Living Resources in the High Seas

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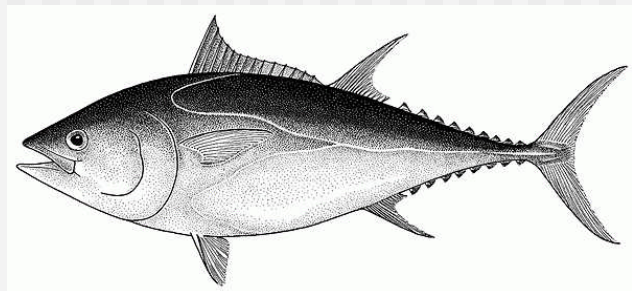
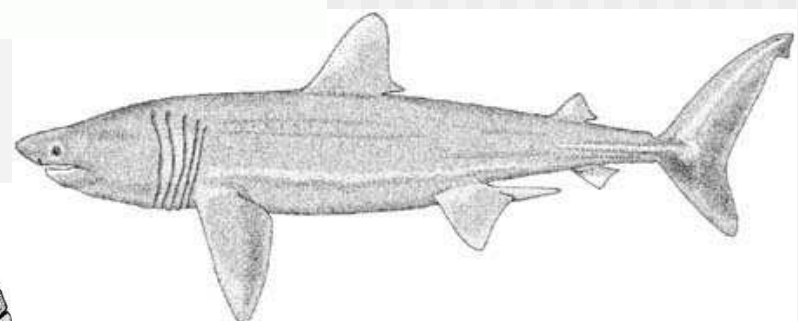
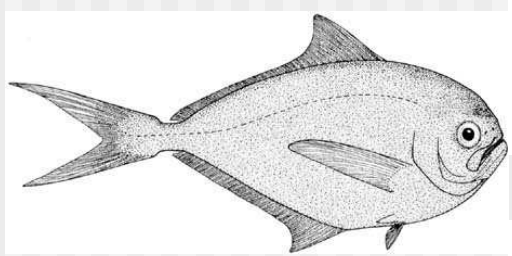
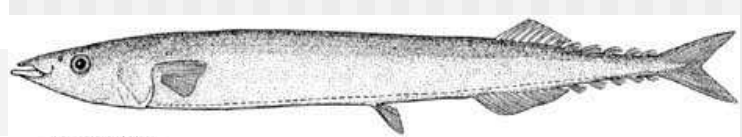
Highly migratory species (as listed in Annex 1 of UNCLOS)

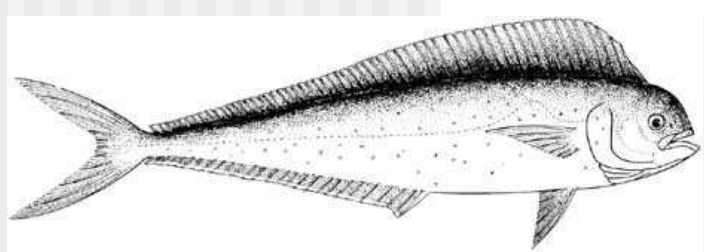
- Tuna and tuna-like species
- Oceanic sharks
- Pomfrets
- Sauries
- Dolphinfish





