

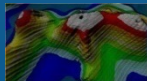
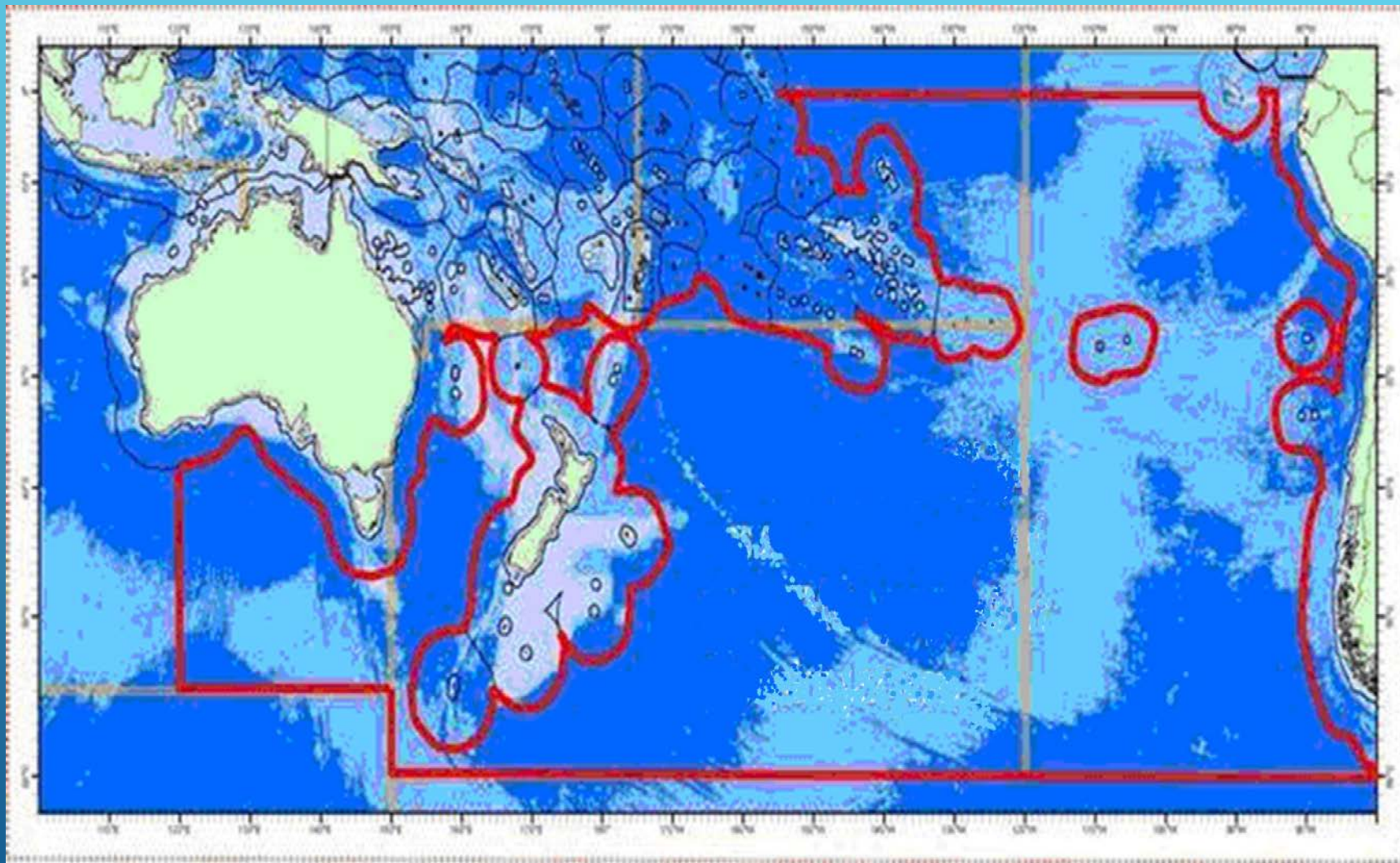
Management of Deepwater Fisheries using Open & Closed Areas

Papers SC-02-INF-04
SC-02-INF-05

(New Zealand) High Seas Fisheries Group Inc.
Scientific Committee Meeting, SPRFMO

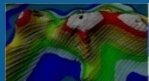
Honolulu, Hawaii, October 2014

THIS IS THE HUGE AREA COVERED BY SPRFMO



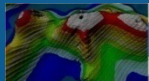
Management of Deepwater Fisheries using Open & Closed Areas

