MARINE CONSERVATION RESEARCH

Prediction and Management of Australia's Marine Biodiversity

Marine Biodiversity CERF Hub

PROJECT: Biophysical modeling and prediction of spatial patterns in biodiversity

Task 1. Biological Data Audit & Acquisition: progress report May 2008

Since the delayed start of this Hub, this task has been scoping and acquiring available biological datasets from various sources that are suitable for biodiversity prediction, ie. broad spatial scale, extend over wide range of contrast in surrogates, broad coverage of taxa. These are generally survey presence/absence/abundance datasets with representative sampling. A number of other possible data sources are still being followed up.

Metadata has been obtained for the most suitable available datasets, and the majority of these datasets have been acquired. Most are already in a format suitable for surrogates & prediction analyses within the Shelf, Slope, Temperate Reefs and Coral Reefs Tasks, although the matching with physical data at a 0.01 degree grid resolution remains to be completed.

The status of biological datasets identified initially for scoping for potential acquisition is as follows:

(a) Key large scale continental shelf & slope survey datasets:

GBR: Prawn trawl, Sled, Video habitat, BRUVS, some Fish trawl — acquired
TS: Prawn trawl, Sled, Video habitat, some Fish trawl — acquired
GoC: Prawn trawl, Sled, Fish trawl — acquired
NWS: Fish trawl, some Sled, fish trapping, Still photo habitat — acquired
SE Shelf: Fish trawl, sled, trap, gill-net — acquired
Slope (SE, NW, SW): Fish trawl, sled — acquired

(b) Key large scale southern temperate reefs survey datasets:

Temperate reefs: UVC of fish, mega-inverts, macro-algae (Tas,Vic,WA,SA,NSW,LHI) — acquired
New Sth Wales: habitat video & BRUVS — metadata
Parks Victoria: habitat video, BRUVS, UVC — metadata
South Australia: shallow habitat — metadata
Coastal CRC: Rescherche Arch., video, BRUVS, UVC — metadata
WA Marine Futures: habitat video, BRUVS, UVC — metadata

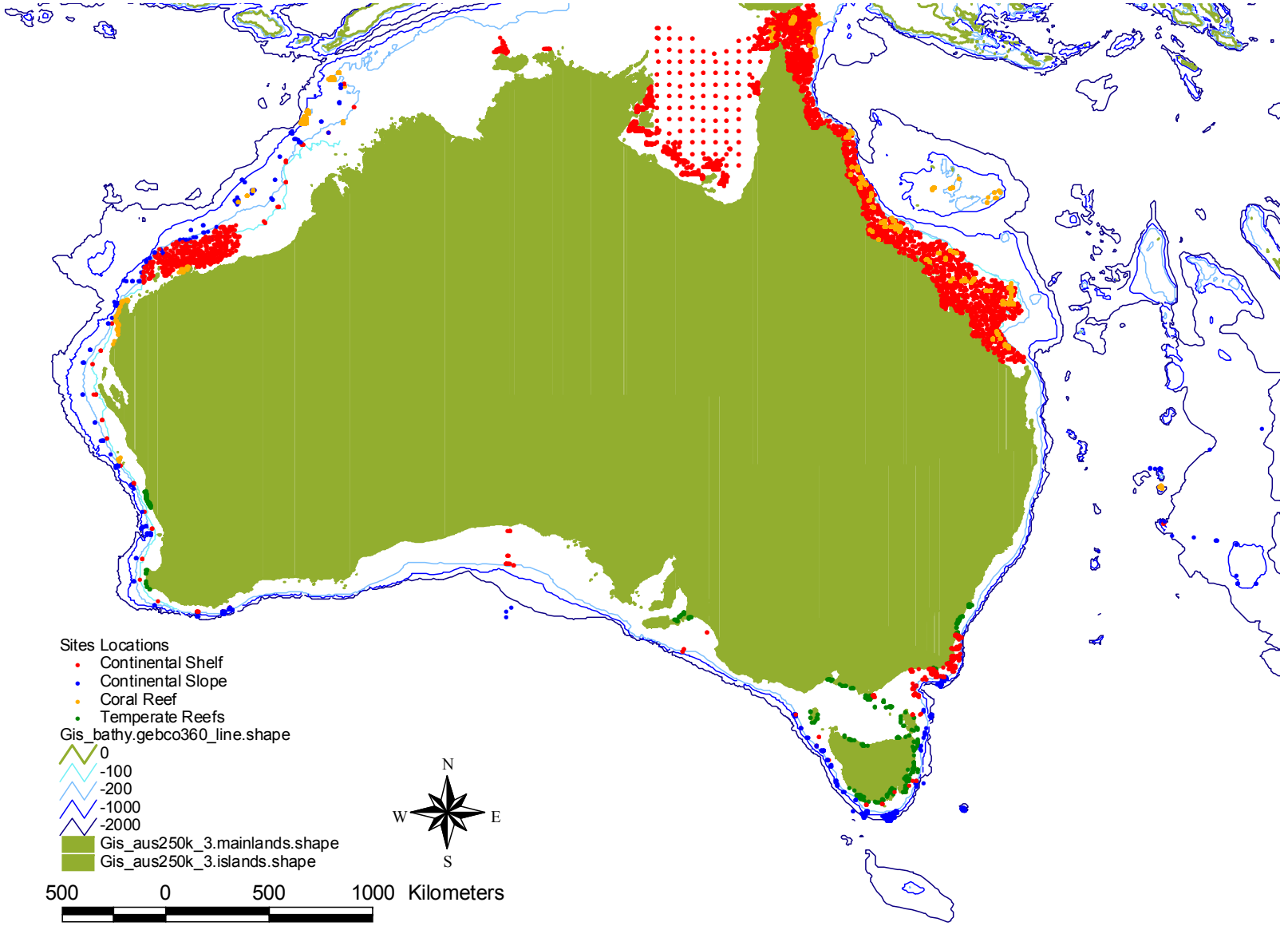
(c) Key large scale northern tropical coral reefs survey datasets:

GBR LTMP: selected GBR Reefs: reef fish UVC & corals fixed transects — acquired
NWS LTMP: Rowley Shoals, Ashmore, Scott Rf, Ningaloo: reef fish UVC & corals — acquired
Coral Sea: selected reefs: fish UVC & corals fixed transects — acquired
Torres Strait: reef resource Inventories: fish & habitat UVC transects — acquired
Timor MOU74 Box: reef resource Inventories: fish & habitat UVC transects — acquired
Other datasets: JCU; NT; WA — scoping

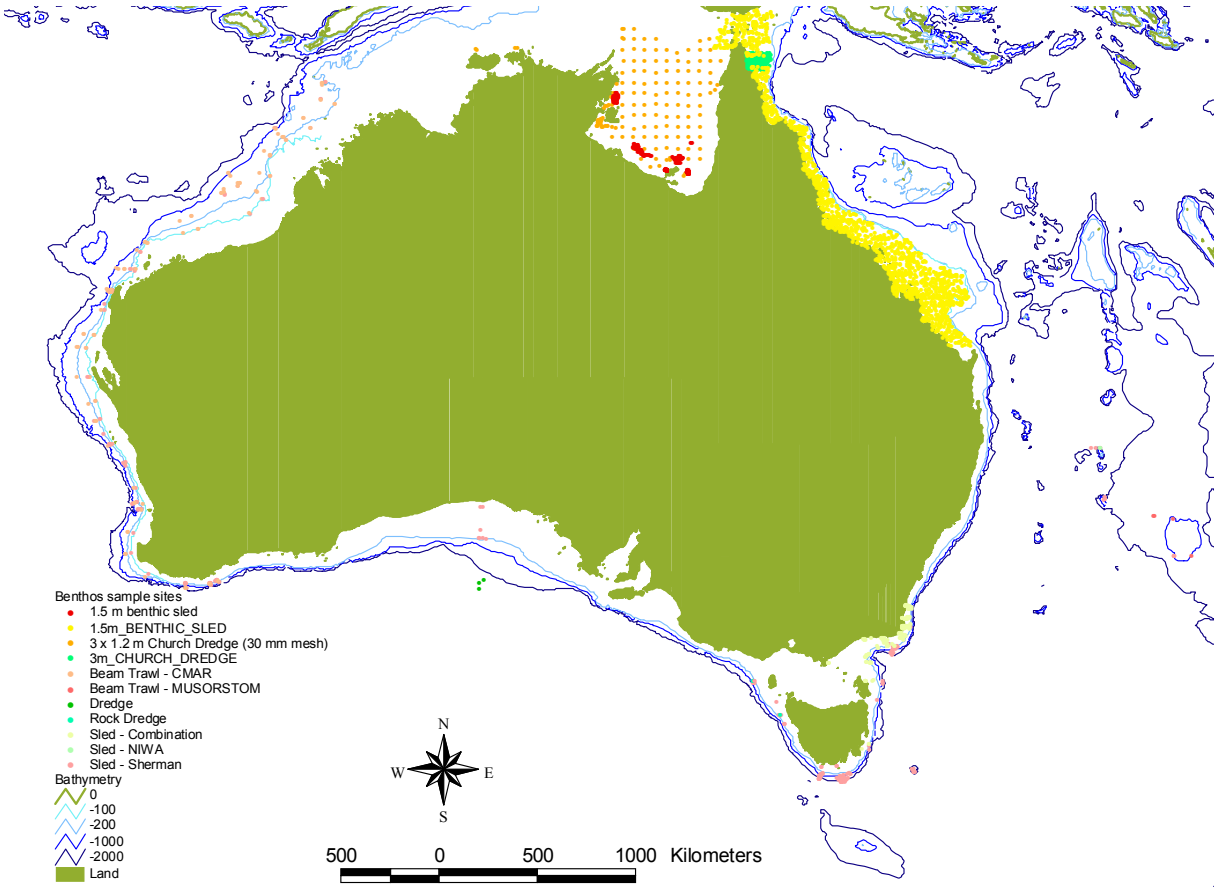
(d) Other possible datasets, various methods:

NSW: shelf and slope surveys (fish trawl), other fish/prawn trawl — scoping
WA: shelf and slope survey data — scoping
SA: shelf and slope survey data — scoping
Vic: shelf and slope survey data — scoping
Antarctic: survey datasets, Macquarie Is, Herd Is. — scoping
Ozcam: collection of many & various museum datasets — scoping

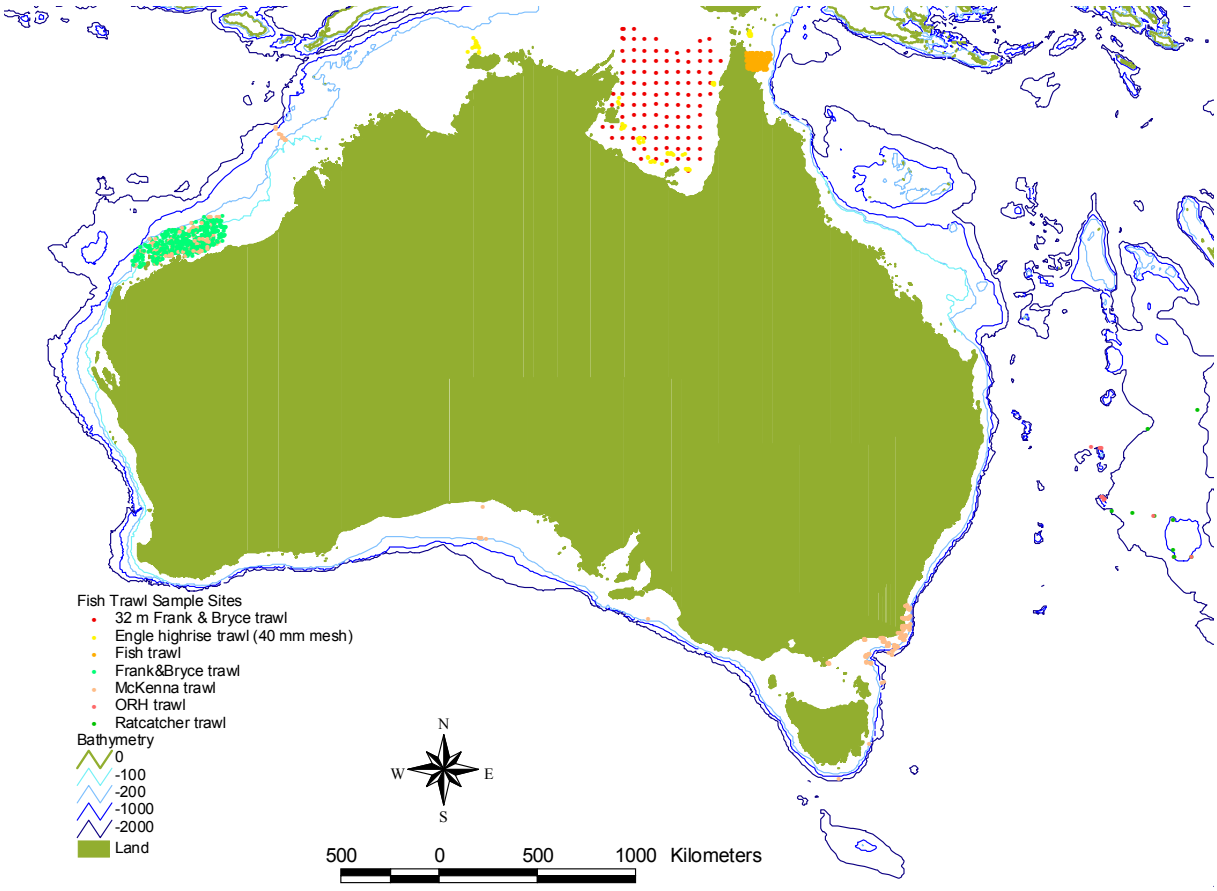
The metadata and maps of site locations of the acquired datasets are presented on the following pages.



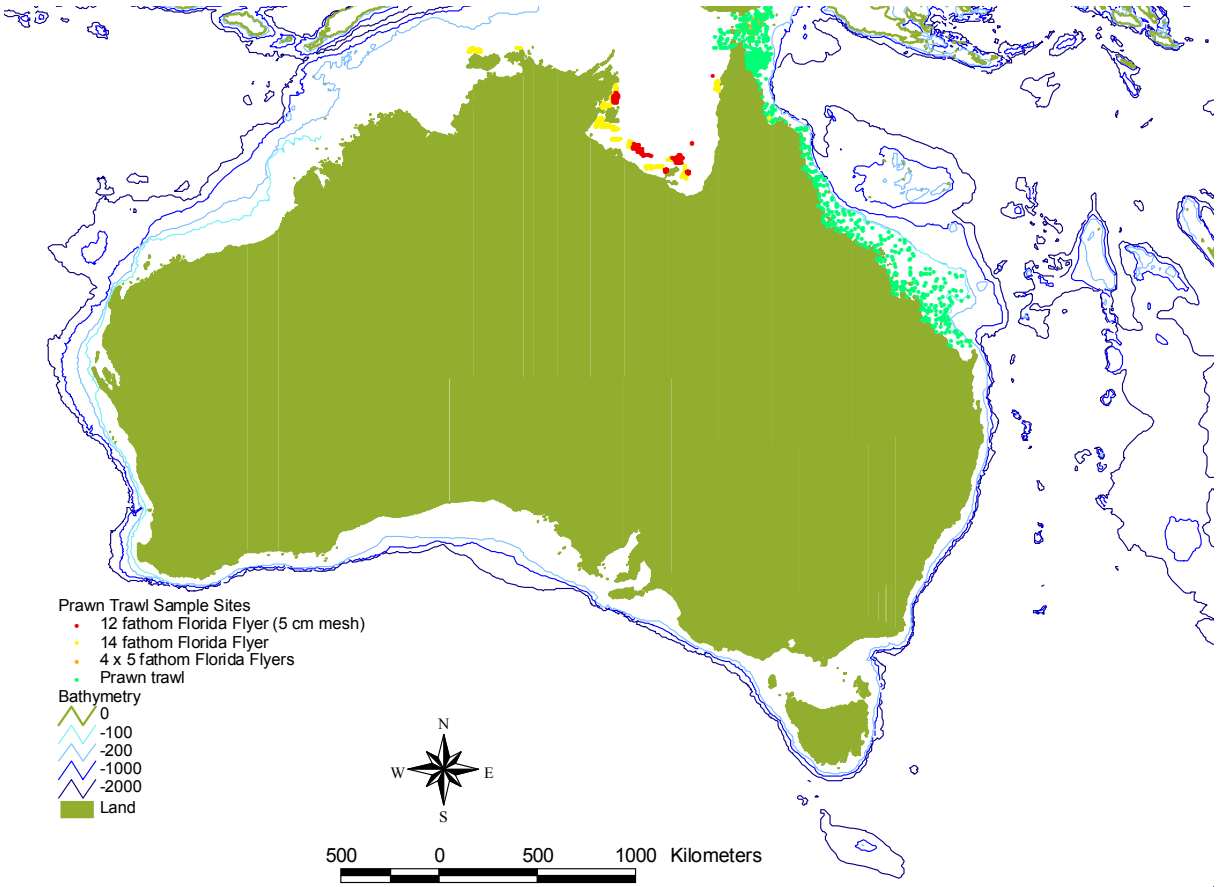
Map 1. Site locations for all data collated to date, categorised by relevance to the Prediction Tasks: Shelf, Slope, Coral Reefs, and Temperate Reefs.



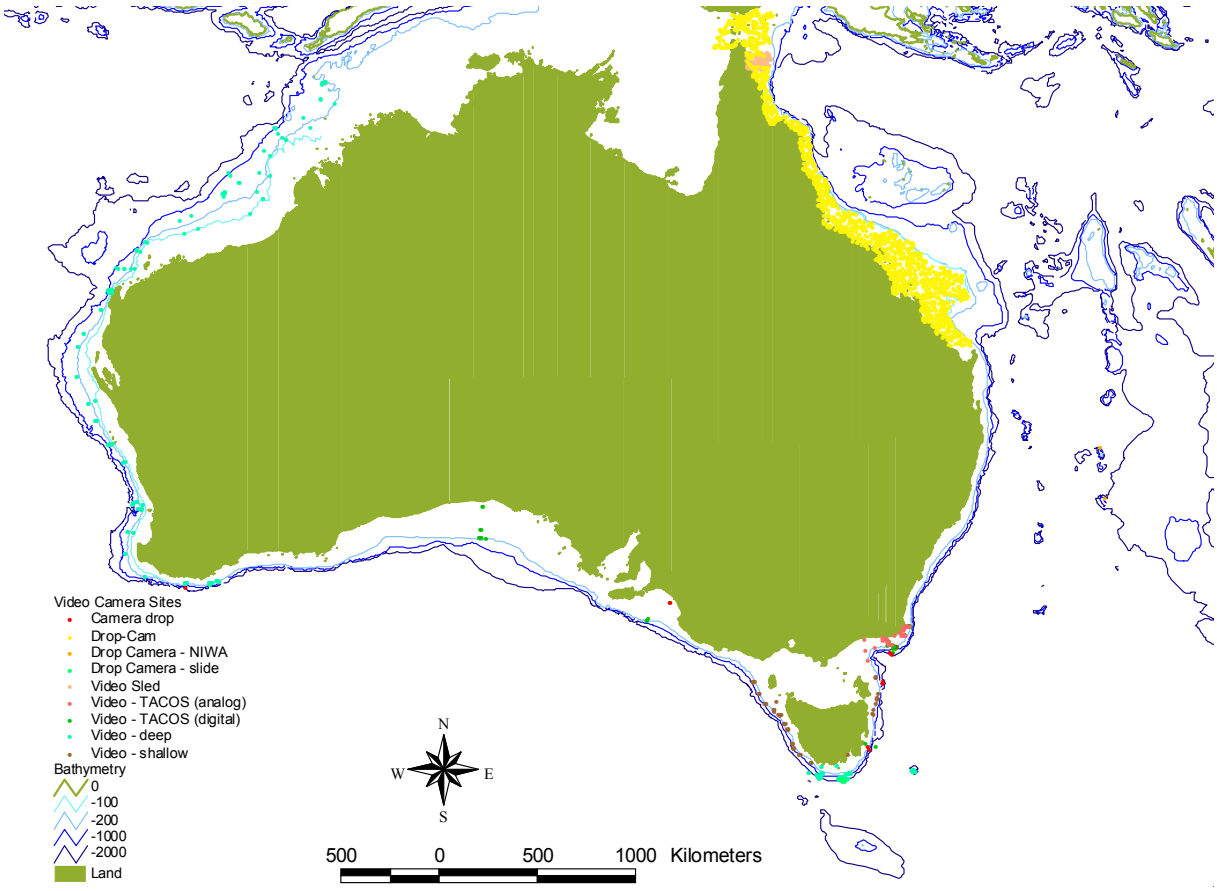
Map 2. Site locations for shelf and slope benthos samples, collected by a variety of devices.



