NORTHERN COMMITTEE
EIGHTH REGULAR SESSION

3-6 September 2012
Nagasaki, Japan

Pacific Bluefin Tuna Fisheries and Management in Japan

WCPFC-NC8-2012/IP-08

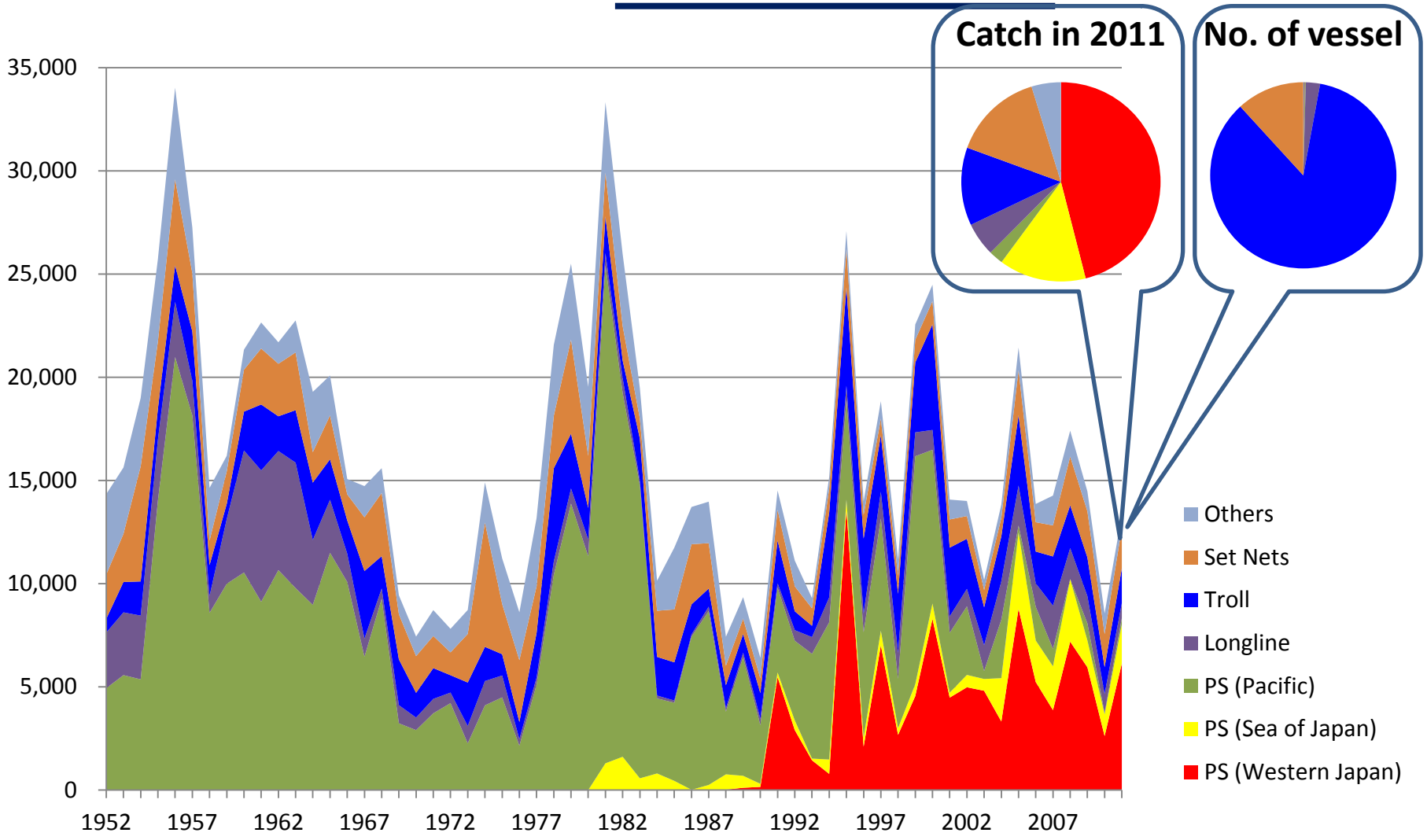
JAPAN

Pacific Bluefin Tuna Fisheries and Management in Japan

Management Scheme for PBF Fisheries

	No. of Vessel	Catch (05-09)	Main target (age)	Management Scheme	
Artisanal Fishery	13,000	2,257 (territorial and internal sea)	0-1	-	Registration system and mandatory reporting (West: since Apr. 2011) (Pacific: since Apr. 2012)
Set Net	1,800 (No. of license)	1,940 (territorial and Internal sea)	all	Licensing by prefectural government (Limited entry)	Administrative instruction not to increase the number of licenses (since Jan. 2010)
Longline	685 (No. of license)	1,598 (EEZ)	4～	Licensing (Limited entry)	
Purse Seine (Western Japan)	23	6,207 (almost EEZ)	0-1	Licensing (Limited entry)	Catch limit for juvenile (4,500 t) - 26 % (since Apr. 2011)
Purse Seine (Sea of Japan)	17	2,431 (almost EEZ)	3～	Licensing (Limited entry)	Catch limit for adult (2,000 t) - 13 % (since Apr. 2011)
Purse Seine (Pacific side)	24	729 (EEZ)	2,3～	Licensing (Limited entry)	Catch limit for juvenile (500t) (since Apr. 2012)
Aquaculture	949 (no. of cage)	-		Licensing by prefectural government (Limited entry)	Registration system and mandatory reporting (since Jan. 2011) Administrative instruction to control to avoid increase of juvenile fishing mortality. (since July 2012)

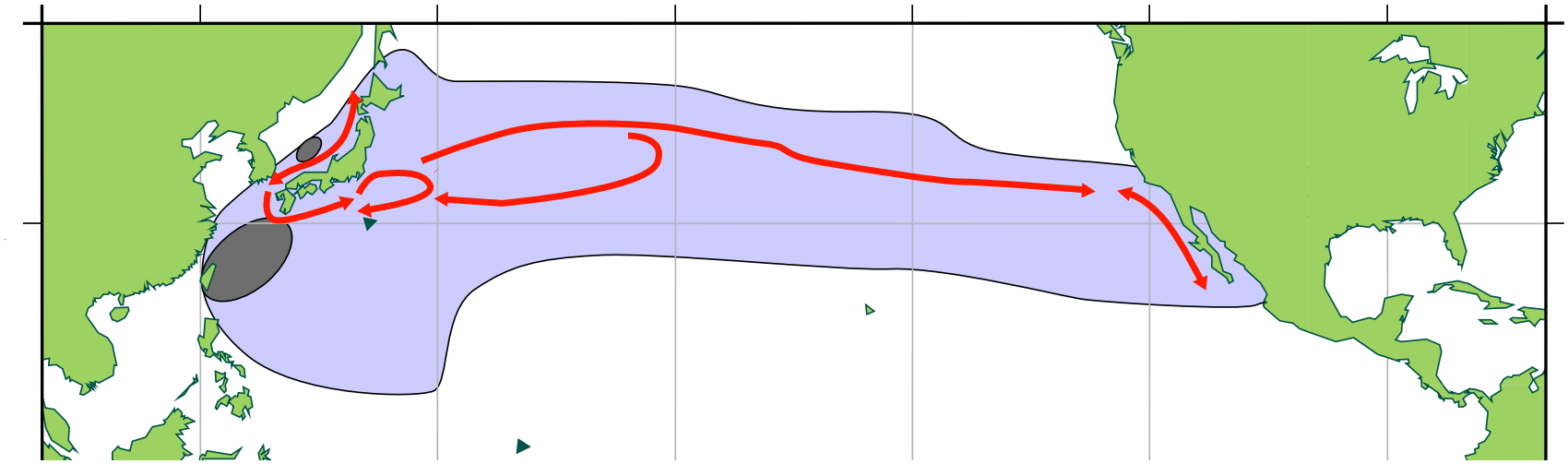
PBF Cathch by fishing gear



※ Most of PBF have been fished in Japan's territorial waters.