- *Not a 'new and original' idea*
- *Logical and 'scientific' basis that reflects the oceanographic nature of the area*
- *Satisfies requirements of simplicity, and thus*
- *Chances of compliance and ease of enforceability*
- *Minimises Adverse Impacts*

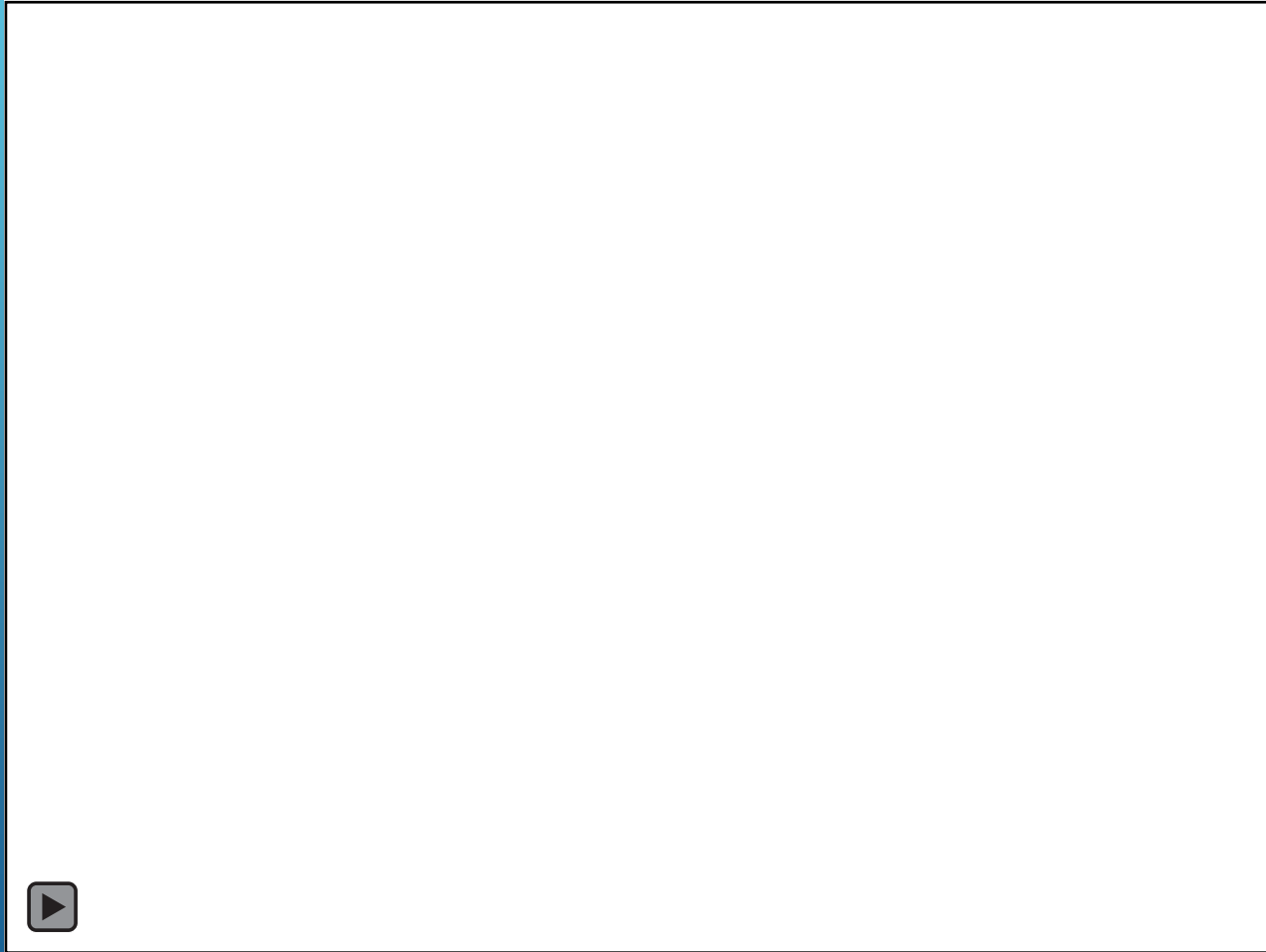


NOTE

- ▶ *Fishing data (catch & effort) are seafloor feature specific*
- ▶ *Bycatch data of benthos are seafloor specific*
- ▶ *Therefore – we assert –*
- ▶ *Manage on the basis of seafloors!*



