



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
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SEAMOUNT FISHERY, FOREIGN VESSEL OBSERVER REPORT

ASO MARU (July 17-August 10, 1982)

By

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On July 12, 1982 the National Marine Fisheries Service (NMFS) Honolulu Laboratory (HL) was notified by Nippon Suisan Kaisha, Ltd. of Japan that one of the company's trawlers intended to fish within the U.S. Fishery Conservation Zone (FCZ). It was planned that the trawler, Aso Maru (Table 1), would start fishing around July 15-18 and remain within the FCZ for about 2 weeks.

Table 1.--Vessel specifications and personnel, Aso Maru.

#### Vessel Statistics

Permit number:	JA-82-0288-A
Length:	90.45 m
Gross tonnage:	3,608.29
Net tonnage:	1,968.81
Width:	16.0 m
Draft:	9.8 m
Engine type:	Diesel
Horsepower:	3,900
Hull number:	96090
Registration number:	TOEN-701
Company owner:	Nippon Suisan, Ltd.
Vessel type:	Independent stern trawler
Year commissioned:	1964
Home port:	Tobata, Japan

#### Personnel

Captain:	Hideo Kumamaru
Number of officers:	9
Number of crew:	51
Processing:	30
Total ship complement:	69
Experience in seamount fishery:	None

As a member of the NMFS HL Foreign Fishing Vessel Observer Program, I was assigned to monitor the Aso Maru's fishing operations in the FCZ. I boarded the Aso Maru on July 17 at Midway. The ship began fishing at the Hancock Seamounts on July 18 and operated there until July 27. It then left the FCZ to fish the Emperor Seamounts. On August 5 the Aso Maru reentered the FCZ and resumed fishing at Hancock. The ship concluded fishing on August 9 and left the FCZ. I was transferred to a cargo ship, the Taisei Maru No. 41, on August 10 and disembarked at Dutch Harbor, Alaska on August 16.