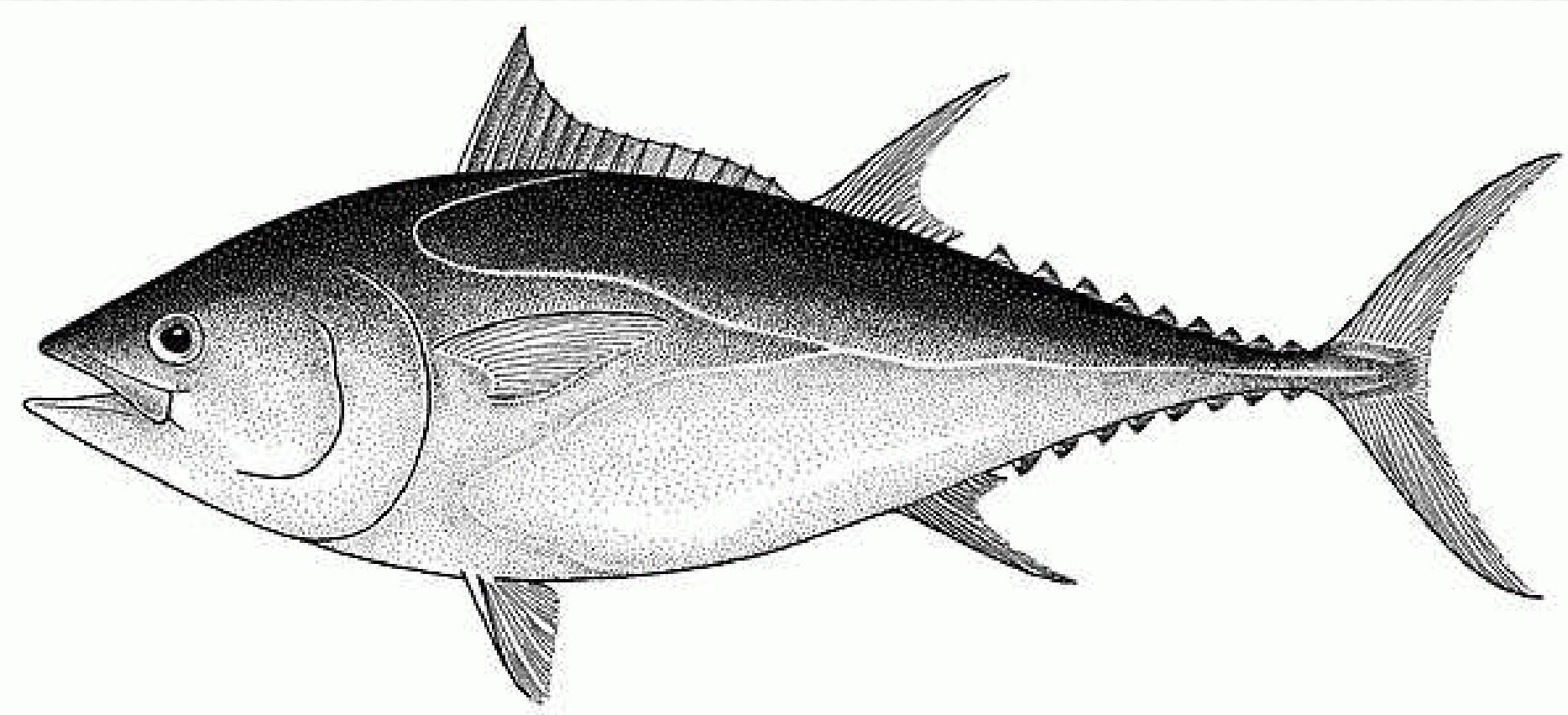






Source: FAO

Trends and figures on tuna fisheries

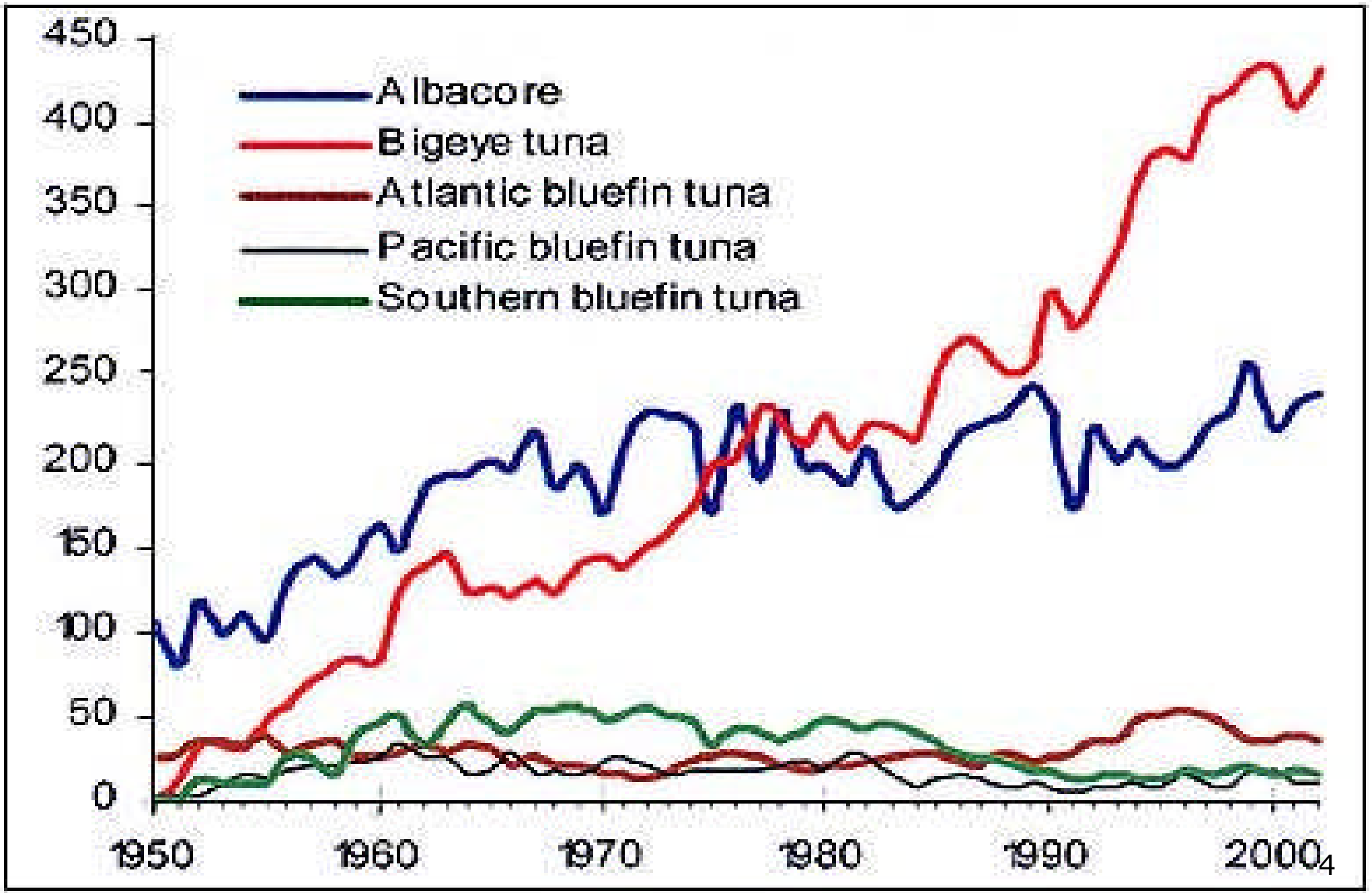


Atlantic Bluefin Tuna *(Thunnus thynnus)*

Source: FAO

Annual nominal catches (thousand tons) of selected tuna, World Oceans

Source: FAO 2005



Exploitation status of highly migratory tuna and tuna-like species (FAO 2006)

- Underexploited: none
- Moderately exploited: 21%
- Fully exploited: 50%
- Overexploited: 21%
- Depleted: 8%

24 Stocks

The state of exploitation status on other 17 stocks of tuna and tuna-like species is not known.

Exploitation status of world fish stocks (FAO 2009)

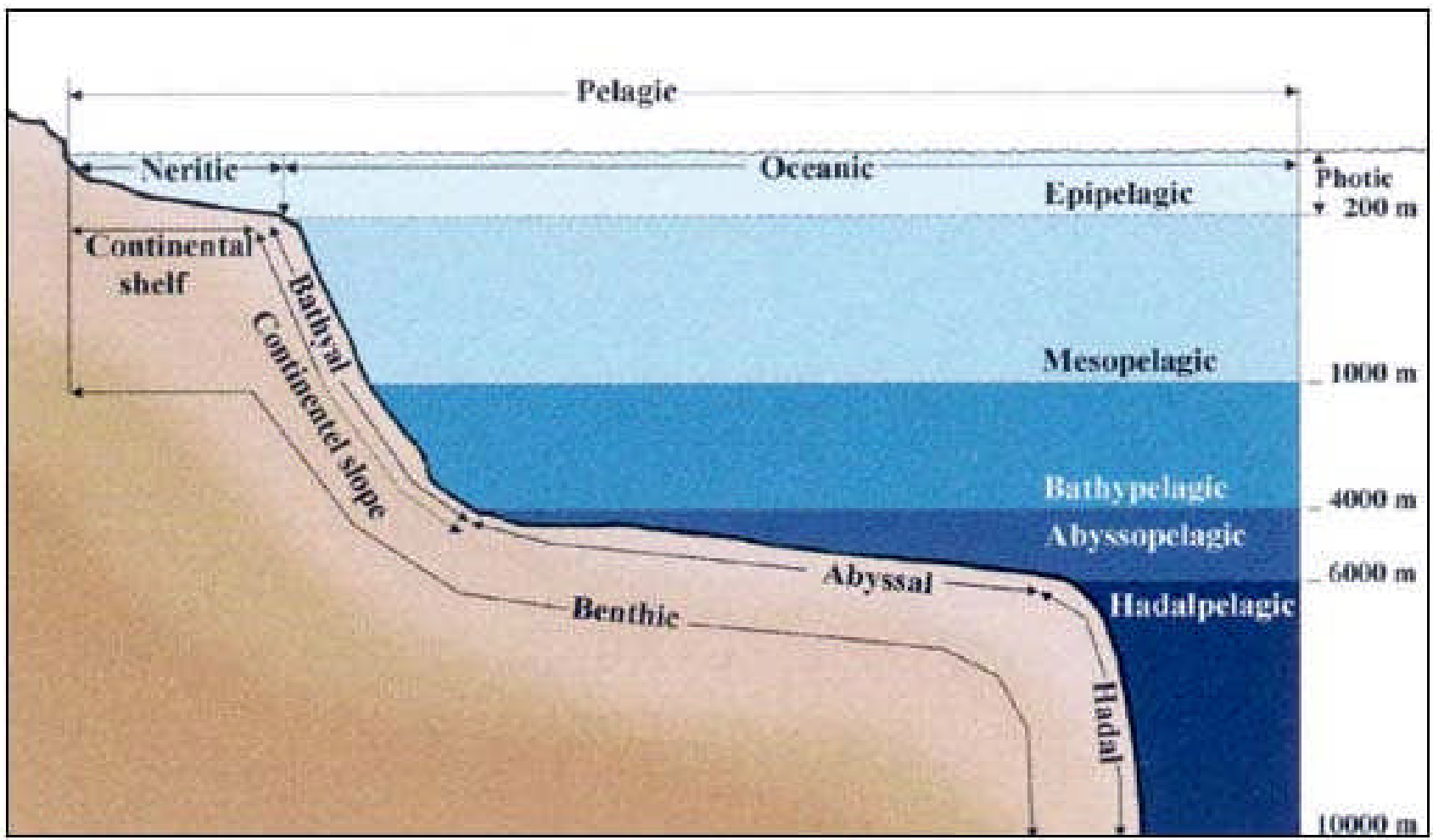
- Underexploited: 2%
- Moderately exploited: 18%
- Fully exploited: 52%
- Overexploited: 19%
- Depleted: 8%
- Recovering: 1%

Problems of the IUU (Illegal, Unreported, and Unregulated) Fishing

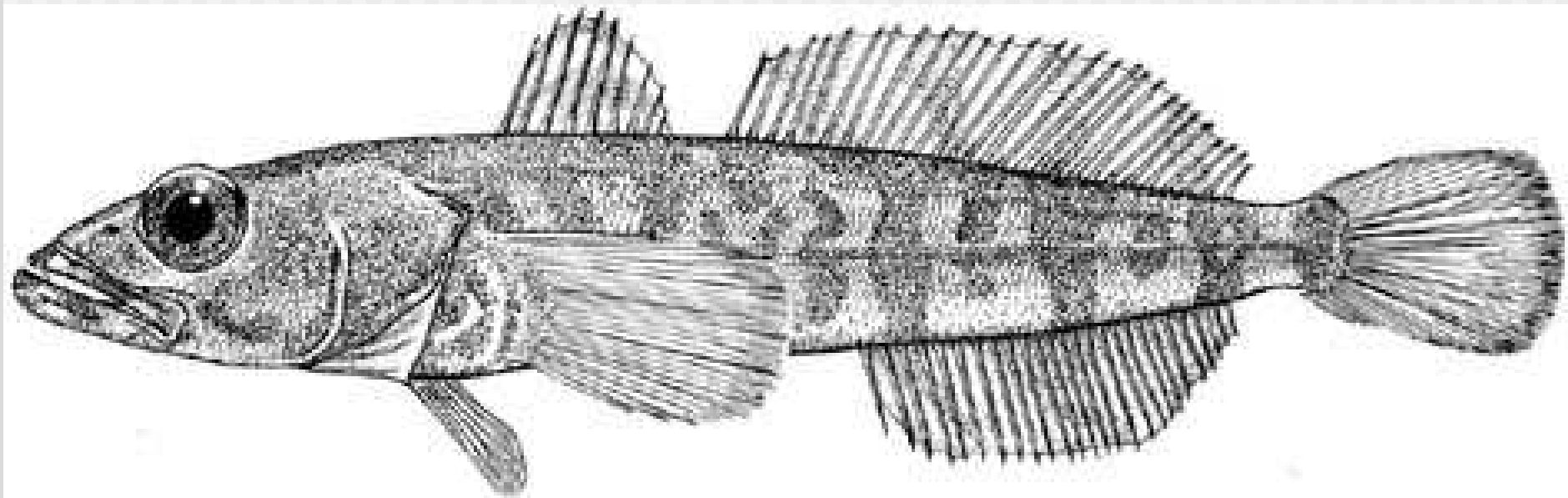
- 20% of the tuna large scale long-line vessels are flag of convenience vessels (Hanafusa and Yagi, 2004).
- Concerns on IUU fishing also exist on tooth-fish fisheries.
- These free-riders must pay the cost of resource conservation (otherwise regular vessels cannot survive in international competition on cost of fishing).

