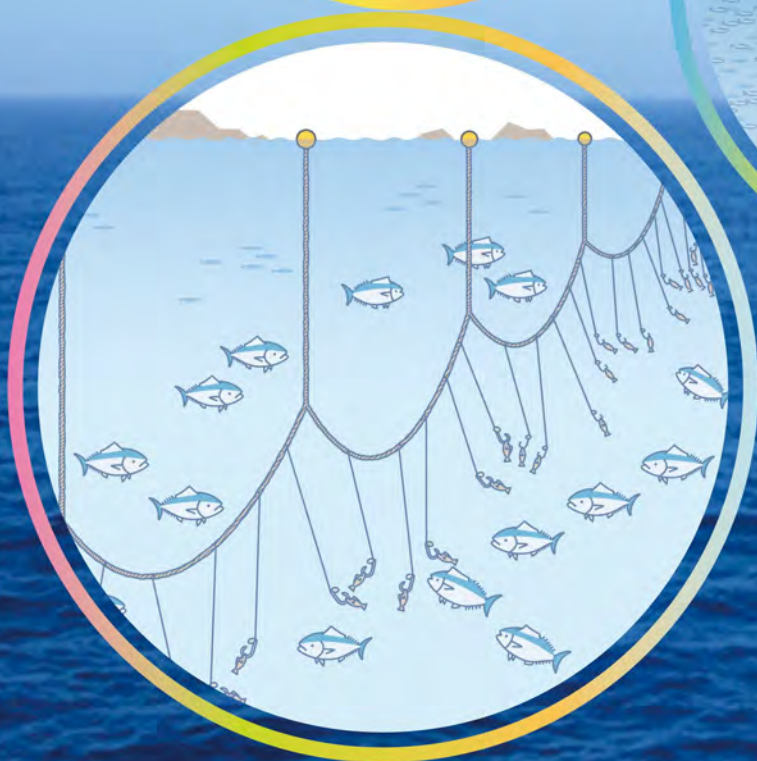
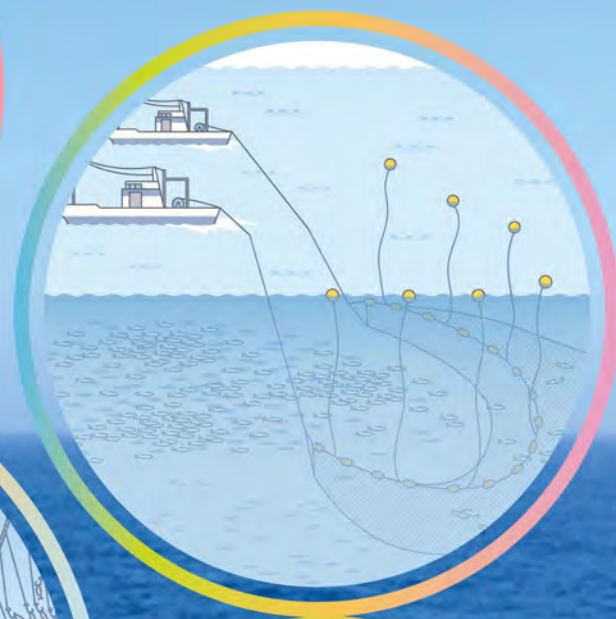
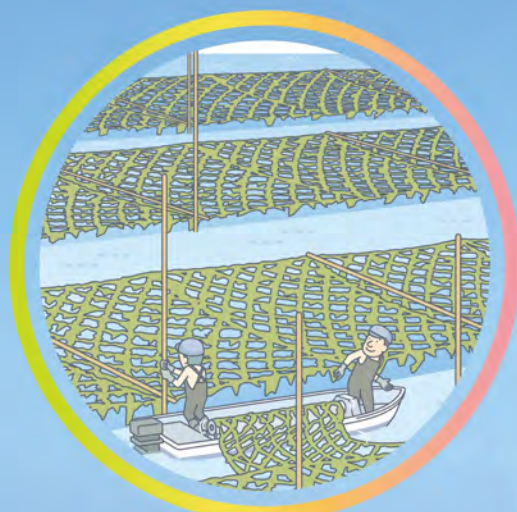


2019

Shipping and fisheries related organizations Liaison Council

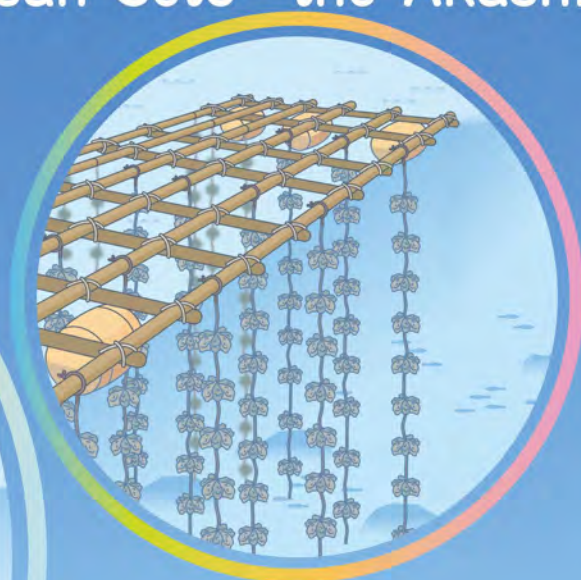
# The chart of fishing operations conducted in the eastern water area (Bisan Seto ~ the Akashi Strait) of the Seto Inland Sea



The Japan Association of Marine Safety



# Purpose of the chart of fishing operations conducted in the eastern water area (Bisan Seto~the Akashi Strait) of the Seto Inland Sea



This chart concerns the major fishing operations conducted in the Seto Inland Sea (under the Maritime Traffic Safety Act). It was drafted for the purpose of improving the safety of ship navigation in the Seto Inland Sea by those related to maritime trading and fisheries using this informational chart.

Note that this chart shows the characteristics of the major fishing operations conducted in the eastern water area from Bisan Seto to the Akashi Strait of the Seto Inland Sea. Fishing operations are being conducted in the water area, but not all of them are covered by this chart.

We strongly hope that using this chart will contribute to the safe maritime trading and fisheries activities in this water area.