THIS IS REALLY WHAT IT LOOKS LIKE DOWN THERE



The fundamentals

- *Commercially targeted fish are most available, and thus fished, when aggregated in relation to seafloor features at the right temperature.*
- *May or may not be a relation between abundance and associated seafloor feature, we have many places in SPRFMO where fish have never occurred in commercial quantities.*
- *Benthos occurs in relation to specific seafloor features and depths*

Not this

Mosaic footprint & m

Need thresholds to define 'core' area for c



Latitude -35.15 to -40.55

Mos

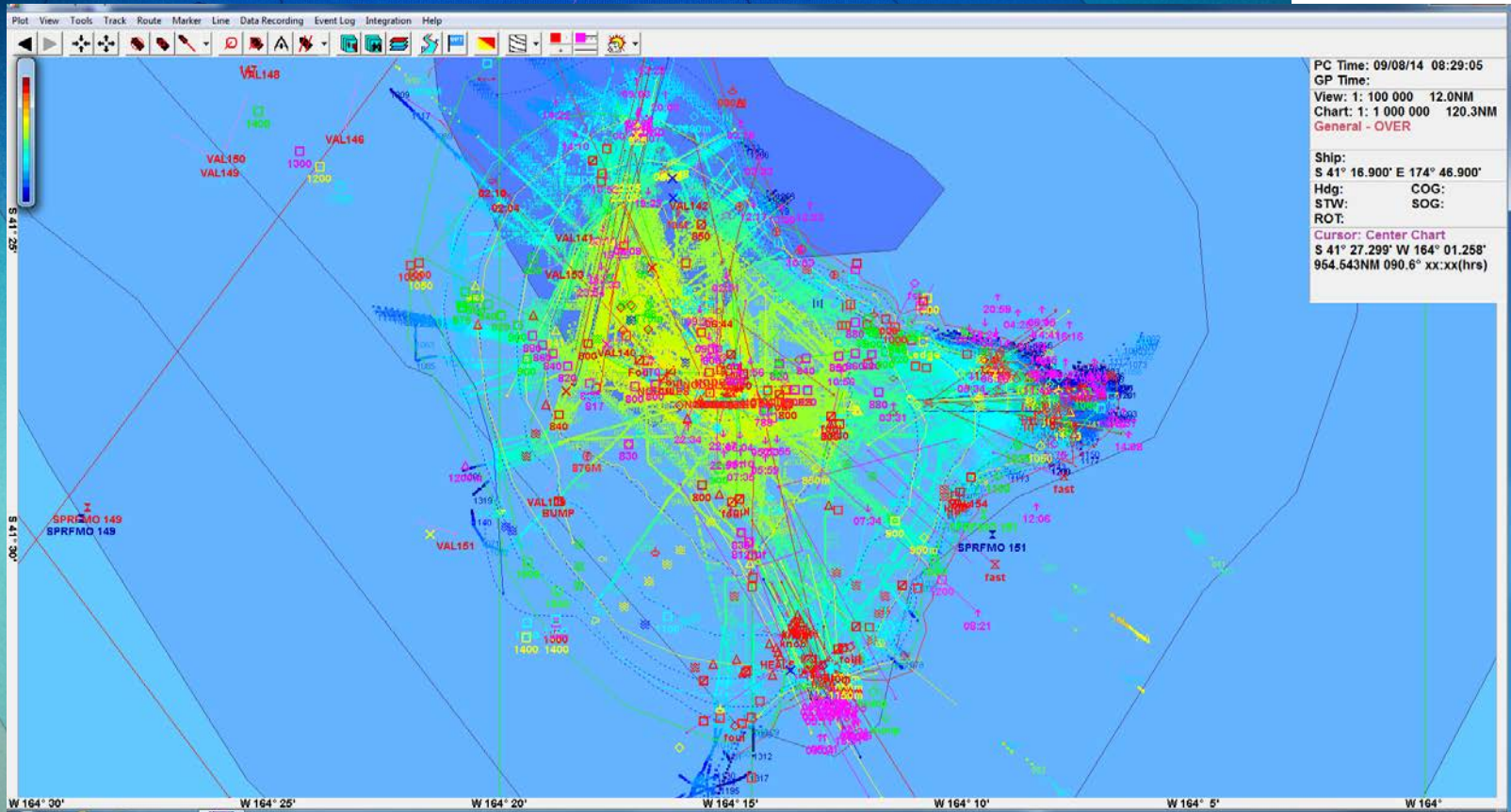
Mosaic detail 2: effort Louisville



Estimate 5



But this



THE NEW ZEALAND PRESENCE/ ABSENCE SHEET TO MEASURE VMES

- ▶ New Zealand has put a VME measure in place so that as little as 0.03 grams of catch can trigger a report.
- ▶ Unlike Australia that has a 50 kilogram limit

Vulnerable Marine Ecosystem Evidence Process (Version 1.0 - Apr 08)

1. Trip, tow, and vessel information

Trip number	Tow number	Observer/s	Name of vessel master

2. Date, time, and position that hauling of the gear commenced

Date ddmm/yy	Time 24-hr clock	Latitude Degrees Minutes	Longitude Degrees Minutes EW
11/11/08	12:00	41 30 S	174 00 E

3. Instructions

Assess the total weights of all organisms whether dead or alive in each of the relevant taxonomic groups and record in Section 4. If the Observed Weight of a taxonomic group is greater than (not equal to) the Threshold Weight, write the VME Indicator Score for that group in the 'Score' Column.