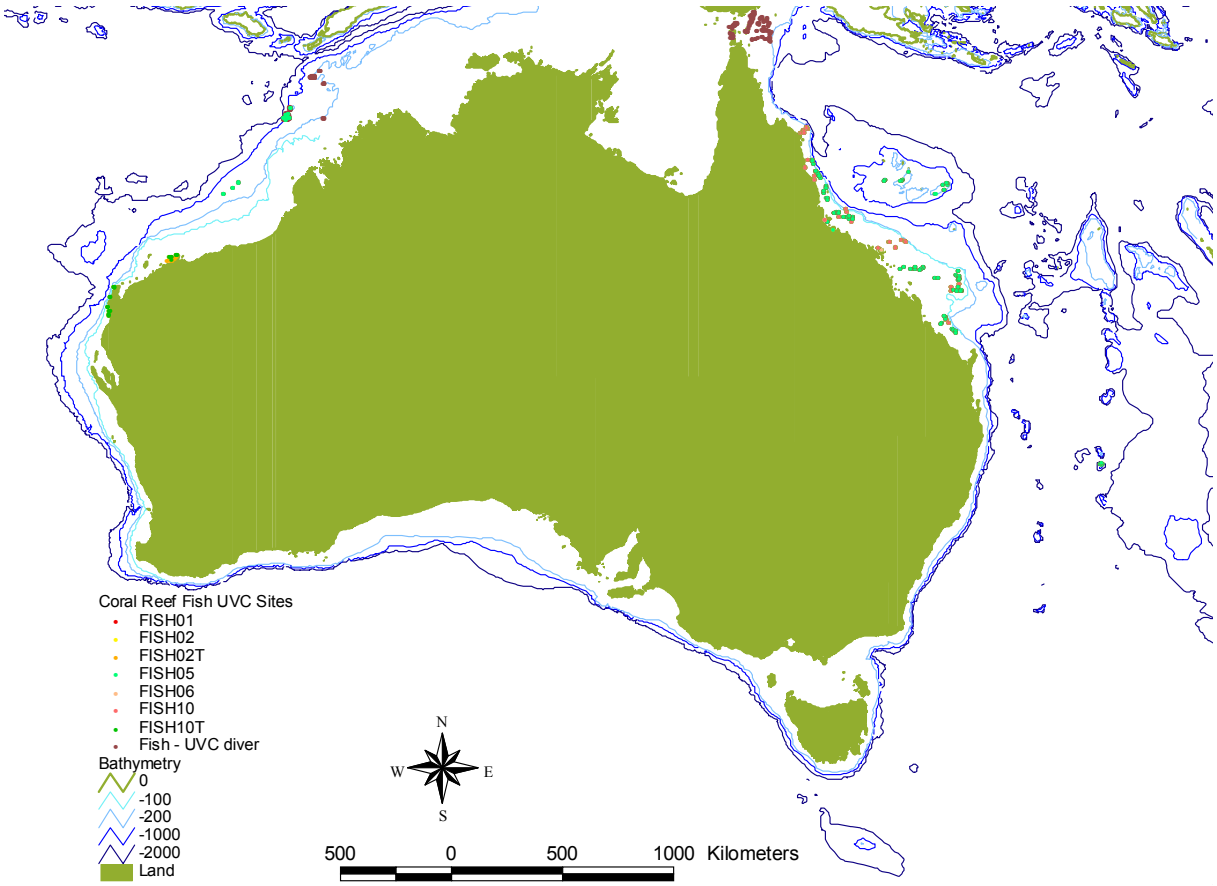
Map 3. Site locations for shelf and slope fish samples, collected by a variety of fish trawls.



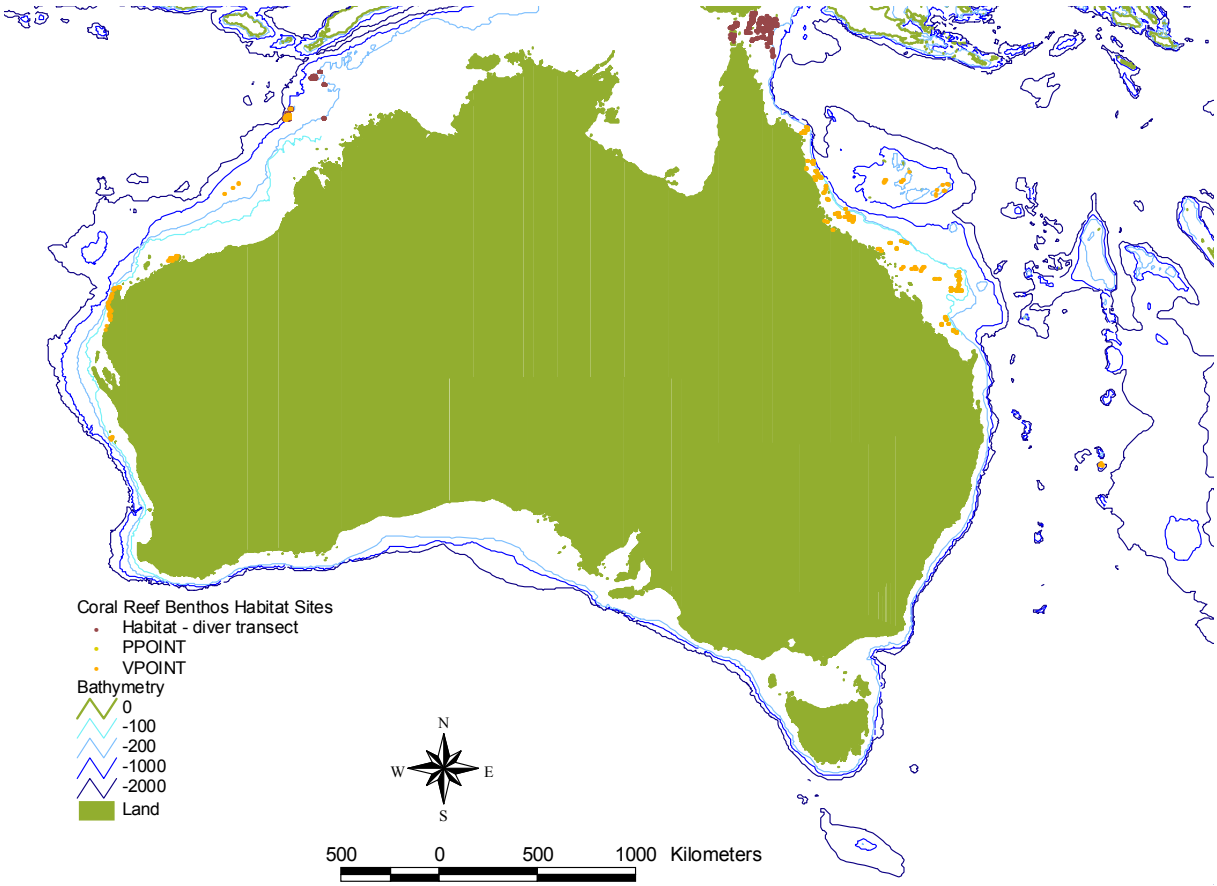
Map 4. Site locations for shelf fish & benthos samples, collected by a variety of prawn trawls.



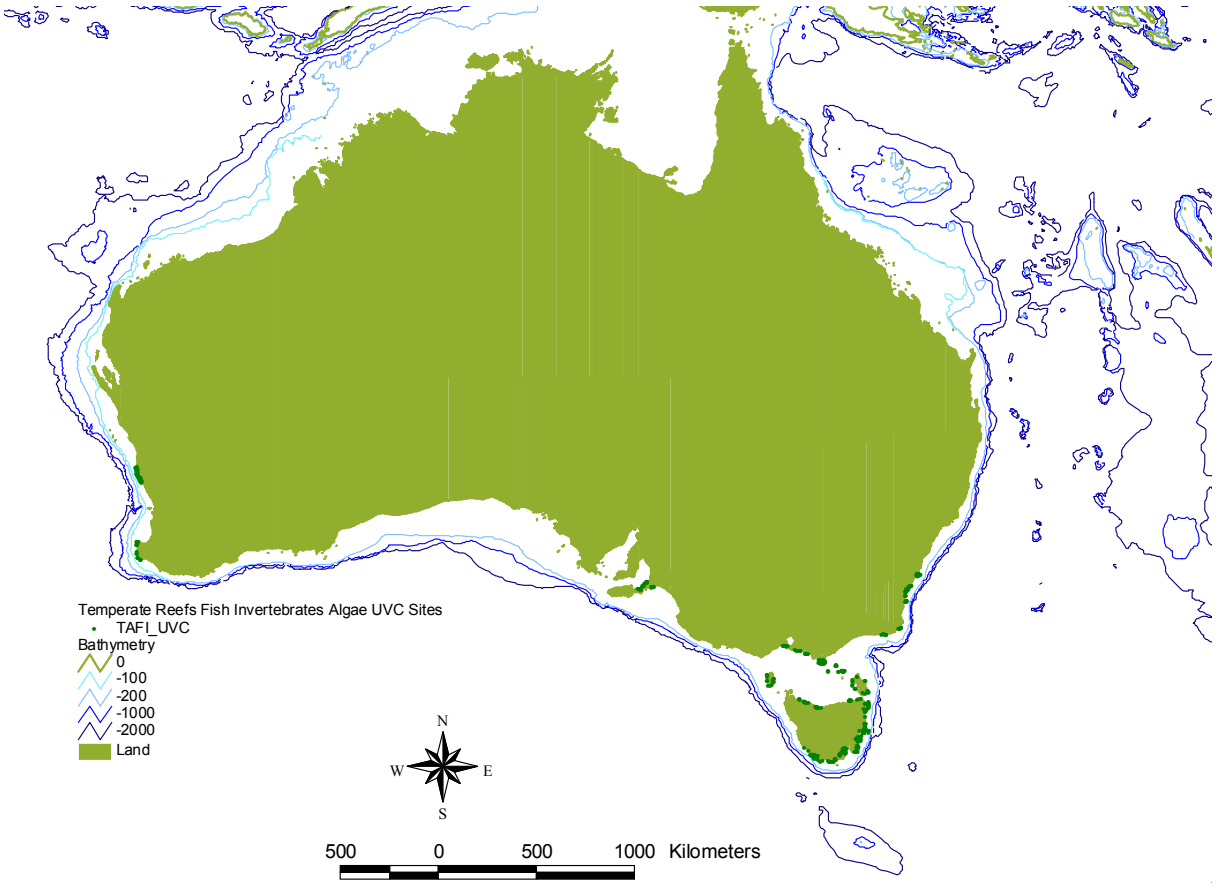
Map 5. Site locations for shelf and slope video observations, collected by a variety of camera systems.



Map 5. Site locations for coral reef fish u/w visual censuses, collected using a variety of transects.



Map 6. Site locations for coral reef benthos and habitat, collected using diver transects and imagery.



Map 7. Site locations for temperate rocky reef fish, invertebrates and algae UVC diver transects.

Habitat and biodiversity surveys - WA Voyages of Discovery

Title : SS05/2007 - Voyage of discovery - benthic biodiversity of the deep continental shelf and slope in Australia's "North West Region"

MarLIN record number : 6938 **Anzlic Identifier** : ANZCW0306006938

Contact

Alan Williams
CSIRO Division of Marine and Atmospheric Research - Hobart
G.P.O. Box 1538 Hobart TAS Australia 7001
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Abstract : The overall aims were to provide data on the distribution of deep seabed habitats and fauna that are amenable to scientific hypothesis testing, can be immediately applied to marine resource management processes, and that enable strategic development of tools and techniques for understanding the processes that maintain deep sea biodiversity. This work was to support the process of NWR Estate inventory and management performance assessment by providing interpreted benthic habitat maps, faunal inventories, distribution maps and conservation values. Data will be collected at scientific reference sites from potential MPA areas that can be re-visited for monitoring purposes in the future. Sampling along environmental gradients (geographic range and depth) in this section of Australia's coast will also provide the opportunity to evaluate biogeographic hypotheses. Further refinement of predictive methods for identifying seabed habitat types, initially developed in temperate and cool-temperate environments, will be enabled by data collection from this tropical location in Australia. We intended to highlight the importance of this underlying science as a modern "Voyage of Discovery" given the likely significance of the findings in terms of Australia's biodiversity and its biogeography and evolution. (From Voyage Plan)
This Metadata record describes the invertebrate and fish catch data taken with benthic sled, beamtrawl and demersal fish trawl.

Contributors : Felicity McEnnulty, Karen Gowlett-Holmes, Franzis Althaus, Alan Williams

References : SS200705 voyage report; client milestone report

Publicly available URLs :

Documentation Links

Hyperlink: http://www.marine.csiro.au/nationalfacility/voyagedocs/2007/MNF-SS05-07_sum.pdf
Description: Voyage summary

Geographic Extent

15.5 S

115.0 E  124.0 E

21.0 S

Beginning Date: 07 Jun 2007 **Ending Date:** 09 Jul 2007

Minimum Depth: **Maximum Depth:**

Progress : In Progress **Maintenance and Update Frequency** : As required

Access constraint

Currently for project access only

Title : SS05/2007 - Exploring and characterising marine ecosystems of the NW Region, 7 June - 7 July 2007

MarLIN record number : 6895 **Anzlic Identifier** : ANZCW0306006895

Contact

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Abstract : The overall aims were to provide data on the distribution of deep seabed habitats and fauna that are amenable to scientific hypothesis testing, can be immediately applied to marine resource management processes, and that enable strategic development of tools and techniques for understanding the processes that maintain deep sea biodiversity. This work was to support the process of NWR Estate inventory and management performance assessment by providing interpreted benthic habitat maps, faunal inventories, distribution maps and conservation values. Data will be collected at scientific reference sites from potential MPA areas that can be re-visited for monitoring purposes in the future. Sampling along environmental gradients (geographic range and depth) in this section of Australia¿s coast will also provide the opportunity to evaluate biogeographic hypotheses. Further refinement of predictive methods for identifying seabed habitat types, initially developed in temperate and cool-temperate environments, will be enabled by data collection from this tropical location in Australia. We intended to highlight the importance of this underlying science as a modern 'Voyage of Discovery' given the likely significance of the findings in terms of Australia's biodiversity and its biogeography and evolution. (From Voyage Plan) This Metadata record describes the imagery data taken with the deep video-system.

Contributors : Bruce Barker, Alan Williams, Matt Sherlock, Jeff Cordell

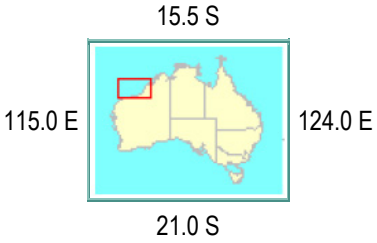
References : SS200705 voyage report; client milestone report

Publicly available URLs :

Documentation Links

Hyperlink: http://www.marine.csiro.au/nationalfacility/voyagedocs/2007/planSS05-2007.pdf
Description: Voyage Plan

Geographic Extent



Beginning Date: 07 Jun 2007 **Ending Date:** 07 Jul 2007

Minimum Depth: **Maximum Depth:**

Progress : In Progress **Maintenance and Update Frequency** : As required

Access constraint

Currently for project access only

Title : SS05/2007 - Voyage of discovery - Sediments of the deep continental shelf and slope in Australia's "North West Region"

MarLIN record number : 7033 **Anzlic Identifier** : ANZCW0306007033

Contact

Alan Williams
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Abstract : The overall aims were to provide data on the distribution of deep seabed habitats and fauna that are amenable to scientific hypothesis testing, can be immediately applied to marine resource management processes, and that enable strategic development of tools and techniques for understanding the processes that maintain deep sea biodiversity. This work was to support the process of NWR Estate inventory and management performance assessment by providing interpreted benthic habitat maps, faunal inventories, distribution maps and conservation values. Data will be collected at scientific reference sites from potential MPA areas that can be re-visited for monitoring purposes in the future. Sampling along environmental gradients (geographic range and depth) in this section of Australia¿s coast will also provide the opportunity to evaluate biogeographic hypotheses. Further refinement of predictive methods for identifying seabed habitat types, initially developed in temperate and cool-temperate environments, will be enabled by data collection from this tropical location in Australia. We intended to highlight the importance of this underlying science as a modern "Voyage of Discovery" given the likely significance of the findings in terms of Australia's biodiversity and its biogeography and evolution. (From Voyage Plan)
This Metadata record describes the sediment data taken with a Smith-McIntyre grab.
Sediment samples were divided into two samples: a elutrition sample for macroinvertebrates that was sent to Robin Wilson at MV for analysis and a sediment sample to be analysed by Geoscience Australia.

Contributors : Rudy Kloser, Robin Wilson (MV) Karen Gowlett-Holmes, Franzis Althaus, Alan Williams, Geoscience Australia

References : SS200705 voyage report

Publicly available URLs :

Documentation Links

Hyperlink: http://www.marine.csiro.au/nationalfacility/voyagedocs/2007/MNF-SS05-07_sum.pdf
Description: Voyage summary

Geographic Extent

15.5 S

115.0 E  124.0 E

21.0 S

Beginning Date: 07 Jun 2007 **Ending Date:** 09 Jul 2007

Minimum Depth: **Maximum Depth:**

Progress : In Progress **Maintenance and Update Frequency** : As required

Access constraint

Currently for project access only

Title : SS10/2005 - Voyage of discovery - benthic biodiversity of the deep continental shelf and slope in Australia's "South West Region"

MarLIN record number : 6937 **Anzlic Identifier** : ANZCW0306006937

Contact

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Abstract : The scientific objectives for the survey were split across two voyages (SS07/2005 for leg 1 and SS10/2005 for leg 2). The first leg was to map and visually survey (video) the upper continental slope (and at selected sites transects from the outer shelf to the mid-slope) at regular intervals of 1deg latitude; the second leg was to targeted sample the surveyed locations to document the benthic biodiversity.
This Metadata record describes the invertebrate and fish catch data taken with benthic sled, and beamtrawl.