Troubles about deep-water Species

Depth Zones of the Oceans (source: FAO 2005)



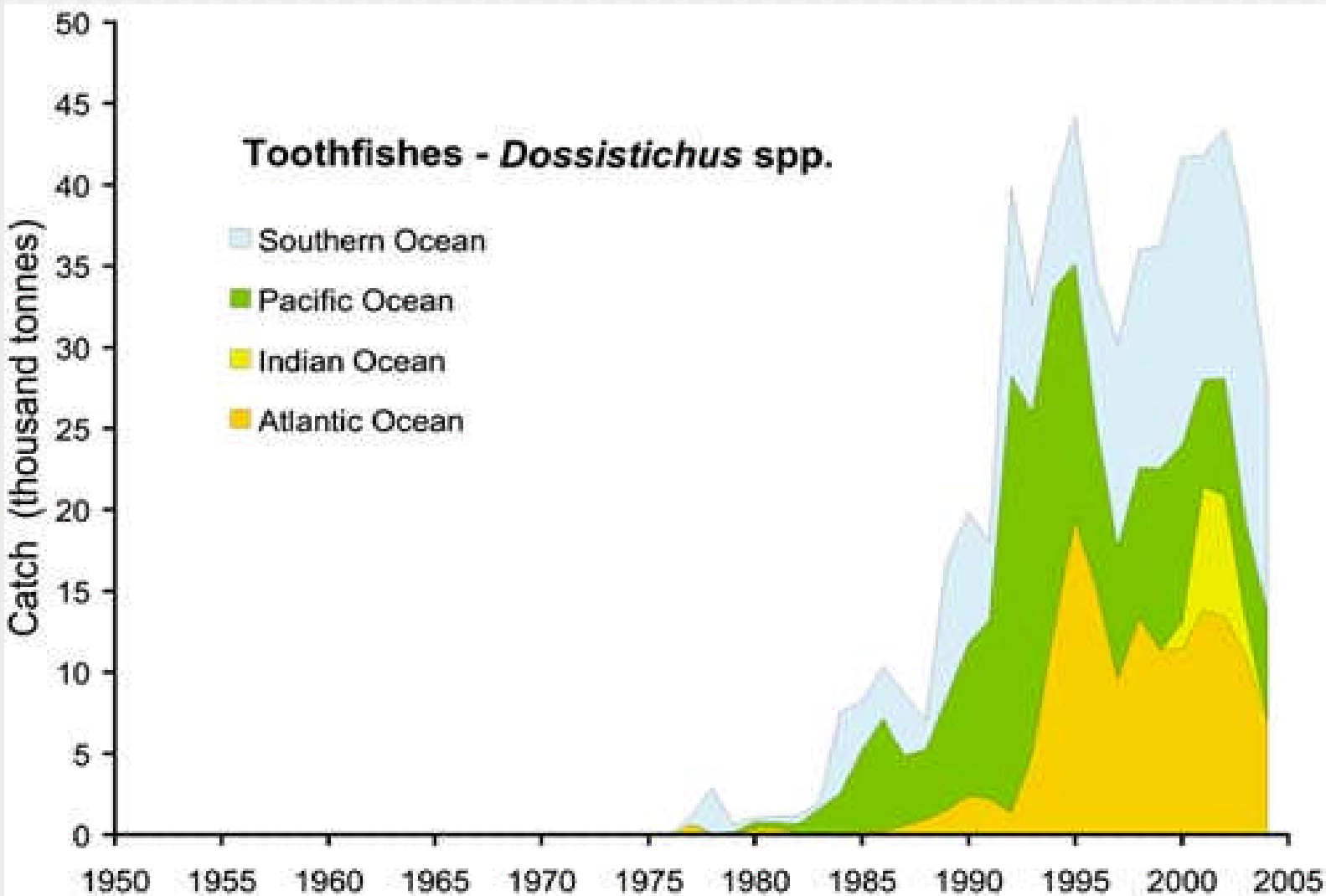
Patagonian toothfish
(*Dissostichus eleginoides*)