If a taxonomic group is present, but the Observed Weight is not greater than the Threshold Weight, tick in the 'Tick' column. Sum the scores and count the ticks. Record these totals at the bottom of the columns. Add the Sum of scores to the Count of ticks and record it as the Total VME Indicator Score.

If the Total VME Indicator Score is 3 or greater, the area is considered to have Evidence of a Vulnerable Marine Ecosystem. The taxonomic groups recorded on this form may not be a complete record of all benthic material present in the tow.

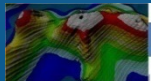
4. Relevant taxonomic groups, weights, and scores

Taxonomic Group	Code	Method of Weighting	Observed Weight (kg)	Threshold Weight (kg)	VME Indicator Score	Score if Threshold Weight exceeded	Tick if not scored but present
PORIFERA	ONG		0.1	50	3		<input checked="" type="checkbox"/>
CNIDARIA							
Anthozoa (class)							
Actinaria (order)	ATR			0	1		
Scleractinia (order)	SIA		0.1	30	3		<input checked="" type="checkbox"/>
Antipatharia (order)	AOB			1	3		
Alcyonacea (order)	SOC			1	3		
Gorgonacea (order)	GOC		0.1	1	3		<input checked="" type="checkbox"/>
Pennatulacea (order)	PTU			0	1		
Hydrozoa (class)	HDR			6	3		
Unidentified Coral	COU			0	1		
ECHINODERMATA							
Crinoidea (class)	CRI			0	1		
Brisingida (order)	BRG			0	1		
Total VME Indicator Score → Sum of scores + count of ticks =						3	3