Contributors : Felicity McEnnulty, Karen Gowlett-Holmes, Franzis Althaus, Alan Williams

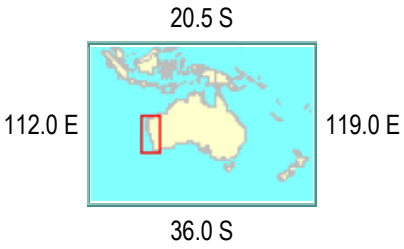
References : SS200510 voyage report; client milestone reports

Publicly available URLs :

Documentation Links

Hyperlink: http://www.marine.csiro.au/nationalfacility/voyagedocs/2005/Summary_SS10-2005.pdf
Description: Voyage summary

Geographic Extent



Beginning Date: 18 Nov 2005 **Ending Date:** 14 Dec 2005

Minimum Depth: 100 **Maximum Depth:** 1100

Progress : In Progress **Maintenance and Update Frequency** : As required

Access constraint

Currently for project access only

Title : SS10/2005 - Voyage of discovery - Sediments of the deep continental shelf and slope in Australia's "South West Region"

MarLIN record number : 7034 **Anzlic Identifier** : ANZCW0306007034

Contact

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Abstract : The scientific objectives for the survey were split across two voyages (SS07/2005 for leg 1 and SS10/2005 for leg 2). The first leg was to map and visually survey (video) the upper continental slope (and at selected sites transects from the outer shelf to the mid-slope) at regular intervals of 1 deg latitude; the second leg was to targeted sample the surveyed locations to document the benthic biodiversity.
This Metadata record describes the sediment data taken with a Smith-McIntyre grab. Sediment samples were divided into two samples: a elutrition sample for macroinvertebrates that was sent to Robin Wilson at MV for analysis and a sediment sample to be analysed by Geoscience Australia.

Contributors : Rudy Kloser, Karen Gowlett-Holmes, Franzis Althaus, Alan Williams, Robin Wilson (MV), Geoscience Australia

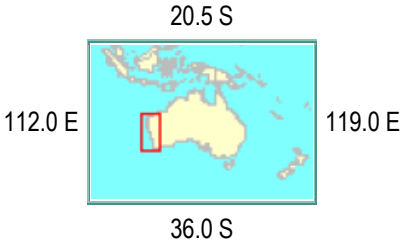
References : SS200510 voyage report

Publicly available URLs :

Documentation Links

Hyperlink: http://www.marine.csiro.au/nationalfacility/voyagedocs/2005/Summary_SS10-2005.pdf
Description: Voyage summary

Geographic Extent



Beginning Date: 18 Nov 2005 **Ending Date:** 14 Dec 2005

Minimum Depth: 100 **Maximum Depth:** 1100

Progress : In Progress **Maintenance and Update Frequency** : As required

Access constraint

Currently for project access only

Title : SS07/2005 Video Mapping benthic ecosystems on the deep continental shelf and slope in Australia's "South West Region"

MarLIN record number : 6839 **Anzlic Identifier** : ANZCW0306006839

Contact

Alan Williams
CSIRO Division of Marine and Atmospheric Research - Hobart
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Abstract : Map data were collected successfully at all locations; map data were processed and products made on board; these were used to target photographic and sediment sampling. Initial map products are of extremely high quality and enable visualization of habitat features at a range of relevant spatial scales. There was a total of 223 sampling stations at 21 sites: 2 box cores, 16 stereo video and stills camera stations; 49 CTD casts; 107 smith macintyre grabs and 2 sherman sleds. Sediment and photographic data were taken successfully at virtually all planned stations at depths of 100 m, 200 m, 400 m, 700 m and 1000 m (a few were lost to weather), and at several additional stations. Sub-samples from sediments were taken for geological analysis, faunal analysis, and stable isotope analysis. The quality of the video and still digital photographic data was very high; a wide variety of previously unseen seabed types and benthic animals were recorded.

Contributors : Bruce Barker, Alan Williams, Matt Sherlock (CSIRO)

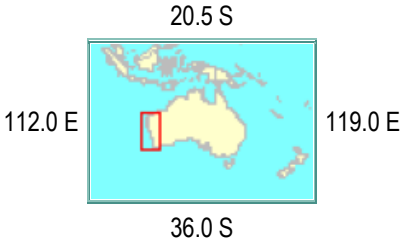
References : http://www.marine.csiro.au/nationalfacility/voyagedocs/2005/summary_ss07-2005.pdf

Publicly available URLs :

Documentation Links

Hyperlink: file:////titanic/Groups/Multiple Use Management of EEZ/Giant Crab/Current/surveys/survey 2/Video Data/Vid Log.xls
Description: Summary of video tape contents

Geographic Extent



Beginning Date: 11 Apr 2004 **Ending Date:** 25 Apr 2004

Minimum Depth: **Maximum Depth:**

Progress : In Progress **Maintenance and Update Frequency** : As required

Access constraint

Currently for project access only

WA other surveys

Title : Southern Surveyor Voyage SS 01/91 Biological Data Overview

MarLIN record number : 4951 **Anzlic Identifier** : ANZCW0306004951

Contact

Tony Koslow
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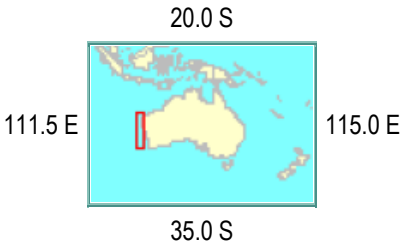
Abstract : This record is an overview entry for biological data collected on Southern Surveyor cruise SS 01/91. This cruise took place in waters off the west coast of Western Australia during 21 January - 19 February 1991, under the leadership of Anthony Koslow. Biological data collected on this cruise include extensive collections of fish, crustaceans (including scampi and deep-water prawns), and cephalopods from 95 trawls. Photographic records were also taken of the specimens and acoustic data were continuosly collected during the cruise.
Please note: This metadata record is a preliminary entry derived from information in the cruise plan and/or cruise report. Individual data types - which may span several cruises - will be indexed separately within this metadata system in due course.

Contributors :

References : CSIRO Division of Fisheries (1991). FRV Southern Surveyor. Cruise Report SS 01/91. Miscellaneous Publication. CSIRO Division of Fisheries, 16 pp.
Williams, A., Last, P.R., Gomon, M.F. & Paxton, J.R. (1996). Species composition and checklist of the demersal ichthyofauna of the continental slope off Western Australia (20-35 deg S). Records of the Western Australian Museum 18: 135-155.

Publicly available URLs :

Geographic Extent



Beginning Date: 22 Jan 1991 **Ending Date:** 19 Feb 1991

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : Not Planned

Access constraint

These datasets are normally accessible only by arrangement with individual scientists and/or relevant custodian(s).

NWS – JEMS

Title : Biological Data from CMR Research Vessels from the Australian North West Shelf, Part I (1982-1997 "North West Shelf Study" database)

Contact

Divisional Data Centre
CSIRO Division of Marine and Atmospheric Research - Hobart
G.P.O. Box 1538 Hobart TAS Australia 7001
data-requests@marine.csiro.au

Abstract : This is a compilation dataset containing all vessel-collected and centrally held biological data from CMR voyages forming part of the 1982-1997 "North West Shelf Study". The data were extracted from the master North West Shelf Database (as described by R. Campbell, 1984 unpublished, with additional data from 1995 and 1997) for the use of the NWS Joint Environmental Management Study, and have been subject to additional maintenance with some new information added by Xi He's group. This version of the data is a copy of the MS Access files held by Xi's group as at October 2000, with no additional quality checks.
Data represented are operation, species, and length-frequency data from Soela voyages SO 5/82, SO 6/82, SO 1/83, SO 2/83, SO 3/83, SO 4/83, SO 5/83, SO 6/86, SO 7/87, SO 5/88, Pride of Eden PoE 4/89, Southern Surveyor SS 02/90, SS 04/91, SS 08/95 and SS 07/97. Biological data from other CSIRO voyages through this region but not part of this series of cruises has been extracted separately as a complementary dataset to the present one (see separate metadata record "Biological Data from CMR Research Vessels, North West Shelf, part II"). In addition to the trawl station and catch data, details of photographic stations is included along with recently compiled data from detailed analyses of the underwater photographs carried out subsequent to the original data collection.
Additional information regarding individual components of this dataset is contained in separate MarLIN metadata records which exist for each voyage (e.g. "Soela Voyage SO 5/82 Biological Data Overview", etc.), and in the cruise report for each voyage. Information regarding the photographic analyses is held by Xi He's group.
This dataset is available on-line for researchers in the NWS-JEMS study (see data links). A username and password is required.

Contributors : Rob Campbell (former project data manger), Franzis Althaus, Kim Woolley

References :

Davis T., Sainsbury K. et al. 1982, Cruise Summaries FRV Soela (unpub). CSIRO Division of Fisheries, Cronulla.
Davis T., Stevens J., et al. 1983, Cruise Summaries FRV Soela (unpub). CSIRO Division ofResearch, Cronulla.
Sainsbury K. et al. 1986, Cruise Summaries FRV Soela (unpub). CSIRO Division of Fisheries, Hobart.
Sainsbury K. et al. 1987, Cruise Summaries FRV Soela (unpub). CSIRO Division of Fisheries, Hobart.
Sainsbury K. et al. 1988, Cruise Summaries FRV Soela (unpub). CSIRO Division of Fisheries, Hobart.
Whitelaw W. et al. 1989, Cruise Report Pride of Eden (unpub). CSIRO Division of Fisheries, Hobart.
Whitelaw W. et al. 1990, Cruise Report FRV Southern Surveyor (unpub). CSIRO Division of Fisheries, Hobart.
Whitelaw W. et al. 1991, Cruise Report FRV Southern Surveyor (unpub). CSIRO Division of Fisheries, Hobart.
Whitelaw W. et al. 1997, Cruise Report FRV Southern Surveyor (unpub). CSIRO Marine, Hobart.
Campbell, R. 1994 draft. CSIRO North West Shelf Research Cruise and Commercial Database Holdings. 41pp.
Sainsbury, K. J. (1991). Application of an experimental approach to management of a tropical multispecies fishery with highly uncertain dynamics. In: Daan, N., Sissenwine, M P (Eds.). ICES Marine Science Symp, 193: 301-320.

Publicly available URLs :

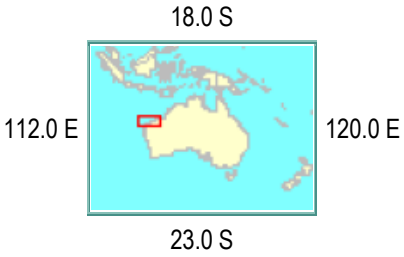
Documentation Links

Hyperlink: http://www.marine.csiro.au/datacentre/nws_data/data_files/cmr_cruises78-97/nws_cruises_bio1.htm
Description: Dataset description (JEMS only dataset- authorisation required)

Data Links

Hyperlink: http://www.marine.csiro.au/datacentre/nws_data/data_files/cmr_cruises78-97/cmr_nws.ZIP
Description: Download Dataset -5MB zipped (JEMS only dataset- authorisation required)

Geographic Extent



Beginning Date: 25 Sep 1982 **Ending Date:** 01 Sep 1997

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : Not Planned

Access constraint

These datasets are normally accessible only by arrangement with individual scientists and/or relevant custodian(s).

Additional Metadata Information

Individual MarLIN records for biological data from voyages SO 5/82, SO 6/82, SO 1/83, SO 2/83, SO 3/83, SO 4/83, SO 5/83, SO 6/86, SO 7/87, SO 5/88, PoE 4/89, SS 02/90, SS 04/91, SS 08/95, and SS 07/97

Brodie et al 2006 published a report summarising all data warehouse and metadata holdings related to the NWSJEMS study:

Brodie, P., Fuller, M. Rees. T. and Wilkes, L. 2006. Data warehouse and Metadata holdings relevant to Australia's North West Shelf. NWSJEMS Technical Report No. 5. CSIRO Marine and Atmospheric Research, Hobart, Australia. http://www.cmar.csiro.au/nwsjems/reports/NWSJEMS_TR5.pdf.

SEF Ecosystem study

Title : South East Fishery (SEF) Ecosystem Study 1993-1996: Benthic Faunal Survey Data

MarLIN record number : 5248 **Anzlic Identifier** : ANZCW0306005248

Contact

Alan Williams
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Abstract : This record describes the benthic assemblage survey data collected as part of the 1993-1996 South East Fishery Ecosystem Study undertaken by CSIRO Division of Fisheries. Benthic sled tows (c.4 per survey) were carried out at selected locations on transects across the continental shelf and in intensive survey areas in eastern Bass Strait, south-west Victoria, and south-west NSW waters. Data were collected in July 1993 (cruise SS 05/93), August 1994 (cruise SS 05/94), April 1996 (cruise SS 02/96) and November 1996 (cruise SS 06/96). Large collections of benthic invertebrates were identified and many photographed. As part of the analysis stage of the project, these assemblages wil be related to substrate characteristics on the one hand and fish faunal assemblages on the other.

Contributors : Alan Williams, Nic Bax + others

References : CSIRO Division of Fisheries (1993). FRV Southern Surveyor. Cruise Report SS 05/93. Miscellaneous Publication. CSIRO Division of Fisheries, 45 pp.
CSIRO Division of Fisheries (1994). FRV Southern Surveyor. Cruise Report SS 05/94. Miscellaneous Publication. CSIRO Division of Fisheries, 35 pp.
CSIRO Division of Fisheries (1996). FRV Southern Surveyor. Cruise Report SS 02/96. Miscellaneous Publication. CSIRO Division of Fisheries, 29 pp.
CSIRO Division of Fisheries (1996). FRV Southern Surveyor. Cruise Report SS 06/96. Miscellaneous Publication. CSIRO Division of Fisheries, 28 pp.
Bax, N and Williams, A. 2000. Habitat and fisheries production in the South East Fishery ecosystem - Final report to the Fisheries Research and Development Corporation. CSIRO Marine Reaserch, Hobart.
Williams, A. and Bax, N. (2001). Delineating fish-habitat associations for spatially-based management: an example from the south-eastern Australian continental shelf. Marine and Freshwater Research, 52: 513-536.

Publicly available URLs :

Geographic Extent

37.4 S

146.3 E  151.5 E

40.3 S

Beginning Date: Jul 1993 **Ending Date:** Nov 1996

Minimum Depth: 20 **Maximum Depth:** 700

Progress : Complete **Maintenance and Update Frequency** : Not Planned

Access constraint

no restrictions

Title : South East Fishery (SEF) Ecosystem Study 1993-1996: Fish Surveys

MarLIN record number : 5245 **Anzlic Identifier** : ANZCW0306005245

Contact

Alan Williams
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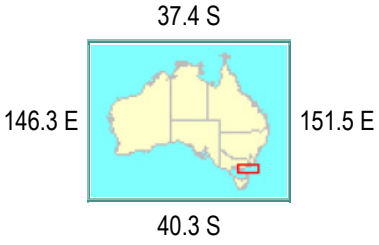
Abstract : This record describes the fish survey data collected as part of the 1993-1996 South East Fishery Ecosystem Study undertaken by CSIRO Division of Fisheries. Demersal trawls (33 per survey) were carried out at a range of depths (25m to 200m) on seven transects across the continental shelf in eastern Bass Strait, south-west Victoria, and south-west NSW waters. Data were collected in July 1993 (cruise SS 05/93), August 1994 (cruise SS 05/94), April 1996 (cruise SS 02/96) and November 1996 (cruise SS 06/96). Extensive biological and distribution data were collected on a wide range of demersal fish including SEF quota species such as jack mackerel, tiger flathead, school whiting, redfish, spotted warehou and jackass morwong, and others. All species, length-frequency, and other catch related data are held in the main Southern Surveyor biological database in Hobart. Other attributes recorded include weight, sex, and gonad maturation stage, for certain target species. Additional samples were taken from this material for biological analyses of stomach contents, stable isotopes, otolith analyses, etc. (see separate metadata entry). In addition to the broad-scale, transect-based surveys described above, representatives of 4 separate habitat types (Big Gutter, Gabo Reef, Big Horsehoe and Broken Reef) were sampled more intensively and the data will be analysed along with the broad-scale survey dataset.

Contributors : Alan Williams, Nic Bax + others

References : CSIRO Division of Fisheries (1993). FRV Southern Surveyor. Cruise Report SS 05/93. Miscellaneous Publication. CSIRO Division of Fisheries, 45 pp.
CSIRO Division of Fisheries (1994). FRV Southern Surveyor. Cruise Report SS 05/94. Miscellaneous Publication. CSIRO Division of Fisheries, 35 pp.
CSIRO Division of Fisheries (1996). FRV Southern Surveyor. Cruise Report SS 02/96. Miscellaneous Publication. CSIRO Division of Fisheries, 29 pp.
CSIRO Division of Fisheries (1996). FRV Southern Surveyor. Cruise Report SS 06/96. Miscellaneous Publication. CSIRO Division of Fisheries, 28 pp.
Bax, N and Williams, A. 2000. Habitat and fisheries production in the South East Fishery ecosystem - Final report to the Fisheries Research and Development Corporation. CSIRO Marine Reaserch, Hobart.
Williams, A. and Bax, N. (2001). Delineating fish-habitat associations for spatially-based management: an example from the south-eastern Australian continental shelf. Marine and Freshwater Research, 52: 513-536.
Bulman, C.M., Althaus, F., He, X., Bax, N.J. and Williams, A. (2001). Diets and trophic guilds of demersal fishes of the south-eastern Australian shelf. Marine and Freshwater Research, 52: 537-548.

Geographic Extent



Beginning Date: Jul 1993 **Ending Date:** Nov 1996

Minimum Depth: 20 **Maximum Depth:** 700

Progress : Complete **Maintenance and Update Frequency** : Not Planned

Access constraint

No restrictions

Title : South East Fishery (SEF) Ecosystem Study 1993-1996: Focussed habitat sampling - Fish Trap (Starfire 1994)

MarLIN record number : 7037 **Anzlic Identifier** : ANZCW0306007037

Contact

Nic Bax
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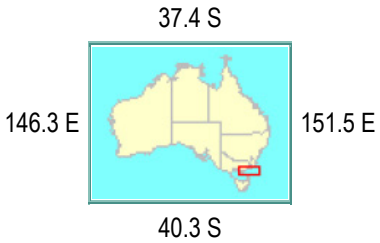
Abstract : Focussed habitat sampling of macrohabitats (defined by bottom type, soft hard or rough) in Gabo and Howe Reef mesohabitats (key study areas presenting a variety of shelf habitats describd by fishers) using fish traps from a commercial vessel. Traps were deployed and retrieved at dawn and dusk giving near equal day/night saoking times. 15 deployments (14 deployments of 5 traps, 1 deployment of 2 traps) yielded ~1 t fish.

