

# CSIRO

## MARINE LABORATORIES

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JDS:KE

17 May 1985

CSIRO  
MARINE LABORATORIES

12 AUG 1985

LIBRARY, HOBART

F. V. 'Rachel'

### Cruise Summary R11/85

#### NORTHERN PELAGIC FISH STOCK RESEARCH PROGRAMME

#### ITINERARY

Departed	Gove	1630h Friday	29 March 1985
Arrived	Yorke Island	1000h Thursday	4 April 1985
Departed	Yorke Island	1700h Thursday	4 April 1985
Arrived	Cairns	1200h Sunday	21 April 1985

#### AREA OF OPERATION

Melville Bay, northern Gulf of Carpentaria, Torres Strait, Gulf of Papua and north-east Queensland between the tip of Cape York and Cairns (Fig. 1).

#### OBJECTIVES

1. To tag all live sharks captured by gillnetting, longlining and handlining in the area between Gove and Thursday Island, and east of Thursday Island as opportunities arise.
2. To tag S. commerson and T. tonggol as opportunities arise.
3. To double tag approximately 250 C. limbatus and C. sorrah in the vicinity of Melville Bay and to inject these fish with tetracycline.

4. To collect vertebrae from C. limbatus and C. sorrah over the length range encountered in the area east of Thursday Island.
5. To collect electrophoretic samples from any dead C. limbatus and C. sorrah encountered between Gove and Thursday Island and from 100 C. limbatus and C. sorrah in the area east of Thursday Island.  
Electrophoretic samples should also be collected from S. commerson and T. tonggol as opportunities arise.
6. To collect biological information on mature specimens of all shark species except C. limbatus and C. sorrah, together with S. commerson and T. tonggol.
7. To retain all dark pelvic forms of C. limbatus encountered during the cruise.
8. To collect girth measurements (around the third gill slit) from C. limbatus and C. sorrah.
9. To collect Northern Territory Museum specimens as requested.
10. To obtain surface temperature, salinity and turbidity data from fishing sites.
11. To record cetacean sightings and to collect biological information from any dead cetacea taken incidentally in the gillnet.

#### PROGRAMME ACHIEVED

1. A total of 661 sharks were tagged during the cruise. Table 1 shows the number of sharks caught and tagged by species. Table 2 gives a breakdown of captures by fishing method. The number of C. sorrah tagged in the Taiwanese fishing zone in the northern Gulf of Carpentaria, in Torres Strait, the Gulf of Papua and the north-east Queensland coast were 2, 9, 47 and 81 respectively. The number of C. limbatus tagged in these areas were 3, 0, 46 and 258 respectively.
2. No S. commerson, and only 5 T. tonggol were tagged during the cruise.
3. Fishing in the vicinity of Melville Bay was poor and only 8 C. limbatus or C. sorrah were double tagged, while 42 were injected with tetracycline for age validation studies.
4. Tissue samples from 101 C. limbatus from north-east Queensland and 25 C. limbatus from Torres Strait were collected for

electrophoretic analysis. Numbers from other areas, and for C. sorrah, were also collected but were too small to constitute a valid sample.

5. Thirty eight girth measurements were collected from C. limbatus or C. sorrah for use in mesh selectivity calculations.
6. Eight 'dark pelvic' C. limbatus were captured during the cruise, of which two were tagged and released. Detailed morphometrics were collected from three specimens, together with two 'ordinary' C. limbatus. Dark pelvic C. limbatus were relatively more numerous around Warrior Reef, Torres Strait.
7. Gonad samples were retained and stomach contents and reproductive condition noted for all mature shark specimens except C. limbatus and C. sorrah. Vertebrae for ageing studies were collected from C. limbatus and C. sorrah from the north-east Queensland coast between Lloyd Bay and Cooktown.
8. Surface temperature, salinity, secchi disc and turbidity meter readings were recorded at approximately 1815h C.S.T. on 18 occasions.
9. One dolphin was captured (dead) in the net and was retained in the freezer for subsequent identification and examination.

#### ACKNOWLEDGEMENTS

Many thanks to the skipper and crew of the 'Rachel'.

#### PERSONNEL

##### Scientific

John Stevens CSIRO (Cruise Leader)

Glen Cuthbert CSIRO

John Beckman CSIRO

##### F.R.V. "Rachel"

Ian Lew (skipper)

