

No 19.82/..78.....

- NEW PROPOSAL
- CONTINUING PROJECT
- FINAL REPORT
- PROGRESS REPORT

FISHING INDUSTRY RESEARCH TRUST ACCOUNT

TITLE OF PROPOSAL/PROJECT: DEVELOPMENT OF SOUTHEAST DEEPWATER
TRAWL

ORGANISATION: GUILLOT ENTERPRISES PTY LTD

PERSON(S) RESPONSIBLE: JOHN C. GUILLOT

FUNDS SOUGHT/GRANTED

YEAR	SOUGHT	GRANTED
<u>1982/83</u>	<u></u>	<u>\$76 000</u>
<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>

RELATED APPLICATIONS: _____

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Secretary
Fishing Industry Research Committee

DEVELOPMENT OF SOUTHEAST DEEPWATER TRAWL

FINAL REPORT ON OPERATIONS

OBJECTIVE

To assess the potential fishery for Orange Roughy and other deepwater species between Gabo Island, Victoria, and Maria Island, Tasmania.

GEAR

Nets: Bridport Gundry 480; 3 bridle trawl net modified for 2 bridle rigging with texas drop chain from the footrope

Bridles: 15 fathom wire

Sweeps: 48 fathom 20mm diameter combination rope

Boards: (1) Rectangular vee doors 8' x 4' 6"
(2) Polyvalent steel 7' 6" x 5'

VESSEL

Initial survey work was undertaken on the "Craigmin" (refer FIRC report 25 Jan '83) until another vessel was purchased, the "Cheryl Anne", which was refitted and subsequently also used for survey work.

Specification for both vessels are as follows:-

(1)	Name:	Craigmin
	Length:	23.16m
	Beam:	6.71m
	Draught:	3.05m
	Construction:	Steel
	Displacement:	106.7 tonnes
	Main Engine:	Cummins kt 1150 (350 HP)
(2)	Name:	Cheryl Anne
	Length:	23.42m
	Beam:	6.6m
	Draught:	3.36m
	Construction:	Steel
	Displacement:	154 tonnes
	Main Engine:	353 Caterpillar (425 HP)

Due to the time delay involved in purchasing and refitting the new vessel, the costs of deep water trawling had increased substantially, and less trawling was completed than initially planned. In all, twenty-four days were spent echo sounding and trawling in deep water.

CONCLUSIONS

Generally catches were disappointing for the entire survey. Although large areas of seabed were investigated by echo sounder there remains some doubt as to whether a 3kw output is sufficient and fish occurrences in deep water may not have been detected. Practically all trawlers operating in depths greater than 400 fathoms in the New Zealand Zone have installed 10kw echo sounders. Nevertheless bottom contour indicated trawlable bottom down to 500 fathoms in several areas. Unfortunately there appeared little fish on these grounds at the time, four bins being about the largest catch.

Between August 1982 and February 1985 thirty trawls were made in new areas. In addition to these trawls many hours were spent searching with echo sounder as all areas trawled were first investigated to avoid serious gear losses. Even then considerable time and money was involved in gear repairs both on board and ashore.

Because of the depth of these trawl shots unusual net behaviour may be encountered and a suitable acoustic link net monitor would have been useful and is now considered essential at these or greater depths. At the very least an indication of when the net had reached bottom could save time and increase productivity. Although the Australian Fisheries Service has a net monitor of this type it is now old and has not the range required for these water depths. One trawl shot was undertaken in 538 to 545 fathoms (983 to 996m) with 980 fathoms (1792m) of warp out necessitating a range of at least 2000m for a net monitor. Only the latest instruments are capable of this performance. The cost of this equipment is approximately \$17,000 which puts it beyond the means of most fishermen, particularly as no assessment of the benefits to Australian conditions is currently available.

As may be seen from the chart of the area of operations much more work could be undertaken and with a higher powered echo sounder even deeper areas could be investigated. This is not meant as a criticism of the echo sounder loaned for the survey by the Department of Primary Industry which was one of the best available at that time; but to draw attention to the superior equipment now available and necessary to keep pace with technological advances and the latest techniques for very deep water operations. Total cost of electronic fishfinding equipment for this type of operations is now \$30,000 plus installation costs.