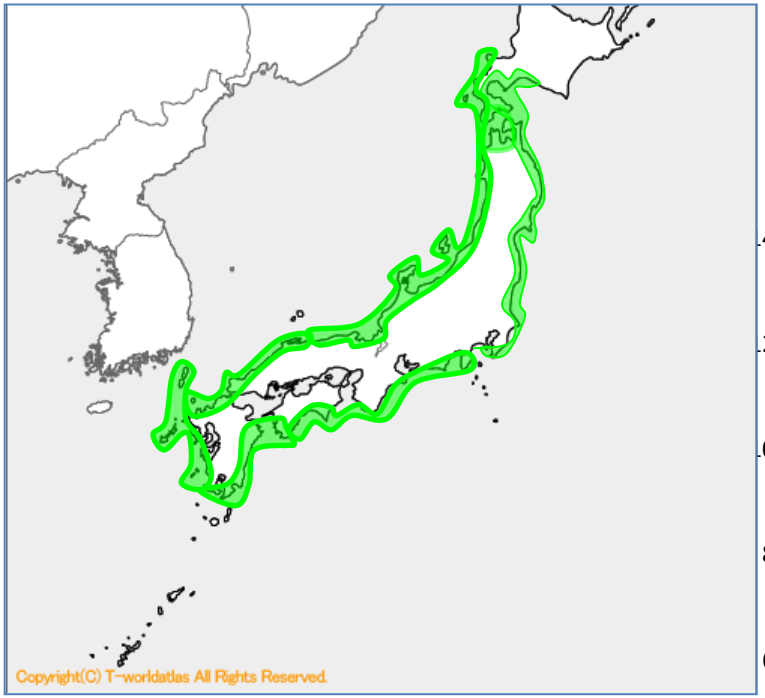
Migration and Spawning Ground of PBF

- Spawning grounds are around Nansei Islands and southwestern part of Sea of Japan.
- Juvenile PBF (mainly age 2) migrates from WPO to EPO

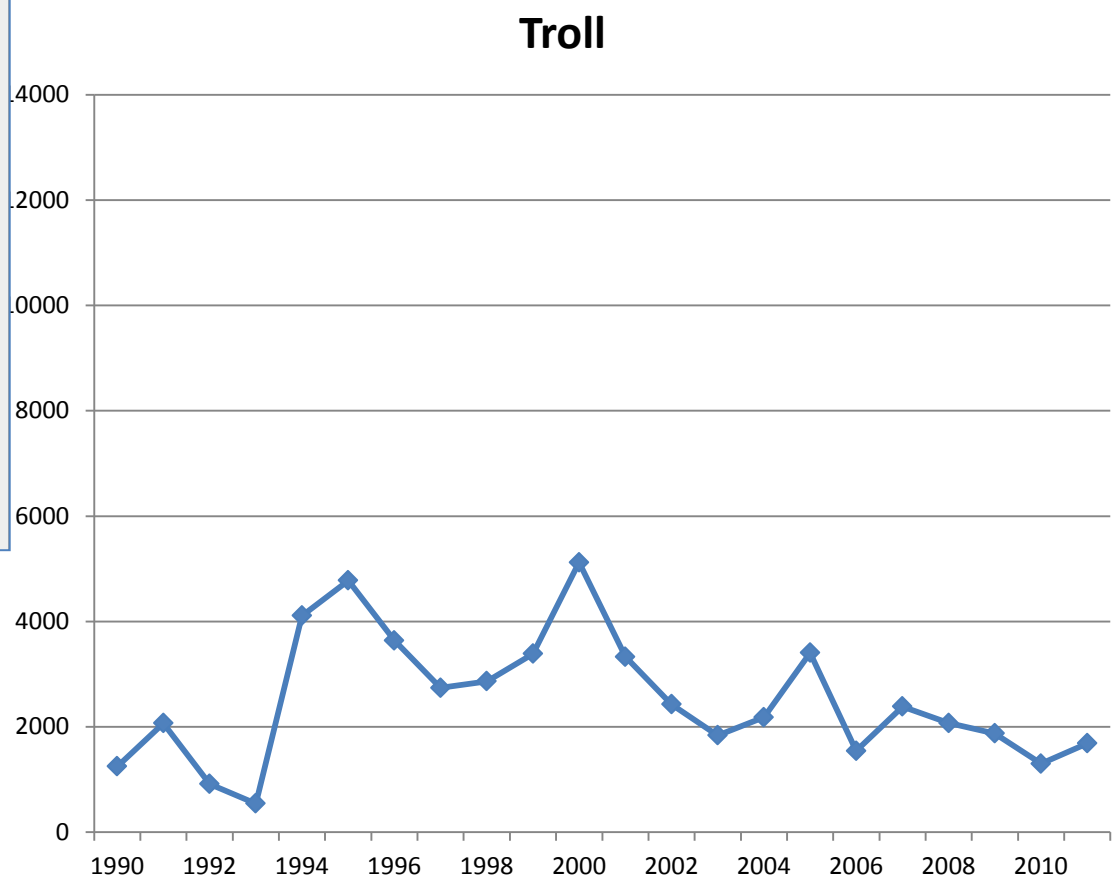


Migration Range
Spawning Ground

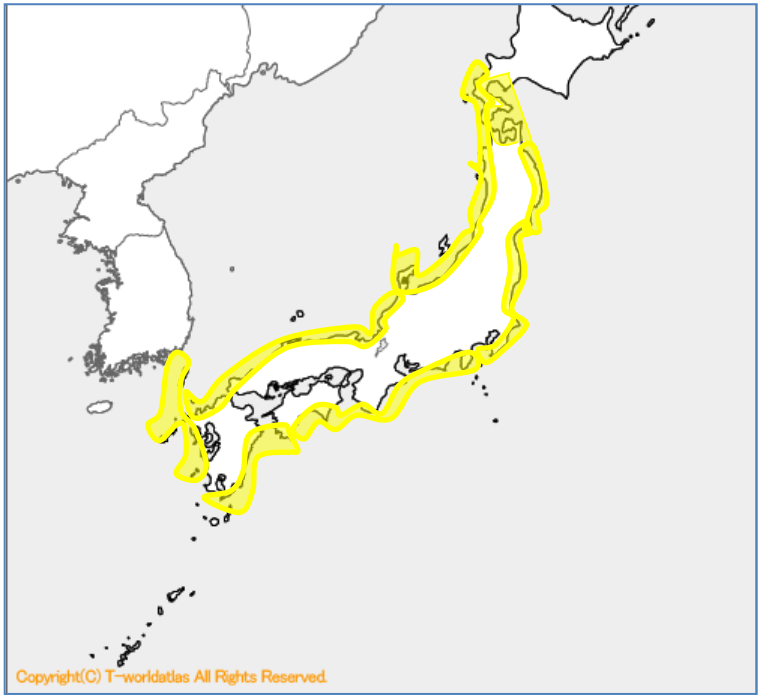
Artisanal: Troll, Jigging, Handline, etc.



