief Fund for Oil Pollution Damage in Fishing Ground is supervised jointly by the Ministry of Agriculture, Forestry and Fisheries, the Ministry of International Trade and Industry, and the Ministry of Transportation. Its operational expenses are shared by private shipping and oil companies, local governments, and the state. The Fund has dispensed some 3.6 billion Yen in compensation since its establishment in 1975.

### Chemical pollution

Fishery damage caused by chemical pollution is categorized into (1) Mass mortalities or retarded growth of marine organisms caused by effluents of cyanide, arsenic, agricultural chemicals, etc. and (2) Fish through biological accumulation of mercury, PBC, etc. becoming unsafe and inedible.

Recently, the Water Contamination Prevention Law and other regulation have shown significant effect in reducing mass mortalities of fish. On the other hand, there have been increasing concern on sea foods contaminated by biological accumulation of harmful chemicals through the food chain. Though chemical pollution is at low levels it affects safety and commercial value of fish. Beside direct contamination of the water by chemical substances, harmful by-products of manufacturing agriculture chemicals, and of waste incineration, and the effluents which become harmful substances after their discharge into the rivers or the sea are also contaminating fish and shellfish.

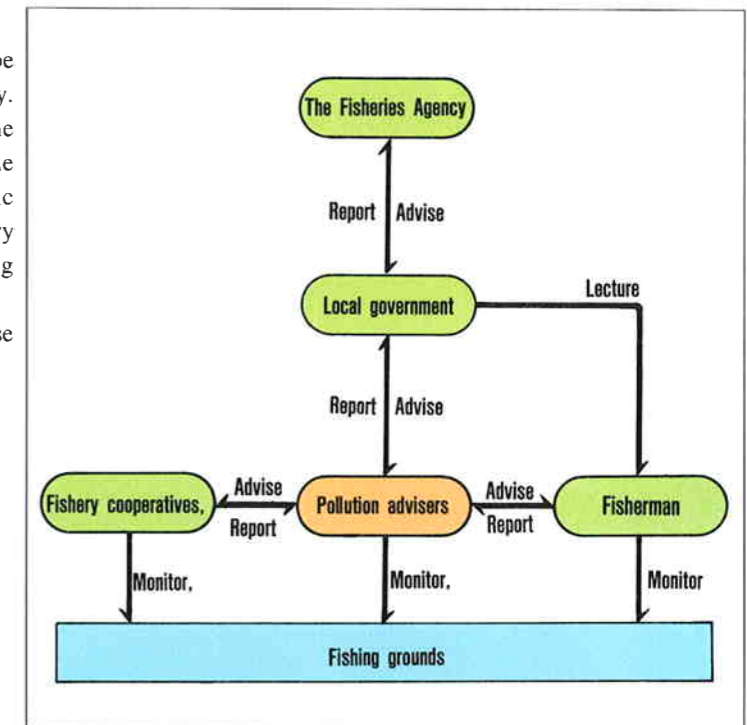
The Fisheries Agency monitors the level of chemical contamination of fish and shellfish and advises the fishermen to voluntarily limit the catch of shell fish and fish when the level of chemical contamination exceeds the standards.

The Agency also conducts surveys to identify potentially harmful substances and alerts ministries and agencies concerned against possible contamination. It maintains a research program on harmful chemicals and toxic substances, and on the mechanism of contamination.