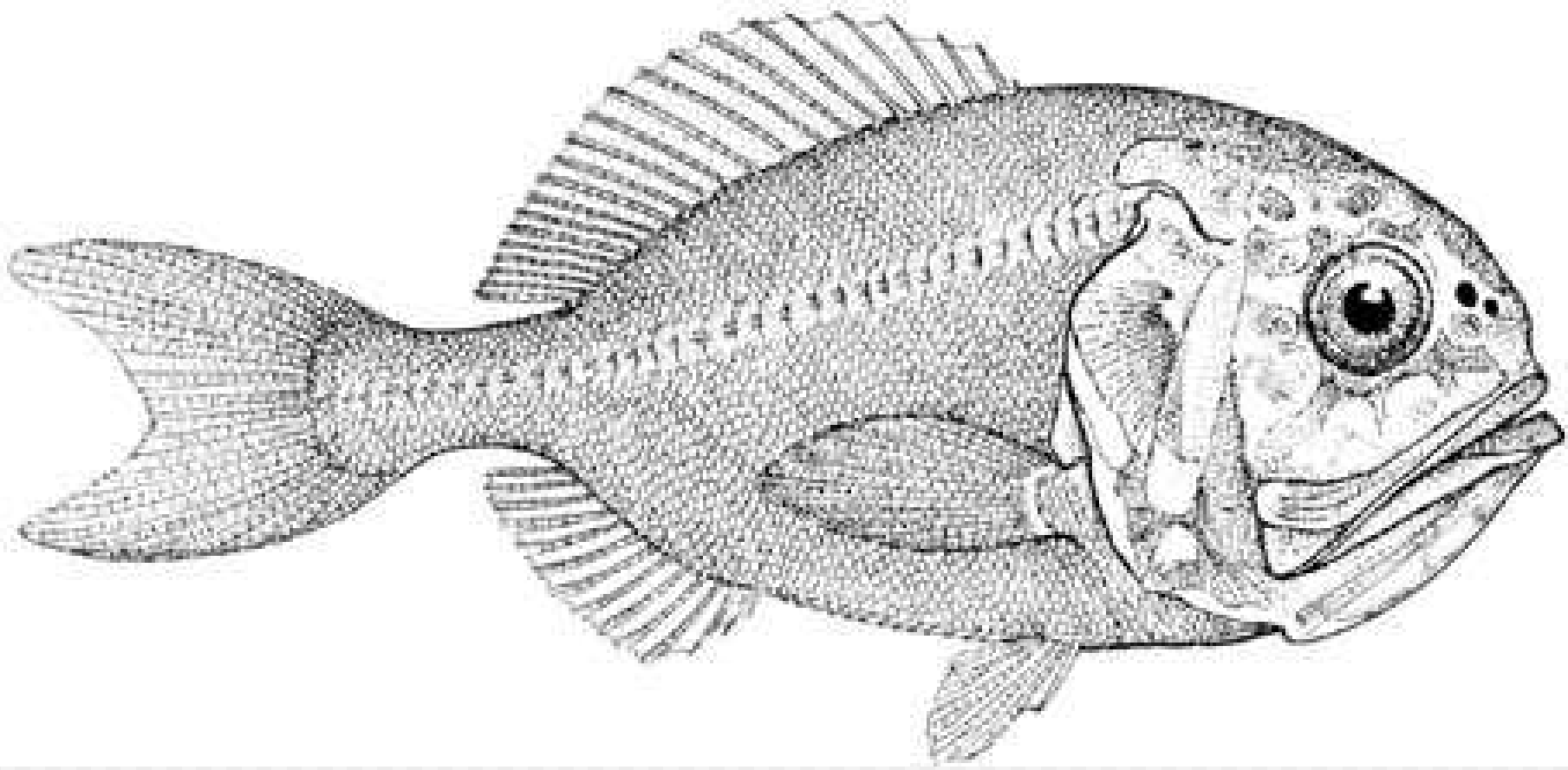
Source: FAO 2006

Catches of toothfish (Antarctic and Patagonian) as reported to FAO

Source: FAO 2006



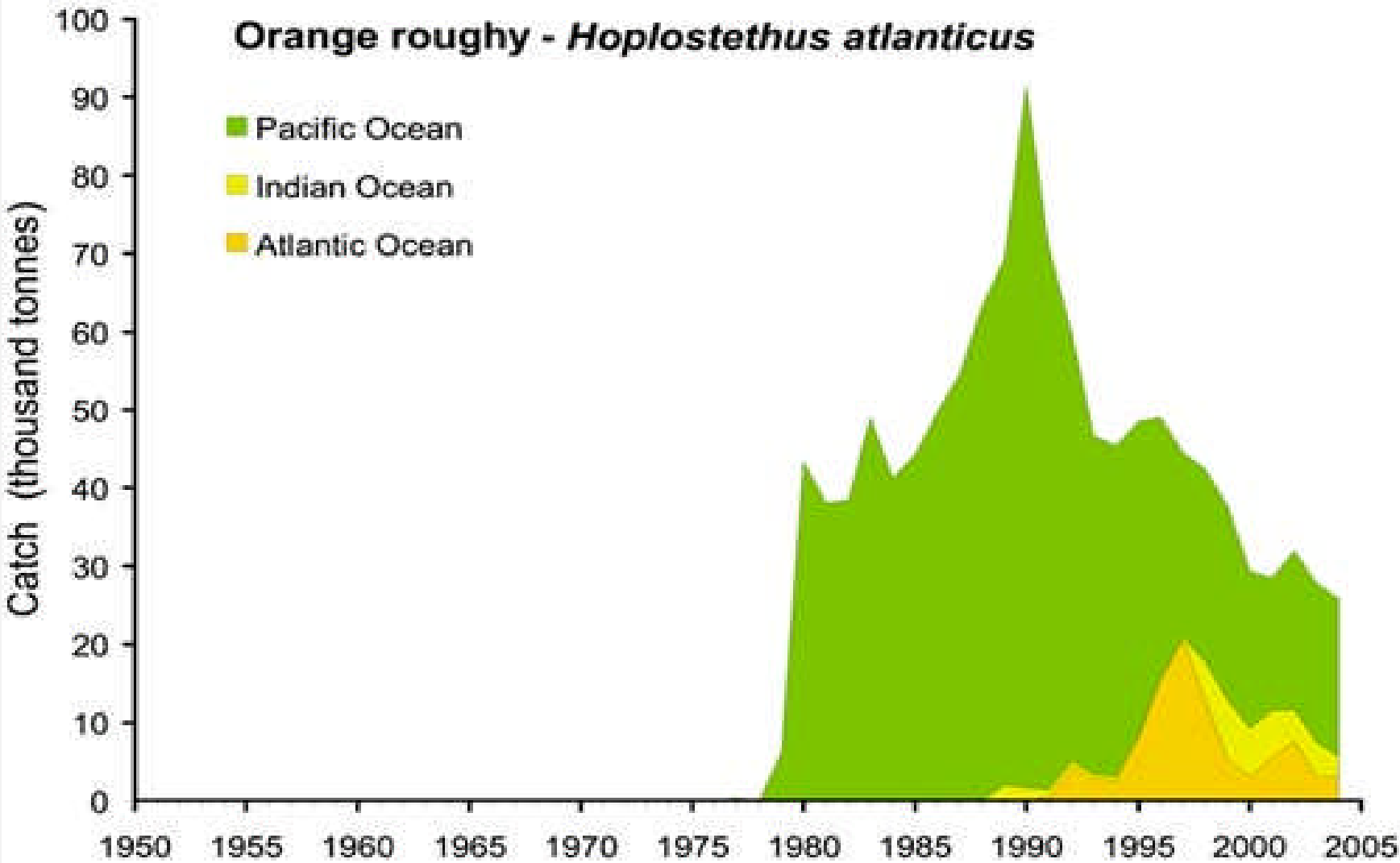
Orange roughy (*Hoplostethus atlanticus*)



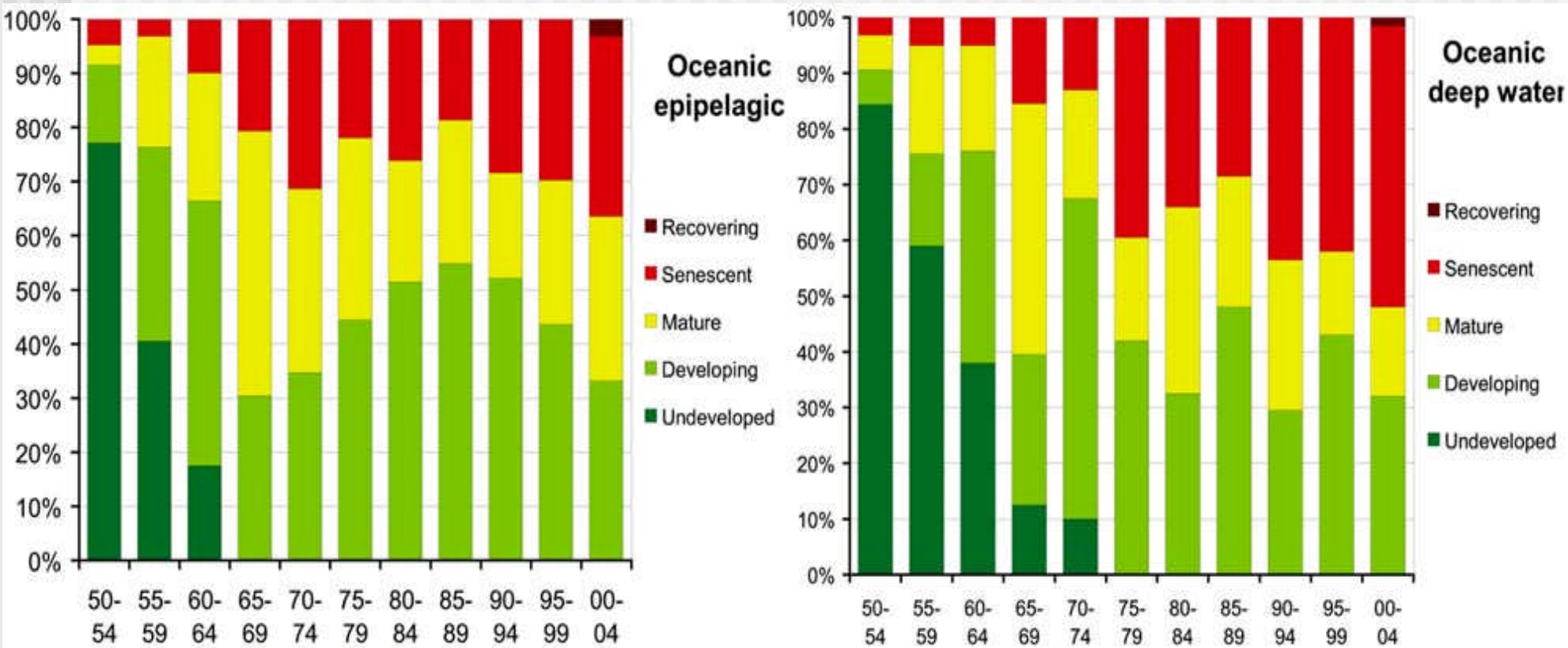
Source: FAO 2006

Catches of orange roughy as reported to FAO

Source: FAO 2006

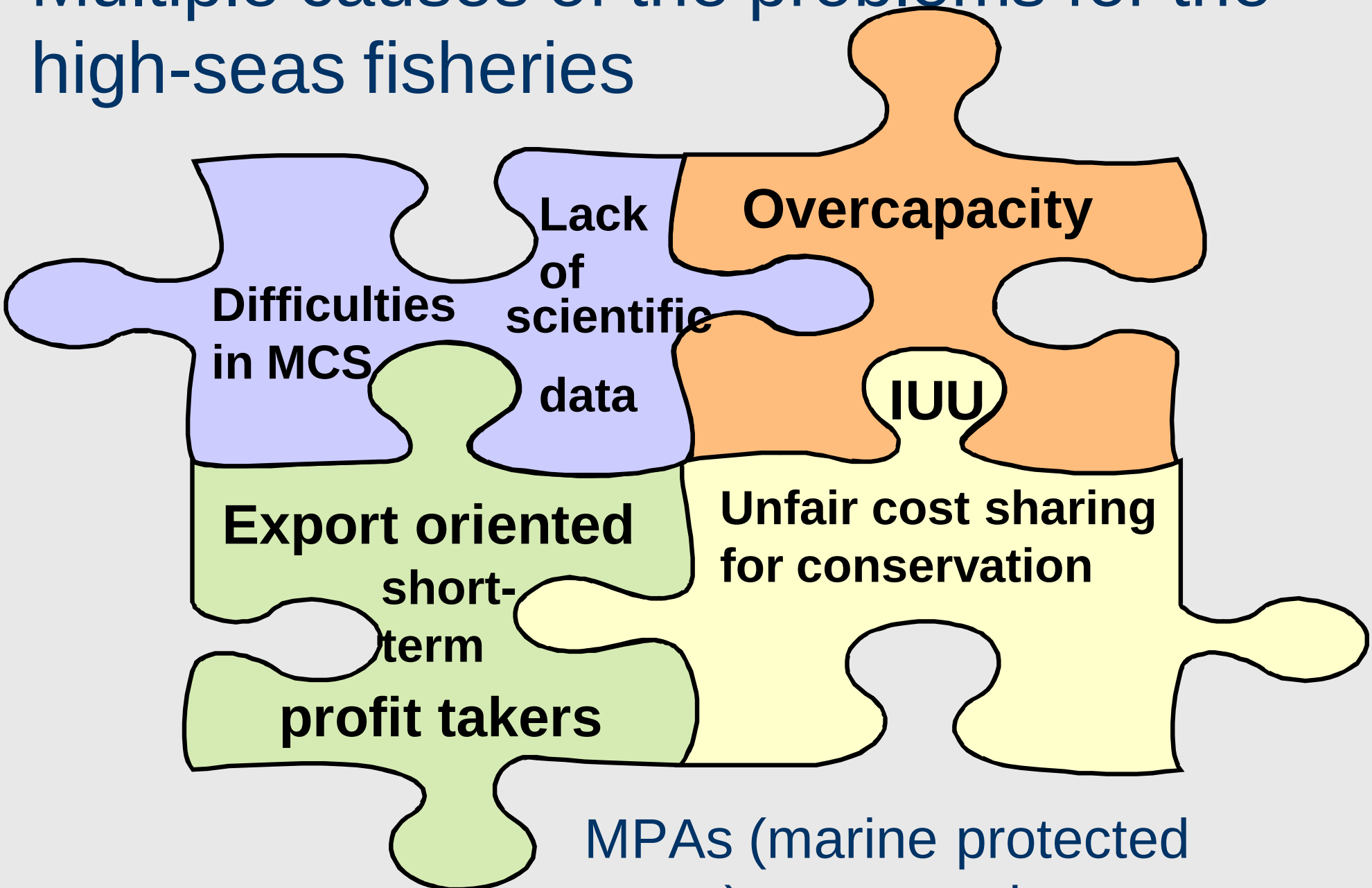


Percentage of the world's top oceanic-epipelagic and deep-water fishery resources in various phases of fishery development, 1950 – 2004