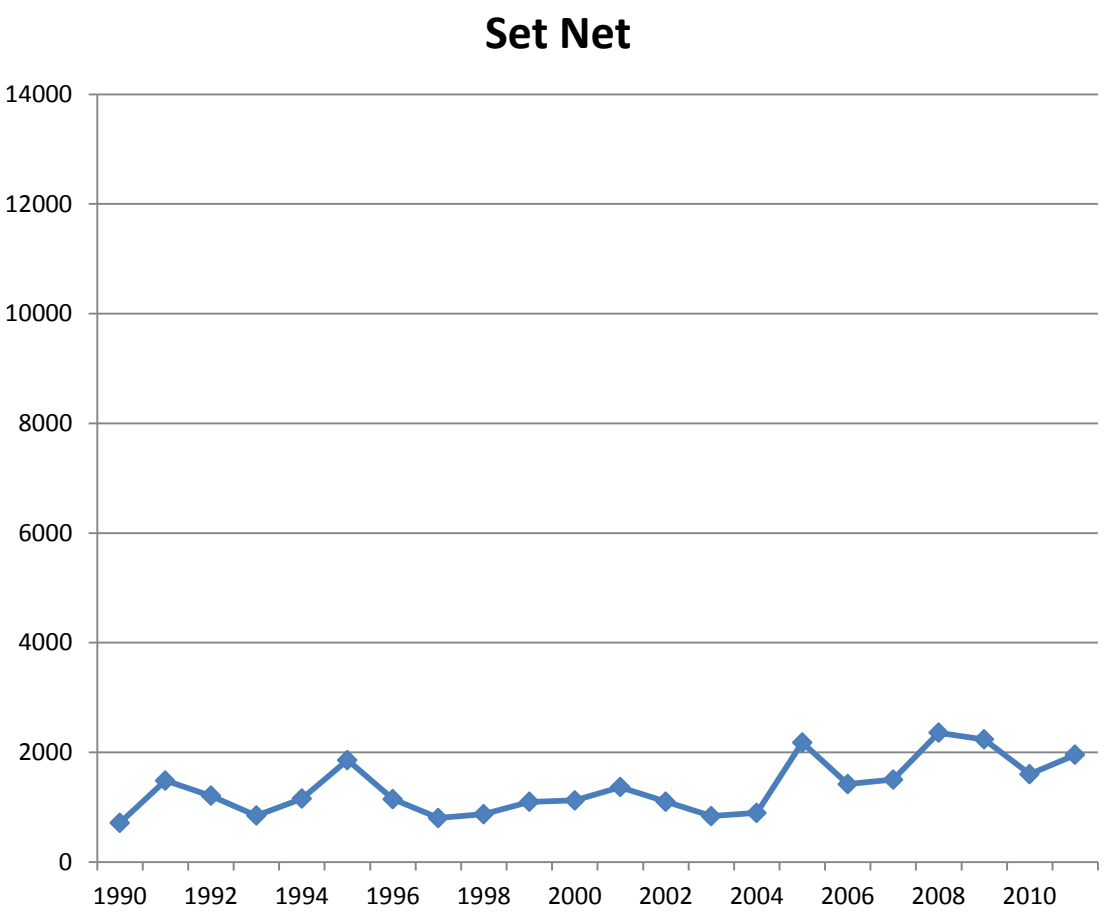
- Management: registration system (since April 2011)
- Number of vessels: around 13,000 vessels
- Main target: juvenile PBF



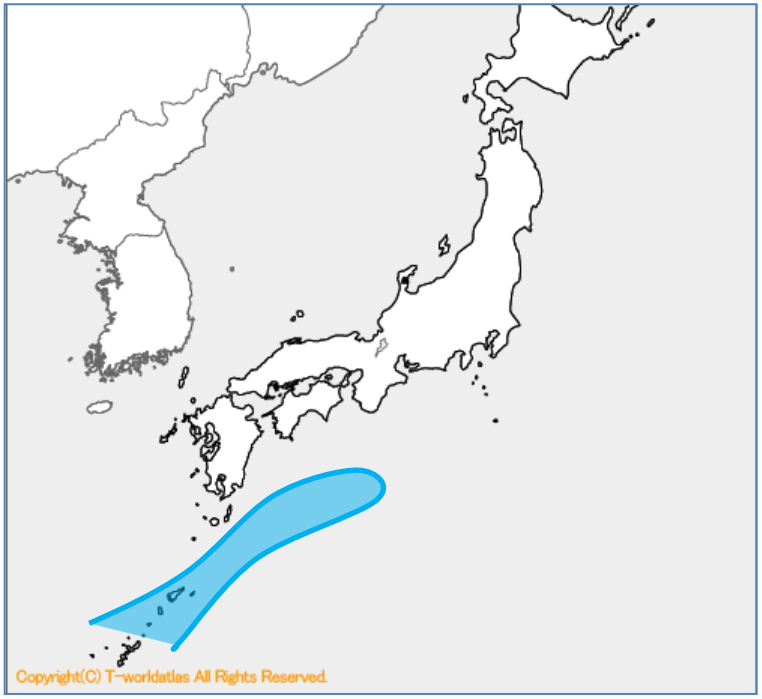
Set Nets



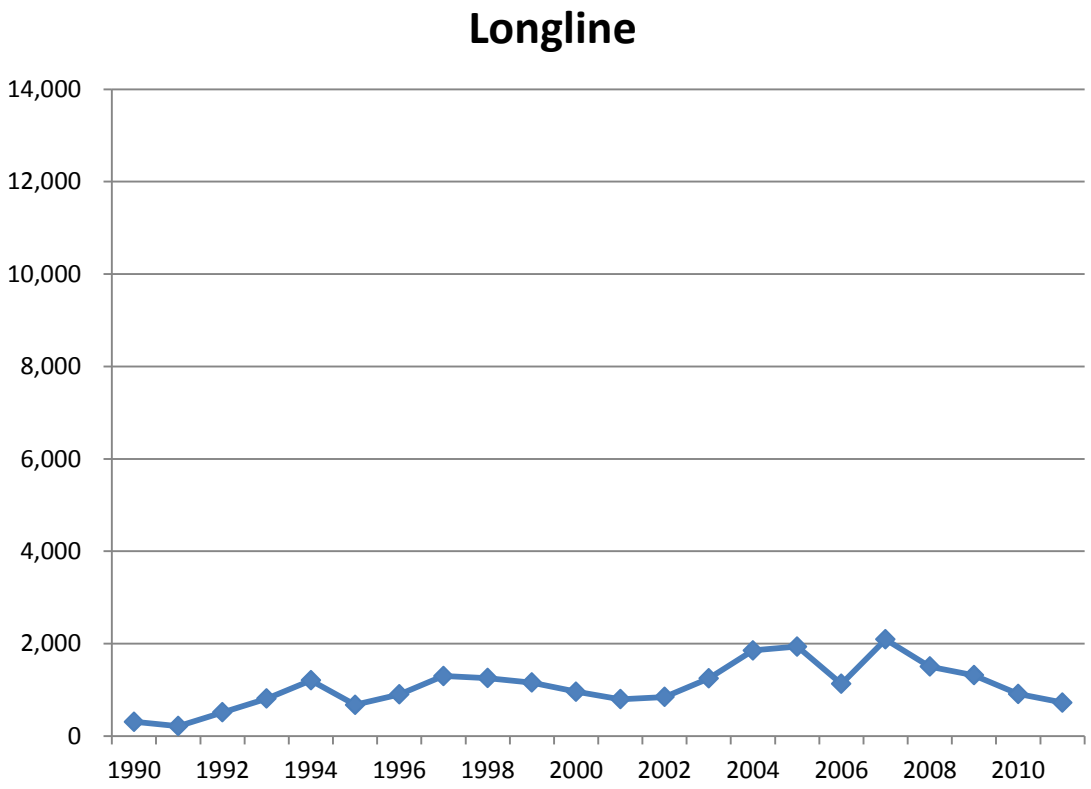
- Management: Licensing system by governor of prefectures
- Number of licenses: approximately 1,800



