

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

CRUISE REPORT ON CHARTER VOYAGE FOR SCAD

CHARTER: JUNELLA

DURATION:

9-30 June 1980

STAFF

Dr P J Dare (Conwy)

LOCATION

W coasts of Ireland and Scotland, SW Approaches, Celtic Sea.

AIMS

1. To locate areas where scad may be caught in summer in commercial quantities.
2. To assess average daily catch rates of scad for a given size and type of vessel when using a certain gear or combination of gears.
3. To assess daily catch rates of other species including those discarded.
4. To identify, and if possible overcome, any handling or processing problems which may arise.

NARRATIVE

JUNELLA is a 1,600 t stern freezer-trawler, 55m length and 13m breadth, with a maximum daily freezing capacity of 37 tonnes and total storage capacity of c. 700 tonnes. Skipper is Mr M R Kiellor and for this voyage there was a crew of 23.

We departed from Hull at 1510 h BST June 9 and headed north around Scotland for the shelf waters west of Ireland. We passed through the Pentland Firth in fair weather on June 11* and reached our first fishing station - Stanton Banks - early next day. With no promising traces showing on the echo-sounder only one short and unproductive haul was made SW of these banks, before we continued on towards Irish waters. On June 13, four hauls were made with the demersal trawl (a Portuguese modified highlift trawl fitted with Polyvalent 1200 doors and 80mm liner) to the S & SE of Eagle Island Ground, off Co Mayo. These produced the first signs of scad. During the next three days, we fished in up to 80-90 fm to the W & SW of Valencia Island and Fastnet but still found only very small quantities of scad.

During June 16-18, fishing effort was concentrated to the S & SW of Hurd Bank, generally in 90-130 fm. Scad were more plentiful in this area, being the most abundant fish caught, although nowhere present in commercial quantities. A westerly gale (f.7-8) occurred during June 19 and interrupted fishing; after dodging overnight (18/19) JUNELLA made for Galley Head where we sheltered overnight on 19/20 June. On June 20, we headed SW to return to Hurd Bank and made a short haul en route when south of Kinsale Head. Fishing was resumed south of Hurd Bank on June 21 but with the weather still very unsettled (westerly f.5-6) and with a heavy swell. The continuing poor sea conditions prevented use of the pelagic trawl.

* Noon positions are listed in Table 1.

By June 22, we had moved further south to the east side of south Hake Ground where 3 hauls were made with the demersal trawl in 90-105 fm. Scad were more plentiful here and were caught in near-commercial quantity on one haul. Plans to continue fishing this promising area, and to explore further south, were then unfortunately foiled by an engine breakdown* which necessitated JUNELLA making immediately for Newlyn, on main generator power, to effect repairs. While passing south of the Scillies next day two short hauls were made; we anchored off Newlyn late on June 23. Spare parts were fitted early next morning and JUNELLA left Newlyn at 0840 BST to explore possible scad areas in the English Channel. There was insufficient charter time remaining to return to the SW Approaches or to search the Celtic Sea.

The area between Start Point and the Lizard was explored with 6 hauls taken during June 24-26 in fine weather. JUNELLA then made up Channel and two hauls were made on June 27 off Beachy Head where dense winter concentrations of scad have been located by MAFF cruises. Finally, two hauls were made in the Southern Bight off Brown Ridge on June 28 before we headed for Hull. JUNELLA docked at 0745 BST on June 30.

During the 21 day charter, fishing was carried out on 16 days and 1½ days were lost to bad weather. Total effort, all with the demersal trawl, amounted to 38 hauls totalling 127 hours.

Acknowledgements

I wish to thank Mr Kiellor, his officers and crew for their keen and full co-operation throughout the voyage and for their hospitality and guidance on many matters relating to commercial fishing.

RESULTS

1. TOTAL CATCH

Table 2 summarises the composition of catches by species and grounds for the waters west of Ireland and Scotland; Table 3 is a similar analysis for English Channel and Southern Bight catches.

In western waters (Table 2) the total catch was 1,334 baskets of which 85% was scad, 7% mackerel, 5% whitefish and 2.5% discards and trash species. Catch rates were generally very low (< 1 basket/hr) for all species except, on occasions, scad. In southern waters (Table 3) catch rates for all fish were very low and only 81 baskets were taken in 25 hours trawling. Scad there made up 37%, mackerel 7%, whitefish 6%; trash and discards (often under-sized flatfish) were 50% of the total.

2. SCAD

(1) Distribution:

Scad were very scarce off western Scotland, NW Ireland and in the English Channel and Southern Bight. Catches and echo-sounder traces gave no signs of the concentrations previously reported in winter off Start Point and Beachy Head.