Source: FAO 2006

Multiple causes of the problems for the high-seas fisheries



MPAs (marine protected areas) are sometimes proposed …

Resolution adopted by the UN General Assembly (14 March 2008) "A/RES/62/215. Oceans and the law of the sea"

- *Reaffirms* the need for States to continue their efforts to develop and facilitate the use of diverse approaches and tools for conserving and managing vulnerable marine ecosystems, including the possible establishment of marine protected areas, consistent with international law and based on the best scientific information available, and the development of representative networks of any such marine protected areas by 2012;

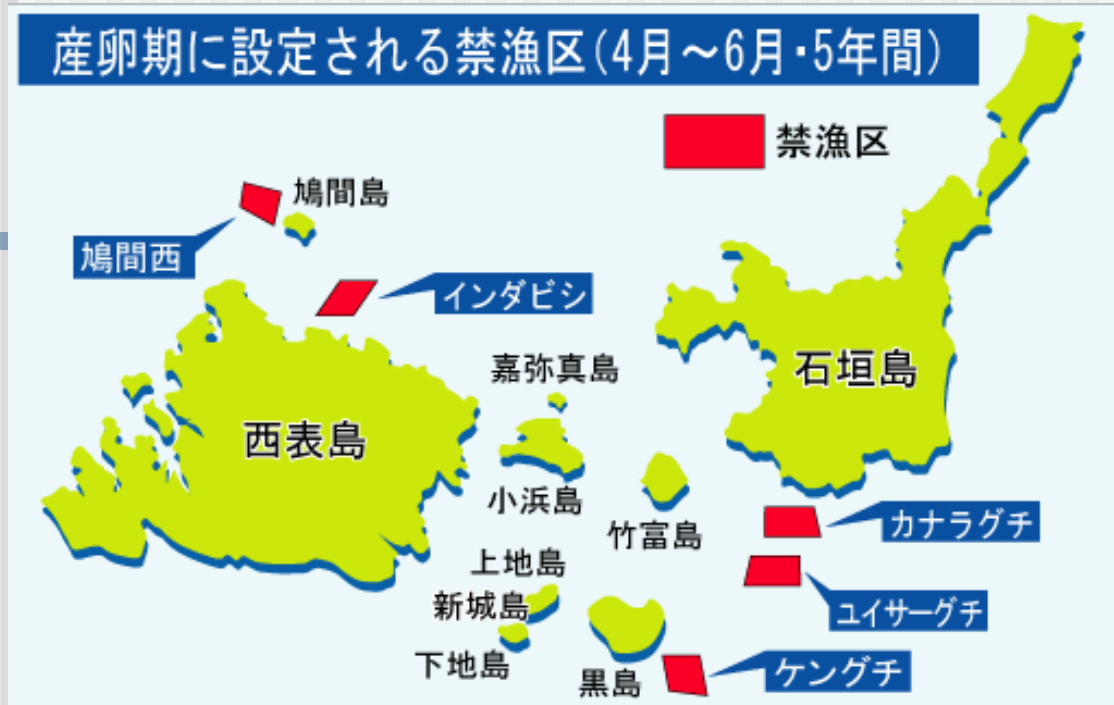
Resolution adopted by the UN General Assembly (28 February 2008) A/RES/62/177. Sustainable fisheries

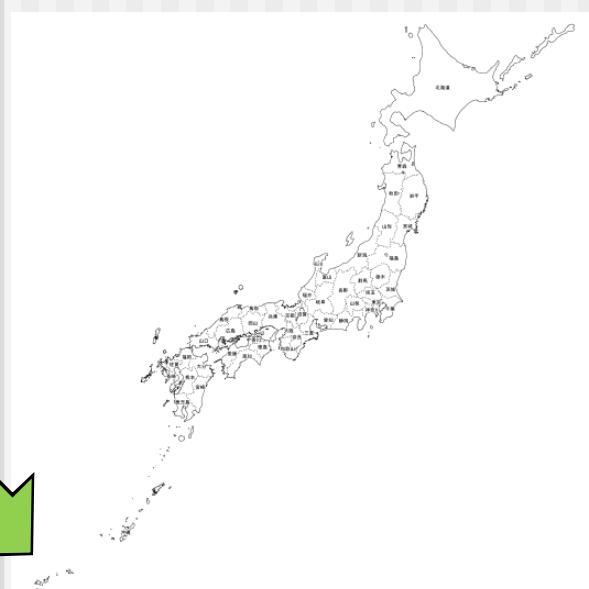
- Para 102. *Encourages* accelerated progress to establish criteria on the objectives and management of marine protected areas for fisheries purposes, and in this regard welcomes the proposed work of the Food and Agriculture Organization of the United Nations to develop technical guidelines in accordance with the Convention and the Code on the design, implementation and testing of marine protected areas for such purposes, and urges coordination and cooperation among all relevant international organizations and bodies

Backgrounds of Japan's fisheries

- 70% of Japan's land is mountain, and fishing provides important source of human diet for hundreds of years.
- Traditional right-based coastal fishery managements are in place. (long-term incentives)
- Legally binding fishery regulations are imposed, and additional local voluntary measures are introduced by the agreements of local fishers. (easier monitoring and control activities)

Example of no-take zone Yaeyama Islands Okinawa since 1998





In Hokkaido

↑
Salmon/trout

Squid
→

↑ Kelp
(Konbu)