Longline



- Management: Licensing system by the Minister for Agriculture, Forestry and Fisheries
- Number of vessels: 685 vessels (coastal Longline)
- Main target: adult PBF

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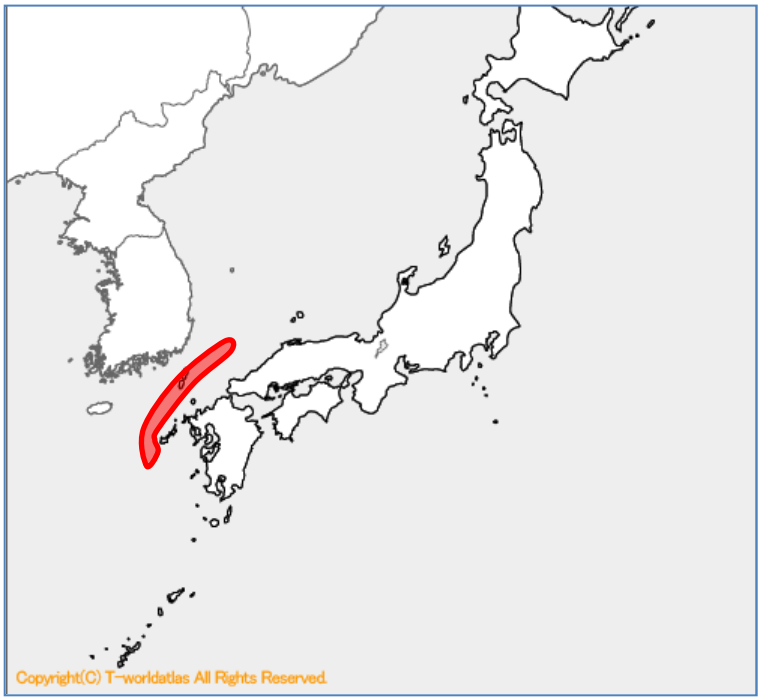
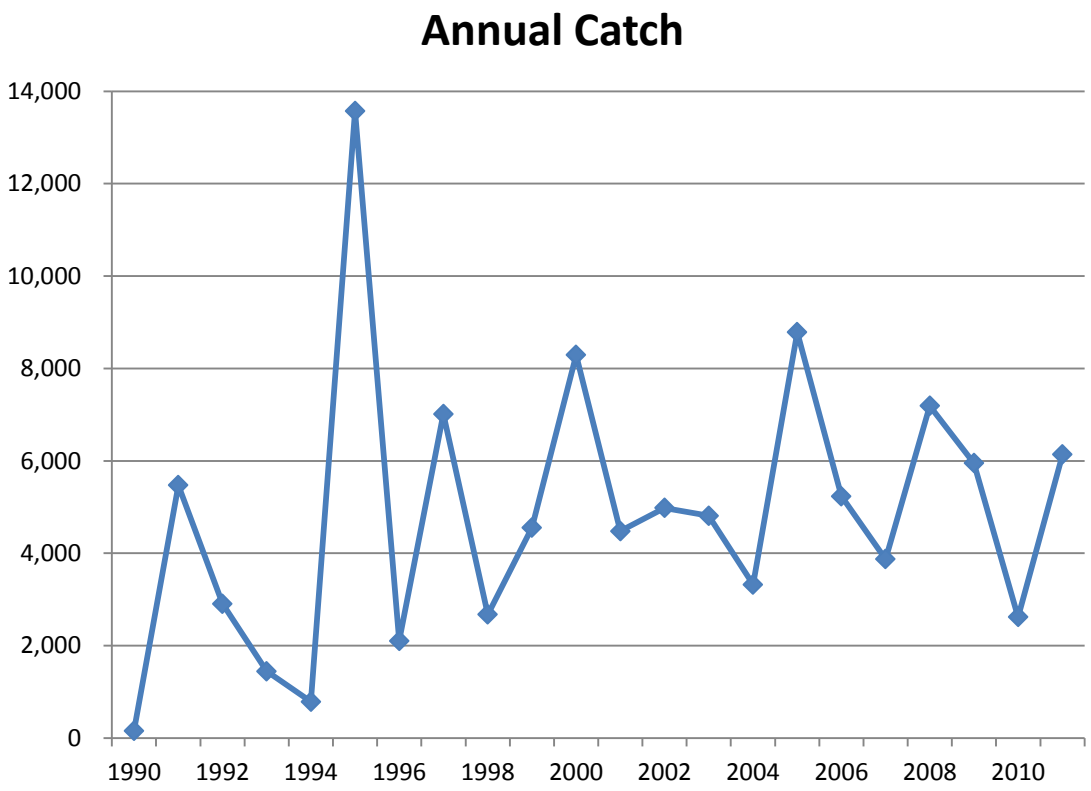
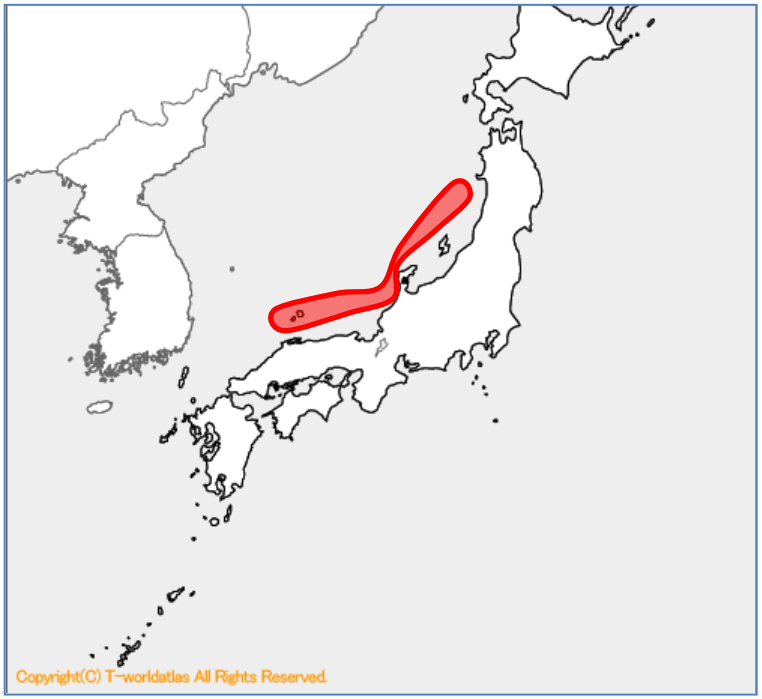
Purse Seine Fisheries in Western Japan