RESULTS

DATE	POSITION		DEPTH (fm)	TOW DURATION (mins)	CATCH AND COMMENTS
	START	FINISH			
2/8/82	38° 24'S 148° 46'E	38° 17'S 149° 40'E	500	600	Echo sounding from 2pm - midnight Reasonable bottom each of Everard
5/8/82	38° 35'S 148° 35'E	39° 11'S 148° 45'E	400 -550		Trawable ground between 38° 55'S 148° 39'E and 39° 11'S 148° 45'E
5/8/82	39° 11' 148° 45'	39° 06' 148° 44'	450 -480	150	60kg oxeye dory 60kg rubbish 16 floats burst
20/8/82	39° 00' 148° 42'	39° 11' 148° 50'	500 -550		Crossed canyon echosounding
20/8/82	39° 11' 148° 50'		520	120	Towed Northwest - came fast no fish
24/8/82	38° 30' 148° 35'	38° 45' 148° 35'	400		Sounding along 400 fm contour Attempted to tow back north - came fast after 30 minutes. No damage
24/8/82			420 470	120	Very steep banks. Still towing north 240kg oxeye dory and rock ling
26/8/82		-500	400	60	Steamed 115° from Lakes entrance to 400 fathoms. Towed down steep bank - came fast at bottom. 4 bins mixed fish
	38° 24' 148° 52'		450	120	1 bin ghost sharks
27/8/82	38° 35' 148° 37'				Sounding 38° 27' 148° 47' to 38° 35' 148° 37'. Shot away towing north, came fast and tore codend off bag. Too steep and hard to trawl, Repaired net

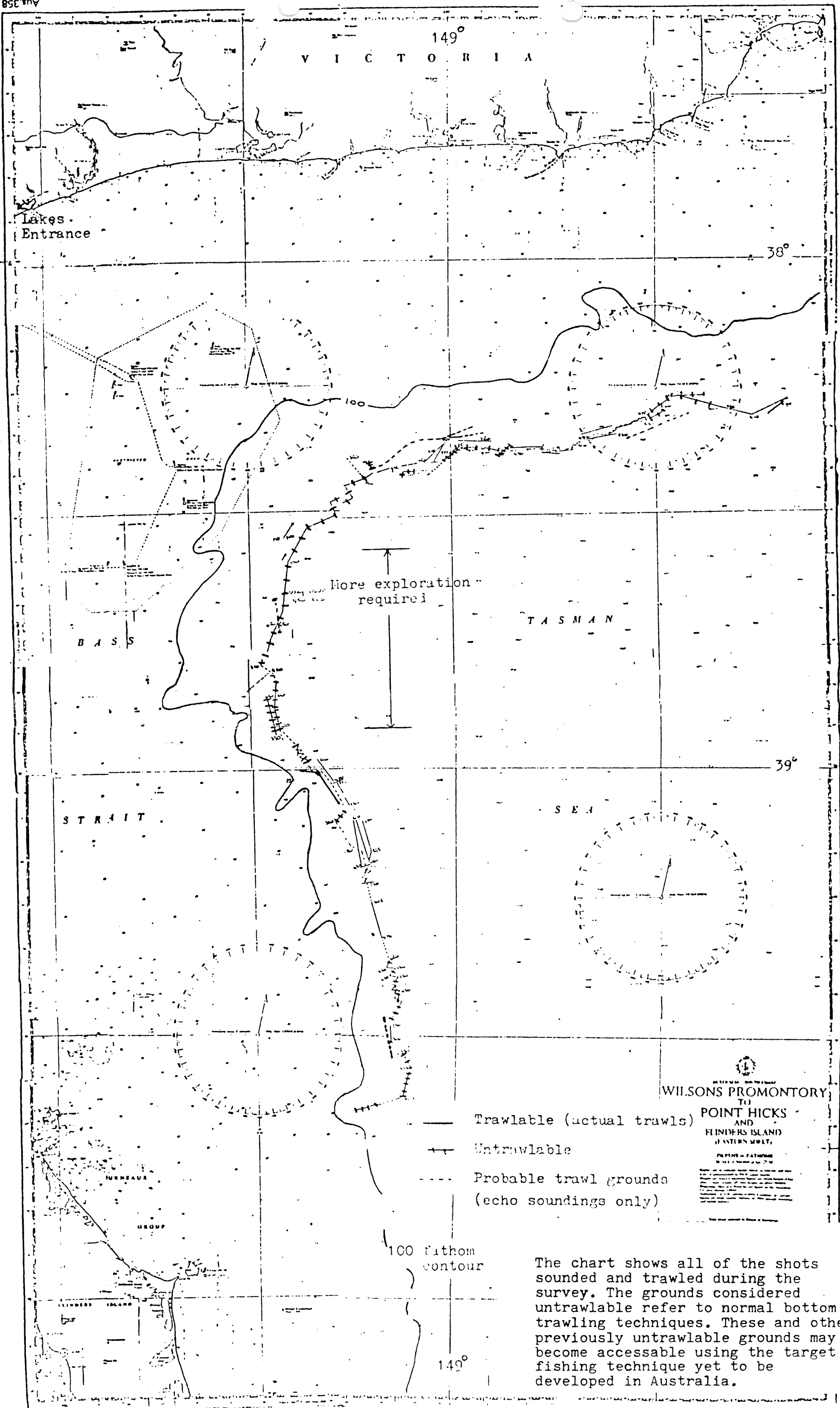
DATE	POSITION		DEPTH (fm)	TOW DURATION (mins)	CATCH AND COMMENTS
	START	FINISH			
28/8/82	38° 33' 148° 35'	38° 31' 5" 148° 36' 5"	350 -370	100	Towed north, came fast on steep mud bank. Bent a frame of gantry and broke new 14mm wire. Returned to port for repairs
30/8/82	38° 22' 149° 09'	38° 22' 149° 13'	480 -500		Good trawlable slope - 3 bins oxeeye dory and 1 bin orange roughy
4/9/82	38° 22' 149° 00'		500 -425	30	Towed northeast, came fast and ripped port side wing out
14/9/82	38° 58' 148° 40'	39° 41' 148° 42'	500 -480	90	Bottom very hard. Towing SSE Two bins mixed, mainly oxeeye dory
14/9/82	39° 43' 148° 43'	39° 05' 148° 45'	500 -550	120	Towed SSE. No fish - boards skipping bottom
22/9/82	38° 20' 149° 24'	38° 21' 149° 19'	400 400	120 120	Ripped hole in extension. No fish, just mud
22/9/82	38° 21' 149° 06'	38° 21' 149° 01'	360	75	Good soft bottom. 30kg ling, 60kg shadow dory, 1 bin spurdog
7/10/82	38° 20' 149° 24'		520	60	Started sounding 38° 21'S 149° 19'E for 120 minutes. Shot away for 1 bin ling, 2 bins dog shark, 1 bin oxeeye dory and 1 bin cod
7/10/82	38° 22' 149° 18'	38° 22' 149° 16'	500 -490		Towing west - came fast in 490 fm
8/10/82	38° 23' 149° 16'	38° 22' 5" 149° 13'	500	60	Towing WSW 15kg orange roughy and 15kg mixed
5/11/82	38° 21' 148° 59'	39° 24' 148° 57'	350 -600	60	Had to pick up - dropped away to 600 fm 2 bins ling, 1 bin cod, 1 bin dog shark