Contributors : Alan Williams, Nic Bax + others

References : Bax, N and Williams, A. 2000. Habitat and fisheries production in the South East Fishery ecosystem - Final report to the Fisheries Research and Development Corporation. CSIRO Marine Reaserch, Hobart.

Publicly available URLs :

Geographic Extent



Beginning Date: 1994 **Ending Date:** 1994

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

No restrictions

Title : South East Fishery (SEF) Ecosystem Study 1993-1996: Focussed habitat sampling - Fish Trap (Starfire 1996)

MarLIN record number : 7038 **Anzlic Identifier** : ANZCW0306007038

Contact

Nic Bax
CSIRO Division of Marine and Atmospheric Research - Hobart
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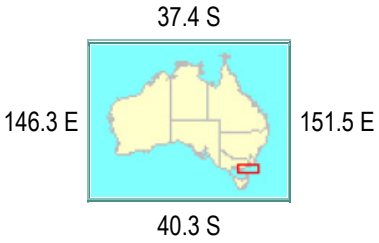
Abstract : Focussed habitat sampling of eight macrohabitats (defined by bottom type, soft hard or rough) in three mesohabitats (key study areas presenting a variety of shelf habitats describd by fishers) using fish traps from a commercial vessel (incidental catches were also taken with modified crab traps). Six of the macrohabitats were located in Disaster Bay off southern NSW, the other two were in Victorian waters off Pt Hicks. Traps were deployed and retrieved at dawn and dusk giving near equal day/night saoking times. 18 deployments yielded 1520 fish (~900 kg) and 258.5 kg hermit crabs. For full details see Williams and Bax (2001).

Contributors : Alan Williams, Nic Bax + others

References : Bax, N and Williams, A. 2000. Habitat and fisheries production in the South East Fishery ecosystem - Final report to the Fisheries Research and Development Corporation. CSIRO Marine Reaserch, Hobart.
Williams, A. and Bax, N. (2001). Delineating fish-habitat associations for spatially-based management: an example from the south-eastern Australian continental shelf. Marine and Freshwater Research, 52: 513-536.

Publicly available URLs :

Geographic Extent



Beginning Date: 1996 **Ending Date:** 1996

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

No restrictions

Title : South East Fishery (SEF) Ecosystem Study 1993-1996: Focussed habitat sampling - Gillnet (Erin Jay 1994)

MarLIN record number : 7039 **Anzlic Identifier** : ANZCW0306007039

Contact

Nic Bax
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Abstract : Focussed habitat sampling of macrohabitats (defined by bottom type, soft hard or rough) in Gabo and Howe Reef mesohabitats (key study areas presenting a variety of shelf habitats described by fishers) using gillnets from a commercial vessel. Gillnets were deployed and retrieved at dawn and dusk giving near equal day/night soaking times. 15 deployments (1 trial soak and 14 sampling stations) yielded ~0.5 t fish.

Contributors : Alan Williams, Nic Bax + others

References : Bax, N and Williams, A. 2000. Habitat and fisheries production in the South East Fishery ecosystem - Final report to the Fisheries Research and Development Corporation. CSIRO Marine Reaserch, Hobart.

Publicly available URLs :

Geographic Extent

37.4 S

146.3 E  151.5 E

40.3 S

Beginning Date: 1994 **Ending Date:** 1994

Minimum Depth: 50 **Maximum Depth:** 200

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

No restrictions

Title : South East Fishery (SEF) Ecosystem Study 1993-1996: Focussed habitat sampling - Gillnet (Erin Jay 1996)

MarLIN record number : 7040 **Anzlic Identifier** : ANZCW0306007040

Contact

Nic Bax
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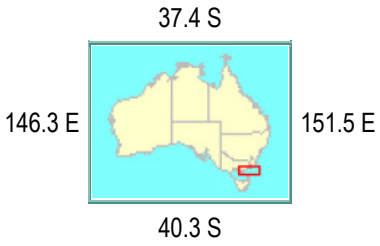
Abstract : Focussed habitat sampling of eight macrohabitats (defined by bottom type, soft hard or rough) in three mesohabitats (key study areas presenting a variety of shelf habitats described by fishers) using gillnets from a commercial vessel.six of the macrohabitats were located in Disaster Bay off southern NSW, the other two were in Victorian waters off Pt Hicks. Gillnets were deployed and retrieved at dawn and dusk giving near equal day/night soaking times. 17 deployments yielded 5,456 fish weighing over 5.5 t. For full details see Williams and Bax (2001).

Contributors : Alan Williams, Nic Bax + others

References : Bax, N and Williams, A. 2000. Habitat and fisheries production in the South East Fishery ecosystem - Final report to the Fisheries Research and Development Corporation. CSIRO Marine Reaserch, Hobart.
Williams, A. and Bax, N. (2001). Delineating fish-habitat associations for spatially-based management: an example from the south-eastern Australian continental shelf. Marine and Freshwater Research, 52: 513-536.

Publicly available URLs :

Geographic Extent



Beginning Date: 1996 **Ending Date:** 1996

Minimum Depth: 50 **Maximum Depth:** 200

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint
No restrictions

Title : South East Fishery (SEF) Ecosystem Study 1993-1996: Focussed habitat sampling - Gillnet and Fish Trap (Starfire 1997)

MarLIN record number : 7041 **Anzlic Identifier** : ANZCW0306007041

Contact

Nic Bax
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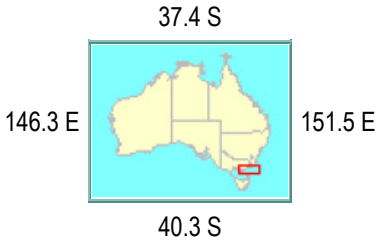
Abstract : Focussed habitat re-sampling of macrohabitats (defined by bottom type, soft hard or rough) in three mesohabitats (key study areas presenting a variety of shelf habitats described by fishers) using gillnets and traps from a commercial vessel.
Gillnets were deployed and retrieved at dawn and dusk giving near equal day/night soaking times. 19 deployments yielded 6,457 fish and squid weighing nearly 4 t.
Fish and crab traps were set during the day only, yielding 979 fish specimens (589 kg) and squids and hermit crabs weighing 673 kg in total.

Contributors : Alan Williams, Nic Bax + others

References : Bax, N and Williams, A. 2000. Habitat and fisheries production in the South East Fishery ecosystem - Final report to the Fisheries Research and Development Corporation. CSIRO Marine Research, Hobart.
Williams, A. and Bax, N. (2001). Delineating fish-habitat associations for spatially-based management: an example from the south-eastern Australian continental shelf. Marine and Freshwater Research, 52: 513-536.

Publicly available URLs :

Geographic Extent



Beginning Date: 1997 **Ending Date:** 1997

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

No restrictions

Title : South East Fishery (SEF) Ecosystem Study 1993-1996: Zooplankton Data

MarLIN record number : 5252 **Anzlic Identifier** : ANZCW0306005252

Contact

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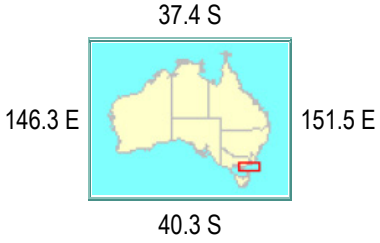
Abstract : This record describes zooplankton data collected as part of the 1993-1996 South East Fishery Ecosystem Study undertaken by CSIRO Division of Fisheries. Zooplankton were collected by bongo and/or drop nets at 40m and 200m stations on seven transects across the continental shelf in eastern Bass Strait, south-west Victoria, and south-west NSW waters. Data were collected in July 1993 (cruise SS 05/93), August 1994 (cruise SS 05/94), April 1996 (cruise SS 02/96) and November 1996 (cruise SS 06/96). Major species/species groups were identified, biomass measured, and subsamples taken for stable isotope analysis. Zooplankton communities identified will be analysed for links to water masses, water column phytoplankton pigments, and nutrient levels in the water.

Contributors : Alan Williams, Nic Bax + others

References : CSIRO Division of Fisheries (1993). FRV Southern Surveyor. Cruise Report SS 05/93. Miscellaneous Publication. CSIRO Division of Fisheries, 45 pp.
CSIRO Division of Fisheries (1994). FRV Southern Surveyor. Cruise Report SS 05/94. Miscellaneous Publication. CSIRO Division of Fisheries, 35 pp.
CSIRO Division of Fisheries (1996). FRV Southern Surveyor. Cruise Report SS 02/96. Miscellaneous Publication. CSIRO Division of Fisheries, 29 pp.
CSIRO Division of Fisheries (1996). FRV Southern Surveyor. Cruise Report SS 06/96. Miscellaneous Publication. CSIRO Division of Fisheries, 28 pp.

Publicly available URLs :

Geographic Extent



Beginning Date: Jul 1993 **Ending Date:** Nov 1996

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : Not Planned

Access constraint

Data access is restricted to custodian until completion of the project (planned 1999)

Title : South East Fishery (SEF) Ecosystem Study 1993-1996: Video/Towed Camera Survey Data

MarLIN record number : 5250 **Anzlic Identifier** : ANZCW0306005250

Contact

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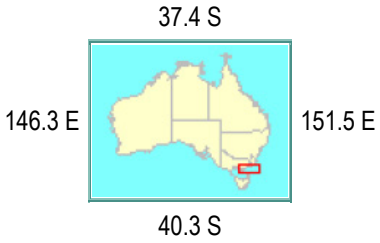
Abstract : This record describes video and still camera data collected using sled-mounted and towed camera arrays as part of the 1993-1996 South East Fishery Ecosystem Study undertaken by CSIRO Division of Fisheries. Sled-mounted video and still cameras and/or Towed Camera Array (TACOS) tows were carried out at selected locations on transects across the continental shelf and in intensive survey areas in eastern Bass Strait, south-west Victoria, and south-west NSW waters. Data were collected in July 1993 (cruise SS 05/93), August 1994 (cruise SS 05/94), April 1996 (cruise SS 02/96) and November 1996 (cruise SS 06/96). The data from these camera surveys will be used in conjunction with benthic sled samples, acoustic data and sediment samples to assess substrate types and provide information about benthic faunal assemblages of the region.

Contributors : Alan Williams, Nic Bax + others

References : CSIRO Division of Fisheries (1993). FRV Southern Surveyor. Cruise Report SS 05/93. Miscellaneous Publication. CSIRO Division of Fisheries, 45 pp.
CSIRO Division of Fisheries (1994). FRV Southern Surveyor. Cruise Report SS 05/94. Miscellaneous Publication. CSIRO Division of Fisheries, 35 pp.
CSIRO Division of Fisheries (1996). FRV Southern Surveyor. Cruise Report SS 02/96. Miscellaneous Publication. CSIRO Division of Fisheries, 29 pp.
CSIRO Division of Fisheries (1996). FRV Southern Surveyor. Cruise Report SS 06/96. Miscellaneous Publication. CSIRO Division of Fisheries, 28 pp.

Publicly available URLs :

Geographic Extent



Beginning Date: Jul 1993 **Ending Date:** Nov 1996

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : Not Planned

Access constraint

Data access is restricted to custodian until completion of the project (planned 1999)

SE Australia Giant crab habitat: video surveys

Title : Project overview: Habitat and population assessment of giant crabs

MarLIN record number : 6278 **Anzlic Identifier** : ANZCW0306006278

Contact

Alan Williams
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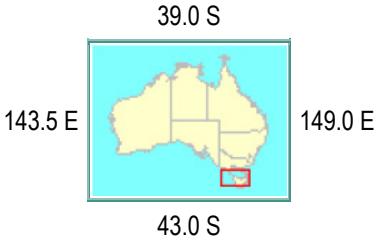
Abstract : The CSIRO part of the collaborative Tasmanian Aquaculture and Fisheries Institute, University of Tasmania (TAFI)/CSIRO Marine Research Project titled 'Understanding Shelf-break Habitat for Sustainable Management of Fisheries with Spatial Overlap', which aimed to map and understand shelf-break seabed habitats (~150-350m depths) around Tasmania, Australia, which is an area of interaction between two fishery sectors, giant crab trappers and finfish trawlers. This project aims to research the habitat effects of these activities over the period 2003-2005 through sampling of fished and unfished areas using video transects, multi-beam acoustic swath mapping, and collection of physical samples using sediment grabs and benthic sleds, using chartered vessels and a voyage of the National Facility FRV Southern Surveyor in 2004.
Specific objectives for the giant crab (Pseudocarcinas gigas) habitat survey are as follows: - define and map giant crab habitat on the shelf edge, at several key locations off the Tasmanian east and west coasts; detail distribution of giant crabs in relation to habitat features; - evaluate ecosystem links between habitats; - evaluate the vulnerability of habitat to damage by fishing (trawls and pots); and - evaluate the ability to obtain fishery independent information by video on the abundance, sex ratio, condition and size of giant crabs.

Contributors : Franzis Althaus, Bruce Barker, Pamela Brodie, Karen Gowlett-Holmes, Gordon Keith, Rudy Kloser, Tim Ryan, Alan Williams (CSIRO); Caleb Gardner, Dave Mills (TAFI)

References : Williams, A., Althaus, F., Barker, B., Gardener, C. and Mills, D. 2007. Understanding shelf-break habitat for sustainable management of fisheries with spatial overlap. Draft final report to the FRDC, project no. 2004/066. 250 pp
Williams A, Althaus F, Barker B, Kloser R, Keith G (2007) 'Research and monitoring for benthic ecosystems in Marine Protected Areas of the South East Marine Region (SEMR) – Using data from the proposed Zeehan MPA to provide an inventory of benthic habitats and biodiversity, and evaluate prospective indicators for monitoring and performance assessment. Final Report to the Department of the Environment and Water Resources. .' CSIRO Marine and Atmospheric Research, Hobart, Tas.

Publicly available URLs :

Geographic Extent



Beginning Date: 02 Nov 2003 **Ending Date:** 13 Apr 2005

Minimum Depth: 50 **Maximum Depth:** 550

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

project access only

Title : Giant Crab Survey 1 Data, Tasmania, November 2003

MarLIN record number : 6279 **Anzlic Identifier** : ANZCW0306006279

Contact

Alan Williams
CSIRO Division of Marine and Atmospheric Research - Hobart
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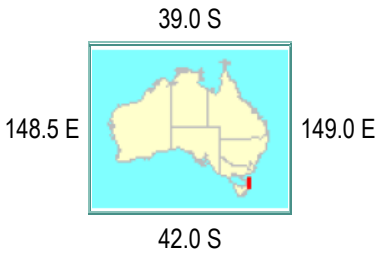
Abstract : The dataset relates to the first of five planned Giant Crab surveys for the joint TAFI (Tasmanian Aquaculture and Fisheries Institute)/CSIRO project titled 'Understanding Shelf-break Habitat for Sustainable Management of Fisheries with Spatial Overlap'. The data comprise bioacoustics data, still camera and underwater video images from 2 trial transects in shallow waters, and 12 research transects at three sites on the north east of Tasmania (off Cape Barren Island, Banks Strait and St Helens), in water depths between 135 and 550m, and include high quality video footage (about 1 hour per transect), 1665 high resolution digital still images. These include the first ever in situ images of giant crabs in their natural habitat. Giant crabs were seen on most transects (up to four confirmed, and other possible sightings, per transect), and numerous seafloor features were observed ranging from large plains of muddy sands supporting communities of small invertebrate animals, to ridges, and rock outcrops exceeding 20 metres in height.

Contributors : Bruce Barker, Alan Williams, Matt Sherlock (CSIRO), Caleb Gardner, David Mills (TAFI)

References :

Publicly available URLs :

Geographic Extent



Beginning Date: 02 Nov 2003 **Ending Date:** 08 Nov 2003

Minimum Depth: **Maximum Depth:**

Progress : Not Known **Maintenance and Update Frequency** : As required

Access constraint

Currently for project access only

Title : Giant Crab Survey 2 Data, Tasmania, April 2004

MarLIN record number : 6511 **Anzlic Identifier** : ANZCW0306006511

Contact

Alan Williams
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G.P.O. Box 1538 Hobart TAS Australia 7001
alan.williams@csiro.au

Abstract : The dataset relates to the second of five planned Giant Crab surveys for the joint TAFI (Tasmanian Aquaculture and Fisheries Institute)/CSIRO project titled 'Understanding Shelf-break Habitat for Sustainable Management of Fisheries with Spatial Overlap'. The data comprise still camera and underwater video images from 9 research transects at sites on the west coast of Tasmania (Southwest Cape to King Island), in water depths between 135 and 550m, and include high quality video footage (about 1 hour per transect), 2258 high resolution digital still images. These include in-situ images of giant crabs in their natural habitat. Giant crabs were seen on several transects and numerous seafloor features were observed ranging from large plains of muddy sands supporting communities of small invertebrate animals, to ridges, and rock outcrops. The voyage began from Hobart and sampling was conducted off the west coast of Tasmania and west of King Island. Swath data and physical samples were also collected in the Banks Strait and Babel study areas where seafloor imagery was collected during Survey 1. Targeted sampling using CSIRO's towed video system, benthic sleds and sediment grabs was undertaken at several sites to characterize the terrain types, sediments, habitats and benthic communities. Targeted sampling in areas identified by the crab fishing industry was enabled by collection of high-resolution multibeam acoustic data using the EM300 swath mapper. Transiting between sites provided opportunity to collect extra swath data providing shelf-break and upper-slope coverage from Strahan to King Island. The CTD instrument was deployed to derive sound velocity profiles for the swath mapper as well as providing temperature and salinity data; the ADCP measured currents through the water column from the surface to the seabed.

Contributors : Bruce Barker, Alan Williams, Matt Sherlock (CSIRO), Caleb Gardner, David Mills (TAFI)

References : Internal report: Voyage Report - Survey of giant crab habitats (survey 2)

Publicly available URLs :

Documentation Links

Hyperlink: file:////titanic/Groups/Multiple Use Management of EEZ/Giant Crab/Current/surveys/survey 2/Video Data/Vid Log.xls
Description: Summary of video tape contents

Geographic Extent

39.0 S

142.0 E  149.0 E

44.0 S

Beginning Date: 11 Apr 2004 **Ending Date:** 25 Apr 2004

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

Currently for project access only

Title : Giant Crab Survey 3 Data, Tasmania, November 2004

MarLIN record number : 6512 **Anzlic Identifier** : ANZCW0306006512

Contact

Alan Williams
CSIRO Division of Marine and Atmospheric Research - Hobart
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Abstract : The dataset relates to the third of four (originally five were planned) Giant Crab surveys for the joint TAFI (Tasmanian Aquaculture and Fisheries Institute)/CSIRO project titled 'Understanding Shelf-break Habitat for Sustainable Management of Fisheries with Spatial Overlap'. The data comprise still camera and underwater video images from 31 research transects at sites on the west coast of Tasmania (Southwest Cape to King Island), in water depths between 135 and 550m, and include high quality video footage (about 1 hour per transect), 2451 high resolution digital still images. These include in-situ images of giant crabs in their natural habitat. Giant crabs were seen on several transects and numerous seafloor features were observed ranging from large plains of muddy sands supporting communities of small invertebrate animals, to ridges, and rock outcrops.

