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

1984 RESEARCH VESSEL PROGRAMME

REPORT: CHARTER DOUBLE-BEAM TRAWLER (BRIXHAM)

STAFF:

M R Vince
K M Brander (8-11 Oct)
D W Palmer (12-19 Oct)

DURATION:

8-19 October

LOCALITY:

Western English Channel

AIMS:

1. To collect length distributions and otolith samples of sole taken from the various grounds fished by the Brixham beam trawl fleet in the western English Channel.
2. To investigate the possibilities of tagging sole caught by a beam trawler on these grounds.
3. To examine the potential of using a chartered beam trawler for a yearly sole recruitment survey.

NARRATIVE:

Messrs Brander and Vince travelled to Brixham by van on 7 October. The next morning after the gear was loaded the BOGEY I sailed for grounds about 10 miles SE of Start Point.

During 8-9 October, 13 half-hour tows were made within an area 13 miles to the south and 17 miles to the east of Start Point. The vessel returned to Brixham at 1730 h on 9 October. Between 10-11 October, 16 hauls were made within an area situated between 15-30 miles SE of Start Point. The grounds sampled during these first four days are regarded as commercially the most important in the western English Channel to the Brixham beam trawl fleet.

Mr Palmer now took Dr Branders place and after spending the night of 11 October in Brixham the BOGEY I steamed to grounds bounded by Swanage to the west and the Needles to the east. This area, although situated at the extreme western end of ICES division VIID, may be responsible for providing a proportion of recruit sole to the western channel (VIIE) stock. Between 1400 h and 2400 h seven half-hour tows were made in the vicinity of the Dolphin Bank off Christchurch. The area fished was comparatively small but there was a considerable variation in catch. The following day six tows were made working from just west of Portland to 11 miles ENE of Berry Head. The night of 13 October was spent in Brixham. During the following two days 16 hauls were made over an extensive area from 15 miles to the west of Start Point to 35 miles SSE of Dodman Point. A return to Brixham was made at 1900 h on 15 October. During 16-17 October, 17 hauls were made all to the east of Berry Head. The first two of these were very close to Chesil Beach in 7 to 11 fathoms. From here the vessel worked out into the channel to a position approximately 25 miles S+W of Portland in 31

fathoms. And from here the remaining 9 hauls were made working towards Berry Head.

On 17 October the weather broke. A severe gale developed from the SW and by the morning of the 18 October most of the Brixham beam trawl fleet including the BOGEY I had returned to port. The remaining two days were spent investigating grounds inshore which we had purposely not looked at whilst the weather was fine. During 18 October four tows were made inshore between Slapton and the entrance to the river Dart. On 19 October the wind had backed even more to the south with no abatement in velocity. Two tows were made - one off Teignmouth and one in Tor Bay. BOGEY I returned to Brixham at 1200 h on 19 October to unload gear. At 1400 h Messrs Vince and Palmer left for Lowestoft by van.

RESULTS:

The BOGEY I, built in Holland in 1954, is a much modernized, small but efficient beam trawler of a registered length of 63 feet. She is powered by GMC unit governed to produce 298 HP. Her two 6 metre beams were equipped with Belgian pattern round nets. The underside of these and the codends were heavily 'dollied' with courelene strips. The groundrope was fitted with 8 inch (app) rubbers in the bosom. Chain mats constructed of 20 longitudinal chains and 7 running at right angles completed the gear. Both codends were of single courelene of around 70-75 mm mesh. For the purposes of the survey the port side codend was fitted with a 60 mm single braided nylon blinder.

Fine weather and good planning by the skipper provided an excellent opportunity to look at virtually all the main grounds fished by the Brixham beam trawl fleet. Additionally some grounds not open to exploitation by this fleet were fished. In general the numbers of sole caught were on the low side, but this is in comparison to catches observed on board a beam trawler working in Morecambe Bay. However, as the skipper explained, the combination of about 2 stone of large/medium sole, a few stone of 'monk' tails plus an occasional brill and turbot can be sufficiently remunerative for a commercial tow of about 1½ hours duration.

1. A total of 80 tows were made nearly all of half hours duration. Of these, 73 were carried out in VIIE. Only two hauls of the total contained no sole. (This should be compared to only the occasional sole in the catches made by our own vessels in the same area using a Granton trawl). All of the 1423 sole caught were measured. Sole not tagged were sampled for otoliths in both VIID and VIIE; the latter in greater numbers than is usual.

In VIIE the mean number of sole per haul (both net combined) was 18. The maximum caught was 60, but this was for a haul of 40 minutes and equates to a catch rate of 45/half hour tow. The length range of sole caught in VIIE was from 21-53 cms. with a mode of 28 cms. The haul of 60 fish was unique. Over 28% of these fish were 40 cms and above. This is to be compared to the mean of about 6% for other hauls made in VIIE. Grouped hauls made in the same area as each other, show the associated mean catch rate of sole per half hour tow to be generally less to the west of an imaginary line drawn south from Start Point than those to the east. This confirms a similar observation by the skipper.

2. A total of 666 sole were tagged with mini-Petersen discs. Of these 424 were caught and released off Christchurch (VIID). The remainder were spread over a number of hauls in VIIE. The majority were of moderate condition. The codend content had a significant effect on the condition of the sole. Certainly many of the fish tagged were in equally as good condition as those tagged in previous years from our own research vessels. It is also worth noting that due to the simplicity of working beamtrawl gear the length of tow could be reduced to 10-15 minutes if necessary. It should be possible to make a comparison between returns of sole tagged on this cruise in VIID and those tagged earlier this year in the same area from a small inshore vessel.

3. Heavy concentrations of pre-recruit or recruiting sole (15-24 cms) were not found on any grounds fished in VIIE. Only 1.6% of the sole caught in this division were below 24 cms as opposed to 19.9% in VIID. There appears to be no trouble in catching sufficient quantities of small sole if they are present. On some inshore grounds considerable numbers of solenette (app 8-10 cms) were retained. A vessel of this type may have advantages over the usual method of pre-recruit sole surveys if large areas are to be looked at especially for the 2 year old fish.

In addition to the sole data collected plaice, 'monk' and lemon sole were regularly measured and otolithed. (Table 1) A few brill, turbot, red mullet, megrim and hake were also measured. Other fish caught regularly included lesser spotted dogfish, red gurnard, spotted ray and thornback ray.

A further sample of 51 'monk' with a length range of between 29-95 cms total length were measured for whole length/tail length relationship. (The previous data which is now used to convert the market sampling of tail measurements was carried out on the DEW-GENEN-NY, a commercial seine-netter, in 1982).

During 28 hauls, 213 sole of 21-48 cms were measured and sexed. These data showed the composition of males to females to be 47% and 53% of the total respectively. This will be used to compare with the market sample composition.

The success of this charter was in the main due to the skippers intimate knowledge of the area to be covered, and his careful planning of the sequence in which each ground was fished. The laboratory staff involved would like to thank the skipper and crew for all their help and co-operation. The co-operation of the respective DIs and sea fisheries committees is also gratefully acknowledged.

M R Vince
1 November 1984

INITIALLED:

H W H

DISTRIBUTION:

Basic List +

M R Vince
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TABLE 1.

BOGEY I, 8-19 OCTOBER 1984

	VIID			VIIE		
	Measured	Tagged	Otolithed	Measured	Tagged	Otolithed
SOLE	*568	424	39	*855	242	205
PLAICE	7		7	504		97
MONK	1		-	323		84
LEMON SOLE				142		

* Measured sole include those tagged