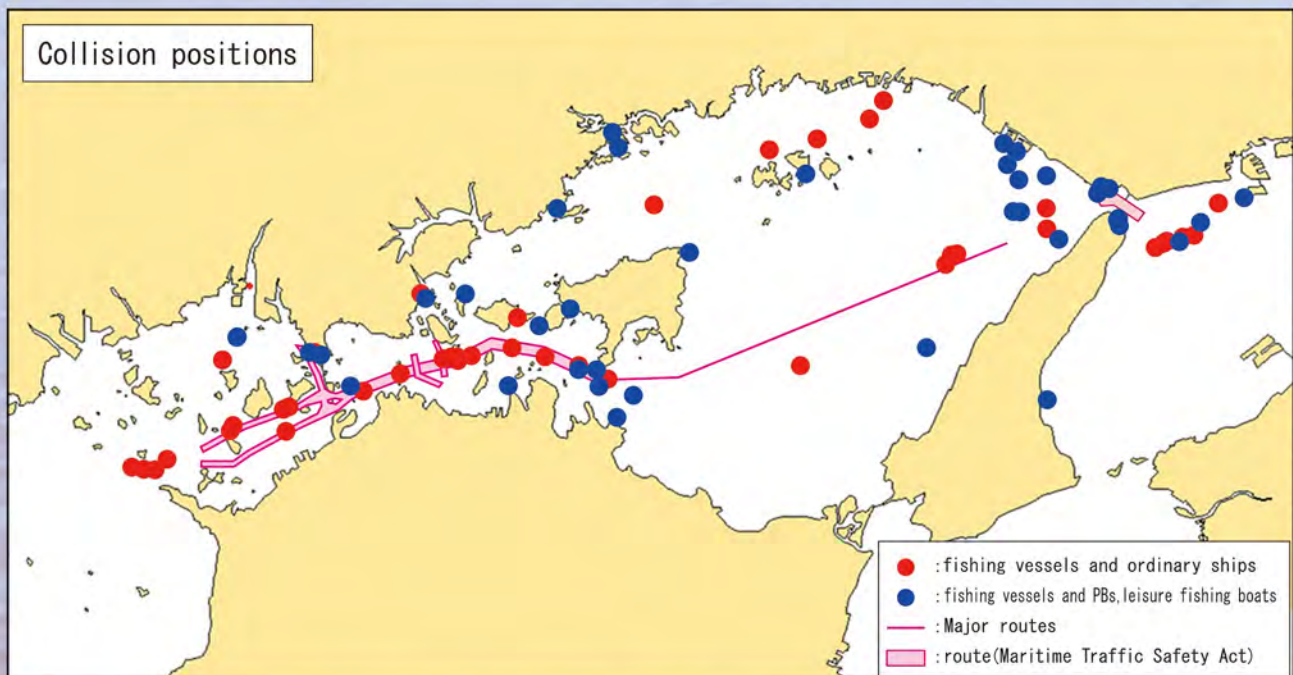
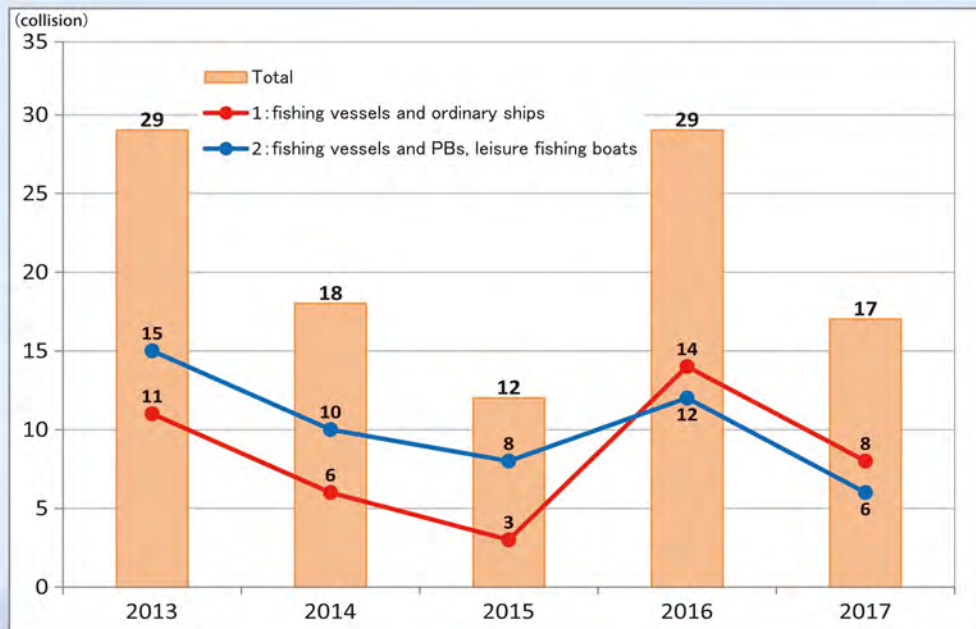


# Maritime accidents involving fishing vessels and ordinary ships in the eastern water area (Bisan Seto~Akashi Strait) of the Seto Inland Sea

We can see that during the period from January 1, 2013 to December 31, 2017, a total of 105 collisions involving fishing vessels have occurred in the eastern water area from Bisan Seto to the Akashi Strait of the Seto Inland Sea.※

42 of them were collisions between fishing vessels and ordinary ships, while 51 collisions were those between fishing vessels and pleasure boats (PBs), fishing vessels or leisure fishing boats.

※Japan Coast Guard

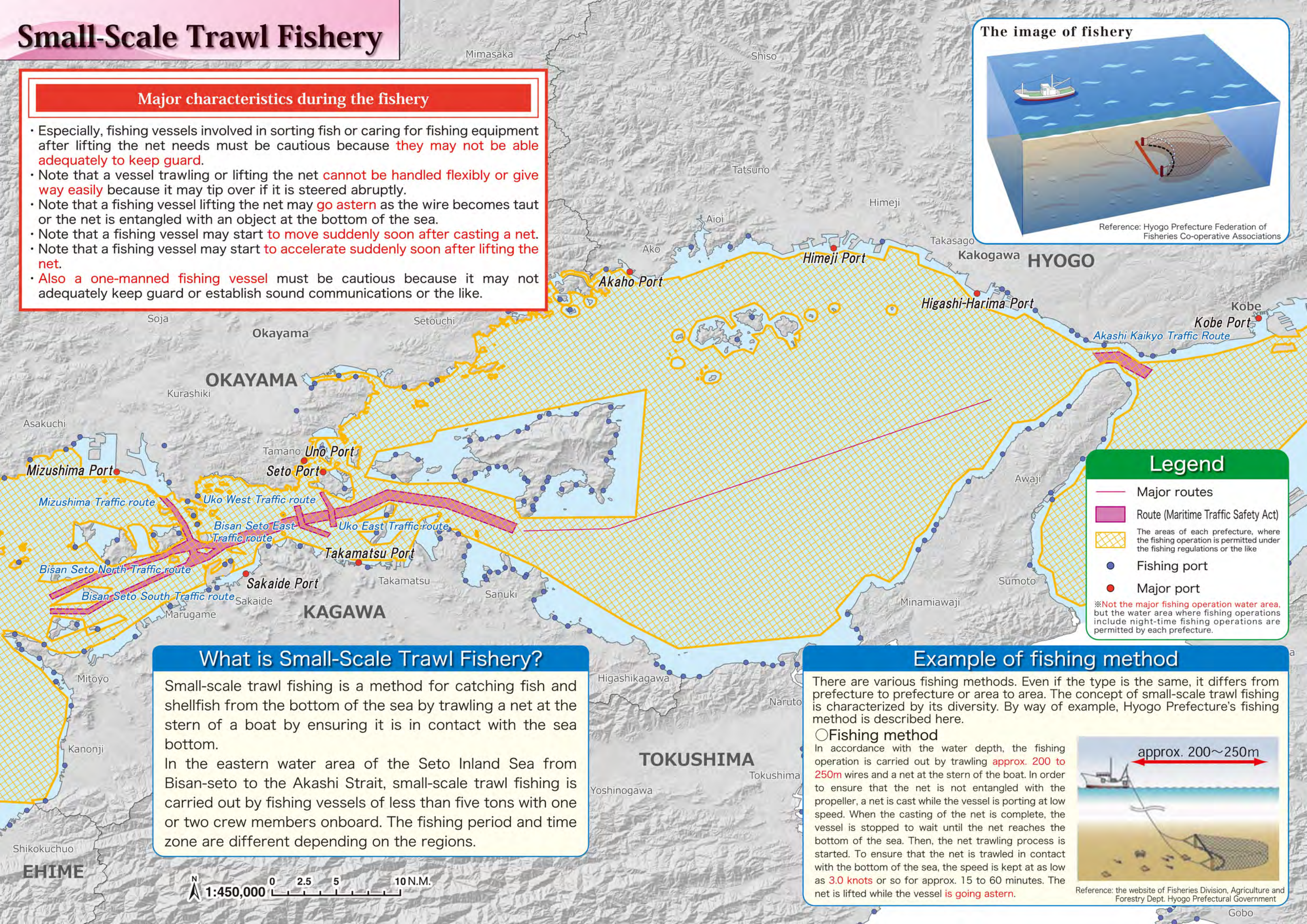
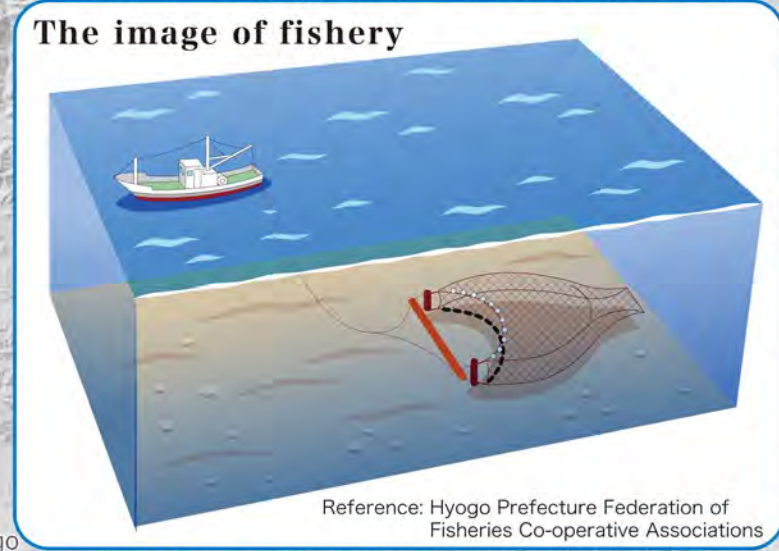




