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SEAMOUNT FISHERY, FOREIGN VESSEL OBSERVER REPORT

ASO MARU (June 9-19, 1981)

By

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ASO MARU

Vessel Statistics

Permit number:	JA-81-0288-B
Length:	90.45 m
Gross tonnage:	3,608.29
Net tonnage:	1,968.81
Width:	16.0 m
Draft:	9.80 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:	Mokichi Sase
Number of officers:	9
Number of crew:	28
Processing:	13
Total ship complement:	50
Experience in seamount fishery:	None

Area of Operation

Seamounts	Latitude	Longitude
Northwest Hancock	30°15'N-30°17'N	178°42'N-178°43'E
Southeast Hancock	29°47'N-29°49'N	179°03'E-179°05'E
K Bank	29°40'N	179°22'E

TRAWL RESULTS

Target Species

Common names:	Armorhead, boarfish
Japanese name:	Kusakari tsubodai
Scientific name:	*Pentaceros richardsoni*
Species code:	080
Common name:	Alfonsin
Japanese name:	Kinmedai
Scientific name:	*Beryx splendens*
Species code:	081

On May 22, 1981 the Nippon Suisan, Ltd. of Japan notified the National Marine Fisheries Service (NMFS) Honolulu Laboratory that two of Nippon Suisan's trawlers would be fishing the Hancock Seamounts during the 1981 trawl season. The first of these trawlers, Aso Maru, intended to begin fishing there on June 10. Nippon Suisan planned that the ship would fish within the U.S. Fishery Conservation Zone (FCZ) for about 10 days.

As a member of the NMFS Honolulu Laboratory Foreign Vessel Observer Program, I was assigned to monitor the Aso Maru's fishing operations for the time the vessel was within U.S. waters. I boarded the Aso Maru at Midway Island on June 9. The ship began fishing on June 10 and trawled the Hancock Seamounts until June 18, when the total catch exceeded the company-assigned quota of 400 metric tons (MT). The Aso Maru then left the FCS, after disembarking me at Midway on June 19.

Trawl Gear

See Figure 1 for dimensions.

The ship made 25 hauls at the Southeast Hancock Seamount. The average trawl haul was 90 minutes. Nineteen trawl hauls were made at the Northwest Hancock Seamount averaging 99 minutes per haul. The five trawl hauls made at K Bank averaged 14 minutes per haul.

Out of a total of 418.2 MT caught at the Hancock Seamounts during June 10-18, 389.4 MT (93.1%) were armorhead, 19.9 MT (4.8%) were alfonsin, and 8.9 MT (2.1%) were other species (Table 1).

SAMPLING RESULTS

1. Pelagic armorhead, *Pentaceros richardsoni*

Morphology. I divided the armorheads into three body types: fat, lean, and medium.

a. Southeast Hancock Seamount

Overall

Number measured: 207

Average length: 302 mm Range: 259-331 mm
Average weight: 0.50 kg

Number weighed and sexed: 49

Sex ratio: Male 34 (69%)
Female 15 (31%)

Fat Type 59%

Number measured: 93

Average length: 307 mm Range: 276-331 mm

Lean Type 24%

Number measured: 38

Average length: 290 mm Range: 259-322 mm

Medium Type 17%

Number measured: 27

Average length: 302 mm Range: 265-325 mm

b. Northwest Hancock Seamount

Overall

Number measured: 158

Average length: 301 mm Range: 250-326 mm
Average weight: 0.53 kg

Number weighed and sexed: 46

Sex ratio: Male 14 (30%)
Female 32 (70%)

Fat Type 60%

Number measured: 95

Average length: 304 mm Range: 265-326 mm
Average weight: 0.54 kg

Number weighed and sexed: 36

Sex ratio: Male 10 (28%)
Female 26 (72%)

Lean Type 25%

Number measured: 39

Average length: 294 mm Range: 250-320 mm
Average weight: 0.40 kg

Number weighed and sexed: 3

Sex ratio: Male 1 (33%)
Female 2 (67%)