Contributors : Bruce Barker, Alan Williams, Matt Sherlock (CSIRO), Caleb Gardner, David Mills (TAFI)

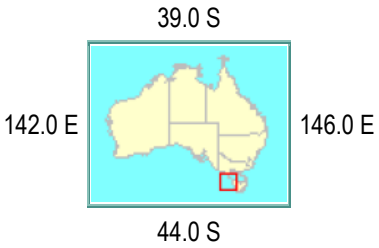
References : Internal report: Voyage Report - Survey of giant crab habitats (survey 3)

Publicly available URLs :

Documentation Links

Hyperlink: S:\Multiple Use Management of EEZ\Giant Crab\Current\surveys\Survey 3
Description: placeholder for Summary of video tape contents and other docs

Geographic Extent



Beginning Date: 08 Nov 2004 **Ending Date:** 02 Dec 2004

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

Currently for project access only

Title : Giant Crab Survey 4 Data, Tasmania, April 2005

MarLIN record number : 6513 **Anzlic Identifier** : ANZCW0306006513

Contact

Alan Williams
CSIRO Division of Marine and Atmospheric Research - Hobart
G.P.O. Box 1538 Hobart TAS Australia 7001
alan.williams@csiro.au

Abstract : The dataset relates to the fourth and final (five originally planned) Giant Crab surveys for the joint TAFI (Tasmanian Aquaculture and Fisheries Institute)/CSIRO project titled 'Understanding Shelf-break Habitat for Sustainable Management of Fisheries with Spatial Overlap'. The data comprise still camera and underwater video images from 26 research transects at sites on the west coast of Tasmania (Southwest Cape to King Island), in water depths between 135 and 550m, and include high quality video footage (about 1 hour per transect), 1425 high resolution digital still images. These include in-situ images of giant crabs in their natural habitat. Giant crabs were seen on several transects and numerous seafloor features were observed ranging from large plains of muddy sands supporting communities of small invertebrate animals, to ridges, and rock outcrops.

Contributors : Bruce Barker, Alan Williams, Matt Sherlock (CSIRO), Caleb Gardner, David Mills (TAFI)

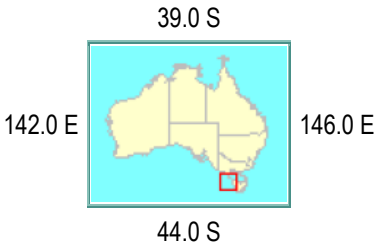
References : Internal report: Voyage Report - Survey of giant crab habitats (survey 4)

Publicly available URLs :

Documentation Links

Hyperlink: S:\Multiple Use Management of EEZ\Giant Crab\Current\surveys\Survey 4
Description: placeholder for summary of video tape contents and other docs

Geographic Extent



Beginning Date: 05 Apr 2005 **Ending Date:** 13 Apr 2005

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

Currently for project access only

SE Australia other surveys

Title : SS2004/04 - Testing, refinement and application of methodology for optimised seabed mapping : Biological data

MarLIN record number : 6978 **Anzlic Identifier** : ANZCW0306006978

Contact

Alan Williams
CSIRO Division of Marine and Atmospheric Research - Hobart
G.P.O. Box 1538 Hobart TAS Australia 7001
alan.williams@csiro.au

Abstract : This voyage tested and refined optimal techniques to map and assess seabed habitat developed in a previous CMR project (NOO OP2000-SE02) by using the National Facility's high-resolution EM300 swath mapper for its first program of biological and physical habitat mapping. The sampling locations were a number of submarine canyons and their immediately adjacent flanks on the west coast of Tasmania and east of Bass Strait. These are prime targets for our methods development because each canyon area is characterised by a great variety of seabed topography and benthic communities concentrated in a relatively small area (< 300 sq km).
The data collected were applied to marine resource management planning in the South East Region. Submarine canyons represent a type of habitat unit ('Level 3 biogeomorphic units') having a strong influence on the location of offshore Marine Protected Areas on the continental slope and rise, and many are likely to be biodiversity hotspots. Several canyons are also the locations of the largest known aggregations of feeding and spawning fishes in the South-East Fishery region, and these support a range of intense, increasing and, in places, conflicting fishing activities. Sampling focussed on the Big Horseshoe Canyon mapped previously with the EM1002 and EM12 swath instruments (to compare data types, and to investigate temporal persistence of features), and several new areas.

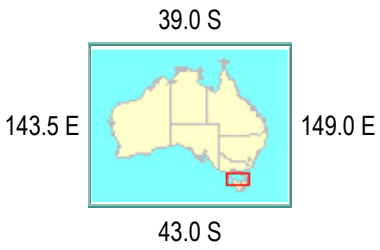
Contributors : Franzis Althaus, Bruce Barker, Pamela Brodie, Karen Gowlett-Holmes, Gordon Keith, Rudy Kloser, Tim Ryan, Alan Williams (CSIRO)

References :

Williams A, Althaus F, Barker B, Kloser R, Keith G (2007) 'Research and monitoring for benthic ecosystems in Marine Protected Areas of the South East Marine Region (SEMR) using data from the proposed Zeehan MPA to provide an inventory of benthic habitats and biodiversity, and evaluate prospective indicators for monitoring and performance assessment. Final Report to the Department of the Environment and Water Resources. .' CSIRO Marine and Atmospheric Research, Hobart, Tas.

Publicly available URLs :

Geographic Extent



Beginning Date: 10 Apr 2004 **Ending Date:** 29 Apr 2004

Minimum Depth: 50 **Maximum Depth:** 550

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

project access only

Title : SS2004/04 - Testing, refinement and application of methodology for optimised seabed mapping : Sediment samples

MarLIN record number : 7035 **Anzlic Identifier** : ANZCW0306007035

Contact

Alan Williams
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Abstract : This voyage tested and refined optimal techniques to map and assess seabed habitat developed in a previous CMR project (NOO OP2000-SE02) by using the National Facility's high-resolution EM300 swath mapper for its first program of biological and physical habitat mapping. The sampling locations were a number of submarine canyons and their immediately adjacent flanks on the west coast of Tasmania and east of Bass Strait. These are prime targets for our methods development because each canyon area is characterised by a great variety of seabed topography and benthic communities concentrated in a relatively small area (< 300 sq km).
The data collected were applied to marine resource management planning in the South East Region. Submarine canyons represent a type of habitat unit ('Level 3 biogeomorphic units') having a strong influence on the location of offshore Marine Protected Areas on the continental slope and rise, and many are likely to be biodiversity hotspots. Several canyons are also the locations of the largest known aggregations of feeding and spawning fishes in the South-East Fishery region, and these support a range of intense, increasing and, in places, conflicting fishing activities. Sampling focussed on the Big Horseshoe Canyon mapped previously with the EM1002 and EM12 swath instruments (to compare data types, and to investigate temporal persistence of features), and several new areas.

Contributors : Franzis Althaus, Bruce Barker, Pamela Brodie, Karen Gowlett-Holmes, Gordon Keith, Rudy Kloser, Tim Ryan, Alan Williams (CSIRO)

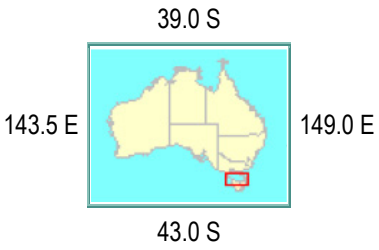
References : voyage report;

Publicly available URLs :

Documentation Links

Hyperlink: groups on titanic :\Sustainable Marine Ecosystems in SE\SE MPA Ecosystem Characterisation\SS0404
Description:

Geographic Extent



Beginning Date: 10 Apr 2004 **Ending Date:** 29 Apr 2004

Minimum Depth: 50 **Maximum Depth:** 550

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint
project access only

Title : Southern Surveyor Voyage SS 01/2000 Biological Data Overview

MarLIN record number : 5746 **Anzlic Identifier** : ANZCW0306005746

Contact

Alan Williams
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Abstract : This record is an overview entry for biological data collected on Southern Surveyor cruise SS 01/2000. This voyage took place off around the south-east coast of Australia including Victorian, Tasmanian and South Australian waters, in the areas of the south eastern "large marine domain" and the Great Australian Bight Marine Park, during April - May 2000, under the leadership of Rudy Kloser (legs 1 and 3) and Alan Williams (leg 2). Biological data collected on this cruise include fish trawls, benthic sled and video camera data, largely in association with ground truthing for swath mapping carried out on the same voyage. In addition, on leg 2, benthic invertebrates and demersal fishes were collected from the lower continental slope region (approx. depths between 1500 and 2000m) to enable the extension of biophysical regionalisations to a new depth, and on leg 3, collections were made to form a taxonomic inventory of demersal fishes and benthic invertebrates from the Great Australian Bight Marine Protected Area, in areas with contrasting histories of light vs. heavy trawling activity.

Contributors : Alan Williams, Rudy Kloser, Mark Lewis, Karen Gowlett-Holmes + others

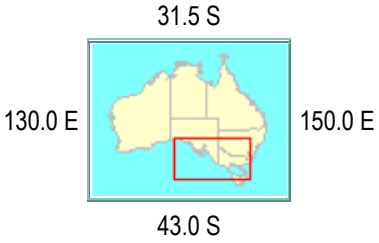
References : CSIRO Division of Marine Research. FRV Southern Surveyor. Cruise Report SS 01/2000. Miscellaneous Publication (in preparation). CSIRO Division of Marine Research.

Publicly available URLs :

Documentation Links

Hyperlink: http://www.marine.csiro.au/voyage/plan.html
Description: Voyage Plan, updates and associated information

Geographic Extent



Beginning Date: 03 Apr 2000 **Ending Date:** 20 May 2000

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : Not Planned

Access constraint

These datasets are normally accessible only by arrangement with individual scientists and/or relevant custodian(s). Datasets from this voyage are embargoed except to the Principal Investigators (Dr Rudy Kloser and collaborators at the National Oceans Office (NOO) until specific instructions are received to release this data to the public, (Written permission of PI is required).

Title : Camera imagery (Photographic Stills) Project OP2000-SE02

MarLIN record number : 6975 **Anzlic Identifier** : ANZCW0306006975

Contact

Mr Bruce Barker
CSIRO Division of Marine and Atmospheric Research - Hobart
G.P.O. Box 1538 Hobart TAS Australia 7001
bruce.barker@csiro.au

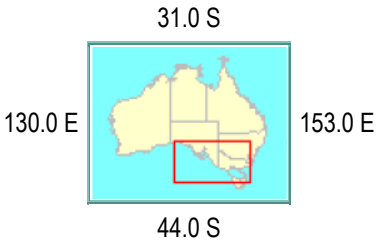
Abstract : Still images were collected as part of the NOO funded survey, Southern Surveyor research voyage SS 1/2000 in the South east of Australia. The camera imagery was used to ground truth or verify contrasting seafloor structure types providing contrasting reflective properties (acoustics) as observed using a swath mapper. The imagery enables us to understand the relationship between seafloor structure, associated demersal fauna and acoustic reflectiveness.
High quality 35 mm images of the seafloor were taken with a Photosea 2000 underwater camera mounted with strobes on to a custom built frame that was suspended from the ship on an electro-mechanical cable. The system has a downward looking acoustic transducer to provide real-time information on height above the seabed. The camera and strobes are triggered from the surface when the system is at the appropriate height above bottom. The system is pressure rated to 3000 m depth. The camera holds up to 250 frames of Kodak Ektachrome 200 ASA colour slide film. Films were processed on board with a Jobo auto-processor.
With each frame taken, UTC time is stamped on the film to enable linking of each frame to GPS position information. We mounted a Sonardyne location beacon just above the camera frame to enable geo-location in relation to ship position of the gear. A log of photographic images contains all relevant information for each frame. Images were digitised as required and the file named according to operation number and the time when the image was taken. The images are scored using the same attributes as used for the videos
For this survey we able to deploy the stills camera deeper than for the video platform.

Contributors : Bruce Barker, Alan Williams, Karen Gowlett-Holmes

References : Acoustic, biological and physical data for seabed characterisation.
Phase 1 Surveys April - June 2000
Progress Report to the National Oceans Office - Progress Report 2

Publicly available URLs :

Geographic Extent



Beginning Date: 04 Apr 2000 **Ending Date:** Not Known

Minimum Depth: **Maximum Depth:**

Progress : In Progress **Maintenance and Update Frequency** : Not Planned

Access constraint

Read only with permission from custodian

Title : Camera imagery (Video Data) Project OP2000-SE02

MarLIN record number : 6976 **Anzlic Identifier** : ANZCW0306006976

Contact

Mr Bruce Barker
CSIRO Division of Marine and Atmospheric Research - Hobart
G.P.O. Box 1538 Hobart TAS Australia 7001
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Abstract : Video footage and still images were collected as part of the NOO funded survey, Southern Surveyor research voyage SS 1/2000 in the South east of Australia. The camera imagery was used to ground truth or verify contrasting seafloor structure types providing contrasting reflective properties (acoustics) as observed using a swath mapper. The imagery enables us to understand the relationship between seafloor structure, associated demersal fauna and acoustic reflectiveness.
Attributes of the seabed were scored from video in four categories: substratum (S) (7 types), geomorphology(G) (10 types), fauna (F)(10 types) and faunal abundance (A) (3 types). These data were merged with geolocation data from the tracking beacon and overlaid on maps derived from acoustic data.
An SGFA score was applied to the video in second by second records. This forms a geo referenced dataset (Access)of ~82,300 georeferenced records.
Frame grab images were taken from the video and form a reference set of substratum, geomorphology and fauna types.

Contributors : Bruce Barker, Alan Williams, Karen Gowlett-Holmes

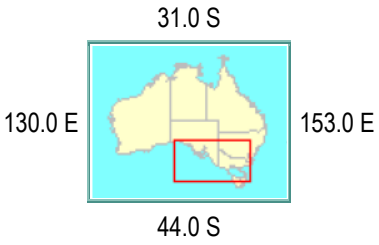
References : Acoustic, biological and physical data for seabed characterisation.
Phase 1 Surveys April - June 2000
Progress Report to the National Oceans Office - Progress Report 2

Publicly available URLs :

Documentation Links

Hyperlink: S:\Acoustics\Projects\Completed_Projects\ea37_OP2000-SE02\metadata_website
Description: Video data home page

Geographic Extent



Beginning Date: 04 Apr 2000 **Ending Date:** 07 May 2000

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : Not Planned

Access constraint

Read only with permission from custodian

Habitat and biodiversity surveys – SE MPA & Tasmanian Seamounts

Title : SS02/2007 - Biodiversity Survey for SE MPA's including the Tasmanian Sea Mounts Marine Reserve

MarLIN record number : 6939 **Anzlic Identifier** : ANZCW0306006939

Contact

Alan Williams
CSIRO Division of Marine and Atmospheric Research - Hobart
G.P.O. Box 1538 Hobart TAS Australia 7001
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Abstract : The scientific objectives for the survey were split across two voyages (SS11/2006 for leg 1 and SS02/2007 for leg 2). They were to: * use advanced sampling tools and techniques that are, to the extent possible, non destructive * collect precisely georeferenced baseline data at scientific reference sites to enable indicators to be quantified (e.g. biodiversity metrics and levels of fishing effort at each site). These data will be documented and available for use for targeted monitoring during subsequent surveys * provide results that can assess the achievement of the TSMR management plan to date (revisit four seamounts photographed in 1997 – Main Pedra, Sister 1, K1 and D1; look for changes in fished and unfished sites) and refine baseline data * enable future assessment against performance objectives for the TSMR and selected proposed Commonwealth MPAs ¿ Huon, Tasman Fracture and possibly South Tasman Rise and Freycinet depending on the time available at sea * test efficiency of the various biodiversity metrics to determine effectiveness, cost and potential for monitoring other deepwater reserves * provide samples for key taxa that can be used in subsequent genetic research to refine definition and extent of endemicity in deepwater fauna * complete swath mapping of relevant parts of continental slope between Hobart and SW Cape This Metadata record describes the invertebrate and fish catch data taken with benthic sled and beamtrawl.

Contributors : Felicity McEnnulty, Karen Gowlett-Holmes, Franzis Althaus, Alan Williams

References : SS200702 voyage report; client milestone reports

Publicly available URLs :

Documentation Links

Hyperlink: http://www.marine.csiro.au/nationalfacility/voyages/0207/index.html
Description: Voyage Plan

Geographic Extent

Beginning Date: 28 Mar 2007 **Ending Date:** 11 Apr 2007

Minimum Depth: 100 **Maximum Depth:** 1400

Progress : In Progress **Maintenance and Update Frequency** : As required

Access constraint

Currently for project access only

Title : SS02/2007 - Video Survey and monitoring for SE MPA's including the Tasmanian Seamounts Marine Reserve

MarLIN record number : 6858 **Anzlic Identifier** : ANZCW0306006858

Contact

Alan Williams
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Abstract : The scientific objectives for the survey were split across two voyages (SS11/2006 for leg 1 and SS02/2007 for leg 2). They were to:
* use advanced sampling tools and techniques that are, to the extent possible, non destructive
* collect precisely georeferenced baseline data at scientific reference sites to enable indicators to be quantified (e.g. biodiversity metrics and levels of fishing effort at each site). These data will be documented and available for use for targeted monitoring during subsequent surveys
* provide results that can assess the achievement of the TSMR management plan to date (revisit four seamounts photographed in 1997 – Main Pedra, Sister 1, K1 and D1; look for changes in fished and unfished sites) and refine baseline data
* enable future assessment against performance objectives for the TSMR and selected proposed Commonwealth MPAs ¿ Huon, Tasman Fracture and possibly South Tasman Rise and Freycinet depending on the time available at sea
* test efficiency of the various biodiversity metrics to determine effectiveness, cost and potential for monitoring other deepwater reserves
* provide samples for key taxa that can be used in subsequent genetic research to refine definition and extent of endemicity in deepwater fauna
* complete swath mapping of relevant parts of continental slope between Hobart and SW Cape
This Metadata record describes the imagery data taken with the deep video-system.

Contributors : Bruce Barker, Alan Williams, Jeff Cordell

Publicly available URLs :

Documentation Links

Hyperlink: http://www.marine.csiro.au/nationalfacility/voyages/0207/index.html
Description: Voyage Plan

Geographic Extent

Beginning Date: 28 Mar 2007 **Ending Date:** 11 Apr 2007

Minimum Depth: **Maximum Depth:**

Progress : In Progress **Maintenance and Update Frequency** : As required

Access constraint

Currently for project access only

Title : SS11/2006 - Video Survey and monitoring for SE MPA's including the Tasmanian Seamounts Marine Reserve

MarLIN record number : 6840 **Anzlic Identifier** : ANZCW0306006840

Contact

Alan Williams
CSIRO Division of Marine and Atmospheric Research - Hobart
G.P.O. Box 1538 Hobart TAS Australia 7001
alan.williams@csiro.au

Abstract : The scientific objectives of this survey support the process of SER Estate inventory and management performance assessment by providing interpreted benthic habitat maps,faunal inventories and documented conservation values in scientific reference sites fromselected MPA areas in the SER estate. Data will enable us to further test and refinepredictive methods for identifying seabed habitat types using acoustic swath data (primarily backscatter, bathymetry and bathymetric derivative variables such as slope and aspect).
This Metadata record describes the imagery data taken with the deep video-system and sediment data taken with a Smith-McIntyre grab.