# Small-Scale Trawl Fishery

## Major characteristics during the fishery

- Especially, fishing vessels involved in sorting fish or caring for fishing equipment after lifting the net needs must be cautious because **they may not be able adequately to keep guard**.
- Note that a vessel trawling or lifting the net **cannot be handled flexibly or give way easily** because it may tip over if it is steered abruptly.
- Note that a fishing vessel lifting the net may **go astern** as the wire becomes taut or the net is entangled with an object at the bottom of the sea.
- Note that a fishing vessel may start **to move suddenly soon after casting a net**.
- Note that a fishing vessel may start **to accelerate suddenly soon after lifting the net**.
- **Also a one-manned fishing vessel** must be cautious because it may not adequately keep guard or establish sound communications or the like.



### Legend

- Major routes
- Route (Maritime Traffic Safety Act)
- Yellow grid pattern: The areas of each prefecture, where the fishing operation is permitted under the fishing regulations or the like
- Blue dot: Fishing port
- Red dot: Major port

※Not the major fishing operation water area, but the water area where fishing operations include night-time fishing operations are permitted by each prefecture.

### What is Small-Scale Trawl Fishery?

Small-scale trawl fishing is a method for catching fish and shellfish from the bottom of the sea by trawling a net at the stern of a boat by ensuring it is in contact with the sea bottom.

In the eastern water area of the Seto Inland Sea from Bisan-seto to the Akashi Strait, small-scale trawl fishing is carried out by fishing vessels of less than five tons with one or two crew members onboard. The fishing period and time zone are different depending on the regions.

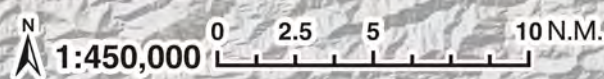
### Example of fishing method

There are various fishing methods. Even if the type is the same, it differs from prefecture to prefecture or area to area. The concept of small-scale trawl fishing is characterized by its diversity. By way of example, Hyogo Prefecture's fishing method is described here.

○Fishing method

In accordance with the water depth, the fishing operation is carried out by trawling **approx. 200 to 250m** wires and a net at the stern of the boat. In order to ensure that the net is not entangled with the propeller, a net is cast while the vessel is porting at low speed. When the casting of the net is complete, the vessel is stopped to wait until the net reaches the bottom of the sea. Then, the net trawling process is started. To ensure that the net is trawled in contact with the bottom of the sea, the speed is kept at as low as **3.0 knots** or so for approx. 15 to 60 minutes. The net is lifted while the vessel **is going astern**.

Reference: the website of Fisheries Division, Agriculture and Forestry Dept. Hyogo Prefectural Government



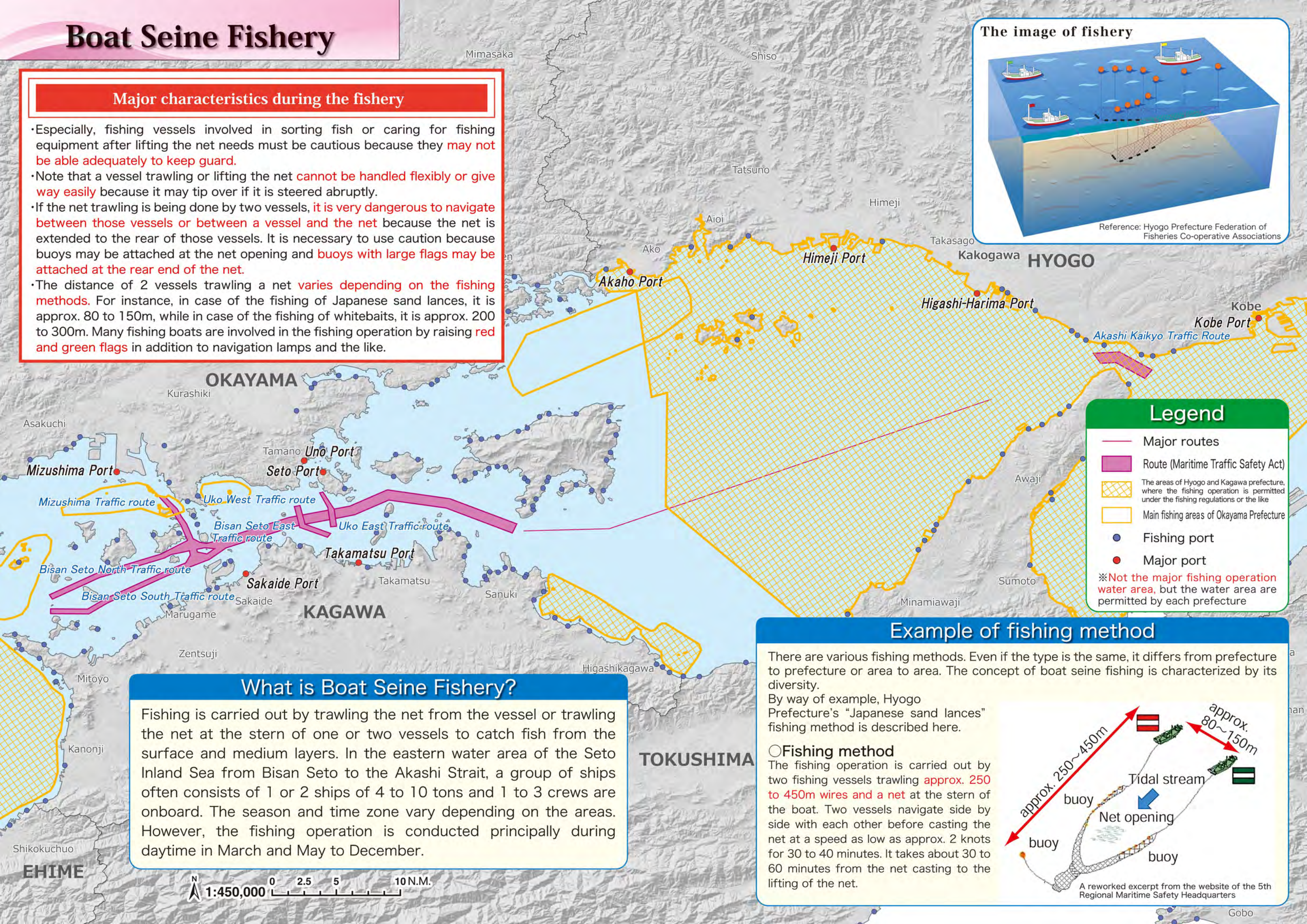
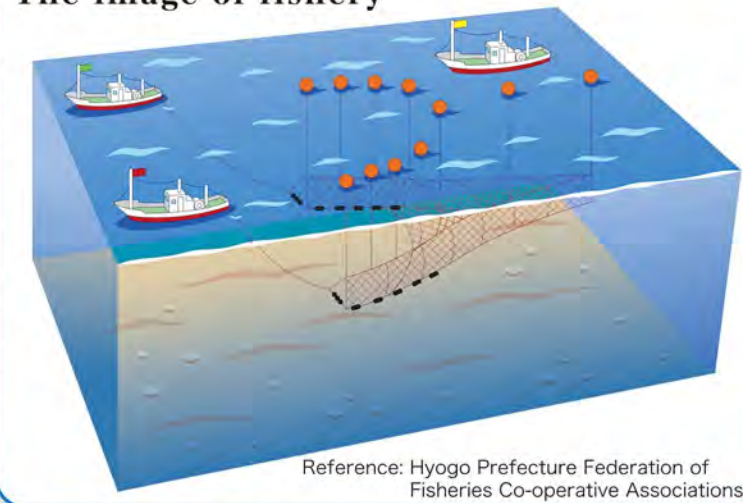