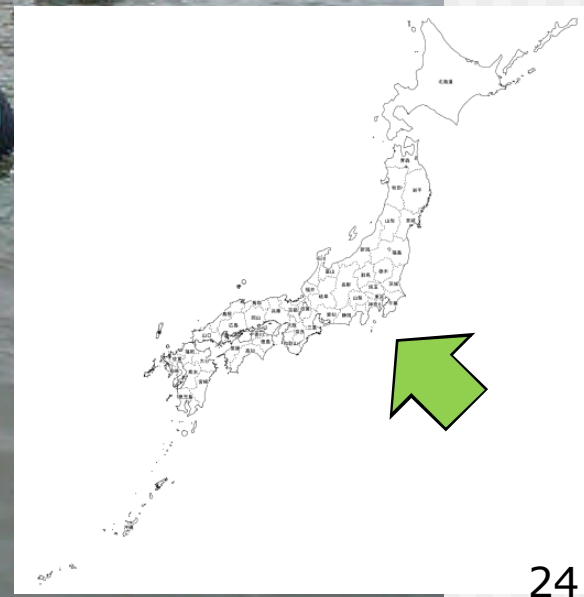
↑ Scalops

Voluntary Kelp (Konbu) protection areas are established close to the shore

The number of Japanese coastal no-take zone

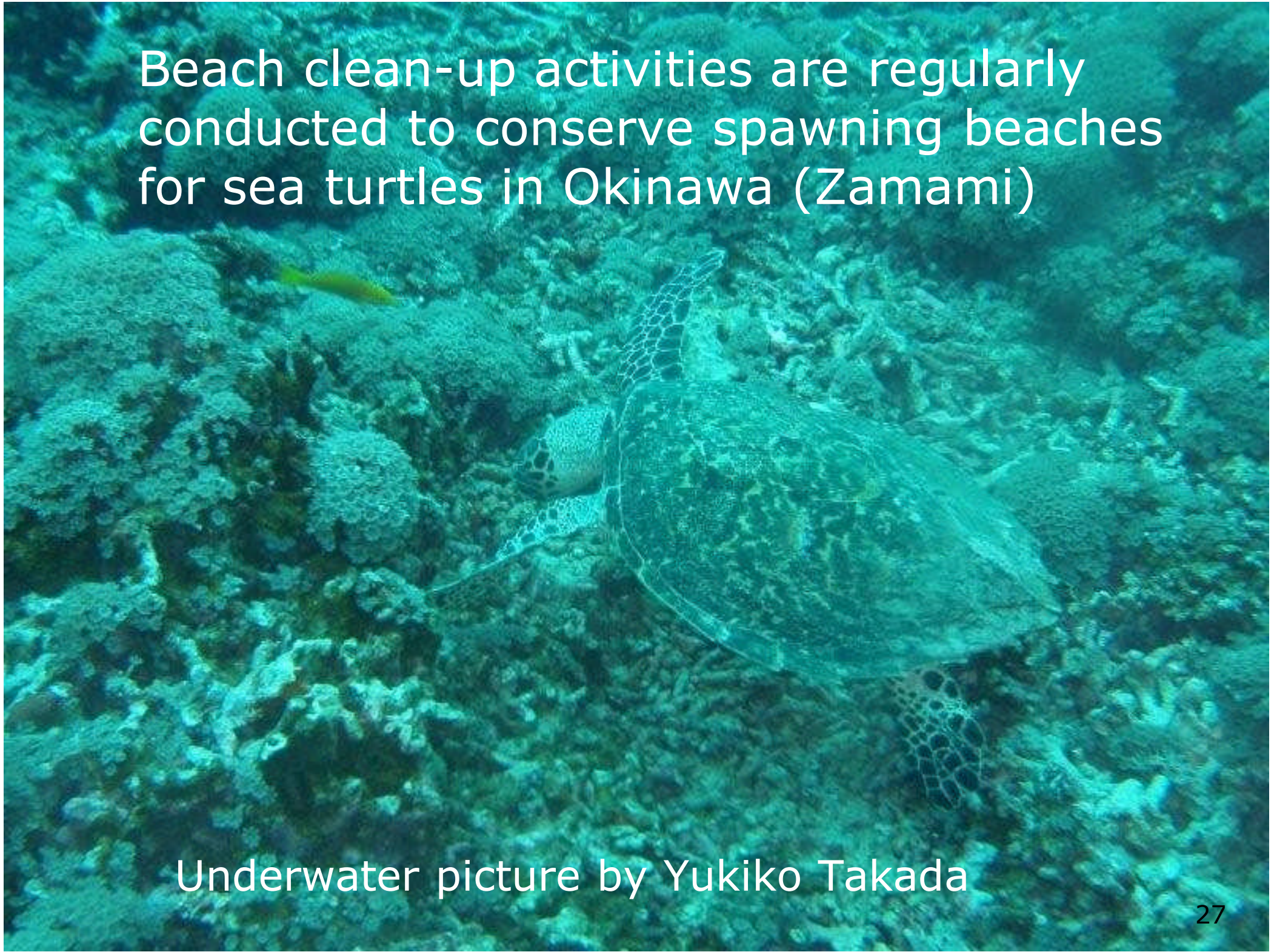
- There is no official statics on the number of coastal no-take zones.
- One database owned by “Japan Fisheries Resource Conservation Association” lists approximately 280 no-take zone in coastal areas in Japan.
- In addition to the no-take zones, various voluntary activities are ongoing.

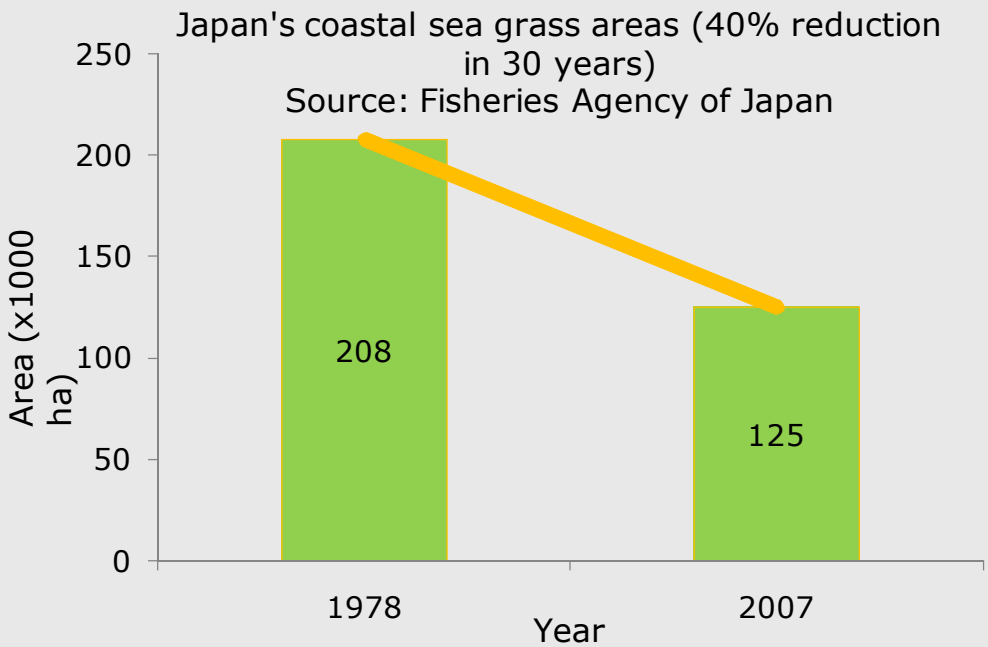
An activity for restoration of Amamo (eelgrass) meadows in the Tokyo Bay (Source; Amamo Revival Collaboration in Kanazawa-Hakkei, Tokyo Bay Area)

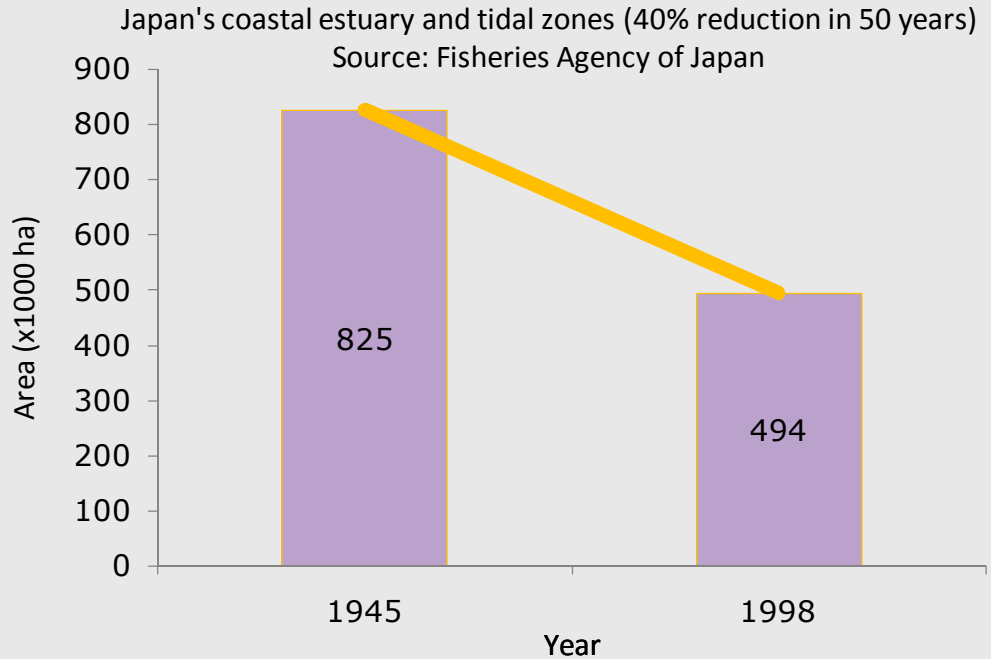


Amamo restorations (Source; Amamo Revival Collaboration in Kanazawa-Hakkei, Tokyo Bay Area)

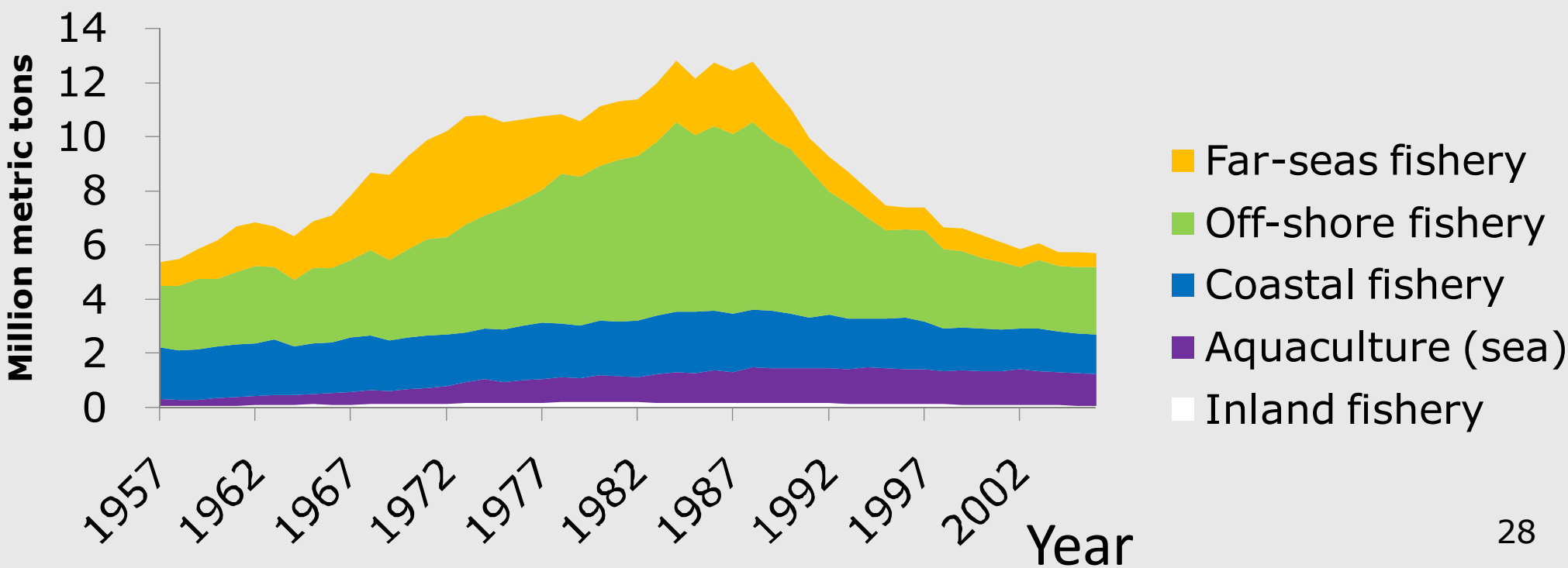
Underwater picture of Amamo (Source; Amamo Revival Collaboration in Kanazawa-Hakkei, Tokyo Bay Area)