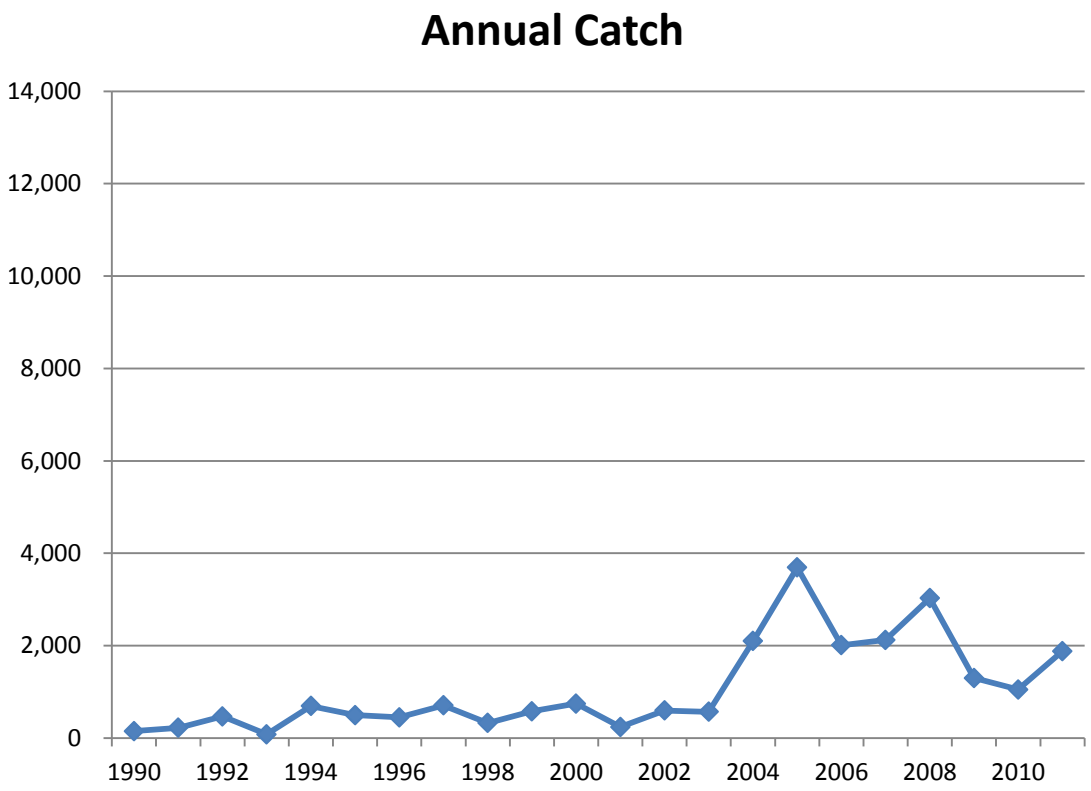
- Management: Licensing system by the Minister for Agriculture, Forestry and Fisheries
- Number of vessels: 23 vessels (Around 135 GRT)
- Main target: Juvenile (0-1 year)



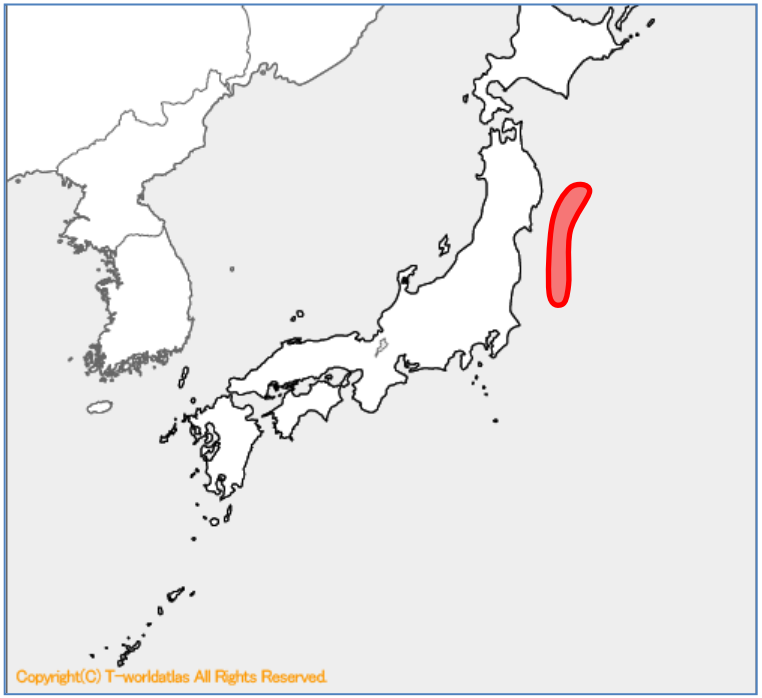
Purse Seine Fisheries in Sea of Japan



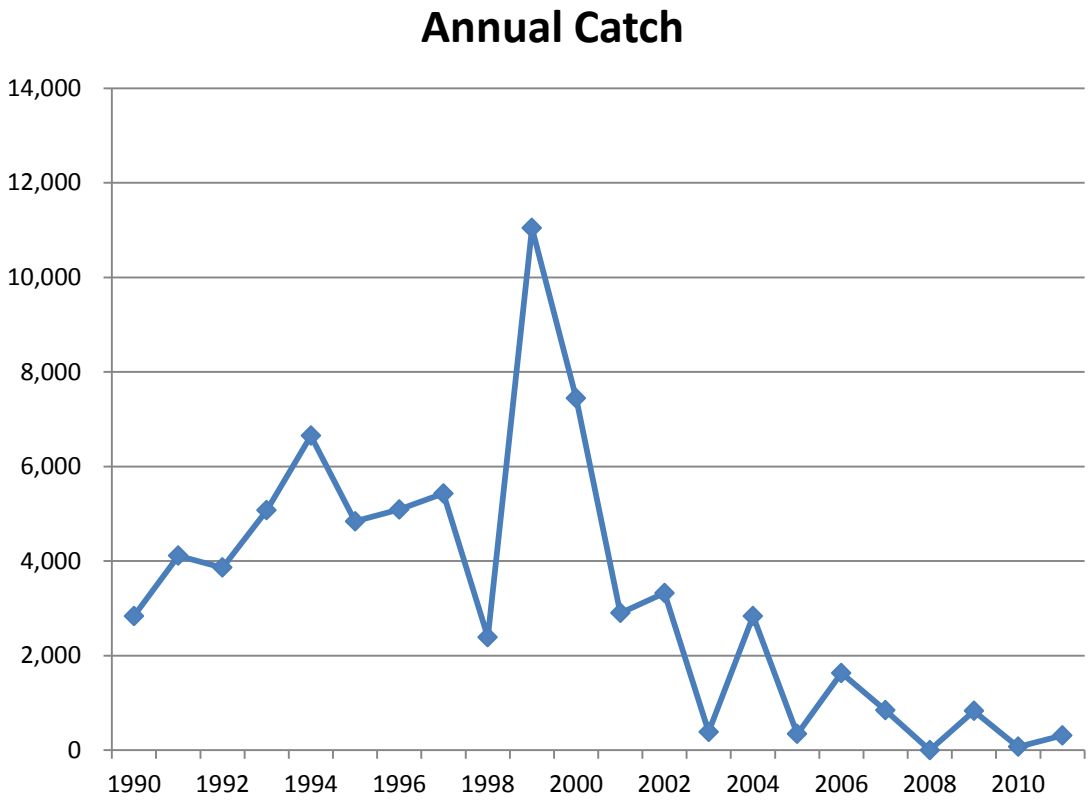
- Management: Licensing system by the Minister for Agriculture, Forestry and Fisheries
- Number of vessels: 17 vessels (Around 135 GRT)
- Main target: adult (over 3 year)