# Boat Seine Fishery

## Major characteristics during the fishery

- Especially, fishing vessels involved in sorting fish or caring for fishing equipment after lifting the net needs must be cautious because they **may not be able adequately to keep guard**.
- Note that a vessel trawling or lifting the net **cannot be handled flexibly or give way easily** because it may tip over if it is steered abruptly.
- If the net trawling is being done by two vessels, **it is very dangerous to navigate between those vessels or between a vessel and the net** because the net is extended to the rear of those vessels. It is necessary to use caution because buoys may be attached at the net opening and **buoys with large flags may be attached at the rear end of the net**.
- The distance of 2 vessels trawling a net **varies depending on the fishing methods**. For instance, in case of the fishing of Japanese sand lances, it is approx. 80 to 150m, while in case of the fishing of whitebaits, it is approx. 200 to 300m. Many fishing boats are involved in the fishing operation by raising **red and green flags** in addition to navigation lamps and the like.

## The image of fishery



## Legend

- Major routes
- Route (Maritime Traffic Safety Act)
- The areas of Hyogo and Kagawa prefecture, where the fishing operation is permitted under the fishing regulations or the like
- Main fishing areas of Okayama Prefecture
- Fishing port
- Major port
- ※ Not the major fishing operation water area, but the water area are permitted by each prefecture

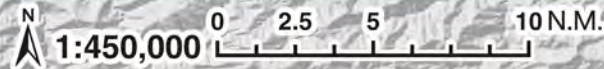
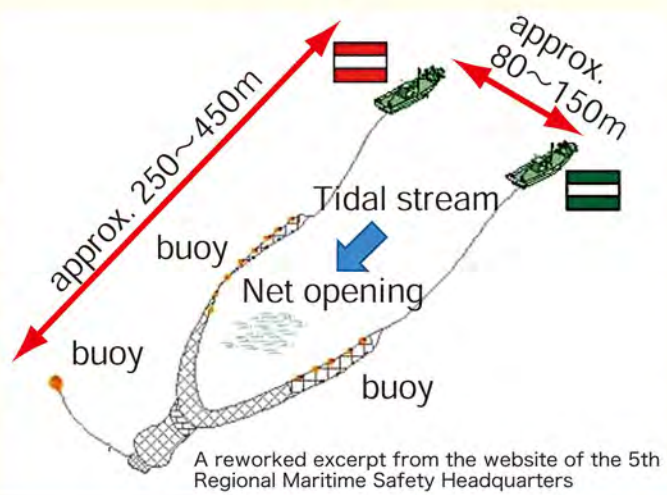
## What is Boat Seine Fishery?

Fishing is carried out by trawling the net from the vessel or trawling the net at the stern of one or two vessels to catch fish from the surface and medium layers. In the eastern water area of the Seto Inland Sea from Bisan Seto to the Akashi Strait, a group of ships often consists of 1 or 2 ships of 4 to 10 tons and 1 to 3 crews are onboard. The season and time zone vary depending on the areas. However, the fishing operation is conducted principally during daytime in March and May to December.

## Example of fishing method

There are various fishing methods. Even if the type is the same, it differs from prefecture to prefecture or area to area. The concept of boat seine fishing is characterized by its diversity. By way of example, Hyogo Prefecture's "Japanese sand lances" fishing method is described here.

**○ Fishing method**  
The fishing operation is carried out by two fishing vessels trawling **approx. 250 to 450m wires and a net** at the stern of the boat. Two vessels navigate side by side with each other before casting the net at a speed as low as approx. 2 knots for 30 to 40 minutes. It takes about 30 to 60 minutes from the net casting to the lifting of the net.



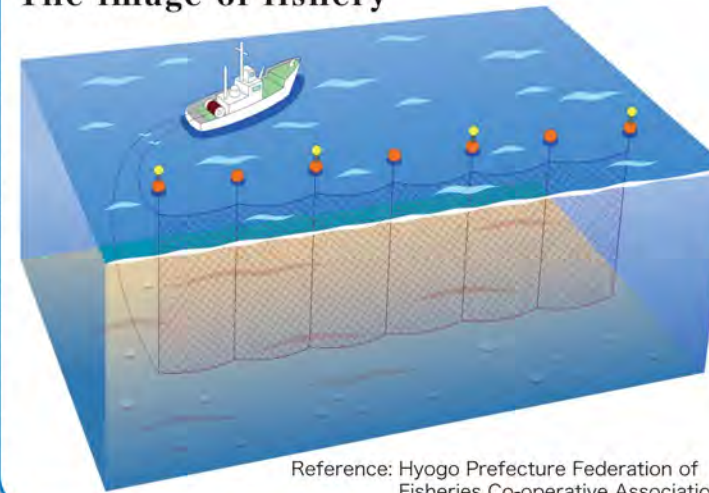


# Gill Net Fishery

## Major characteristics during the fishery

- Normally, the net is placed in a **north-south direction** so that it receives the tidal stream laterally. However, depending on the locations, it may be placed in an **east-west direction**.
- Especially a fishing vessel involved in the sorting of caught fishes or caring for fishing equipment after lifting the net needs to use caution because it may **not adequately keep guard**.
- Note that a vessel casting or lifting the net **cannot be handled flexibly or give way easily** because it may tip over if it is steered abruptly.
- Note that a fishing vessel casting and lifting the net may **go astern** as the wire becomes taut or the net is entangled with an object at the bottom of the sea.
- Give way very carefully **because the net has buoys at its both ends or at certain intervals**.
- **The length, height and casting depth vary** depending on the regions and the target fish species.
- Fishing vessels are equipped with **yellow rotating lights** or the like in addition to the navigation lights, which can be used for keeping guard.