Contributors : Bruce Barker, Alan Williams, Matt Sherlock (CSIRO)

References : **Publicly available URLs** :

Documentation Links

Hyperlink: http://www.marine.csiro.au/nationalfacility/voyages/0207/index.html
Description: Part 2 of the survey: SS200702

Hyperlink: file:////titanic/Groups/Multiple Use Management of EEZ/Giant Crab/Current/surveys/survey 2/Video Data/Vid Log.xls
Description: Summary of video tape contents

Geographic Extent

Beginning Date: 11 Apr 2004 **Ending Date:** 25 Apr 2004

Minimum Depth: **Maximum Depth:**

Progress : In Progress **Maintenance and Update Frequency** : As required

Access constraint
Currently for project access only

Tasmanian Seamounts – 1997 survey

Title : Southern Surveyor Voyage SS 01/97 Biological Data Overview

MarLIN record number : 4940 **Anzlic Identifier** : ANZCW0306004940

Contact

Tony Koslow
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G.P.O. Box 1538 Hobart TAS Australia 7001
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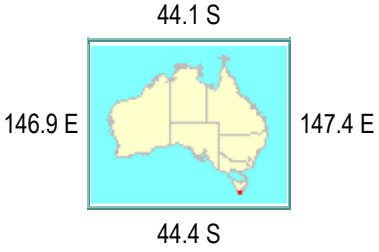
Abstract : This record is an overview entry for biological data collected on Southern Surveyor cruise SS 01/97. This cruise took place in southern Tasmanian Continental Slope waters during 20 January - 1 February 1997, under the leadership of Tony Koslow. Biological data collected on this cruise include photographic surveys of four seamounts, dredge samples, faunal samples (including corals and many other benthic invertebrates) and fish samples. Samples of several species of corals, including Solenosmilia variabilis, were also taken for genetic analysis, and rock samples taken for age determination of the seamounts.
Please note: This metadata record is a preliminary entry derived from information in the cruise plan and/or cruise report. Individual data types - which may span several cruises - will be indexed separately within this metadata system in due course.

Contributors : **References** : CSIRO Division of Fisheries (1997). FRV Southern Surveyor. Cruise Plan SS 01/97. Miscellaneous Publication. CSIRO Division of Fisheries, x pp.
CSIRO Division of Fisheries (1997). FRV Southern Surveyor. Cruise Report SS 01/97. Miscellaneous Publication. CSIRO Division of Fisheries, 16 pp.

Publicly available URLs :

Geographic Extent



Beginning Date: 20 Jan 1997 **Ending Date:** 31 Jan 1997

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : Not Planned

Access constraint

These datasets are normally accessible only by arrangement with individual scientists and/or relevant custodian(s).

Title : Tasmanian Seamounts Study 1997: Benthic Faunal Survey Data

MarLIN record number : 5256 **Anzlic Identifier** : ANZCW0306005256

Contact

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Abstract : This record describes the benthic assemblage survey data collected as part of the Tasmanian Seamounts Study undertaken by CSIRO Division of Fisheries in January 1997. 34 benthic dredge tows were made on the top, slope and base of 14 seamounts in the survey area, approx. 100 km to the south of Tasmania, using a specially constructed dredge, in water depths ranging from 600m to approx. 2000m. Numerous (>200) invertebrate taxa were recovered representing hydroids, octocorals, polychaetes, bryozoa, bivalve molluscs, cephalopods, barnacles, isopods, decapod crustaceans, crinoids, asteroids, echiuroids, holothurians, hydrozoans, brachiopods, chitons, gastropods, sponges, and other minor groups. The data have been analysed with respect to depth, fishing history (lightly or heavily fished areas), and position on the seamount, and two main community types documented, one dominated by living colonial coral (Solenosmilia variabilis) and one by echinoids (sea urchins). Many of the species found are new records for Australia and a number are new to science; taxonomic studies of these species are continuing.

Contributors : Tony Koslow, Sebastian Rainer, Mark Lewis, Karen Gowlett-Holmes, Alan Williams

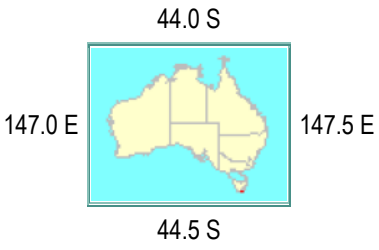
References : CSIRO Division of Marine Research (1997). FRV Southern Surveyor. Cruise Report SS 01/97. Miscellaneous Publication. CSIRO Division of Marine Research, 15 pp.
Koslow, J. A. & Gowlett-Holmes, K. (1998). The seamount fauna off southern Tasmania: benthic communities, their conservation and impacts of trawling. Final report to Environment Australia and the Fisheries Research Development Corporation. Miscellaneous Publication. CSIRO Division of Marine Research, 104 pp.

Publicly available URLs :

Documentation Links

Hyperlink: http://www.environment.gov.au/marine/publications/mpa_images.html
Description: Further information on the Tasmanian seamounts area & new marine reserve (1999)

Geographic Extent



Beginning Date: 20 Jan 1997 **Ending Date:** 31 Jan 1997

Minimum Depth: **Maximum Depth:**

Progress : In Progress **Maintenance and Update Frequency** : As required

Access constraint

Release with the permission of the custodian

Title : Tasmanian Seamounts Study 1997: Longline and Fish Trap Data

MarLIN record number : 5258 **Anzlic Identifier** : ANZCW0306005258

Contact

Tony Koslow
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Abstract : This record describes the longline and trap data collected as part of the Tasmanian Seamounts Study undertaken by CSIRO Division of Fisheries in January 1997. Droplines and traps were deployed for between 2 and 7 hours at four seamounts to sample the motile fauna (fish, crustaceans, etc.) living within the benthic environment. 8 fish species were collected by these methods, the most numerous being squalid sharks (Etmopterus spp.) and eels (Diastobranchus capensis, Simenchelys parasiticus). The data from these fishing methods has been added to that from the dredge surveys in the faunal sections of the report of this survey.

Contributors : Tony Koslow, Sebastian Rainer, Mark Lewis, Karen Gowlett-Holmes, Alan Williams

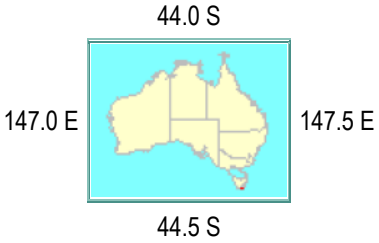
References : CSIRO Division of Marine Research (1997). FRV Southern Surveyor. Cruise Report SS 01/97. Miscellaneous Publication. CSIRO Division of Marine Research, 15 pp.
Koslow, J. A. & Gowlett-Holmes, K. (1998). The seamount fauna off southern Tasmania: benthic communities, their conservation and impacts of trawling. Final report to Environment Australia and the Fisheries Research Development Corporation. Miscellaneous Publication. CSIRO Division of Marine Research, 104 pp.

Publicly available URLs :

Documentation Links

Hyperlink: http://www.environment.gov.au/marine/publications/mpa_images.html
Description: Further information on the Tasmanian seamounts area & new marine reserve (1999)

Geographic Extent



Beginning Date: 20 Jan 1997 **Ending Date:** 31 Jan 1997

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

Release with the permission of the custodian

Title : Tasmanian Seamounts Study 1997: Photographic Transects

MarLIN record number : 5257 **Anzlic Identifier** : ANZCW0306005257

Contact

Tony Koslow
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Abstract : This record describes the photographic transect survey data collected as part of the Tasmanian Seamounts Study undertaken by CSIRO Division of Fisheries in January 1997. 10 photographic transects were made from the base to pinnacle of 4 out of 14 seamounts in the survey area, approx. 100 km to the south of Tasmania, using a Photosea 2000 stereoscopic deepsea camera system, in water depths ranging from 2180 m to 714 m. The transects were typically oriented N-S and E-W on each seamount, with 2 transects replicated. Between 67 and 150 photos were taken per transect, at a mean range between photos of 27 m, at heights of 1 to 4 m off the bottom. The photographs were later assessed for percent cover by a range of bottom types, and for numbers of recognisable organisms of particular types.

Contributors : Tony Koslow, Sebastian Rainer, Mark Lewis, Karen Gowlett-Holmes, Alan Williams

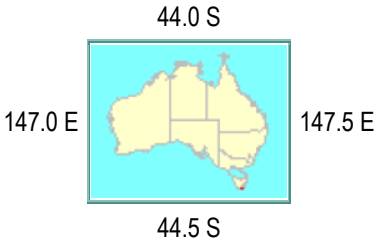
References : CSIRO Division of Marine Research (1997). FRV Southern Surveyor. Cruise Report SS 01/97. Miscellaneous Publication. CSIRO Division of Marine Research, 15 pp.
Koslow, J. A. & Gowlett-Holmes, K. (1998). The seamount fauna off southern Tasmania: benthic communities, their conservation and impacts of trawling. Final report to Environment Australia and the Fisheries Research Development Corporation. Miscellaneous Publication. CSIRO Division of Marine Research, 104 pp.

Publicly available URLs :

Documentation Links

Hyperlink: http://www.environment.gov.au/marine/publications/mpa_images.html
Description: Further information on the Tasmanian seamounts area & new marine reserve (1999)

Geographic Extent



Beginning Date: 20 Jan 1997 **Ending Date:** 26 Jan 1997

Minimum Depth: **Maximum Depth:**

Progress : In Progress **Maintenance and Update Frequency** : As required

Access constraint

Release with the permission of the custodian

NORFANZ – Norfolk Ridge and Lord Howe Rise Survey

Title : NORFANZ Biodiversity Survey Data 2003 - Biological Data

MarLIN record number : 6481 **Anzlic Identifier** : ANZCW0306006481

Contact

Alan Williams
CSIRO Division of Marine and Atmospheric Research - Hobart
G.P.O. Box 1538 Hobart TAS Australia 7001
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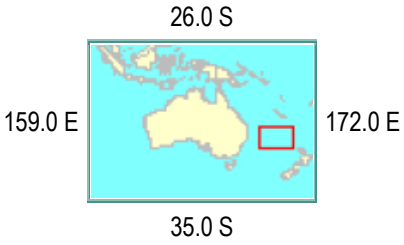
Abstract : This record describes the biological survey data (species IDs and catch compositions) collected during the NORFANZ voyage on the Norfolk Ridge and Lord Howe Rise in the Tasman Sea between Australia and New Zealand, in May-June 2003. Fourteen seamount and slope sites were sampled, 10 on the Norfolk Ridge and 4 on the Lord Howe Rise. A total of 168 operations were completed, including 144 trawl-sled-dredge shots, in depths ranging from less than 100 m to over 2000 m. Gear types included bottom trawls, midwater trawl, beam trawl, epibenthic sleds, and rock and pipe dredges. The dataset contains records of 1,622 macroinvertebrate species or provisional species units in 15 phyla, and 582 fish species in 122 families, and is expected to include a significant percentage of species new to science. The data are currently held in spreadsheet format at CSIRO Marine Research in Hobart. Accompanying these survey data are photographs and, in some cases, voucher specimens which are described in separate metadata records.

Contributors : Malcolm Clark (NIWA), Clive Roberts (Te Papa), Alan Williams (CSIRO), Peter Last (CSIRO) + others

References : Williams A, Gowlett-Holmes K, Althaus F (2006) 'Biodiversity survey of the seamounts and slopes of the Norfolk Ridge and Lord Howe Rise (NORFANZ). Final Report to the National Oceans Office, April 2005.' CSIRO Marine Research, Hobart, Tas.

Publicly available URLs :

Geographic Extent



Beginning Date: 11 May 2003 **Ending Date:** 15 Jun 2003

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

Release with the permission of the custodian

Title : NORFANZ Biodiversity Survey Data 2003 - Acoustics (Sounder and Swath Mapper) Data

MarLIN record number : 6482 **Anzlic Identifier** : ANZCW0306006482

Contact

Alan Williams
CSIRO Division of Marine and Atmospheric Research - Hobart
G.P.O. Box 1538 Hobart TAS Australia 7001
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Abstract : This record describes the acoustic data collected using the EM300 multi-beam swath mapper and the ES60 single beam echosounder during the NORFANZ voyage on the Norfolk Ridge and Lord Howe Rise in the Tasman Sea between Australia and New Zealand, in May-June 2003. Fourteen seamount and slope sites were surveyed using the EM300 multi-beam swath mapper, 10 on the Norfolk Ridge and 4 on the Lord Howe Rise. There is a total of 4 gigabytes of raw EM300 data. Sound velocity profiles were processed to make TIFF images of backscatter (bs - grey scale), digital terrain model (dtm - sun illuminated colored bathymetry) , and elevation model (ele - very dark images) for each of the 14 sites. Each tiff file has an associated TIFF world files (.tfw) for a mercator 41 degree projection with origin at 100 degrees east. ES60 data for the voyage is stored in a local directory. There are 666 MB of data in EK5 format, made up of 134 files of 5MB each.

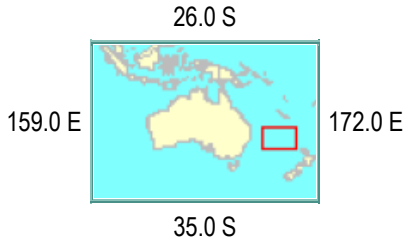
Contributors : Malcolm Clark (NIWA), Clive Roberts (Te Papa), Alan Williams (CSIRO), Peter Last (CSIRO) + others

References :

Williams A, Gowlett-Holmes K, Althaus F (2006) 'Biodiversity survey of the seamounts and slopes of the Norfolk Ridge and Lord Howe Rise (NORFANZ). Final Report to the National Oceans Office, April 2005.' CSIRO Marine Research, Hobart, Tas.

Publicly available URLs :

Geographic Extent



Beginning Date: 11 May 2003 **Ending Date:** 15 Jun 2003

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

Release with the permission of the custodian

Title : NORFANZ Biodiversity Survey Data 2003 - Seabed Images

MarLIN record number : 6925 **Anzlic Identifier** : ANZCW0306006925

Contact

Alan Williams
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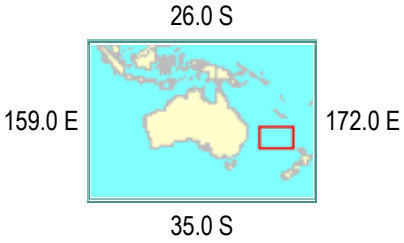
Abstract : This record describes the seabed image data (digitised 35 mm slide still camera images) collected during the NORFANZ voyage on the Norfolk Ridge and Lord Howe Rise in the Tasman Sea between Australia and New Zealand, in May-June 2003. Fourteen seamount and slope sites were sampled, 10 on the Norfolk Ridge and 4 on the Lord Howe Rise. The camera was deployed using two systems: (1) a headline camera unit deployed with the orange roughy net, and (2) a vertical-drop camera system. The headline camera system yielded usable photographs from 14 operations at 6 sites on the Norfolk Ridge and 1 operation at 1 site on the Lord Howe Rise where the camera frame got heavily damaged. The drop camera system was used on 7 occasions: 5 operations at 4 sites on the Norfolk Ridge and 2 operations at 2 sites on the Lord Howe Rise. The dataset contains 2141 images of the seabed.

Contributors : Malcolm Clark (NIWA), Clive Roberts (Te Papa), Alan Williams (CSIRO), Peter Last (CSIRO) + others

References : Williams A, Gowlett-Holmes K, Althaus F (2006) 'Biodiversity survey of the seamounts and slopes of the Norfolk Ridge and Lord Howe Rise (NORFANZ). Final Report to the National Oceans Office, April 2005.' CSIRO Marine Research, Hobart, Tas.

Publicly available URLs :

Geographic Extent



Beginning Date: 11 May 2003 **Ending Date:** 15 Jun 2003

Minimum Depth: **Maximum Depth:**

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

Release with the permission of the custodian

Great Barrier Reef Seabed Biodiversity Project

Title: Seabed Biodiversity on the Continental Shelf of the Great Barrier Reef World Heritage Area (Epibenthic Sled)

MarLIN record number : 7036 **Anzlic Identifier** : ANZCW0306007036

Contact

Roland Pitcher
CSIRO Division of Marine and Atmospheric Research - Cleveland
PO Box 120 Cleveland QLD Australia 4163
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Abstract : The benthic invertebrate, plant and fish biodiversity of the 200,000 km² area of the GBR shelf seabed was sampled by a 200 m tow of a 1.5 m epibenthic sled at 1191 sites, representing a full range of known physical environments, during six 1-month-long voyages on the AIMS vessel Lady Basten. More than 7,000 species/species-equivalent OTUs (operational taxonomic units) were identified. The dataset comprises 79,173 site-by-species records. A pipe-dredge was attached to the sled to collect sediment samples: a 500 ml subsample was processed for particle size and carbonate by Geoscience Australia; another 500 ml subsample was sieved on 1 mm mesh and preserved in 10% Formalin - Rose Bengal solution.

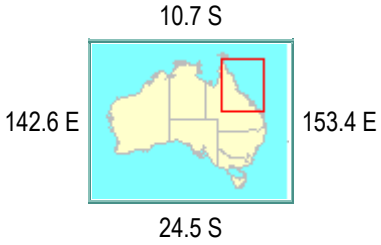
Contributors : Roland Pitcher (CSIRO), Peter Doherty (AIMS), John Hooper (QM), Neil Gribble (QDPIF) plus 50 other contributors (see references)

References : Pitcher, C.R., Doherty, P., Arnold, P., Hooper, J., Gribble, N., Bartlett, C., Browne, M., Campbell, N., Cannard, T., Cappo, M., Carini, G., Chalmers, S., Cheers, S., Chetwynd, D., Colefax, A., Coles, R., Cook, S., Davie, P., De'ath, G., Devereux, D., Done, B., Donovan, T., Ehrke, B., Ellis, N., Ericson, G., Fellegara, I., Forcey, K., Furey, M., Gledhill, D., Good, N., Gordon, S., Haywood, M., Hendriks, P., Jacobsen, I., Johnson, J., Jones, M., Kinninmoth, S., Kistle, S., Last, P., Leite, A., Marks, S., McLeod, I., Oczkowicz, S., Robinson, M., Rose, C., Seabright, D., Sheils, J., Sherlock, M., Skelton, P., Smith, D., Smith, G., Speare, P., Stowar, M., Strickland, C., Van der Geest, C., Venables, W., Walsh, C., Wassenberg, T., Welna, A., Yearsley, G. (2007). Seabed Biodiversity on the Continental Shelf of the Great Barrier Reef World Heritage Area. AIMS/CSIRO/QM/QDPI CRC Reef Research Task Final Report. 320 pp. ISBN 978-1-921232-87-9

Publicly available URLs :

Documentation Links
Hyperlink: http://www.reef.crc.org.au/resprogram/programC/seabed/index.htm
Description: GBR Seabed Biodiversity Project website at CRC Reef

Geographic Extent



Beginning Date: 17 Sep 2003 **Ending Date:** 09 Nov 2005

Minimum Depth: -6 **Maximum Depth:** -127

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint :
Restricted, release for approved purposes with the permission of the custodian, not for public release at this time in this form.