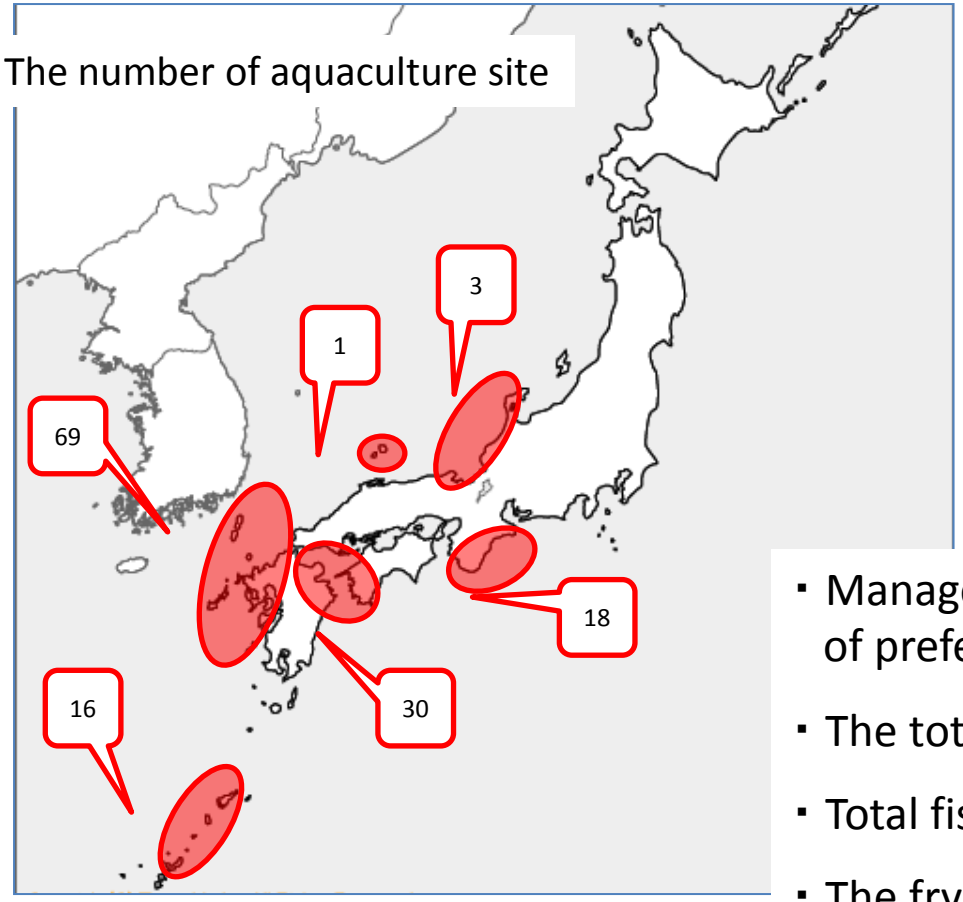
Purse Seine Fisheries in Pacific side



- Management: Licensing system by the Minister for Agriculture, Forestry and Fisheries
- Number of vessels: 24 vessels (Around 135 GRT)
- Main target: adult PBF



Aquaculture



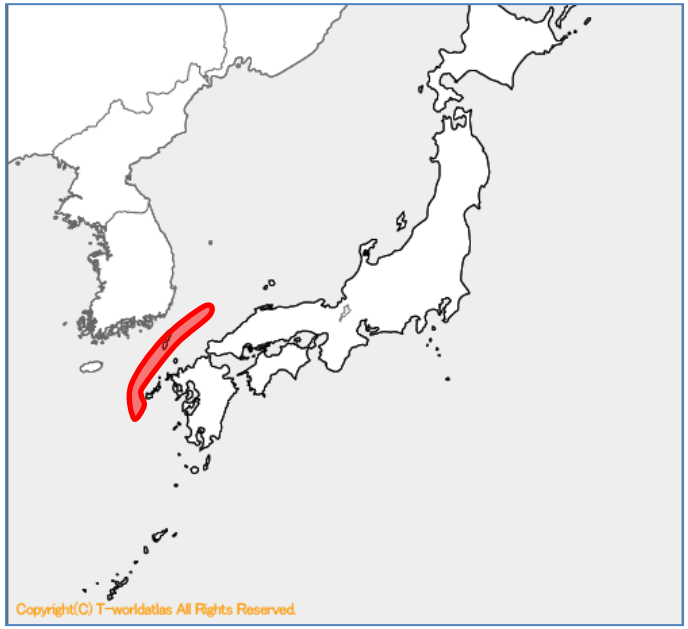
- Management: Licensing system by governors of prefecture
- The total number of cages: 949
- Total fish production in 2011: 9,044 mt
- The fry used for PBF farming is mainly caught by troll, not PS.

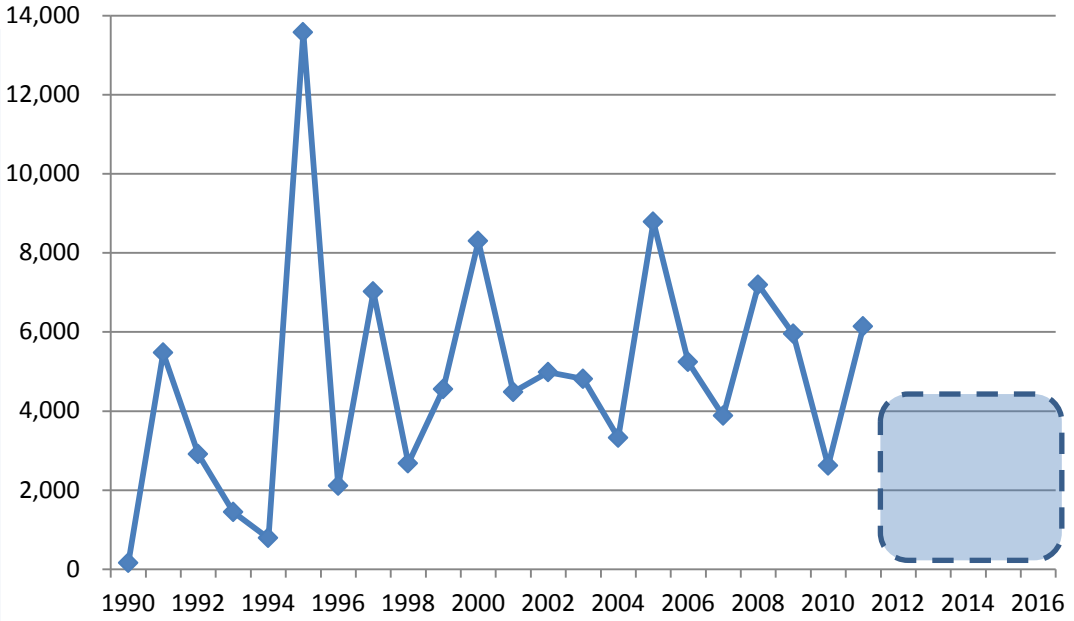
Management Strategy

- Total effort shall stay below the 2002-2004 level
- Reducing catches of juvenile below the 2002-2004 level
- Strengthening of data collecting system

Reducing juvenile (age 0-3) catch

- **Purse seine in Western Japan** mainly target on juvenile (age 0-1)
- An annual catch limit of juvenile PBF – smaller than 30 kg – has been in place since 2011.
- The catch limit is **4,500 mt**, which is equal to 2002-2004 average catch and to a 26 % reduction from 2005-2009 average catch.