## The image of fishery

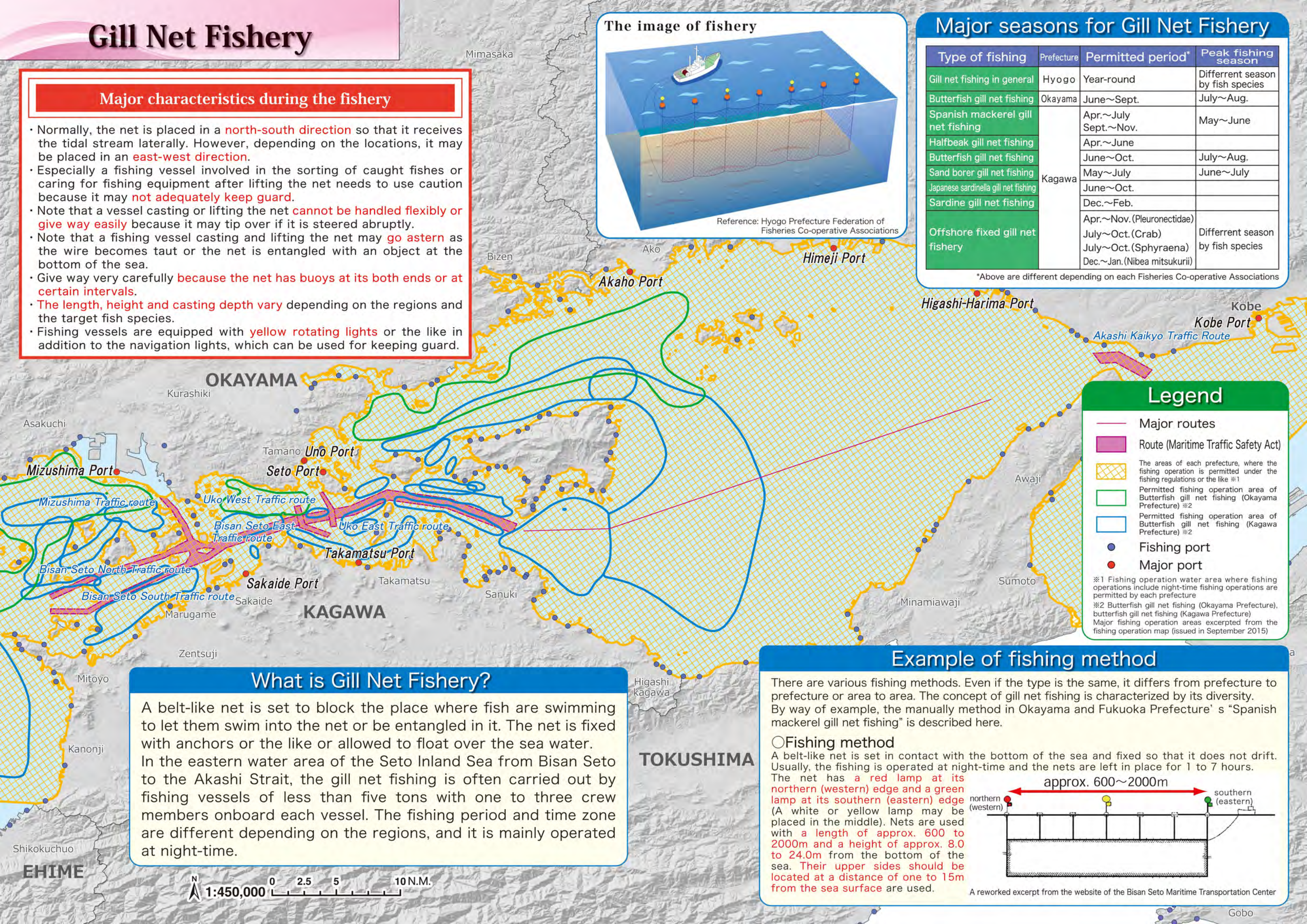


Reference: Hyogo Prefecture Federation of Fisheries Co-operative Associations

## Major seasons for Gill Net Fishery

Type of fishing	Prefecture	Permitted period*	Peak fishing season
Gill net fishing in general	Hyogo	Year-round	Different season by fish species
Butterfish gill net fishing	Okayama	June~Sept.	July~Aug.
Spanish mackerel gill net fishing	Kagawa	Apr.~July Sept.~Nov.	May~June
Halfbeak gill net fishing		Apr.~June	
Butterfish gill net fishing		June~Oct.	July~Aug.
Sand borer gill net fishing		May~July	June~July
Japanese sardinella gill net fishing		June~Oct.	
Sardine gill net fishing		Dec.~Feb.	
Offshore fixed gill net fishery		Apr.~Nov. (Pleuronectidae) July~Oct. (Crab) July~Oct. (Sphyræna) Dec.~Jan. (Nibea mitsukurii)	Different season by fish species

\*Above are different depending on each Fisheries Co-operative Associations



## Legend

- Major routes
  - Route (Maritime Traffic Safety Act)
  - The areas of each prefecture, where the fishing operation is permitted under the fishing regulations or the like ※1
  - Permitted fishing operation area of Butterfish gill net fishing (Okayama Prefecture) ※2
  - Permitted fishing operation area of Butterfish gill net fishing (Kagawa Prefecture) ※2
  - Fishing port
  - Major port
- ※1 Fishing operation water area where fishing operations include night-time fishing operations are permitted by each prefecture  
 ※2 Butterfish gill net fishing (Okayama Prefecture), butterfish gill net fishing (Kagawa Prefecture)  
 Major fishing operation areas excerpted from the fishing operation map (issued in September 2015)

## What is Gill Net Fishery?

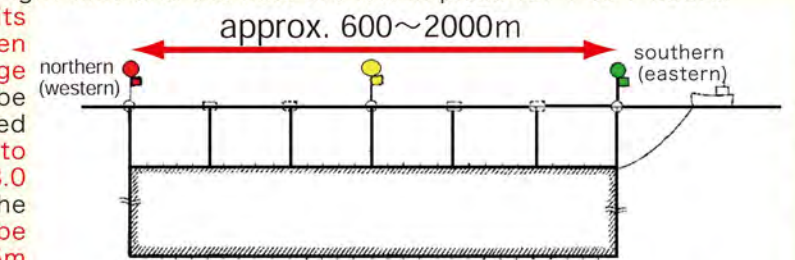
A belt-like net is set to block the place where fish are swimming to let them swim into the net or be entangled in it. The net is fixed with anchors or the like or allowed to float over the sea water. In the eastern water area of the Seto Inland Sea from Bisan Seto to the Akashi Strait, the gill net fishing is often carried out by fishing vessels of less than five tons with one to three crew members onboard each vessel. The fishing period and time zone are different depending on the regions, and it is mainly operated at night-time.

## Example of fishing method

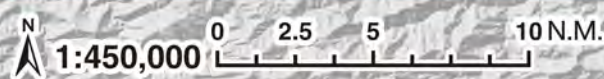
There are various fishing methods. Even if the type is the same, it differs from prefecture to prefecture or area to area. The concept of gill net fishing is characterized by its diversity. By way of example, the manually method in Okayama and Fukuoka Prefecture's "Spanish mackerel gill net fishing" is described here.

### ○Fishing method

A belt-like net is set in contact with the bottom of the sea and fixed so that it does not drift. Usually, the fishing is operated at night-time and the nets are left in place for 1 to 7 hours. The net has a **red lamp at its northern (western) edge** and a **green lamp at its southern (eastern) edge** (A white or yellow lamp may be placed in the middle). Nets are used with a **length of approx. 600 to 2000m** and a **height of approx. 8.0 to 24.0m** from the bottom of the sea. Their upper sides should be located at a distance of one to 15m from the sea surface are used.



A reworked excerpt from the website of the Bisan Seto Maritime Transportation Center





# Stownet Fishery

## Major characteristics during the fishery

- Especially a fishing vessel involved in the sorting of caught fishes or caring for fishing equipment after lifting the net needs to use caution because it may **not adequately keep guard**.
- Note that a vessel casting or lifting the net **cannot be handled flexibly or give way easily** because it may tip over if it is steered abruptly.
- Note that a fishing vessel casting and lifting the net may **go astern** as the wire becomes taut or the net is entangled with an object at the bottom of the sea.
- **At the net opening, orange and white buoys are attached**. In case of fishing operation at night, **a lamp is attached to the anchor barrel**. Therefore, they should be warded off carefully during the navigation.
- **The length, height and casting depth of a net vary**.
- Some fishing vessels are equipped with **yellow rotating lights** or the like in addition to the navigation lights, which can be used for keeping guard.
- You can access the Bisan Seto Maritime Transportation Center to get the chart of stownet fishery operation.
- Use caution because **buoys may submerge under the sea** when the tidal stream is strong.