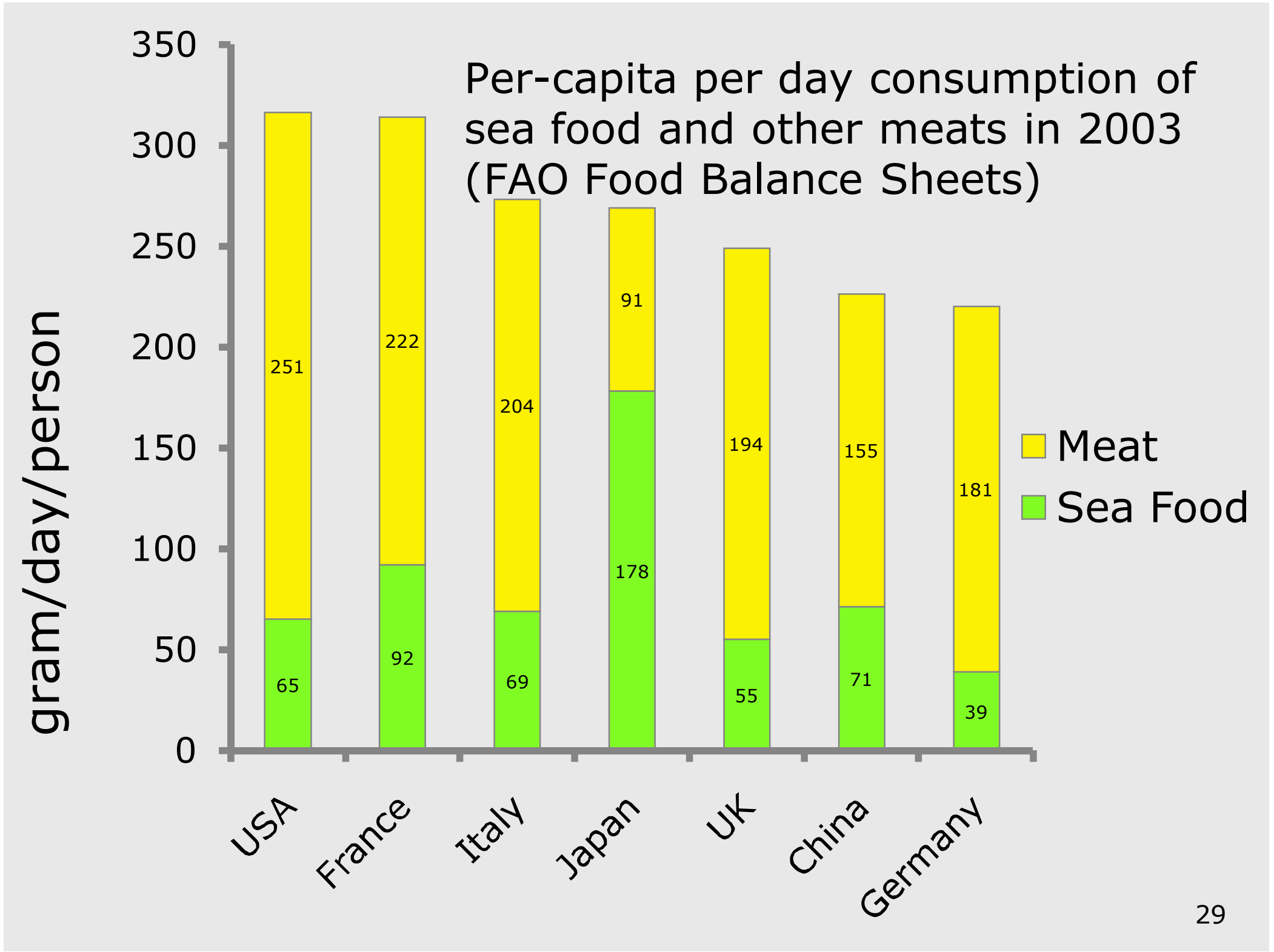

Beach clean-up activities are regularly conducted to conserve spawning beaches for sea turtles in Okinawa (Zamami)
Underwater picture by Yukiko Takada



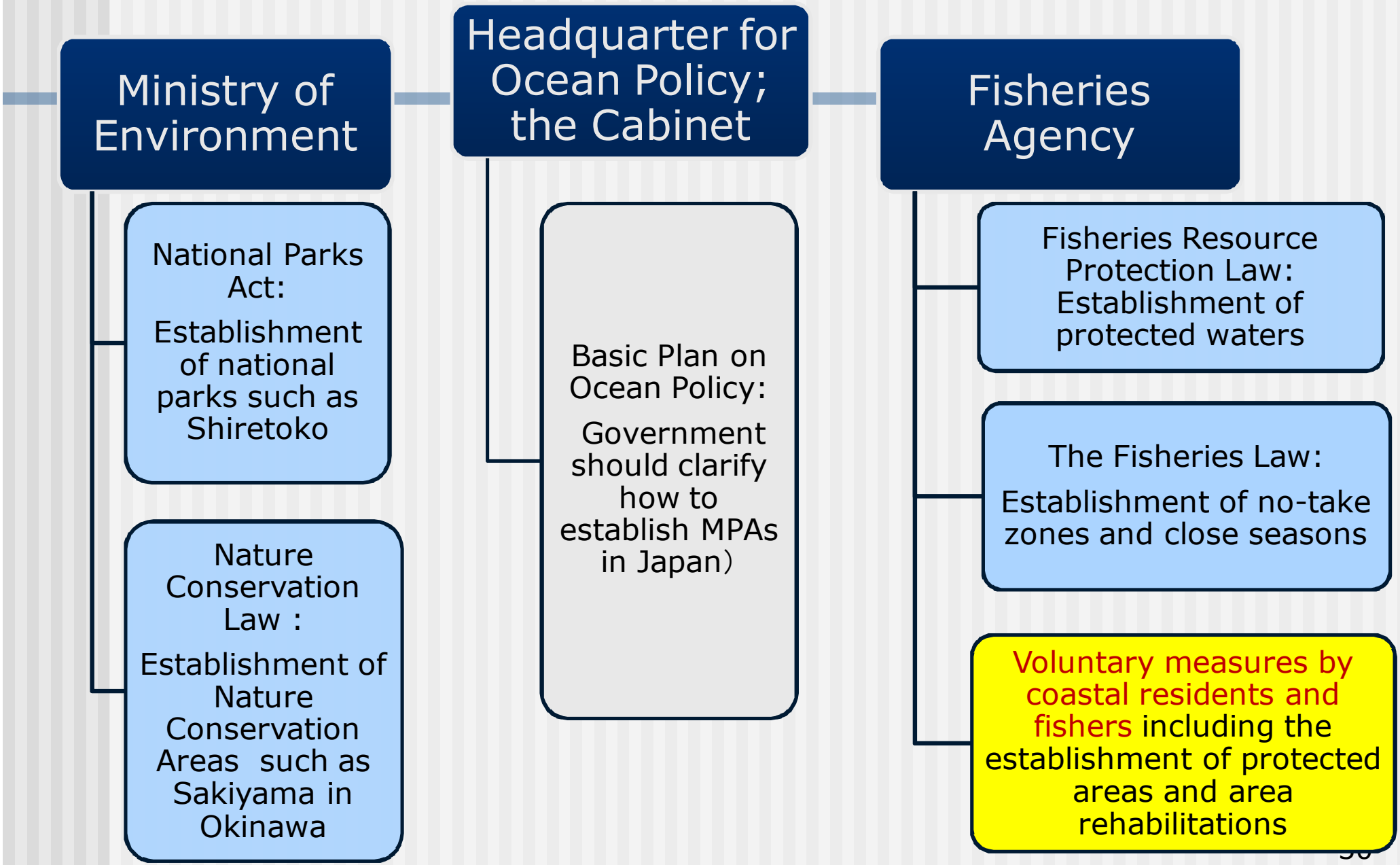


The amount of Japan's fishery production
Source: Government fishery and aquaculture production statistics