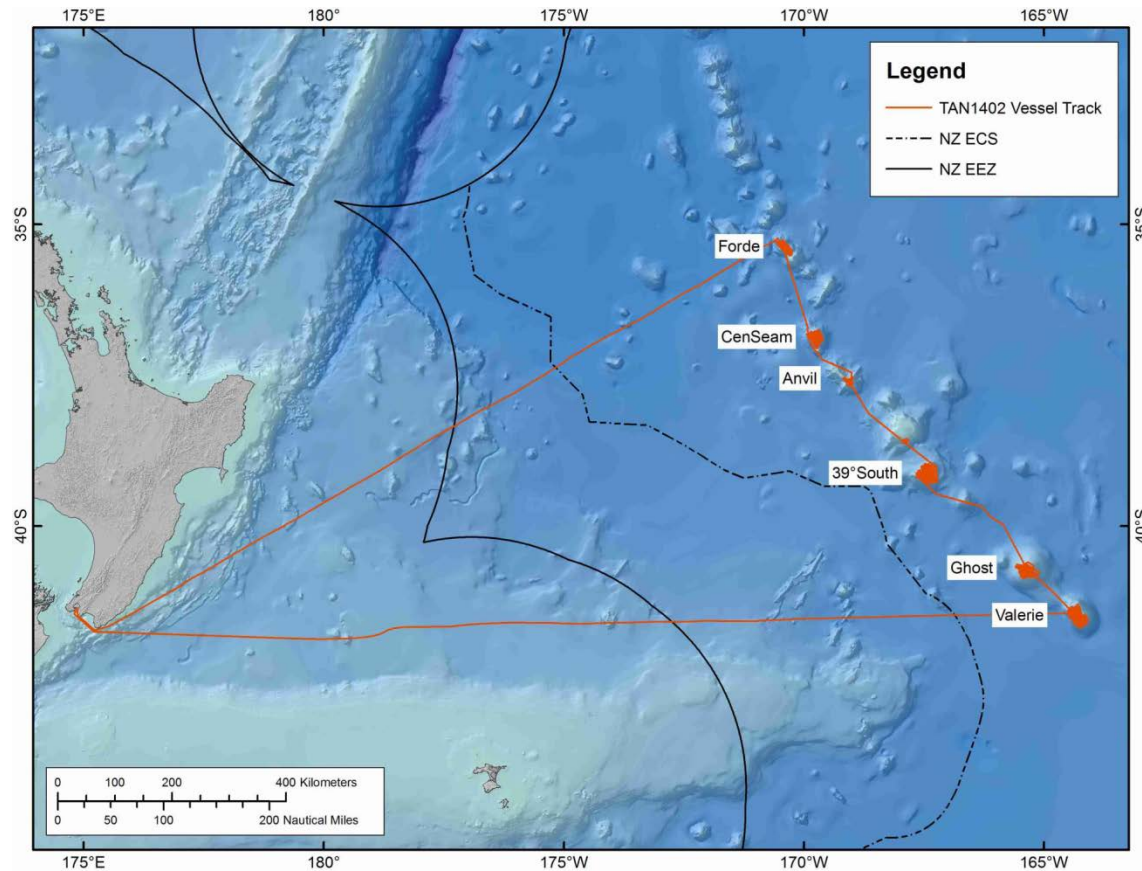
5. Vessel notification

As soon as the form is completed for any tow provide a copy to the _____ of the vessel.

Name (if not vessel master)	Received by person in charge	Date received (ddmm/yy)	Time received (24-hr clock)
		11/11	12:00



Now- the survey to validate the predictive model view that VME's were everywhere and there was major RISK from fishing