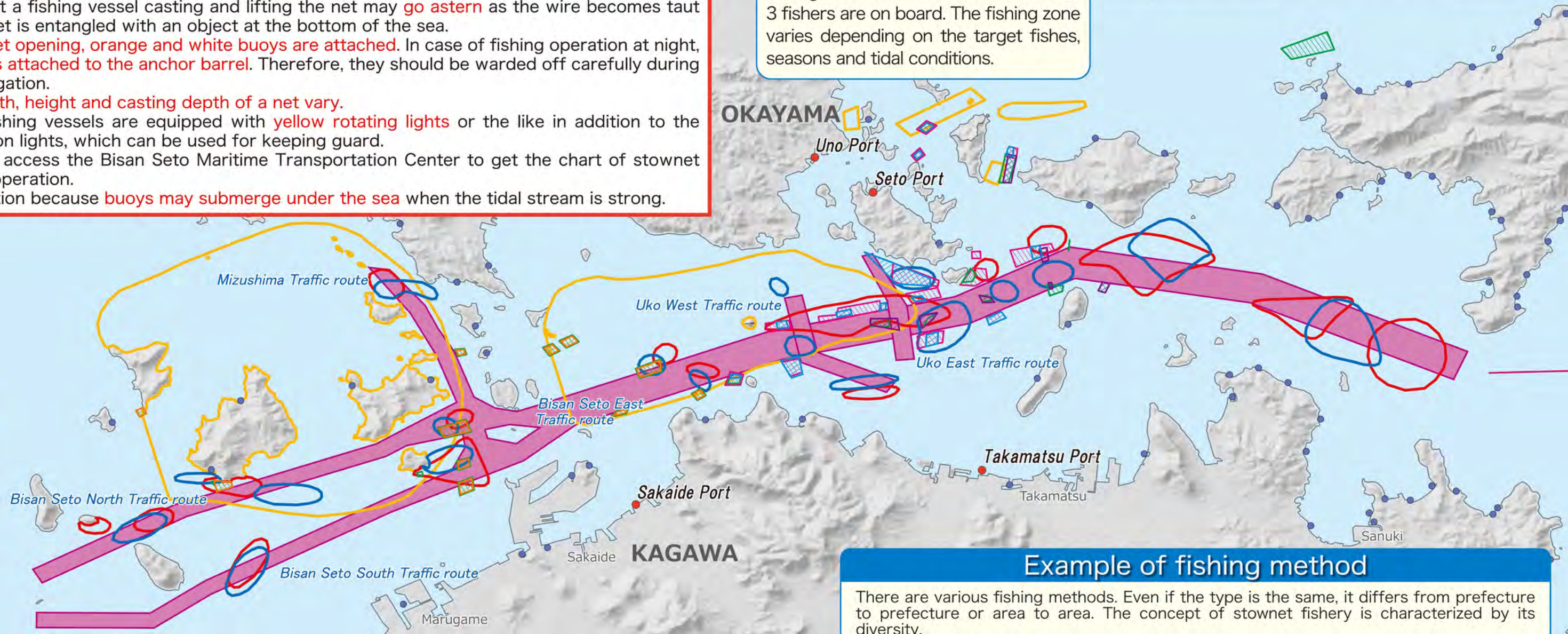
## What is Stownet Fishery?

A sack-like net is fixed on the sea bottom with 2 anchors so that it is located in parallel with the tidal stream in order to catch the fishes swimming into the net along with the tidal stream. In the Bisan Seto water area, the fishing operation is conducted mainly by fishing vessels of 5 to 19 tons and 2 or 3 fishers are on board. The fishing zone varies depending on the target fishes, seasons and tidal conditions.

## Major seasons for Stownet Fishery

Fishing season (month)	1	2	3	4	5	6	7	8	9	10	11	12
Fishing operation hours												
Daytime		○	◎	◎	◎	◎	○					
Day and night				○	◎	◎	◎	○				

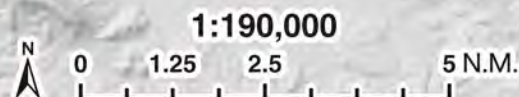
Reference: Takamatsu Coast Guard Office HP



## Legend

- Major routes
- Route (Maritime Traffic Safety Act)
- Main fishing areas at W-going stream
- Main fishing areas at E-going stream
- Fishing port
- Major port
- Main fishing areas of Okayama prefecture
- The area of Kagawa prefecture, where the fishing operation is permitted under the fishing regulations and the like
- Small harvestfish stownet fishing
- Squid stownet fishing
- Harvestfish stownet fishing
- Small squid stownet fishing
- Large squid stownet fishing

Except for the areas, where the fishing operation is permitted under the fishing regulations of Okayama prefecture and except for the area of Kagawa prefecture listed above



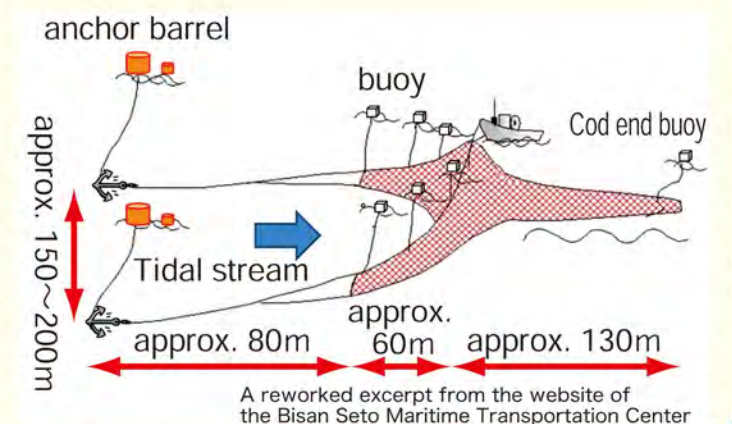
## Example of fishing method

There are various fishing methods. Even if the type is the same, it differs from prefecture to prefecture or area to area. The concept of stownet fishery is characterized by its diversity.

By way of example, the manually method in Okayama and Fukuoka Prefecture's fishing method is described here.

### ○Fishing method

A sack-like net is placed within a distance of 150 to 200m and fixed on the sea bottom with 2 anchors. The fishing operation is conducted mainly during the time zones where the tidal stream is strong and the net is **left for approx. 5 hours**. Mostly, **orange or white buoys are attached at the net opening**. Those nets whose length is **approx. 300m** and height is **approx. 15m** from the bottom of the sea are used. Their upper sides should be located at a **distance of 1 to 15m from the sea surface**.