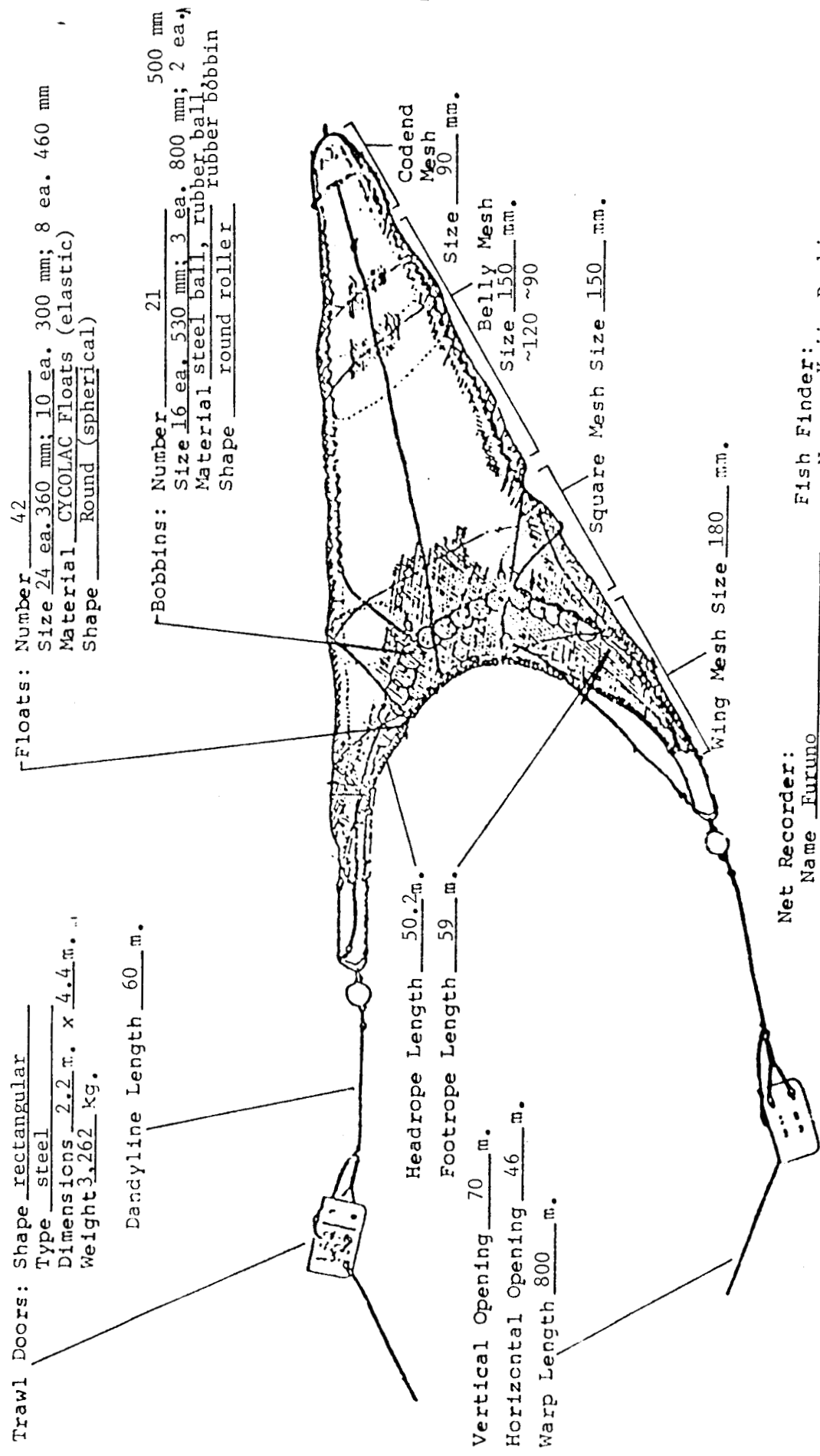
#### COMPLIANCE

During my stay aboard the Aso Maru, the ship made one haul in a closed area of the FCZ. The Western Pacific Program Office of the NMFS Southwest Region has been notified of the particulars of this incident.

Figure 1.--NET DIMENSIONS AND CHARACTERISTICS

Type of Vessel Stern trawler

Observation Period July 17-August 10, 1982



Trawl Doors: Shape rectangular  
 Type steel  
 Dimensions 2.2 m. x 4.4 m.  
 Weight 3.262 kg.

Dandyline Length 60 m.

Floats: Number 42  
 Size 24 ea. 360 mm; 10 ea. 300 mm; 8 ea. 460 mm  
 Material CYCOLAC Floats (elastic)  
 Shape Round (spherical)

Bobbins: Number 21  
 Size 16 ea. 530 mm; 3 ea. 800 mm; 2 ea. 500 mm  
 Material steel ball, rubber ball  
 Shape round roller

Headrope Length 50.2 m.  
 Footrope Length 59 m.

Vertical Opening 70 m.  
 Horizontal Opening 46 m.  
 Warp Length 800 m.

Codend Mesh 90 mm.  
 Belly Mesh Size 150 mm. ~120 ~90  
 Square Mesh Size 150 mm.  
 Wing Mesh Size 180 mm.

Net Recorder: Name Euruno  
 Model Number 155-0334 (FNR-50)  
 Frequency 50 kHz

Fish Finder: Name Kaijo Denki  
 Model Number W-655-CHR-562-JM  
 Frequency 200 kHz 50 kHz 24 kHz  
 Paper Type - Wet 0 Dry X  
 Speed of Advance \_\_\_\_\_

## FISHING ACTIVITIES

## Trawl Operations

The Aso Maru made 35 hauls at Northwest Hancock (lat. 30°16'N, long. 178°42'E). The average trawling time per haul was 66 min. The ship made 59 hauls at Southeast Hancock (lat. 29°48'N, long. 179°04'E). The average trawling time per haul at this location was also 66 min. Thirty-two hauls were made at K Bank (lat. 29°40'N, long. 179°20'E), where the average trawling time per haul was 33 min. The trawl gear dimensions are given in Figure 1. Data on catch per unit of effort by area and species are given in Table 2.

Table 2.--Catch per unit of effort by area and species.

	Northwest Hancock Seamount	Southeast Hancock Seamount	K Bank
No. hauls	35	59	32
Total minutes <sup>1</sup> (trawl in water)	2,295	3,910	1,040
Armorhead			
Total catch (kg)	13,188	11,517	813
Kilogram/minute	5.75	2.95	0.78
Alfonsin			
Total catch (kg)	7,896	4,477	49,312
Kilogram/minute	3.44	1.15	47.42
Other species			
Total catch (kg)	6,777	10,285	105
Kilogram/minute	2.95	2.63	0.10
All species			
Total catch (kg)	27,860	26,279	50,230
Kilogram/minute	12.14	6.72	48.30

<sup>1</sup>The recorded trawl times include periods when the ship was turning and not over the seamount.

## Overall Catch

Out of a total of 104.4 metric tons (MT) caught at the Hancock Seamounts during July 18-August 9, 25.5 MT (24.4%) were armorhead, 61.7 MT (59.1%) were alfonsin, and 17.2 MT (16.5%) were other species (Table 3).

Table 3.--Trawl catch by species and area (in metric tons).

Species	Northwest Hancock Seamount	Southeast Hancock Seamount	K Bank	Total
Armorhead	13.2	11.5	0.8	25.5
Alfonsin	7.9	4.5	49.3	61.7
Others	<u>6.8</u>	<u>10.3</u>	<u>0.1</u>	<u>17.2</u>
Total	27.9	26.3	50.2	104.4

## Precious Coral

Based on my sampling I estimated that approximately 17 kg of coral were incidentally caught during my stay on the vessel. However, this is very probably a gross exaggeration of the actual catch. Although the net often brought up bottom material, coral was rare.

## Shipboard Processing of Catch

The catch was processed into headed and gutted frozen fish, frozen whole fish, frozen fillets, and frozen ovaries (Table 4). In addition to armorhead and alfonsin, the following were processed (frozen): butterfish, Hyperoglyphe japonica; rudderfish, Ariomma lurida; boga fish, Emmelichthys struhsakeri; and red-tailed opelu, Decapterus tabl.