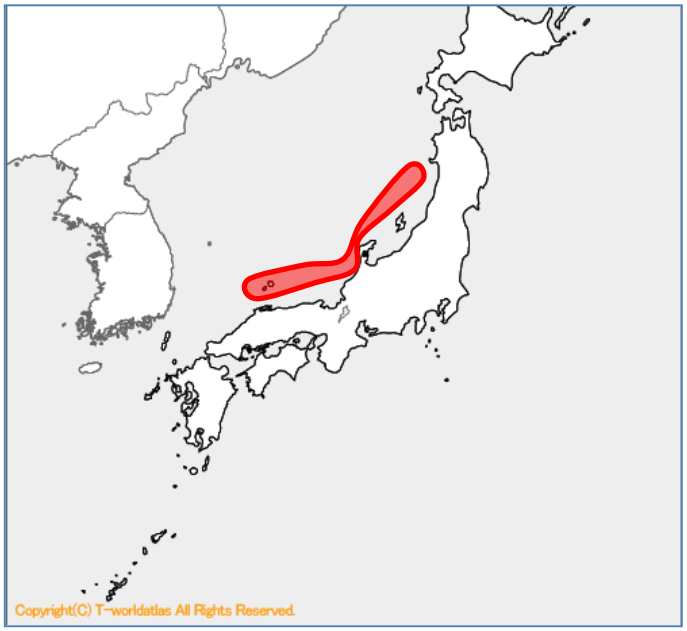


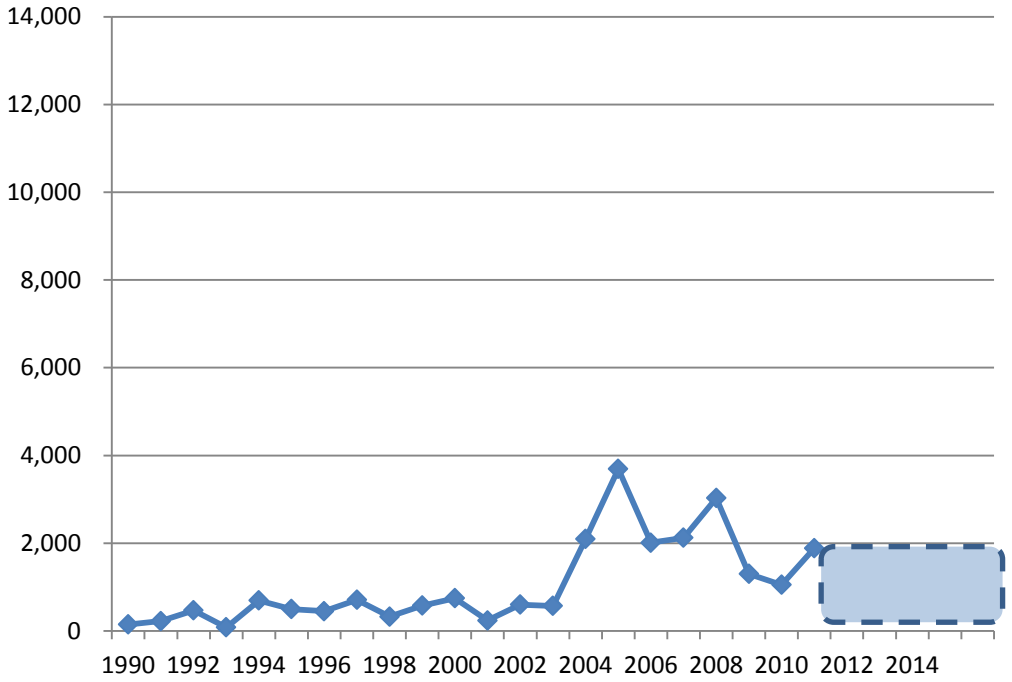


※ In the Pacific side, an annual catch limit of juvenile PBF at 500t, which is the average amount of 2002-2004, was introduced.

Catch limit for adult PBF

- Catch limit of **2,000 mt** for adult PBF has been voluntarily introduced during July – August for 2011 and 2012 in **purse seine fishery operating in the Sea of Japan**.





Effort Control to 2002-2004 level and Data Collection

① Artisanal Fishery – mostly troll fishery-

Troll fishery is conducted ….
1. by small scale vessels (<5 GRT) with 1 or 2 crew
2. close to the Japanese coast
3. throughout Japan, frequently in isolated area
4. fishing in a few month a year when PBF migrates to coast
5. engaged in other fisheries rest of the seasons

Before April 1, 2011

- No management measures was established
- No way to identify how many vessels were engaged in PBF fishery.

A vessel registration system accompanied with a mandatory reporting requirement has been introduced
----to the Sea of Japan and Eastern China Sea in April 1, 2011
----to Pacific side in April 1, 2012

As of July 1, 2012,
5,400 vessels in the Sea of Japan and Eastern China Sea
7,600 vessels in Pacific side
13,000 vessels in total are on the registration.

Effort Control to 2002-2004 level and Data Collection

② Set Net Fishery

Ministry of Agriculture, Forestry and Fisheries

In January 2011,

Administrative instruction

Prefectural government

Not to increase the number of set nets for PBF

③ Aquaculture

No data on
-- how many cages were existing
-- how much PBF were caged
-- how much PBF were harvested

Starting in April 2011,

All PBF aquaculture sites are required to register and to report their farming activities, including information on caging and harvest.

In 2011,
- The number of aquaculture sites: 137
- The number of cages: 949
- Harvest in 2011: 9,044 mt (the number of harvested PBF is 676,000)
- The number of caged fry: 141,000 artificial and 535,000 caught by fishing vessels

Research Activity about PBF Conducted by National Research Institute of Far Seas Fisheries

Enhanced PBF Research and research network

Research Direction

Ecological Study
(Identification of spawning grounds and season)

Stock Assessment
(More timely and less uncertainties)

Technology Development
(Stable supply by artificial reproduction of PBF fry for aquaculture)