Per-capita per day consumption of sea food and other meats in 2003 (FAO Food Balance Sheets)
gram/day/person
350
300
250
200
150
100
50
0
251
65
222
92
204
69
91
178
194
55
155
71
181
39
USA
France
Italy
Japan
UK
China
Germany
Meat
Sea Food

Current Japanese Management Structure on Marine Protected Areas

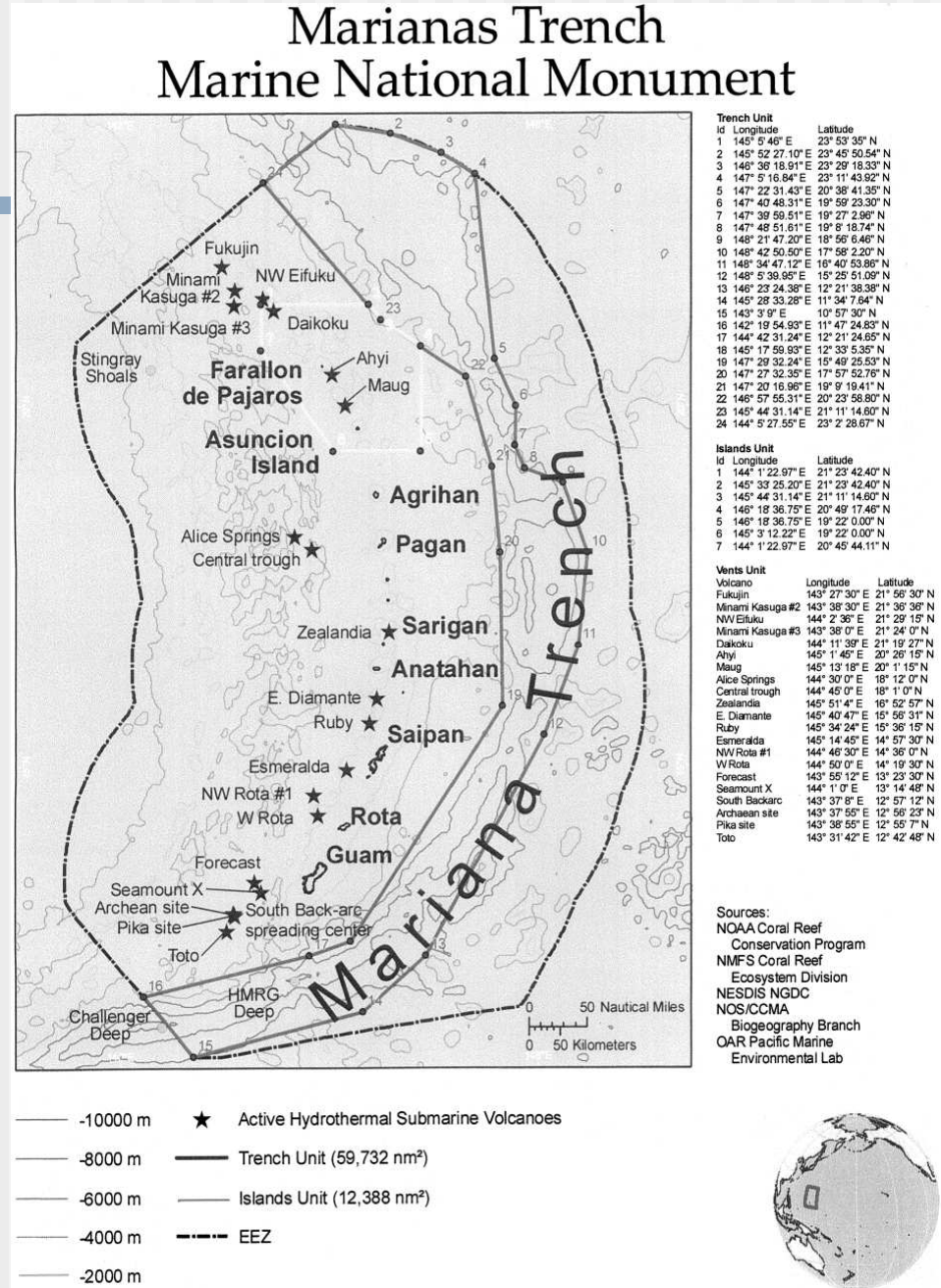


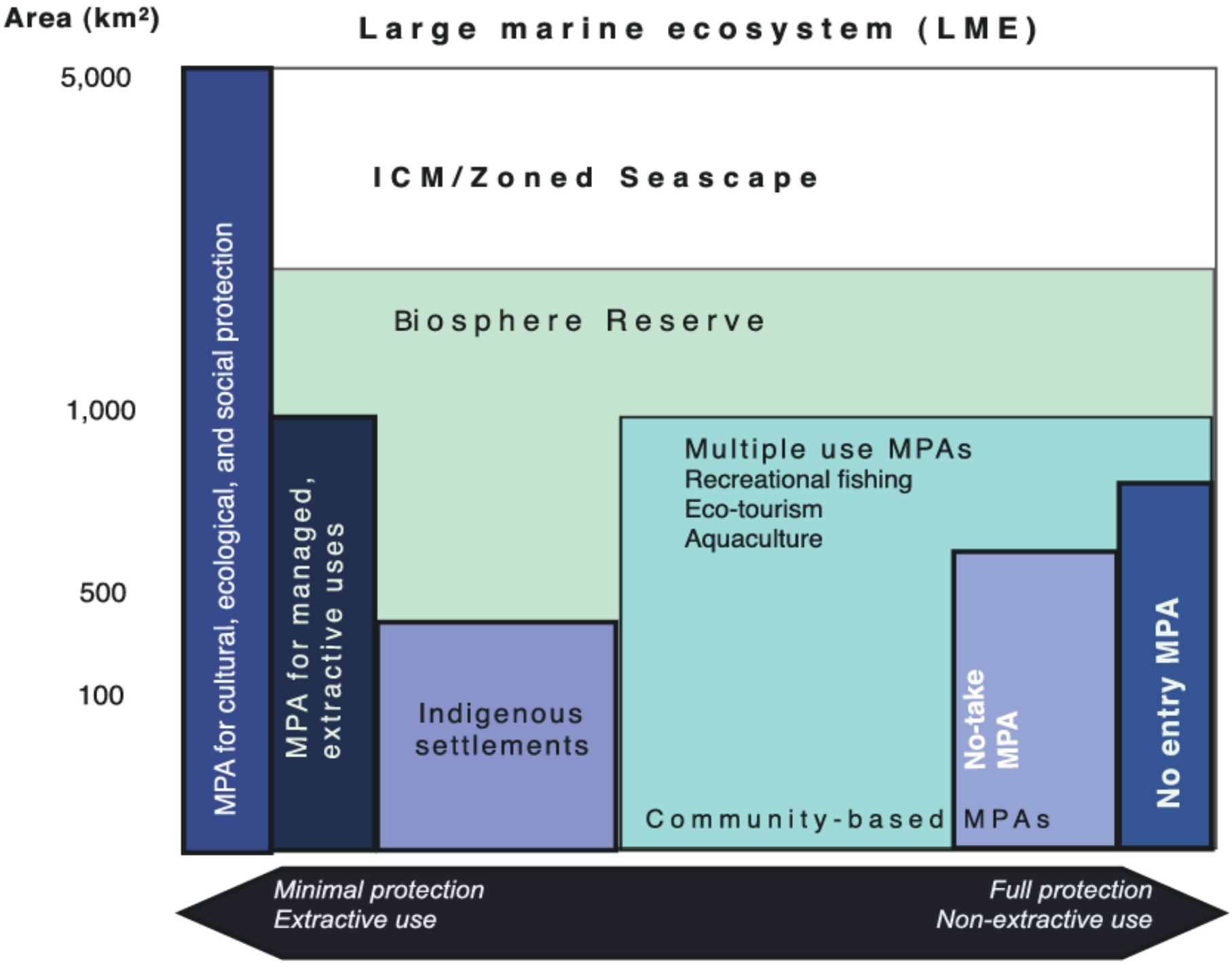
These practices in Japan may not be compatible to MPAs in other countries.

- IUCN's definition of MPA:
- "Any area of intertidal or subtidal terrain, together with its overlaying waters, and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment."(IUCN, Resolution 17.38 of the IUCN General Assembly, 1988, reaffirmed in Resolution 19.46, 1994)

For example, in the case of the United States:

- The President established the Pacific Remote Islands, Marianas Trench, Rose Atoll <u>Marine National Monument</u>, on January 6, 2009.





Source: IUCN (2008) Establishing Marine Protected Area Networks – Making it happen.

Comparison between Japan and USA (Marine national monument)

	USA	Japan
Reserved by law or not?	Yes	No (partly yes)
Institutional characteristics	Top-down	Bottom-up
Conservation style	No touch	Positive interaction
Stakeholder involvement	Unknown	Intensive
Area scale	Large coverage	Small area

Conclusions

- High seas fisheries stocks are in trouble.
- Creating MPA is not a magic wand. Command and control measures always face difficulties on monitoring, control and surveillance.
- Combination of various measures, including RFMO efforts including catch/trade control and port-state measures (legal tools), consumer involvements through eco-labeling (economic measures), and right-based fisheries management (incentive systems) should be considered.