Table 4.--Shipboard products (vessel estimates in metric tons).

Species	Frozen fish (headed and gutted)	Frozen whole fish	Frozen fillets	Frozen ovaries
Armorhead	13.9	0.0	0.0	0.0
Alfonsin	31.8	0.5	0.0	0.3
Others	3.8	7.9	0.5	0.0

I also observed that john dory fish, Zenopsis nebulosa, were being processed, but these apparently were not frozen. They were probably used for crew consumption.

All fish or parts of fish that were unsuitable for freezing (inedible species, heads, viscera, small or badly damaged fish) were converted to fish meal and fish oil. No records were kept on the weights of particular species groups that were so utilized. Overall, 6.8 MT of fish meal and 2.4 MT of fish oil were produced.

#### BIOLOGICAL OBSERVATIONS

##### Target Species

1. Armorhead, Pentaceros richardsoni (Species code: 080)  
(Japanese name: Kusakari tsubodai) (Table 5)

Most of these fish were caught at Northwest and Southeast Hancock Seamounts. In collecting length-sex data I separated the armorhead into three body types: fat, lean, and medium. This division is based on the amount of fat on the dorsal side and the general body shape. The causes of the variation in body type are unknown.

2. Alfonsin, Beryx splendens (Species code: 081)  
(Japanese name: Kinmedai) (Table 6)

Most of the alfonsin were caught at K Bank during the last 5 days of the cruise. Many were quite large. This species made up the bulk of the catch, an unusual occurrence in this fishery. Some of the small fish could not be sexed.

#### ITINERARY

- |          |   |
|----------|---|
| July 17  | - Departed Honolulu. Arrived Midway. Embarked <u>Aso Maru</u> .   |
| 18       | - Arrived Hancock. Began sampling.  |
| 27       | - Departed FCZ. Sampling ended.   |
| August 5 | - Reentered FCZ. Sampling resumed.  |
| 9        | - Departed FCZ. Sampling ended.   |
| 10       | - Transferred to cargo ship.  |
| 16       | - Disembarked at Dutch Harbor, Alaska. Departed Dutch Harbor. Arrived Anchorage. Departed Anchorage. Arrived Seattle. |
| 20       | - Departed Seattle. Arrived Honolulu.   |

Table 5.--Observations on armorhead, Pentaceros richardsoni.

Body type	Fat	Lean	Medium	Total
Northwest Hancock Seamount				
Percent of sample	53	15	32	100
Number measured	145	42	86	1381
Length range (mm)	280-335	258-314	272-333	258-339
Average length (mm)	307	288	300	303
Number weighed and sexed	40	9	21	2100
Average weight (kg)	0.49	0.32	0.41	0.45
Number (%) males	14 (35.0%)	7 (77.8%)	14 (66.7%)	250 (50.0%)
Number (%) females	26 (65.0%)	2 (22.2%)	7 (33.3%)	250 (50.0%)
Southeast Hancock Seamount				
Percent of sample	59	13	28	100
Number measured	71	16	33	3186
Length range (mm)	286-327	275-318	281-316	264-327
Average length (mm)	307	292	299	301
Number weighed and sexed	24	10	7	41
Average weight (kg)	0.47	0.35	0.40	0.43
Number (%) males	7 (29.2%)	9 (90.0%)	3 (42.9%)	19 (46.3%)
Number (%) females	17 (70.8%)	1 (10.0%)	4 (57.1%)	22 (53.7%)
K Bank				
Percent of sample	76	5	19	100
Number measured	43	3	11	57
Length range (mm)	281-332	275-301	290-315	275-332
Average length (mm)	304	285	301	302
Number weighed and sexed	17	2	5	24
Average weight (kg)	0.44	0.32	0.42	0.42
Number (%) males	10 (58.8%)	2 (100.0%)	4 (80.0%)	16 (66.7%)
Number (%) females	7 (41.2%)	0 (0.0%)	1 (20.0%)	8 (33.3%)

<sup>1</sup>Includes 108 fish that were measured but not classified by body type.

<sup>2</sup>Includes 30 fish that were weighed and sexed but not classified by body type.

<sup>3</sup>Includes 66 fish that were measured but not classified by body type.



Table 6.--Observations on alfonsin, Beryx splendens.

Seamount	Northwest Hancock	Southeast Hancock	K Bank
Number measured	269	121	485
Length range (mm)	141-418	148-328	212-481
Average length (mm)	210	187	370
Number weighed and sexed	141	0	133
Average weight (kg)	0.15	--	1.13
Number (%) males	24 (58.5%)	--	87 (65.4%)
Number (%) females	17 (41.5%)	--	46 (34.6%)

<sup>1</sup>An additional 61 fish were weighed but could not be sexed.

#### RECORDS

The following records were kept:

Scientists log  
Daily trawl haul form  
Species composition from basket samples  
Size-frequency log

#### OBSERVER

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