Title : Seabed Biodiversity on the Continental Shelf of the Great Barrier Reef World Heritage Area (Prawn Trawl)

MarLIN record number : 7042 **Anzlic Identifier** : ANZCW0306007042

Contact

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Abstract : The mobile invertebrate and fish biodiversity of the 200,000 km² area of the GBR shelf seabed was sampled by a 1 km tow of a 8 fthm otter trawl (single high-flying Florida Flyer) at 458 sites, representing a wide range of known physical environments, during four 1-month-long voyages on the QDPIF vessel Gwendoline May. More than 4,800 species/species-equivalent OTUs (operational taxonomic units) were identified. The dataset comprises 42,813 site-by-species records.

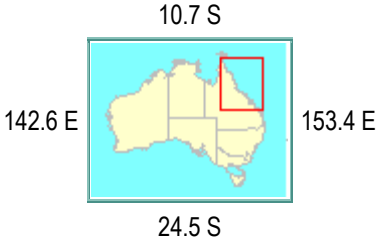
Contributors : Roland Pitcher (CSIRO), Peter Doherty (AIMS), John Hooper (QM), Neil Gribble (QDPIF) plus 50 other contributors (see references)

References : Pitcher, C.R., Doherty, P., Arnold, P., Hooper, J., Gribble, N., Bartlett, C., Browne, M., Campbell, N., Cannard, T., Cappo, M., Carini, G., Chalmers, S., Cheers, S., Chetwynd, D., Colefax, A., Coles, R., Cook, S., Davie, P., De'ath, G., Devereux, D., Done, B., Donovan, T., Ehrke, B., Ellis, N., Ericson, G., Fellegara, I., Forcey, K., Furey, M., Gledhill, D., Good, N., Gordon, S., Haywood, M., Hendriks, P., Jacobsen, I., Johnson, J., Jones, M., Kinninmoth, S., Kistle, S., Last, P., Leite, A., Marks, S., McLeod, I., Oczkowicz, S., Robinson, M., Rose, C., Seabright, D., Sheils, J., Sherlock, M., Skelton, P., Smith, D., Smith, G., Speare, P., Stowar, M., Strickland, C., Van der Geest, C., Venables, W., Walsh, C., Wassenberg, T., Welna, A., Yearsley, G. (2007). Seabed Biodiversity on the Continental Shelf of the Great Barrier Reef World Heritage Area. AIMS/CSIRO/QM/QDPI CRC Reef Research Task Final Report. 320 pp. ISBN 978-1-921232-87-9

Publicly available URLs :

Documentation Links
Hyperlink: http://www.reef.crc.org.au/resprogram/programC/seabed/index.htm
Description: GBR Seabed Biodiversity Project website at CRC Reef

Geographic Extent



Beginning Date: 17 Nov 2003 **Ending Date:** 04 Mar 2006

Minimum Depth: -6 **Maximum Depth:** -127

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint
Restricted, release for approved purposes with the permission of the custodian, not for public release at this time in this form.

Title : Seabed Biodiversity on the Continental Shelf of the Great Barrier Reef World Heritage Area (Towed Video)

MarLIN record number : 7043 **Anzlic Identifier** : ANZCW0306007043

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PO Box 120 Cleveland QLD Australia 4163
roland.pitcher@csiro.au

Abstract : The seabed habitat, marine plant and sessile megabenthos cover of the 200,000 km² area of the GBR shelf seabed was observed by a 500 m transect of a Drop-Camera video system at 1210 sites, representing a full range of known physical environments, during six 1-month-long voyages on the AIMS vessel Lady Basten. Continuous underway coding during transects recorded cover of 9 substrata types, 26 biohabitat types, and occurrence of 12 faunal classes. Laboratory post-analysis of the video recorded more detail at ~30 random frames per transect, including: 11 physical topography types, 23 substratum types, 115 biological types -- the dataset comprises 176,000 records site-by-type records. In addition, during most transects, digital still photographs were taken at 5-15 second intervals with strobes, and CTD data were recorded.

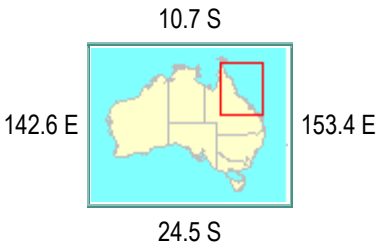
Contributors : Roland Pitcher (CSIRO), Peter Doherty (AIMS), John Hooper (QM), Neil Gribble (QDPIF) plus 50 other contributors (see references)

References : Pitcher, C.R., Doherty, P., Arnold, P., Hooper, J., Gribble, N., Bartlett, C., Browne, M., Campbell, N., Cannard, T., Cappo, M., Carini, G., Chalmers, S., Cheers, S., Chetwynd, D., Colefax, A., Coles, R., Cook, S., Davie, P., De'ath, G., Devereux, D., Done, B., Donovan, T., Ehrke, B., Ellis, N., Ericson, G., Fellegara, I., Forcey, K., Furey, M., Gledhill, D., Good, N., Gordon, S., Haywood, M., Hendriks, P., Jacobsen, I., Johnson, J., Jones, M., Kinninmoth, S., Kistle, S., Last, P., Leite, A., Marks, S., McLeod, I., Oczkowicz, S., Robinson, M., Rose, C., Seabright, D., Sheils, J., Sherlock, M., Skelton, P., Smith, D., Smith, G., Speare, P., Stowar, M., Strickland, C., Van der Geest, C., Venables, W., Walsh, C., Wassenberg, T., Welna, A., Yearsley, G. (2007). Seabed Biodiversity on the Continental Shelf of the Great Barrier Reef World Heritage Area. AIMS/CSIRO/QM/QDPI CRC Reef Research Task Final Report. 320 pp. ISBN 978-1-921232-87-9

Publicly available URLs :

Documentation Links
Hyperlink: http://www.reef.crc.org.au/resprogram/programC/seabed/index.htm
Description: GBR Seabed Biodiversity Project website at CRC Reef

Geographic Extent



Beginning Date: 17 Sep 2003 **Ending Date:** 09 Nov 2005

Minimum Depth: -6 **Maximum Depth:** -127

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint
Restricted, release for approved purposes with the permission of the custodian, not for public release at this time in this form.

Torres Strait Seabed Mapping Project

Title : Mapping and Characterisation of Key Biotic & Physical Attributes of the Torres Strait Ecosystem (Epibenthic Sled)

MarLIN record number : 7044 **Anzlic Identifier** : ANZCW0306007044

Contact

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Abstract : The benthic invertebrate, plant and fish biodiversity of the 50,000 km² area of the Torres Strait Protected Zone and adjacent shelf seabed was sampled by a 200 m tow of a 1.5 m epibenthic sled at 166 sites, representing a wide range of known physical environments, during one 1-month-long voyage on the James Cook University vessel James Kirby. More than 1,550 species/species-equivalent OTUs (operational taxonomic units) were identified. The dataset comprises 8,569 site-by-species records. A pipe-dredge was attached to the sled to collect sediment samples: a 500 ml subsample was processed for particle size and carbonate by Geoscience Australia; another 500 ml subsample was sieved on 1 mm mesh and preserved in 10% Formalin - Rose Bengal solution.

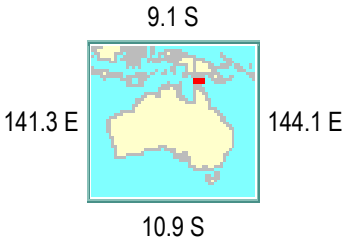
Contributors : Roland Pitcher & Michael Haywood (CSIRO), John Hooper (QM), Rob Coles (QDPIF) plus 30 other contributors (see references)

References : Pitcher, C.R., Haywood, M., Hooper, J., Coles, R., Bartlett, C., Browne, M., Cannard, T., Carini, G., Carter, A., Cheers, S., Chetwynd, D., Colefax, A., Cook, S., Davie, P., Ellis, N., Fellegara, I., Forcey, K., Furey, M., Gledhill, D., Hendriks, P., Jacobsen, I., Johnson, J., Jones, M., Last, P., Marks, S., McLeod, I., Sheils, J., Sheppard, J., Smith, G., Strickland, C., Van der Geest, C., Venables, W., Wassenberg, T., Yearsley, G. (2007). Mapping and Characterisation of Key Biotic & Physical Attributes of the Torres Strait Ecosystem. CSIRO/QM/QDPI CRC Torres Strait Task Final Report. 145 pp. ISBN 978-1-921232-89-3 (pbk.).

Publicly available URLs :

Documentation Links
Hyperlink: http://www.crctorres.com/research/T2-1.html
Description: TS Seabed Mapping Project webpage at CRC Torres Strait

Geographic Extent



Beginning Date: 23 Mar 2005 **Ending Date:** 19 Apr 2005

Minimum Depth: -4 **Maximum Depth:** -64

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

Restricted, release for approved purposes with the permission of the custodian, not for public release at this time in this form.

Title : Mapping and Characterisation of Key Biotic & Physical Attributes of the Torres Strait Ecosystem (Prawn Trawl)

MarLIN record number : 7045 **Anzlic Identifier** : ANZCW0306007045

Contact

Roland Pitcher
CSIRO Division of Marine and Atmospheric Research - Cleveland
PO Box 120 Cleveland QLD Australia 4163
roland.pitcher@csiro.au

Abstract : The mobile invertebrate and fish biodiversity of the 50,000 km² area of the Torres Strait Protected Zone and adjacent shelf seabed was sampled by a 1 km tow of a 8 fthm otter trawl (single high-flying Florida Flyer) at 148 sites, representing a wide range of known physical environments, during one 1-month-long voyage on the QDPIF vessel Gwendoline May. About 1,550 species/species-equivalent OTUs (operational taxonomic units) were identified. The dataset comprises 11,325 site-by-species records.

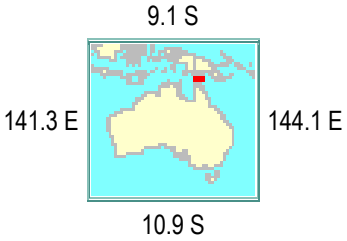
Contributors : Roland Pitcher & Michael Haywood (CSIRO), John Hooper (QM), Rob Coles (QDPIF) plus 30 other contributors (see references)

References : Pitcher, C.R., Haywood, M., Hooper, J., Coles, R., Bartlett, C., Browne, M., Cannard, T., Carini, G., Carter, A., Cheers, S., Chetwynd, D., Colefax, A., Cook, S., Davie, P., Ellis, N., Fellegara, I., Forcey, K., Furey, M., Gledhill, D., Hendriks, P., Jacobsen, I., Johnson, J., Jones, M., Last, P., Marks, S., McLeod, I., Sheils, J., Sheppard, J., Smith, G., Strickland, C., Van der Geest, C., Venables, W., Wassenberg, T., Yearsley, G. (2007). Mapping and Characterisation of Key Biotic & Physical Attributes of the Torres Strait Ecosystem. CSIRO/QM/QDPI CRC Torres Strait Task Final Report. 145 pp. ISBN 978-1-921232-89-3 (pbk.).

Publicly available URLs :

Documentation Links
Hyperlink: http://www.crctorres.com/research/T2-1.html
Description: TS Seabed Mapping Project webpage at CRC Torres Strait

Geographic Extent



Beginning Date: 08 Jan 2004 **Ending Date:** 01 Feb 2004

Minimum Depth: -4 **Maximum Depth:** -64

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

Restricted, release for approved purposes with the permission of the custodian, not for public release at this time in this form.

Title : Mapping and Characterisation of Key Biotic & Physical Attributes of the Torres Strait Ecosystem (Towed Video)

MarLIN record number : 7046 **Anzlic Identifier** : ANZCW0306007046

Contact

Roland Pitcher
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Abstract : The seabed habitat, marine plant and sessile megabenthos cover of the 50,000 km² area of the Torres Strait Protected Zone and adjacent shelf seabed was observed by a 500 m transect of a Drop-Camera video system at 173 sites, representing a wide range of known physical environments, during one 1-month-long voyage on the James Cook University vessel James Kirby. Continuous underway coding during transects recorded cover of 9 substrata types, 26 biohabitat types, and occurrence of 12 faunal classes. Laboratory post-analysis of the video recorded more detail at ~30 random frames per transect, including: 20 substratum types, 92 biological types -- the dataset comprises ~28,000 site-by-type records. In addition, during most transects, digital still photographs were taken at 5-15 second intervals with strobes, and CTD data were recorded.

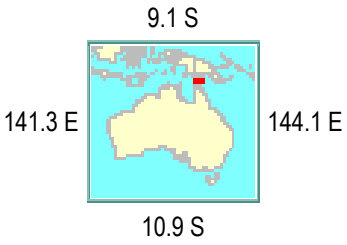
Contributors : Roland Pitcher & Michael Haywood (CSIRO), John Hooper (QM), Rob Coles (QDPIF) plus 30 other contributors (see references)

References : Pitcher, C.R., Haywood, M., Hooper, J., Coles, R., Bartlett, C., Browne, M., Cannard, T., Carini, G., Carter, A., Cheers, S., Chetwynd, D., Colefax, A., Cook, S., Davie, P., Ellis, N., Fellegara, I., Forcey, K., Furey, M., Gledhill, D., Hendriks, P., Jacobsen, I., Johnson, J., Jones, M., Last, P., Marks, S., McLeod, I., Sheils, J., Sheppard, J., Smith, G., Strickland, C., Van der Geest, C., Venables, W., Wassenberg, T., Yearsley, G. (2007). Mapping and Characterisation of Key Biotic & Physical Attributes of the Torres Strait Ecosystem. CSIRO/QM/QDPI CRC Torres Strait Task Final Report. 145 pp. ISBN 978-1-921232-89-3 (pbk.).

Publicly available URLs :

Documentation Links
Hyperlink: http://www.crctorres.com/research/T2-1.html
Description: TS Seabed Mapping Project webpage at CRC Torres Strait

Geographic Extent



Beginning Date: 23 Mar 2005 **Ending Date:** 19 Apr 2005

Minimum Depth: -4 **Maximum Depth:** -64

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

Restricted, release for approved purposes with the permission of the custodian, not for public release at this time in this form.

Great Barrier Reef Effects of Trawling Project

Title : GBR - Environmental Effects of Prawn Trawling in the Far Northern Section of the Great Barrier Reef 1991-1996

MarLIN record number : 2621 **Anzlic Identifier** : ANZCW0306002621

Contact

CSIRO Division of Marine and Atmospheric Research - Cleveland
PO Box 120 Cleveland QLD Australia 4163

Abstract : The data were mainly collected in the Far Northern Section Cross-Shelf Closure of the Great Barrier Reef Marine Park. The data consisted of: 1. Biological samples from prawn trawls, fish trawls, benthic dredge tows 2. Sediment samples 3. Seabird regurgitated pellets 4. Seabird counts 5. GPS Position data for trawls
The study objectives were as follows:
1. A quantitative description of the physical environment, sediment characteristics, fishing effort, fish communities, epibenthic communities and prawn populations.
2. A comparison of the fish,benthic and prawn communities of areas closed to trawling with areas open to trawling.
3. An assessment of the impact of prawn trawling on benthic communities and fish communities.
4. A quantitative description of the composition of bycatch produced by prawn trawling in the Green Zone and the areas to the immediate north and south of the Zone.
5. A list of the species trawled animals other than prawns returned to the sea and whether they float or sink and quantification of the fate of the dead material.
6.Quantitative estimates of the importance of trawl discards in the diets of seabirds, the degree of dependence on such discards and the effects of discards on seabird populations.

Contributors : Roland Pitcher, Charis Burridge, Ted Wassenberg, David Brewer, David Milton, Neil Gribble (QDPI)

References : Poiner, I., Glaister, J., Pitcher, R., Burridge, C., Wassenberg, T., Gribble, N., Hill, B., Blaber, S., Milton, D., Brewer, D. and Ellis, N. (1998).Environmental Effects of Prawn Trawling in the Far Northern Section of the Great Barrier Reef 1991-1996. Final Report to Great Barrier Reef Marine Park Authority and the Fisheries Research and Development Corporation (June 1998). CSIRO Division of Marine Research.

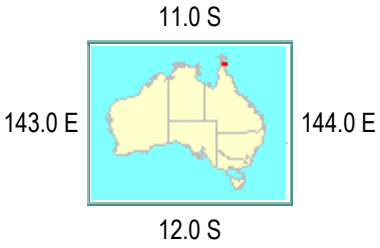
Publicly available URLs :

Documentation Links

Hyperlink: http://www.marine.csiro.au/datacentre/internal/marlin_docs/gbr_metad_cgf.htm
Description: Catch Grossing Factor Strategies

Hyperlink: http://www.marine.csiro.au/datacentre/internal/marlin_docs/gbr_metadata.htm
Description: GBR Project Experiment and Database Description

Geographic Extent



Beginning Date: May 1992 **Ending Date:** Dec 1995

Minimum Depth: -7 **Maximum Depth:** -60

Progress : Complete **Maintenance and Update Frequency** : As required

Access constraint

No Restrictions

Great Barrier Reef Long-term Monitoring Program

Title: **AIMS Long-term Monitoring Program Fish Census Data (Great Barrier Reef)**

Abstract:

About 50 selected reefs throughout the Great Barrier Reef (GBR) are sampled in the AIMS Long-term Monitoring Project (LTMP). Transects in the GBR are fixed.

Count - Individuals, Genus, Species Visual census of fish on fixed transects (3 sites per reef, 5*50 metre transects per site). 245 species of fish are counted.

Data Creation Date:
1992-03-01 01:00:00

Project Code/Survey Method:
LTMP_Fish / FISH01 / FISH02 / FISH05 / FISH06/ FISH10

Custodian:
Name: Dr Hugh Sweatman
Organisation: Australian Institute of Marine Science
Address: PRIVATE MAIL BAG 3, TOWNSVILLE MAIL CENTRE, Queensland, 4810, Australia
Email: reception@aims.gov.au
URL: http://www.aims.gov.au

Update:
Update Frequency: not planned
Current Status: Complete

Restrictions:
Access Restrictions: Must acknowledge AIMS as the source, Intellectual Property Rights
Use Limitations: Map products not to be used for navigation

Source:
Acknowledgements: Australian Institute of Marine Science

Contact:
Position: Data Manager, AIMS Long-term Monitoring Project
Email: adc@aims.gov.au
URL: http://www.aims.gov.au/adc

Keywords:
Fish
Ecology
Coral Reefs
Monitoring

Spatial Reference:

Native Data Format: Oracle database

Bounding Box:
West Coordinate: 145.35114
East Coordinate: 152.668567
North Coordinate: -14.523517
South Coordinate: -23.890883

Projection: Lat/Long (Geographic)

Title: **AIMS Long-term Monitoring Program Video and Photo Transects (Great Barrier Reef)**

Abstract:

The AIMS Long-term Monitoring Program has been monitoring about 50 selected reefs throughout the Great Barrier Reef (GBR) since 1993. Surveys are undertaken at 3 sites per reef, with 5x50m transects surveyed per site. In 1994 visual transects were discontinued in favour of video transects. The program was modified again in 2007 to allow collection of data from single frames shot at 1m intervals along each transect using a digital still camera.