**28,000 still images were taken
the proportion of useable images is high.**

**Summary of image data collected during the voyage.
Seamount Stations Video (hours) Video (minutes) Still
images**

Forde	4341
Censeam	4758
Anvil	3053
JCM	258
39 South	4255
Ghost	7067
Valerie	4132

Depth Distribution of Living Scleractinian Matrix

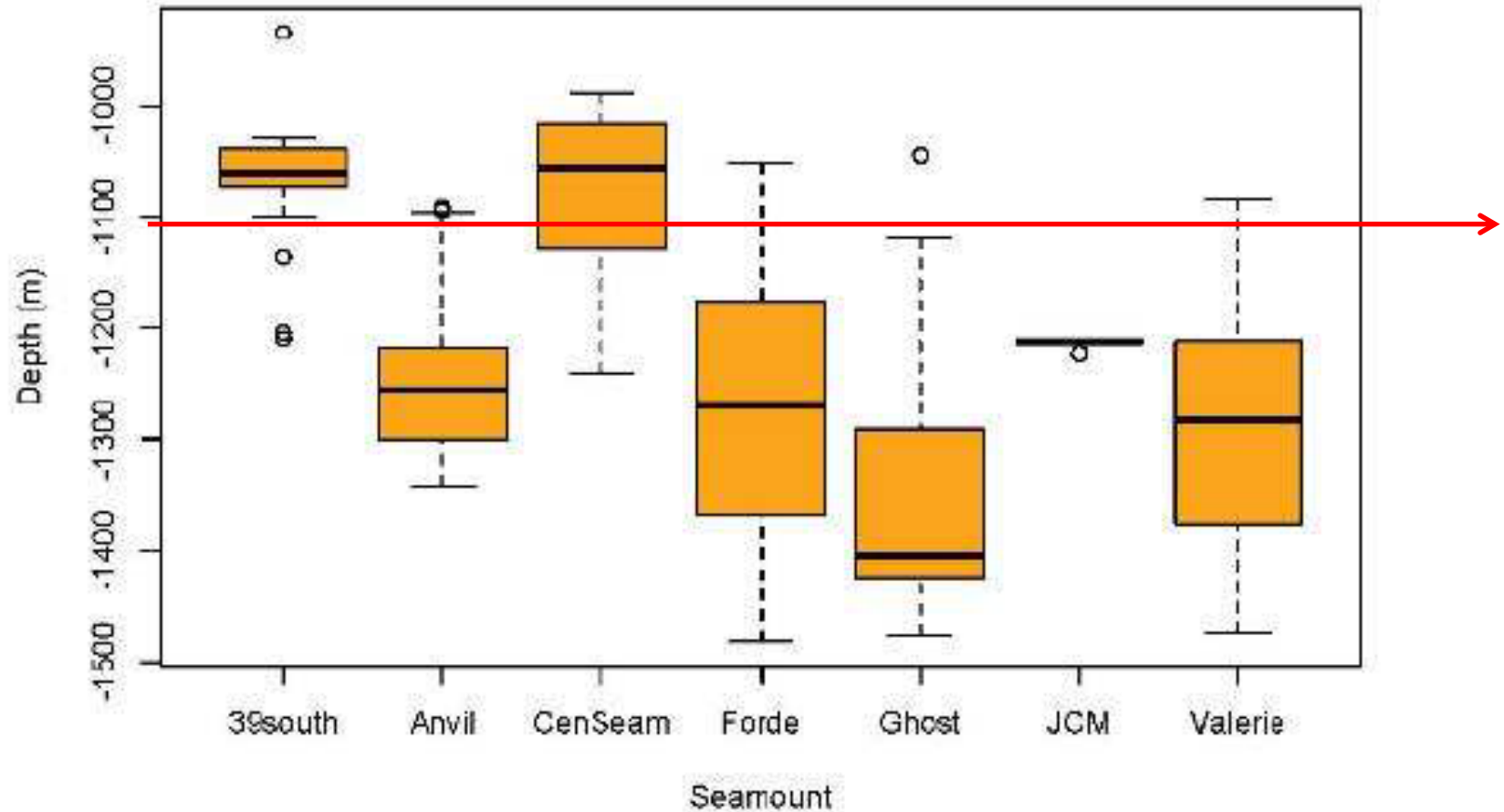
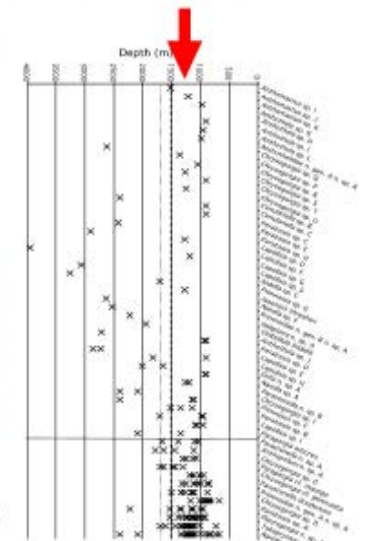
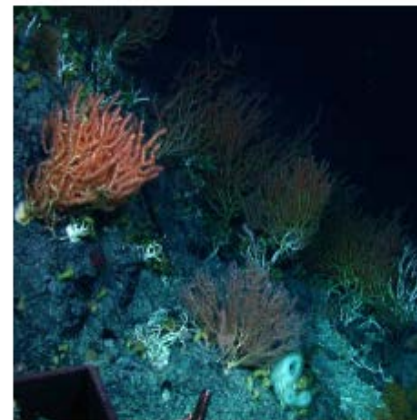


Figure 53: Depth distribution of live scleractinian corals on the surveyed seamounts. The plot shows the median (bar), upper and lower quartiles (box), and total range (circles).

FISHING FOOTPRINT IN THE SPRFMO AREA IS IN AREAS OF LOW BENTHIC MATERIAL

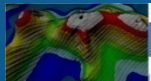
- ▶ As was presented to the 1st SPRFMO SC 1 only 4 % has been impacted ,leaving 96% untouched . In one of the most heavily fished areas on the Louville ridge most of this ridge area where vessel trawl was sand
- ▶ On true seamounts and ridges, only the ground rope is on the bottom (20-25m spread), doors and sweeps are generally in mid-water. So the actual swept area is about 25% of this, i.e 1%.