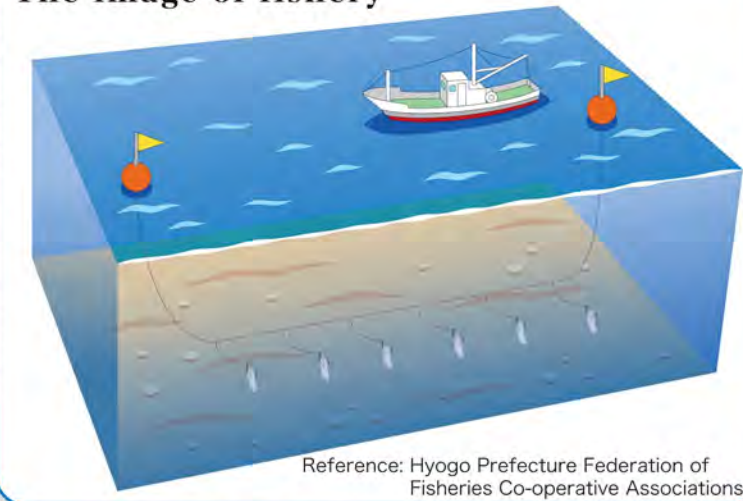


# Longline Fishery

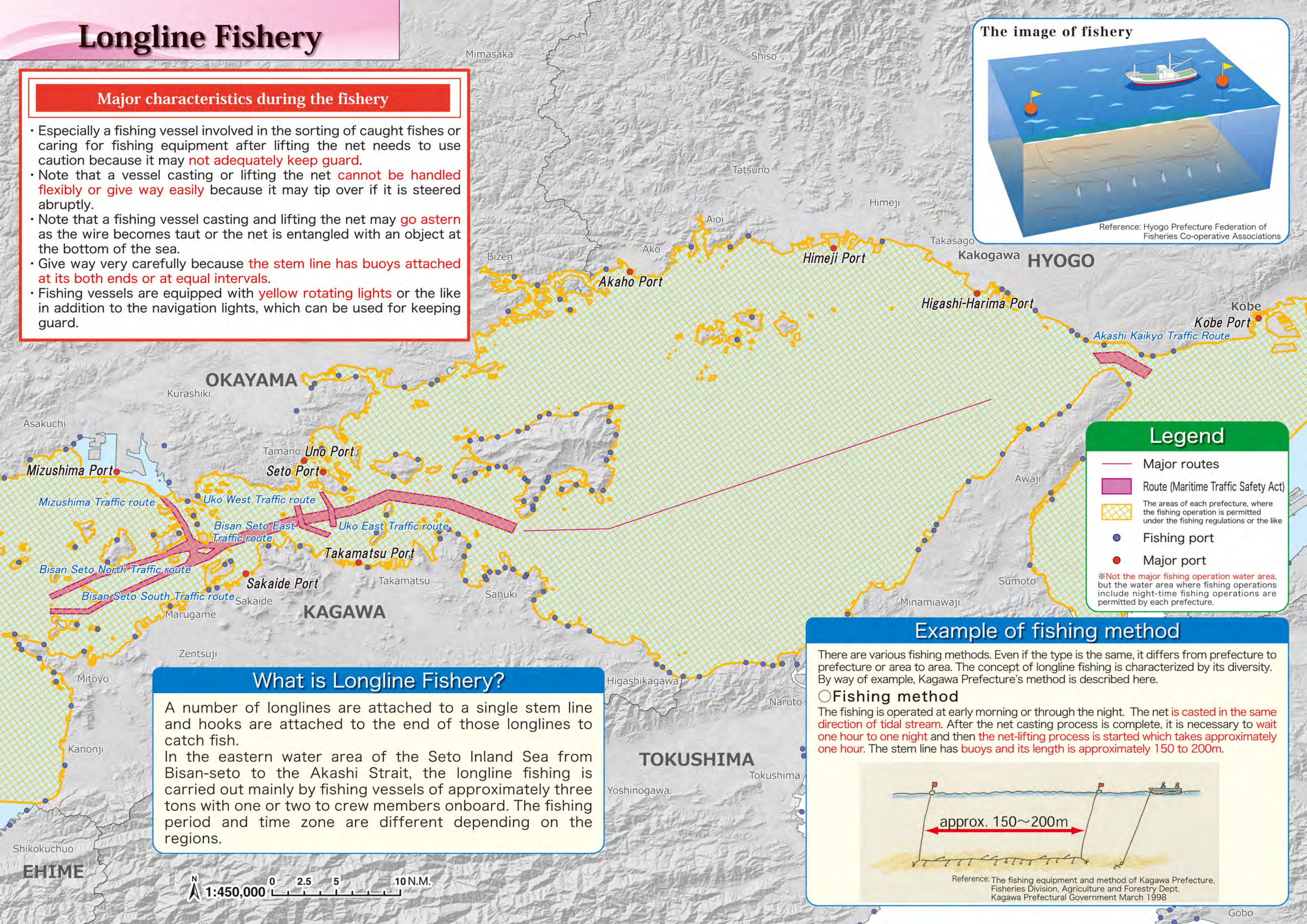
## Major characteristics during the fishery

- Especially a fishing vessel involved in the sorting of caught fishes or caring for fishing equipment after lifting the net needs to use caution because it may **not adequately keep guard**.
- Note that a vessel casting or lifting the net **cannot be handled flexibly or give way easily** because it may tip over if it is steered abruptly.
- Note that a fishing vessel casting and lifting the net may **go astern** as the wire becomes taut or the net is entangled with an object at the bottom of the sea.
- Give way very carefully because **the stem line has buoys attached at its both ends or at equal intervals**.
- Fishing vessels are equipped with **yellow rotating lights** or the like in addition to the navigation lights, which can be used for keeping guard.

## The image of fishery



Reference: Hyogo Prefecture Federation of Fisheries Co-operative Associations



## Legend

- Major routes
  - Route (Maritime Traffic Safety Act)
  - The areas of each prefecture, where the fishing operation is permitted under the fishing regulations or the like
  - Fishing port
  - Major port
- ※Not the major fishing operation water area, but the water area where fishing operations include night-time fishing operations are permitted by each prefecture.

## What is Longline Fishery?

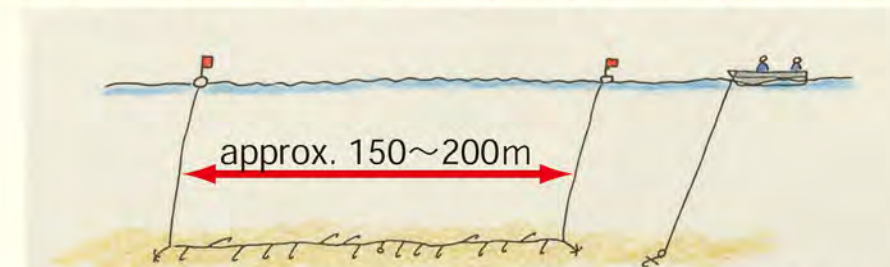
A number of longlines are attached to a single stem line and hooks are attached to the end of those longlines to catch fish. In the eastern water area of the Seto Inland Sea from Bisan-seto to the Akashi Strait, the longline fishing is carried out mainly by fishing vessels of approximately three tons with one or two to crew members onboard. The fishing period and time zone are different depending on the regions.

## Example of fishing method

There are various fishing methods. Even if the type is the same, it differs from prefecture to prefecture or area to area. The concept of longline fishing is characterized by its diversity. By way of example, Kagawa Prefecture's method is described here.

### ○Fishing method

The fishing is operated at early morning or through the night. The net is **casted in the same direction of tidal stream**. After the net casting process is complete, it is necessary to **wait one hour to one night** and then **the net-lifting process is started which takes approximately one hour**. The stem line has **buoys** and its length is **approximately 150 to 200m**.



Reference: The fishing equipment and method of Kagawa Prefecture, Fisheries Division, Agriculture and Forestry Dept. Kagawa Prefectural Government March 1998