Medium Type 15%

Number measured: 24

Average length: 302 mm Range: 255-326 mm
Average weight: 0.55 kg

Number weighed and sexed: 7

Sex ratio: Male 3 (43%)
Female 4 (57%)

c. K Bank

Overall

Number measured: 73

Average length: 302 mm Range; 270-334 mm

2. Alfonsin, *Beryx splendens* (Note: Many were immature and could not be sexed.)

a. Southeast Hancock Seamount

Number measured: 127

Average length: 186 mm Range; 145-390 mm
Average weight: 0.56 kg

Number weighed and sexed: 11

Sex ratio: Male 4 (36%)
Female 7 (64%)

b. Northwest Hancock Seamount

Number measured: 37

Average length: 227 mm Range: 150-371 mm
Average weight: 0.15 kg

Number weighed and sexed: 19

Sex ratio:	Male	1	(5%)
	Female	0	
	Unidentified	18	(95%)

c. K Bank

No alfonsin were sampled for length from K Bank.

3. Other commercial species

The only nontarget species that I saw being frozen was Erythrocles schlegelii. All other species were used for fish meal.

4. Only one piece of dead coral (weighing 0.1 kg) was incidentally dredged up during my stay on the vessel. Based on this, I estimated that 20 kg of coral were incidentally dredged up during the entire cruise, but this estimate is probably a gross exaggeration of the actual catch.

SHIPBOARD PRODUCTS AND RECOVERY RATIOS (VESSEL ESTIMATES)

Species Product

1. Armorhead

Frozen fish (headed and gutted)	222.6 MT
Fish meal and oil	See below

The product recovery ratio is estimated to be 56-58.5% of the fish, depending on size (more is recovered from larger fish).

2. Alfonsin

Frozen fish (headed and gutted)	0.5 MT
Fish meal and oil	See below

The recovery ratio for headed and gutted alfonsin is estimated to be 52%.

3. Other species

Frozen whole fish	0.3 MT
Frozen fish (headed and gutted)	1.9 MT
Frozen fish (fillets)	0.2 MT
Fish meal and oil	See below

The recovery ratio for headed and gutted fish overall is estimated to be 55-58%, again depending on the size of the fish.

By-Products

All fish or parts of fish that were unsuitable for freezing (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, 27.0 MT of fish meal and 24.3 MT of fish oil were produced.

The overall recovery ratio for fish meal was estimated to be 16%. The fish oil recovery ratio was estimated to be 9-12% for armorhead caught in the summer (8-9% for winter fish). The alfonsin-to-fish oil recovery ratio was estimated at 2.5%.

ITINERARY

June	9	- Departed Honolulu Arrived Midway Embarked *Aso Maru*
	10	- Began sampling
	17	- Sampling ended
	19	- Disembarked *Aso Maru* Arrived Midway
	20	- Departed Midway Arrived Honolulu

RECORDS

The following records were kept:

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

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Table 1.--Trawl catch by species and area (in metric tons).

Species	Southeast Hancock Seamount	Northwest Hancock Seamount	K Bank	Total
Armorhead	259.3	118.0	12.1	389.4
Alfonsin	11.2	8.7	0.0	19.9
Others	3.1	5.8	0.0	8.9
Total	273.6	132.5	12.1	418.2

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

Area	No. hauls	Total minutes* (trawl in water)	Armorhead		Alfonsin		Other species		All species	
			Total catch (kg)	Kg/min	Total catch (kg)	Kg/min	Total catch (kg)	Kg/min	Total catch (kg)	Kg/min
Southeast Hancock Seamount	25	2,250	259,279	115.24	11,247	5.00	3,053	1.36	273,579	121.59
Northwest Hancock Seamount	19	1,885	118,045	62.62	8,654	4.59	5,801	3.08	132,500	70.29
K Bank	5	70	12,074	172.49	0	0	6	0.09	12,080	172.57

*The recorded trawl times include periods when the ship was turning and not over the seamount.