Most scad were located just inside the 100fm line south-west of Ireland - around Hurd Bank and south Hake Ground - where abundance appeared to be increasing markedly as we moved south towards 49°N. On these two grounds, scad constituted 93% of the total catch (Table 2). It was unfortunate therefore that engine trouble prevented JUNELLA from searching south beyond 49°N. However, the weather remained rough in

* caused by a broken exciter belt which damaged other units; the other belts were considered to be likely to break and there were no spares on board.

Biscay area until June 25/26, and it is debatable whether we would have achieved much had we gone further south.

(2) Biometrics:

Two samples were measured for length frequency analysis. Scad at south Hake Ground comprised a single population of mean length 33cm (range 28-36 cm) and were significantly larger than fish taken with the same gear off Start Point (mean length 27cm, range 23-34 cm). The latter stock showed indications of containing two subgroups.

(3) Catch Rates:

Table 4 shows that even in the best area, south Hake Ground, the average catch rate of scad was only around 1 tonne/hour with the demersal trawl. This is far below the requirement of a large freezer-trawler such as JUNELLA which must catch c.20 tonnes/day to break even on costs (M R Keillor, pers. comm.). The fishing day is restricted to 13 hours actual trawling partly by the factory processing rate of 37 tonnes per 24 hours. The best single haul on south Hake Ground was 1.6t/hr, which was close to the minimum required fishing rate. Very few Continental trawlers were found in the SW Approaches.

The total catch of scad for the voyage amounted to 34.5 tonnes.

(4) Handling Problems:

Large catches of scad present handling problems on deck and below in the factory conveyor belts. The spiny fish clog together readily both in the cod-end and on the belts. The largest catch we made (c.8 tonnes) required 20 minutes of heavy hosing to remove it from the trawl. Transport on the conveyors ideally requires large volumes of water. (M R Keillor, pers. comm.)

CONCLUSIONS

No commercial quantities of scad were located, although the area around south Hake Ground began to show promise. Apparently the winter shoals reported from Biscay have either not yet migrated north of 49°N or else they have dispersed over a wide summer range. The latter behaviour seems to have occurred with the English Channel winter stocks. Scad were very scarce north of 51°N.

It is suggested that Charter No 2 should start at south Hake Ground and then search southwards into Biscay. However, JUNELLA's skipper reports that he has never found commercial quantities of scad in Biscay in previous summers.

P J Dare
9 July 1980

SEEN IN DRAFT: M R Keillor

INITIALLED: AJL

DISTRIBUTION:

Basic List	Mr C R Cann	1	Mr P M Boyling	1
Mr W Mosa	CI	2	FLR 3935	1
Mr H R Neilson	Mr T B J Dawes	1	FLR 3931	1
Mr R Holmwood	(Chief Inf.Officer)		Mr B B Parrish	1
Mr R J Packer	Mr A J C Taylor	1	Mr A J Lee	1
Mr Burd	(Fisheries II)		Dr P Dare	1
Mr A R Margetts	Mr Bridger	6	Spare	10

Table 1.

Noon Positions of JUNELLA on Charter No 1, June 1980

Date	Latitude		Longitude		Approx locality
	o	'N	o	'W	
June 10	55	20	00	50	E of Coquet Is
11	58	43	03	28	Pentland Firth
12	56	04	08	07	Stanton Banks
13	53	35	11	11	Nr Eagle Is Ground
14	52	03	11	10	W of Valencia Is
15	51	27	10	43	SW of Valencia Is
16	50	55	10	21	SW of Fastnet
17	50	29	10	52	S of Hurd Bank
18	50	44	10	55	S-SW of Hurd Bank
19	51	10	10	32	SW of Fastnet
20	51	11	08	45	S of Kinsale Head
21	50	55	11	03	S of Hurd Bank
22	49	39	10	53	E of S Hake Ground
23	49	42	06	48	SSW of Scilly Is
24	49	55	04	45	E of Lizard
25	50	06	03	19	S of Start Point
26	49	45	04	15	SW of Start Point
27	50	36	00	31E	Beachy Head
28	52	46	03	20E	E of Lowestoft
June 29	53	32	00	30E	E of Humber mouth

Table 2. Total Catches (No Baskets): West of Ireland and Scotland Areas, 12-22 June 1980.