Research Contents

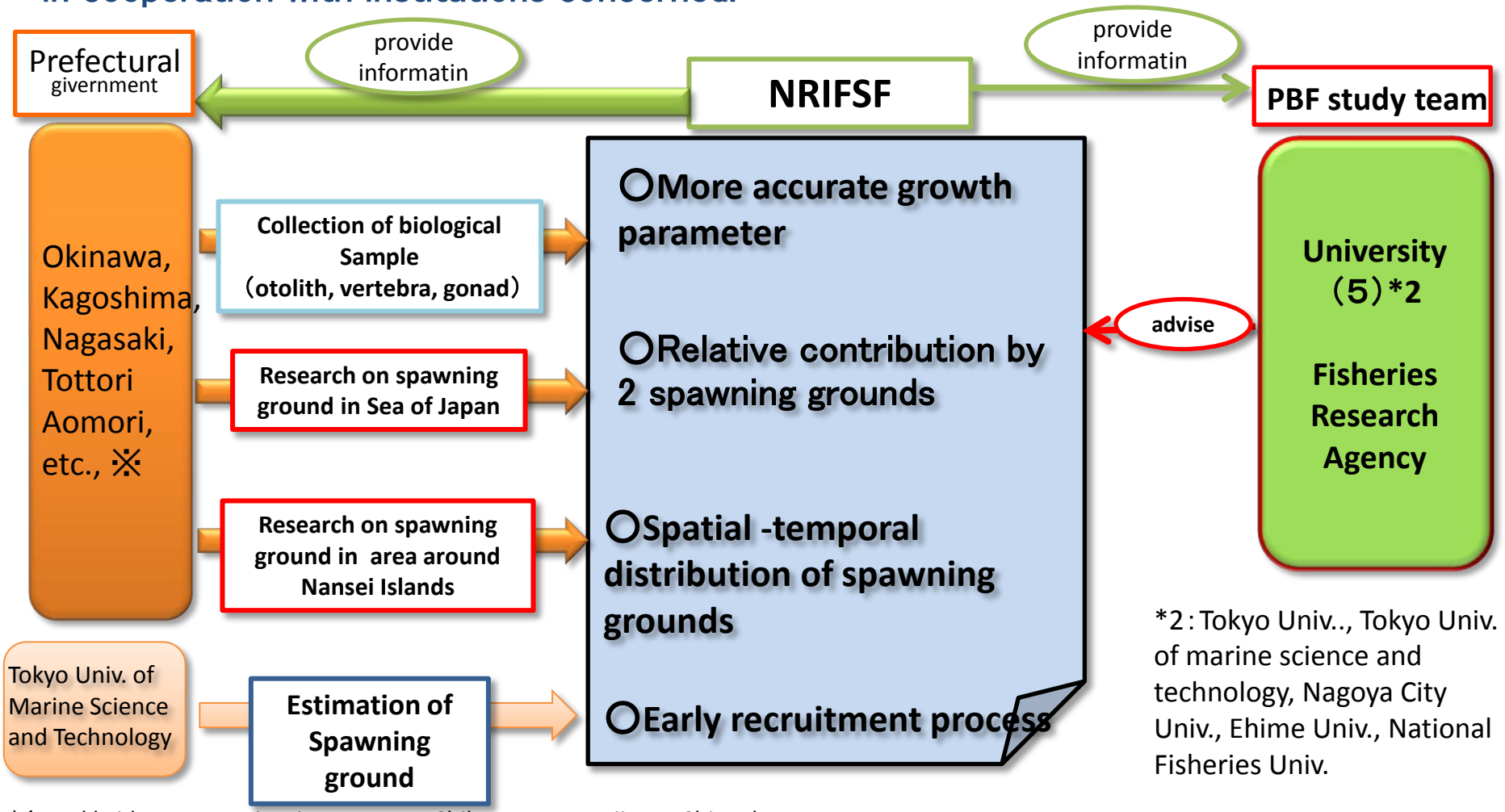
- Research cruise to capture PBF larvae
- Identification of spawning grounds and season from fisheries data and biological sampling

- Development of timely recruitment monitoring system (as measures of increase and decrease of stock abundance)
- Stock assessment and future projection with less uncertainties

- Planned egg collection in aquarium
- Efficient production of fry using artificial feed
- Improvement of farming technology
- Farming technology to collect egg in early life stage, to have high survival rate, to combat disease

Enhancement of Ecological Study – Formulation of Biological study netwo

・Collection of data such as spawning ground, spawning season, growth and maturity for appropriate protection of spawning stock and accuracy improve of stock assessment., in cooperation with institutions concerned.



*2 : Tokyo Univ.., Tokyo Univ. of marine science and technology, Nagoya City Univ., Ehime Univ., National Fisheries Univ.

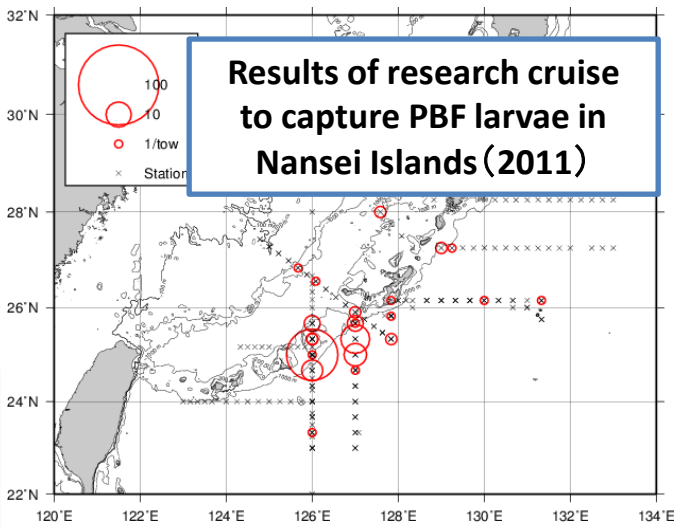
*1 : Hokkaido, Iwate, Miyagi, Kanagawa, Chiba, Toyama, Niigata, Shizuoka, Mie, Miyazaki, Wakayama, Kochi, Shimane, Yamaguchi, Ishikawa

Identification of spawning grounds and season for appropriate protection of spawning stock

Situation： Sea of Japan and around Nansei Islands are main spawning grounds

- Detail of spawning grounds is unknown.
- Latest data is necessary.

→ Latest date were collected to identify when and where PBF spawns

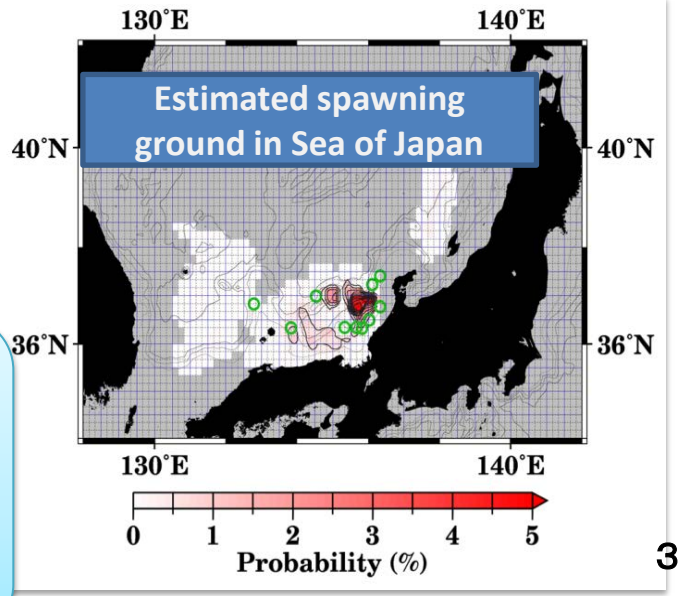


Results of research cruise to capture PBF larvae in Nansei Islands（2011）

1. Data collection from fisheries

- Estimation of fishing ground by fishery monitoring
  - Longline（around Nansei Islands）・Purse seine（Sea of Japan）
- Confirmation of Spawning activity by observation of gonad
  - Determine if the fish had already spawned , from observation of ovary.
  - Spawning season is estimated from gonad sample collected in main fishing port（800 samples were analyzed in 2011）
    - Nansei Islands：early May～early July
    - Sea of Japan： middle June～early August

Spawning grounds and seasons will be identified in few



2. Research Cruise

- Estimation of spawning ground by larval survay
  - Research were conducted both fishing ground and non-fishing ground.
  - Spawning grounds and season in Sea of Japan and around Nanasei Islands were estimated（2011）