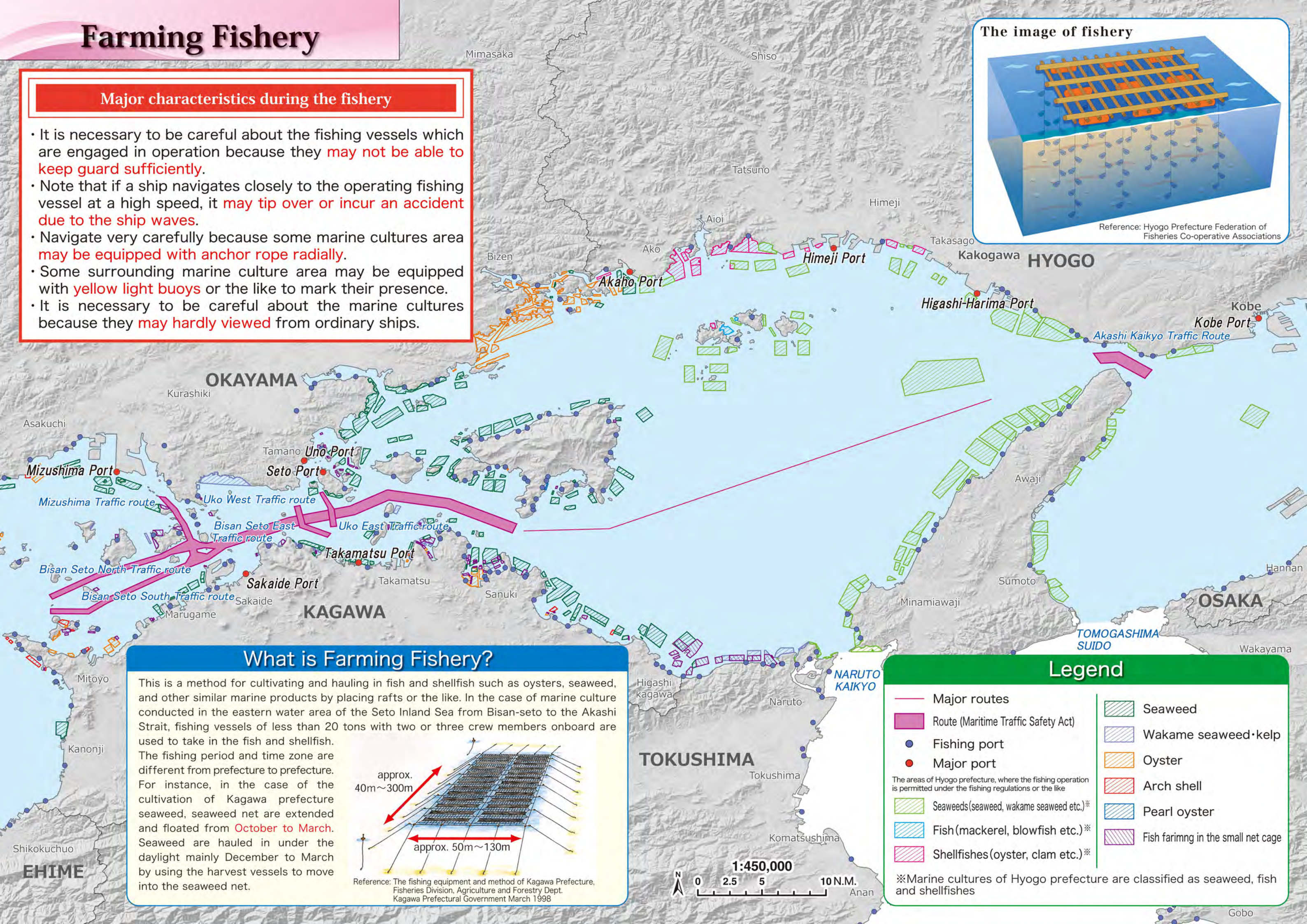
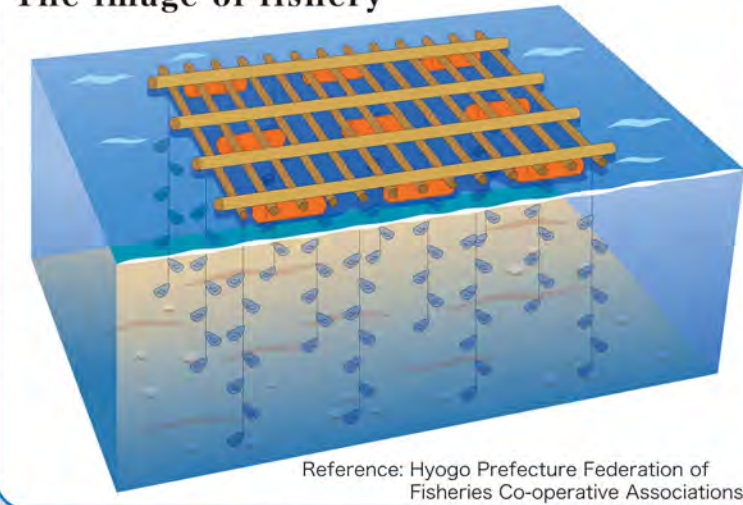


# Farming Fishery

## Major characteristics during the fishery

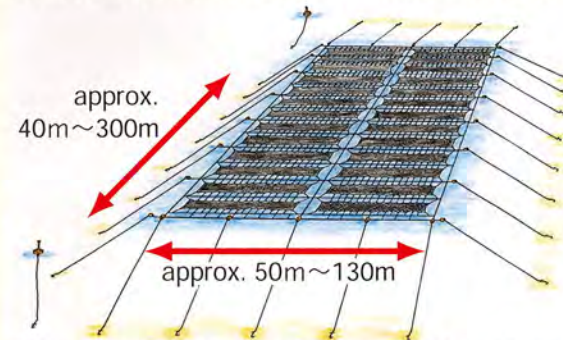
- It is necessary to be careful about the fishing vessels which are engaged in operation because they **may not be able to keep guard sufficiently**.
- Note that if a ship navigates closely to the operating fishing vessel at a high speed, it **may tip over or incur an accident due to the ship waves**.
- Navigate very carefully because some marine cultures area **may be equipped with anchor rope radially**.
- Some surrounding marine culture area may be equipped with **yellow light buoys** or the like to mark their presence.
- It is necessary to be careful about the marine cultures because they **may hardly viewed** from ordinary ships.

## The image of fishery



## What is Farming Fishery?

This is a method for cultivating and hauling in fish and shellfish such as oysters, seaweed, and other similar marine products by placing rafts or the like. In the case of marine culture conducted in the eastern water area of the Seto Inland Sea from Bisan-seto to the Akashi Strait, fishing vessels of less than 20 tons with two or three crew members onboard are used to take in the fish and shellfish. The fishing period and time zone are different from prefecture to prefecture. For instance, in the case of the cultivation of Kagawa prefecture seaweed, seaweed net are extended and floated from **October to March**. Seaweed are hauled in under the daylight mainly December to March by using the harvest vessels to move into the seaweed net.

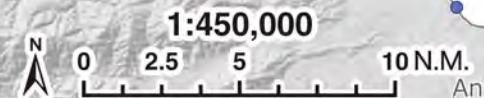


Reference: The fishing equipment and method of Kagawa Prefecture, Fisheries Division, Agriculture and Forestry Dept. Kagawa Prefectural Government March 1998

## Legend

- Major routes
- Route (Maritime Traffic Safety Act)
- Fishing port
- Major port
- Seaweeds (seaweed, wakame seaweed etc.)\*
- Fish (mackerel, blowfish etc.)\*
- Shellfishes (oyster, clam etc.)\*
- Seaweed
- Wakame seaweed·kelp
- Oyster
- Arch shell
- Pearl oyster
- Fish farming in the small net cage

\* Marine cultures of Hyogo prefecture are classified as seaweed, fish and shellfishes





## Dial “118” in case of emergency at sea

By dialing “118,” you can make an emergency call to the Japan Coast Guard. In the following cases, please dial “118” and describe “what has happened,” “when it has happened” and “where it has happened” calmly and concisely.

- If you encountered or witnessed an accident causing injury or death at sea
  - If you found oil spill
  - If you found a suspicious vessel
  - If you received information on smuggling, illegal migration, etc.
- You can make an emergency call via a fixed-line phone, mobile phone, PHS, maritime phone, etc.

## Links to the maritime and safety information

### Maritime safety information

#### (Japan Coast Guard)



You can access the maritime safety information, maritime weather information, etc.

<http://www.kaiho.mlit.go.jp/info/mics/index.htm>

### Navigation safety information

(Hydrographic and Oceanographic Department, 5th Regional Coast Guard Headquarters)



You can access the navigation safety information such as the information on stationary fishing gear in the coastal water area of each prefecture / Osaka, Hyogo (except the Sea of Japan side) Wakayama, Tokushima and Kochi.

<http://www1.kaiho.mlit.go.jp/KAN5/tuho/tuho2.htm>

### Nautical disaster hazard map

#### (Japan Transport Safety Board)



You can access the information on nautical disasters such as the nationwide nautical disaster case examples, hazard case examples, etc.

<http://jtsb.mlit.go.jp/hazardmap/>

### Navigation safety information

(Hydrographic and Oceanographic Department, 6th Regional Coast Guard Headquarters)



You can access the navigation safety information such as the information on fisheries in the Seto Inland Sea and Uwa Sea, tidal streams at the Kurushima Strait.

[http://www1.kaiho.mlit.go.jp/KAN6/1\\_kokai/kokai.html](http://www1.kaiho.mlit.go.jp/KAN6/1_kokai/kokai.html)

## Contact us

**The Japan Association of Marine Safety TEL:03-3502-2231**

**U R L : <http://www.nikkaibo.or.jp/>**

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