### Organization to control fishery pollution

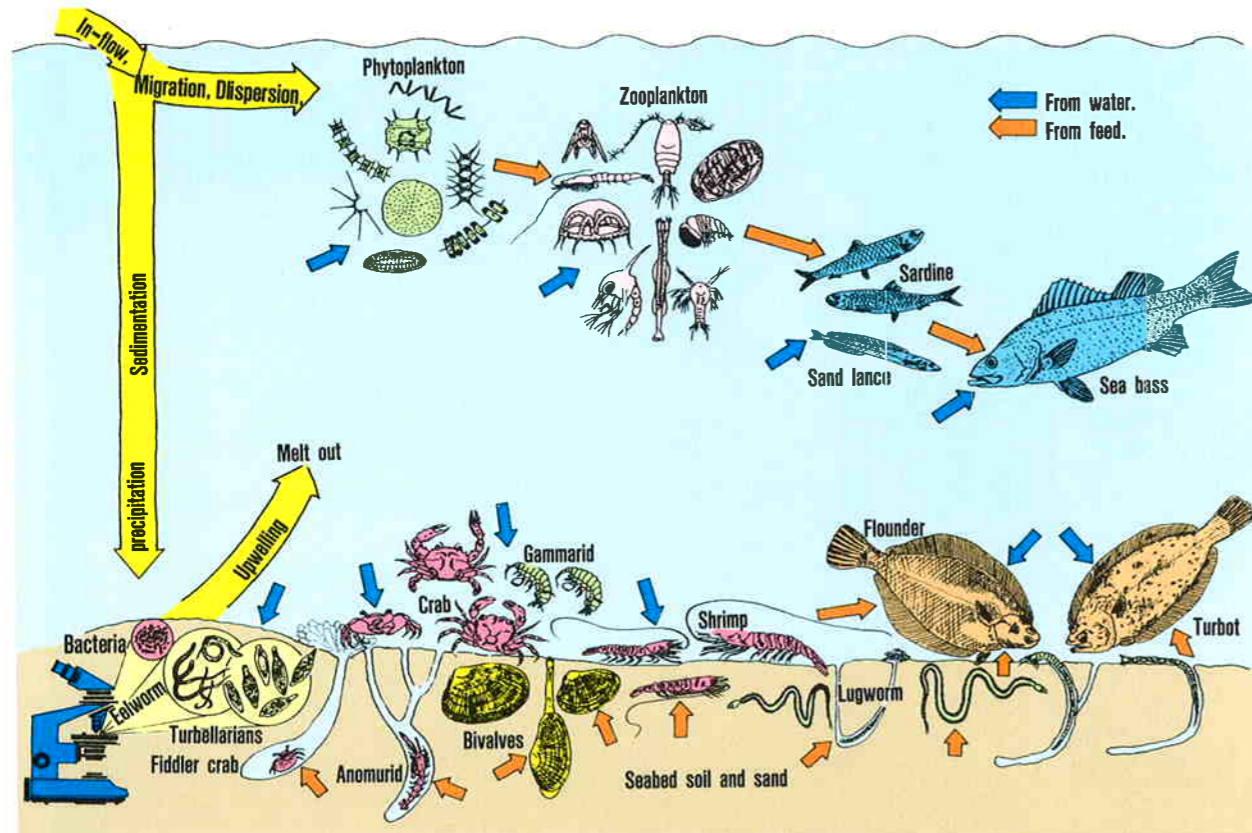
Appropriate and swift response is necessary to cope with fishery pollution which often occurs suddenly. Therefore, pollution advisers are posted at each of the local government. The advisers regularly monitor the fishing grounds and advise ways to cope with aquatic pollution when it happens. They also provide necessary information on fishery pollution to the fishing community.

The Fisheries Agency subsidizes the costs of these pollution advisers.

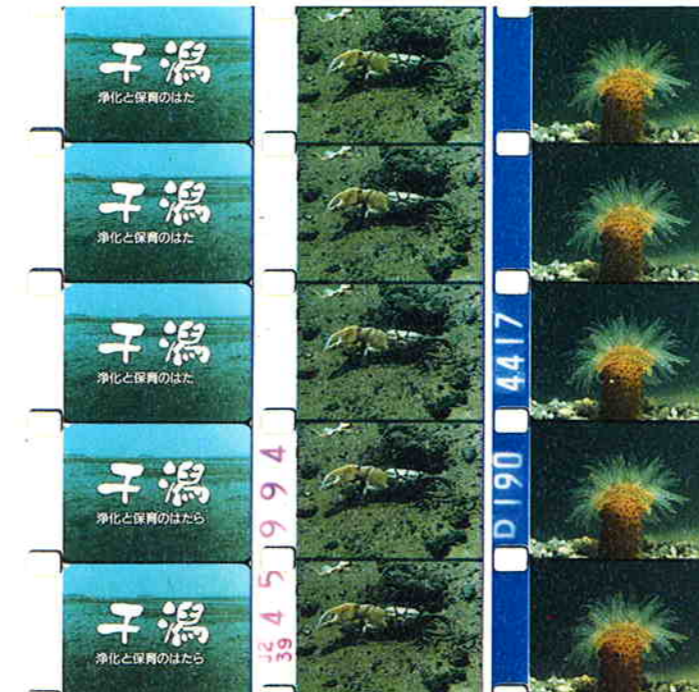


DIAGRAM—Organization against fishery pollution

DIAGRAM—Harmful substances flowed into the sea.



### Movies and TV films related to fishery pollution control



Movies and TV films related to the prevention and control of fishery pollution are produced, shown and leased free-of-charge. Some films are leased from municipal audio-video centers or libraries.

16mm films.