Some octocorals extend beyond fishing depths



Note: octocoral species above vertical line collected once only

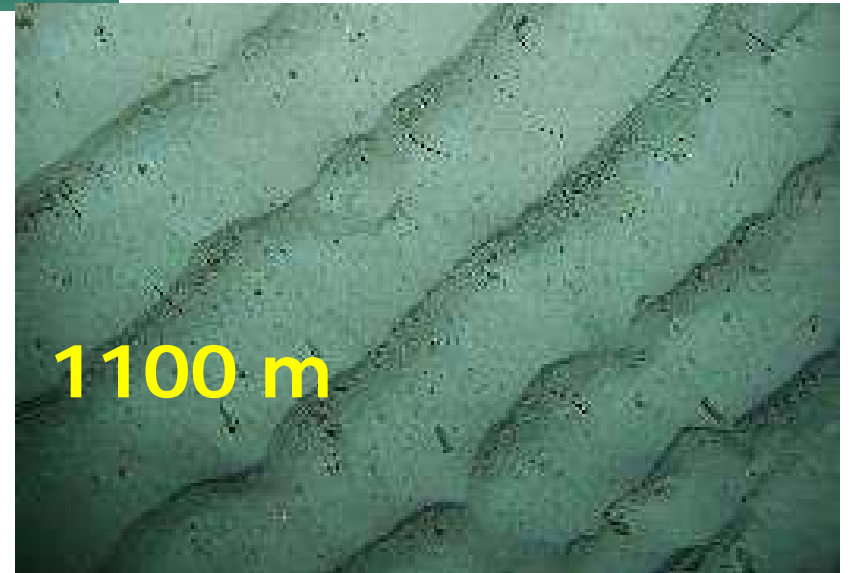
1. Thresher et al. (PlosOne, in press). Strong depth-related zonation of megabenthos on a rocky continental margin (1700-4000 m) off southern Tasmania, Australia



Cover Page For Report !!!



Not This





1462 m



1175 m

The greater depth at which the stony corals occurred **was unexpected**. The median depth of *Solenosmilia* and *Goniocorella* on the NZ slope and small seamounts is 900–1000 m” on the Louisville seamounts it was 1200–1300 m. ... Similarly, **the amount of dead, but intact, coral matrix was surprising**, although this has also been observed in in parts of the New Zealand EEZ, the Macquarie Ridge, and off Tasmania. Follow up work is planned to age the coral ... enable us to evaluate whether a large “die off” could coincide with a major oceanographic event, be related to the seamounts slowly getting deeper with age, or be an effect of high sedimentation rates

WE ALREADY KNEW A LOT OF THIS FROM EARLIER SURVEYS IN SPRFMO

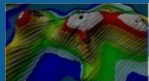
T.J. Anderson et al. / Deep-Sea Research II 58 (2011) 979–991

Therefore, while many seamounts may support dense coverage of cold water corals with high associated biodiversity (Koslow et al., 2001; Clark et al., 2006), others support much sparser assemblages (e.g., Sisters and Mongrel Seamounts, CSIRO unpublished data: Thresher *pers. comm.*; Gifford Guyot – *this study*). Consequently, it is clear that not all seamounts are equally capable of supporting high density assemblages even when rocky substrata are present.

The rocky substrata

of peaks had sparse coverage of sessile organisms, characterised by mixed cold-water corals (e.g., *Metallogorgia* sp., *Callogorgia* sp., black corals (Order: Antipatharia), sponges (Class: Demospongiae and Hexactinellida (glass sponges)), and dead coral rubble (Figs. 5, 6C,E,F,G,I, 7A,C), but supported no dense habitat-forming biota.

opurges



HSFG's previous papers (HSFG 2010 & 2013) describe many possible solutions that the Scientific Committee might recommend to the Parties so as to protect the environment and permit a sustainable fishery.

We stress too, fishing vessels collect much information and are an excellent platform to gather information that can inform science and monitor impacts – something that is now conventional wisdom. The officers and crews see immediately the effects of their actions. Notwithstanding the benefits of careful scientific analysis and no matter the delays (and uncertainties) in getting the results, failure to benefit from past and present officer/crew experience and their potential contributions results in a loss for all.

RECOMMENDATION

HSFG believes that a small working group be established immediately to evaluate the feasibility of specific seafloor feature conservation and management and report to the Parties in January 2015.