	Stanton Banks (SW)	Eagle Is (S)	Dingle -Valencia	Hurd Bank (S-SW)	South Hake Ground (E)	Kinsale Head (S)	Total Catch/Species Baskets	%
No.Hauls	1	4	5	12	3	1		
No.Hours	1	11 $\frac{3}{4}$	22 $\frac{3}{4}$	50	11 $\frac{1}{2}$	4		
Scad		25 $\frac{1}{2}$	38 $\frac{1}{2}$	652 $\frac{1}{2}$	412		1,128 $\frac{1}{2}$	84.6
Mackerel		2	56 $\frac{1}{2}$	40 $\frac{1}{2}$	✓		99	7.4
Cod	✓	3 $\frac{1}{2}$	5	✓		1	9 $\frac{1}{2}$	0.7
Haddock	5	13	3				21	1.6
Hake	✓	11	8	21			40	3.0
Whiting/Pollack	✓		1	1 $\frac{1}{2}$	✓	✓	2 $\frac{1}{2}$	0.2
Flatfish //	✓	1			✓		1	0.1
All Saleable	5	56	112	715 $\frac{1}{2}$	412	1	1,301 $\frac{1}{2}$	97.5
Trash/Discards /	<1	9 $\frac{1}{2}$	2 $\frac{1}{2}$	12 $\frac{1}{2}$	6	2	33	2.5
Grand Total Catch	5 $\frac{1}{2}$	65 $\frac{1}{2}$	114 $\frac{1}{2}$	728	418	3	1,334 $\frac{1}{2}$	
Catch Rates (Baskets/hr)*								
Scad	0	2	2	13	36	0		
Mackerel	0	< $\frac{1}{2}$	2 $\frac{1}{2}$	<1	< $\frac{1}{2}$	0		
Whitefish	5	2 $\frac{1}{2}$	<1	< $\frac{1}{2}$	< $\frac{1}{2}$	< $\frac{1}{2}$		
Trash/discards	<1	<1	< $\frac{1}{2}$	< $\frac{1}{2}$	< $\frac{1}{2}$	< $\frac{1}{2}$		
Totals	5 $\frac{1}{2}$	6	5	14 $\frac{1}{2}$	36	<1		

Notes: * catch rates to nearest $\frac{1}{2}$ basket ✓ = present in very small numbers (<20 fish)
 / trash = blue whiting (small), dogfishes, John Dory, bream, rays, anglers, Sebastes, coley, red gurnard, small flatfish or dabs.
 // flatfish = principally plaice and soles; 1 Greenland halibut.

Table 3. Total Catches (No. Baskets): English Channel and North Sea,
23-28 June 1980.

	Scilly Is. (S)	Lizard -Start	Beachy Head(S)	Southern Bight	Total Catch/Species	
No. Hauls	2	6	2	2	Baskets	%
No. Hours	3	16	3 $\frac{1}{4}$	2 $\frac{1}{4}$		
Scad	1	26	2 $\frac{1}{2}$	1	30 $\frac{1}{2}$	37.4
Mackerel	<1	5	<1	< $\frac{1}{2}$	6	7.4
Cod		✓	$\frac{1}{2}$	2 $\frac{1}{2}$	3	3.7
Hake		✓				
Flatfish //	<1	2		< $\frac{1}{2}$	2	2.5
All Saleable	1	33	3	4	41	50.3
Trash/Discards /	3	32	3 $\frac{1}{2}$	2	40 $\frac{1}{2}$	49.7
Grand Total Catch	4	65	6 $\frac{1}{2}$	6	81 $\frac{1}{2}$	

Catch Rates
(Baskets/hr)*

Scad	<1	1 $\frac{1}{2}$	<1	< $\frac{1}{2}$
Mackerel	< $\frac{1}{2}$	< $\frac{1}{2}$	< $\frac{1}{2}$	< $\frac{1}{2}$
Whitefish	< $\frac{1}{2}$	< $\frac{1}{2}$	< $\frac{1}{2}$	1
Trash/Discards	1	2	1	1
Totals	1 $\frac{1}{2}$	4	2	3

Notes: * catch rates to nearest $\frac{1}{2}$ basket

✓ = present in very small quantities (<20 fish)

// flatfish = principally lemon soles, plaice; a few Dover soles, turbot and brill

/ trash = dogfish, tope, John Dory, red gurnards, rays, anglers, ling, conger eel, undersized flatfish (many), small whiting/pollack.

Table 4. Catch Rates (tonnes/hr. fishing) for Scad.

	Eagle Is (S)	Dingle- Valencia	Hurd Bank (S-SW)	South Hake Ground (E)	Western Channel (Start-Lizard)	E Channel (Beachy Hd)	Southern Bight
Total No. Cartons	35	50.5	892.5	551*	(34)	(3)	(3)
No Hours Fishing	11.75	22.75	50	11.5	16	3.75	2.25
Av No Cartons/hr	3.0	2.2	17.9	47.9	(2.1)	(0.8)	(1.3)
Wt Fish(Tonnes)/hr	0.06	0.04	0.36	0.96	(0.04)	(0.02)	(0.03)

Notes: Cartons in parentheses were estimated from no. baskets.

1 carton = 20 kg

* max. catch rate on this ground was 400 cartons in 5 hrs = 1.6 tonnes/hr.