DATE	POSITION		DEPTH (fm)	TOW DURATION (mins)	CATCH AND COMMENTS
	START	FINISH			
5/11/82	38° 21' 148° 59'	38° 24' 148° 54'	350	50	Towed SSW to hold depth. 1 bin ling, 1 bin cod
22/11/82	39° 06' 148° 46'	39° 11' 148° 47'	538 -545	85	Gear fishing too light. 10kg orange roughy. 980 fm wire
22/11/82	39° 15' 42" 148° 47' 66"	39° 19' 01" 148° 49' 17"	505 -475	110	5 bins orange roughy, 1 bin cod, 8 bins rubbish. Gear fishing heavy - very shelly bottom
22/11/82	39° 28' 79" 148° 50'	39° 31' 148° 50' 50"	350 -310	60	No fish, although no damage to net - chain off footline
11/7/83	38° 47' 148° 32'	38° 49' 148° 33'	470 -430	35	Bank too steep, soft mud 1 bin mixed dog shark and cod
11/7/73	38° 41' 148° 33'	38° 44' 148° 34'	350 -500	90	Bottom fell away, too steep to hold gear on the bottom. 2 bins mixed
11/8/83	38° 16' 149° 49'	38° 18' 149° 45'	490 -530	120	Towing SW - good bottom. 2 bins orange roughy, 1 bin ling, 1 bin mixed dog shark and cod
*6/4/84	39° 00' 148° 37'	39° 06' 148° 41'	300	110	30 bins grenadier, 32kg king dory, 64kg ling, 32kg dog shark. 600 fathoms wire 100 fathom sweep
*20/7/84	39° 06' 148° 37'	39° 14' 148° 47'	480	90	33kg grenadier, 30kg ling, 80kg dog shark, 20kg orange roughy, 200kg trash fish
*21/7/84	39° 27' 148° 51'	39° 38' 148° 52'	360	195	80kg king dory, 100kg ling, 500kg spotted trevalla, 50kg dog shark, 200kg light fish
*21/9/84	38° 51' 148° 29'	38° 49' 148° 33'	400	120	90kg ling, 100kg dog shark, 20kg cod, 30kg trash

DATE	POSITION		DEPTH (fm)	TOW DURATION (mins)	CATCH AND COMMENTS
	START	FINISH			
*10/12/84	38° 53' 148° 31'	38° 55' 148° 33'	450		Came fast immediately. Retrieved gear and continued sounding between 300-520 fathoms for six hours from 38° 55' 148° 33' to 39° 06' 148° 47'
*26/2/85	38° 23' 149° 11'	38° 22' 149° 11'	480	20	Sounding continued for 6 miles east, possible trawlable bottom. Shot was too short, no fish
*27/2/85	38° 20' 149° 23'	38° 18' 149° 39'	300 -500		Sounding survey only - no trawls undertaken. Could possibly trawl area with the use of net sounder, 30 fathom bridles and no sweep

* These soundings and trawl were undertaken on the FV "Cheryl Anne" - all others were from the "Craigmin"

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The chart shows all of the shots sounded and trawled during the survey. The grounds considered untrawlable refer to normal bottom trawling techniques. These and other previously untrawlable grounds may become accessible using the target fishing technique yet to be developed in Australia.