Pam Canney

David McKenna

Rosie Lew

FRHJ

INITIALLED

*J.D. Stevens*  
for J.D. STEVENS

SCIENTIST-IN-CHARGE

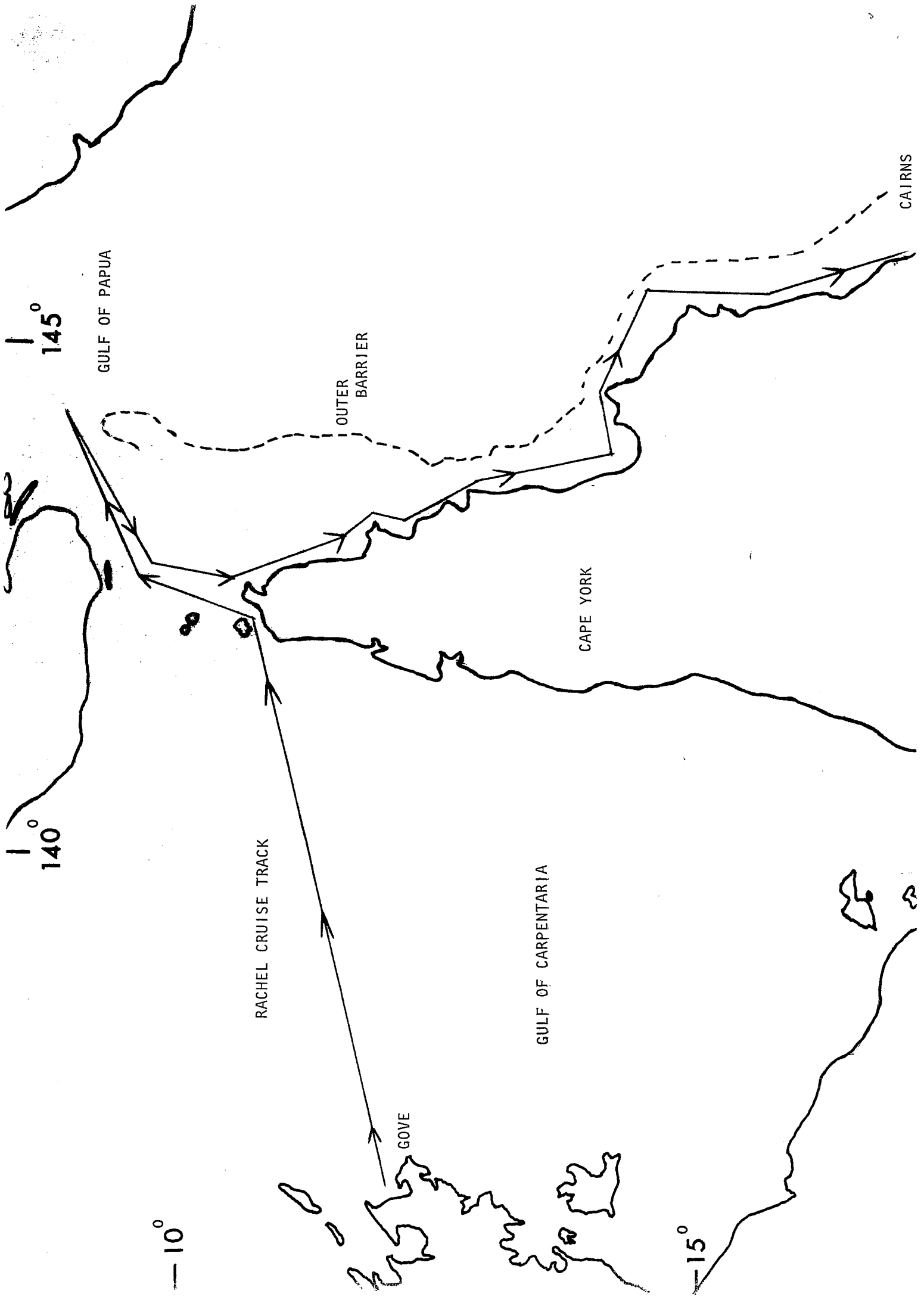
TABLE 1

Breakdown of Catch During R11/85

Species	Number Caught	Number Tagged	Number of Biologicals	Electrophoretic Samples Retained
<u>ELASMOBRANCH</u>				
<u>Carcharhinus limbatus</u>	556	332	140	126
<u>C. sorrah</u>	220	162	35	29
<u>C. macloiti</u>	148	122	14	0
<u>Rhizoprionodon acutus</u>	20	16	3	0
<u>Galeocerdo cuvieri</u>	10	10	0	0
<u>Carcharhinus amboinensis</u>	7	7	0	0
<u>Sphyrna lewini</u>	6	3	3	0
<u>S. mokarran</u>	5	3	2	0
<u>Carcharhinus brevipinna</u>	2	1	1	1
<u>C. dussumieri</u>	2	2	0	0
<u>C. amblyrhynchoides</u>	1	1	0	0
<u>C. plumbeus</u>	1	1	0	0
<u>Sphyrna blochii</u>	1	0	1	0
<u>Rhinobatus batillum</u>	1	1	0	0
<b>TOTAL</b>	<b>980</b>	<b>661</b>	<b>199</b>	<b>156</b>
<u>TELEOST</u>				
<u>Scomberomorus semifasciatus</u>	21	0	2	2
<u>S. commerson</u>	15	0	15	15
<u>Thunnus tonggol</u>	11	5	0	0
<u>Apolectus niger</u>	4	0	0	0
<u>Mene maculata</u>	4	0	0	0
<u>Corphaena hippurus</u>	3	0	0	0
<u>Scomberomorus munroi</u>	2	0	1	1
<u>Sphyrna sp.</u>	2	0	0	0
<u>Euthynnus affinis</u>	2	0	0	0
<u>Cybiosarda elegans</u>	1	0	0	0
<u>Echeneis sp.</u>	1	0	0	0
<u>Pristipomoides multidens</u>	1	0	0	0
<u>Istiophorus platypterus</u>	1	0	0	0
<u>Grammatocynus bicarinatus</u>	1	0	0	0
<b>TOTAL</b>	<b>69</b>	<b>5</b>	<b>13</b>	<b>18</b>

**TABLE 2**Shark Captures by Fishing Method

Method	Total Catch (number)	Percentage Tagged	Number of sets
Handline	150	90	
Longline	54	78	6 (1800 Hooks)
Tagnet	209	61	12
Commercial net	566	63	29



145°

GULF OF PAPUA

OUTER BARRIER

CAIRNS

CAPE YORK

140°

RACHEL CRUISE TRACK

GULF OF CARPENTARIA

GOVE

10°

15°