The program has been designed to track changes in reef communities over time across sub-regions of the GBR.

Data Creation Date:

Project Code/ Survey Method:
LTMP_BENTHIC/ VPOINT / PPOINT

Custodian:
Name: Dr Hugh Sweatman
Organisation: Australian Institute of Marine Science
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Email: reception@aims.gov.au
URL: http://www.aims.gov.au

Update:
Update Frequency: not planned
Current Status: Complete

Restrictions:
Access Restrictions: Must acknowledge AIMS as the source, Intellectual Property Rights
Use Limitations: Map products not to be used for navigation

Source:
Acknowledgements: Australian Institute of Marine Science

Keywords:
Biosphere| Aquatic Ecosystems| Benthic Habitat
Biosphere| Aquatic Ecosystems| Reef Habitat
Biological Classification| Animals/Invertebrates
Oceans| Coastal Processes| Coral Reefs

Spatial Reference:

Native Data Format: oracle database

Bounding Box:

West Coordinate: 145.35114
East Coordinate: 152.668567
North Coordinate: -14.523517
South Coordinate: -23.890883

Projection: Lat/Long (Geographic)

North West Shelf Long-term Monitoring Program

Title: **Scott Reef/Rowley Shoals Long Term Monitoring Project**

Abstract:
Benthic and fish communities are surveyed at 16 locations. 3 fixed sites per location 5 transects per site. Benthic communities are surveyed using video analysis. Adult fish are surveyed using visual census. Fish recruits are surveyed using visual census on occasion.

Data Creation Date:
Beginning Date: 1994-09-01

Project Code/Survey Method:
WA_FISH01 / FISH01
WA_FISH01 / FISH01
WA_VPOINT / VPOINT
WA_PPOINT / PPOINT
WAS_VPOINT / VPOINT

Custodian:
Name: Dr Andrew Heyward
Organisation: Australian Institute of Marine Science
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Email: reception@aims.gov.au
URL: http://www.aims.gov.au

Update:
Update Frequency: Annually
Current Status: in progress

Restrictions:
Access Restrictions: Must acknowledge AIMS as the source, Intellectual Property Rights
Use Limitations: Map products not to be used for navigation

Source:
Acknowledgements: Australian Institute of Marine Science

Keywords:
OCEANS Marine Biology Marine Invertebrates monitoring
OCEANS Marine Biology Fish monitoring

Spatial Reference:

Native Data Format: Oracle Database

Bounding Box:
West Coordinate: 118.972367
East Coordinate: 122.031450
North Coordinate: -13.636850
South Coordinate: -17.558233

Projection: Lat/Long (Geographic)

Title: **Ningaloo Marine Park Monitoring Program**

Abstract:
Benthic life form and substrate monitoring has been carried from 1993 onwards in the Ningaloo Marine Park. Percentage cover of different substrate types and benthic organisms (particularly corals) are identified to benthic group or life form level. Videos are made along fixed standardised 20 metre transects and data is analysed from stills on a large video screen halted at specified time intervals. Fish were counted on 20 minute timed transects. Smaller fish were counted on 2 m wide transects and bigger fish on 10 metre wide transects. Not all sites have associated fish data.

Data Creation Date
Beginning Date: 1998-01-01

Project Code/Survey Method:
WA_NI_VPOINT / VPOINT
WA_CO_VPOINT / VPOINT
WAND FISH02T & FISH10T

Custodian:
Name: Dr Andrew Heyward
Organisation: Australian Institute of Marine Science
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Update:
Update Frequency: not planned
Current Status: Complete

Restrictions:
Access Restrictions: Must acknowledge AIMS as the source, Intellectual Property Rights
Use Limitations: Map products not to be used for navigation

Source:
Acknowledgements: Australian Institute of Marine Science

Keywords:
OCEANS Marine Environment Monitoring

Spatial Reference:

Native Data Format: Database

Bounding Box:
West Coordinate: 113.541667
East Coordinate: 114.178633
North Coordinate: -21.784967
South Coordinate: -23.762633

Projection: Lat/Long (Geographic)

Other AIMS Coral Reef Fish and Benthos Surveys

Title: **Characterisation of the Fish Communities at Rowley Shoals, Scott and Seringapatam Reefs**

Abstract:
In October 1992 ten days were spent at Scott Reef, three at Seringapatam and two days at each of the Rowley Shoals. Fish population censuses for a number of major reef fish families were carried out by trained divers during 45 minute SCUBA swims at a number of outer reef-slope and lagoon sites. Counts of snappers, emperors and cods were also made at lagoon sites. Additionally lists of all species of fish observed at each site were compiled. Additional fish counts were also made using standardised counting methods developed for long-term monitoring of fish populations in the Great Barrier Reef.

Data Creation Date:
Beginning Date: 1993-09-26
Ending Date: 1993-10-14

Survey Methods:
45 minute scuba swims — Fish01,Fish05

Custodian:
Name: Dr Dave Williams
Organisation: Australian Institute of Marine Science
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URL: http://www.aims.gov.au

Update:
Update Frequency: not planned
Current Status: Complete

Restrictions:
Access Restrictions: Must acknowledge AIMS as the source, Intellectual Property Rights
Use Limitations: Map products not to be used for navigation

Source:
Acknowledgements: Australian Institute of Marine Science

Keywords:
OCEANS Marine Biology Fish biodiversity
OCEANS Marine Biology Fish census
OCEANS Marine Biology Fish monitoring

Spatial Reference:

Native Data Format: Digital - Database

Bounding Box:
West Coordinate: 118.961244
East Coordinate: 122.048688
North Coordinate: -13.637742
South Coordinate: -17.614153

Projection: Lat/Long (Geographic)

Title: **A Preliminary Assessment of Fish and Coral Communities on Reefs of the Dampier Archipelago**

Abstract:
During the initial AIMS survey of coral and fish communities within the Dampier Archipelago, 24 sites, chosen to be representative of the diverse range of habitats in the region, were visited. At each site, coral benthos communities were quantitatively sampled using standardised 20 metre transects (5 per site) as used widely in the Great Barrier Reef and in the Ningaloo Reef survey. Fish were counted on 20 minute timed transects. Smaller fish were counted on 2 m wide transects and bigger fish on 10 metre wide transects. Not all sites have associated fish data. Visual surveys at the sites indicate that many sites had been subjected to significant recent storm damage. Large massive coral colonies were overturned and previously luxuriant *Acropora* beds were reduced to rubble banks.

Data Creation Date:
Beginning Date: 1993-09-21
Ending Date: 1993-09-25

Project Code / Survey Method:
WAND_VPOINT / VPOINT
WAND FISH02T & FISH10T

Custodian:
Name: Dr Hugh Sweatman
Organisation: Australian Institute of Marine Science
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Update:
Update Frequency: not planned
Current Status: Complete

Restrictions:
Access Restrictions: Must acknowledge AIMS as the source, Intellectual Property Rights
Use Limitations: Map products not to be used for navigation

Source:
Acknowledgements: Australian Institute of Marine Science

Keywords:
OCEANS Marine Biology Fish biodiversity
OCEANS Marine Biology Marine Habitat coral

Spatial Reference:

Native Data Format: Database

Bounding Box:
West Coordinate: 116.403833
East Coordinate: 116.848833
North Coordinate: -20.351667
South Coordinate: -20.663333

Projection: Lat/Long (Geographic)

Title: **Broadscale survey of coral condition on the reefs of the Easter Group of the Houtman Abrolhos Islands**

Abstract:
Anthropogenic activities that occur at the Abrolhos Islands include commercial lobster and line fishing and tourism. Impacts such as physical damage from diving, anchoring deployment of lobster pots and influence of land-based activities could cause changes to coral condition. The possible effects of human activities on coral reefs were noted as potential issues during management and stakeholder workshops (Fisheries WA 1998; Chubb et al. 2002; Webster et al.2002). This survey broadly addressed potential impacts on the coral reefs by estimating coral cover, coral bleaching, coral disease, coral damage, and the abundance of the corallivores; *Acanthaster planci* starfish and *Drupella* snails. Eight research sites were selected, including reefs in the Rat Island group, Suami Island group and Leo Island group and surveyed from the 16th to 21st of February 2004. At each site three 50 metre belt transects were videoed and a GPS reading taken at the start of each site. Transects were laid parallel to the reef crest at a depth of appropriately 4 - 6 m. The video transects were analysed using AVTAS (AIMS Video Analysis System), (Christie et al, 1996). The health of the corals 2 m either side of the transect line were examined and the following potential impacts assessed and quantified: Bleaching: The severity of bleaching on individual colonies and the proportion of colonies affected was estimated. Disease: Five categories of coral disease were recorded including, black band disease, white syndrome, skeletal eroding band, brown band and pink spot. The species infected and the number colony displaying disease symptoms were recorded. Corallivores: The levels of the damage and incidence of starfish and snails were counted at each site. Coral Damage: The extent and severity of coral damage was recorded.

Data Creation Date: Beginning Date: 2004-02-16, Ending Date: 2004-02-22

Project Code/Survey Method:
WA_HA_VPOINT / VPOINT

Custodian:
Name: Dr Andrew Heyward
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URL: http://www.aims.gov.au

Update:
Update Frequency: not planned
Current Status: Complete

Restrictions:
Access Restrictions: Must acknowledge AIMS as the source, Intellectual Property Rights
Use Limitations: Map products not to be used for navigation

Source:
Acknowledgements: Australian Institute of Marine Science

Keywords:
OCEANS Marine Biology Marine Plants coral
OCEANS Marine Biology Marine Plants coral cover

Spatial Reference:

Native Data Format: Database, Video (including digital video)

Bounding Box:
West Coordinate: 113.788417
East Coordinate: 113.857117
North Coordinate: -28.671850
South Coordinate: -28.825050

Projection: Lat/Long (Geographic)

Title: **Fish, sessile benthos and beche-de-mer surveys in the Lihou Reef National Nature Reserve (Coral Sea)**

Abstract:
The Australian Institute of Marine Science (AIMS) conducted fish, sessile benthos and beche-de-mer surveys in the Lihou Reef National Nature Reserve from the 15 to 18 March 2004. One hundred species of hard coral were recorded in the Reserve compared to 99 at the Coringa-Herald Reserve in 2003. Coral cover was low (7.9%) and consistent with a reef recovering from a disturbance. At the time of the surveys, a severe bleaching event was in progress. Bleaching of hard corals was observed at all sites and at the Reserve level it was estimated that 65% of the hard coral cover was bleached. The Lihou Reef National Nature Reserve (Reserve) is one of two protected areas in the Coral Sea Region. The Reserve is located some 400 kilometres east of Townsville, Queensland. The Reserve was declared on 16 August 1982 and the first plan of management prepared under the National Parks and Wildlife Conservation Act 1975, came into effect in 1989. The reserve is one of twelve Marine Protected Areas (MPAs) managed by the Marine Environment and Policy Branch of the Department of the Environment and Heritage (DEH), nine of which contain coral reef ecosystems. The management plan for the Reserve makes clear that the reef system is to be managed as a strict nature reserve - World Conservation Union (IUCN) category Ia (Commonwealth of Australia 2001). Performance assessment forms a key role in the implementation of world best management practice and determining the effectiveness of these Marine Protected Areas (MPAs). The survey results provide a baseline against which future change can be assessed and allow the present 'status' of the reefs in the Reserve to be compared with other reef systems where similar surveys have been conducted.

Data Creation Date:

Project Code/Survey Method:
CoralSea_LI_Benthic / VPOINT
CoralSea_LI_Fish / FISH01 / FISH05

Custodian:
Name: Dr Hugh Sweatman
Organisation: Australian Institute of Marine Science
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Email: reception@aims.gov.au
URL: http://www.aims.gov.au

Update:
Update Frequency: not planned
Current Status: Complete

Restrictions:
Access Restrictions: Must acknowledge AIMS as the source, Intellectual Property Rights
Use Limitations: Map products not to be used for navigation

Source:
Acknowledgements: Australian Institute of Marine Science

Keywords:

Biological Classification| Animals/Invertebrates| Cnidarians
Biological Classification| Animals/Vertebrates| Fish
Biological Classification| Animals/Invertebrates| Echinoderms
Biosphere| Aquatic Ecosystems| Benthic Habitat
Biosphere| Aquatic Ecosystems| Reef Habitat

Spatial Reference:

Bounding Box:
West Coordinate: 151.1333
East Coordinate: 152.3333
North Coordinate: -16.95
South Coordinate: -17.9

Projection: Lat/Long (Geographic)

Title: **Fish, sessile benthos and beche-de-mer surveys of Elizabeth Reef in the Elizabeth and Middleton Reefs National Nature Reserve (Tasman Sea)**

Abstract:
The Australian Institute of Marine Science (AIMS) conducted fish, sessile benthos, and beche-de-mer surveys on Elizabeth Reef in the Elizabeth and Middleton Reefs National Nature Reserve from the 2nd to 6th December 2003. A total of 111 species of coral were identified during this survey. The coral community at Elizabeth Reef was similar to that observed during previous surveys. At the time of survey no bleaching and very little crown-of-thorns starfish (COTS) activity was observed.
The Elizabeth and Middleton Reefs Marine National Nature Reserve (the Reserve) is one of two protected areas in the Tasman Sea region. The Reserve is located approximately 600 km east of Coffs Harbour and 200 km north of Lord Howe Island. The Reserve covers an area of 188,000 hectares, and includes the southern-most open-ocean platform reefs in the world: Elizabeth Reef (~5,100 ha) and Middleton Reef (~3,700 ha). Formed on volcanic seamounts in the northern Tasman Sea, these isolated reef systems lie close to the boundary between the Coral Sea and the Tasman Sea and are exposed to both tropical and temperate ocean currents.

Data Creation Date:
2003-12-02 00:00:00

Project Code/Survey Method:
CoralSea_EM_Benthic / VPOINT
CoralSea_EM_Fish / FISH01 / FISH05

Custodian:
Name: Dr Hugh Sweatman
Organisation: Australian Institute of Marine Science
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URL: http://www.aims.gov.au

Update:
Update Frequency: not planned
Current Status: Complete

Restrictions:
Access Restrictions: Must acknowledge AIMS as the source, Intellectual Property Rights
Use Limitations: Map products not to be used for navigation

Source:
Acknowledgements: Australian Institute of Marine Science

Keywords:
Biological Classification| Animals/Invertebrates| Cnidarians
Biological Classification| Animals/Invertebrates| Echinoderms
Biological Classification| Animals/Vertebrates| Fish
Biosphere| Aquatic Ecosystems| Benthic Habitat
Biosphere| Aquatic Ecosystems| Reef Habitat

Spatial Reference:

Native Data Format:

Bounding Box:
West Coordinate: 158.9167
East Coordinate: 159.2333
North Coordinate: -29.35
South Coordinate: -30.05

Projection: Lat/Long (Geographic)

Title: **Fish, sessile benthos and beche-de-mer surveys in the Coringa-Herald National Nature Reserve (Coral Sea)**

Abstract:
The Australian Institute of Marine Science (AIMS) conducted fish, sessile benthos, and beche-de-mer surveys in the Coringa-Herald National Nature Reserve (CHNNR) from the 28 March to 2 April 2003. The outstanding feature observed during these surveys was the dramatically low cover of live hard coral. During these surveys we observed strong evidence of bleaching mortality of hard corals and a suggestion of storm wave damage at a few exposed sites. Hard coral diversity was also very low in the CHNNR. The reef fish assemblages showed a similar pattern of low diversity. The reef fish assemblages observed were unique compared to anywhere on the GBR with many species common to Coral Sea reefs, rare or absent from similar habitats on the GBR and visa versa. The Coringa-Herald National Nature Reserve (CHNNR or Reserve) is one of two protected areas in the Coral Sea region. The Reserve is located some 400 kilometres east of Cairns, Far North Queensland. It was proclaimed on the 16th August 1982 under the National Parks and Wildlife Conservation Act 1975, and is one of 12 MPAs managed by Environment Australia (EA), nine of which contain coral reef ecosystems.

Data Creation Date
2003-03-28
2003-04-02

Project Code/Survey Method:
CoralSea_CH_Benthic / VPOINT
CoralSea_CH_Fish / FISH01 / FISH05

Custodian:
Name: Dr Hugh Sweatman
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Email: reception@aims.gov.au
URL: http://www.aims.gov.au

Update:
Update Frequency: not planned
Current Status: Complete

Restrictions:
Access Restrictions: Must acknowledge AIMS as the source, Intellectual Property Rights
Use Limitations: Map products not to be used for navigation

Source:
Acknowledgements: Australian Institute of Marine Science

Keywords:
Biological Classification| Animals/Invertebrates| Cnidarians
Biological Classification| Animals/Invertebrates| Echinoderms
Biological Classification| Animals/Vertebrates| Fish
Biosphere| Aquatic Ecosystems| Benthic Habitat
Biosphere| Aquatic Ecosystems| Reef Habitat

Spatial Reference:

Native Data Format: Oracle database

Bounding Box:
West Coordinate: 149
East Coordinate: 150.5
North Coordinate: -16.3833
South Coordinate: -17.1833

Projection: Lat/Long (Geographic)

Title: **Monitoring the effects of rezoning the Great Barrier Reef Marine Park**

Abstract:
As a result of the Representative Areas Program (RAP), a major rezoning of the Great Barrier Reef Marine Park occurred in July 2004. The objective of rezoning the GBR Marine Park was to conserve biodiversity by ensuring that at least 20% of each of a full range of bioregions within the Marine Park was protected. In order to assess the effects of the new zoning plan, pairs of mid-shelf and outer shelf reefs were identified that had both been open to fishing prior to 2004, but one reef in each pair had been rezoned as a "no-take" area in 2004, while the other reef remained open to fishing. Reefs in each pair were located close to each other, were in the same Representative Areas Program bioregion and had similar geomorphology of the NE reef face. Six pairs of mid-shelf or outer shelf reefs with the appropriate zoning history were selected in each of four localities close to centres of population: Cairns-Innisfail, Townsville, Mackay and the Swain Reefs, and four pairs of reefs were selected in the Capricorn-Bunker Group.

This research is being undertaken to monitor the effects of rezoning of the GBRMP, which entailed a large increase in the "no-take" areas within the Marine Park.

Data Creation Date:

Project Code/Survey Method:
RAP_BENTHIC/ VPOINT / PPOINT
RAP_Fish / FISH01 / FISH05

Custodian:
Name: Dr Hugh Sweatman
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URL: http://www.aims.gov.au

Update:
Update Frequency: not planned
Current Status: Complete

Restrictions:
Access Restrictions: Must acknowledge AIMS as the source, Intellectual Property Rights
Use Limitations: Map products not to be used for navigation

Source:
Acknowledgements: Australian Institute of Marine Science

Keywords:
Biosphere| Aquatic Ecosystems| Benthic Habitat
Biosphere| Aquatic Ecosystems| Reef Habitat
Biological Classification| Animals/Vertebrates| Fish
Biological Classification| Animals/Invertebrates| Cnidarians
Biological Classification| Animals/Invertebrates| Echinoderms

Spatial Reference:

Native Data Format: Oracle database

Bounding Box:
West Coordinate: 145.35114
East Coordinate: 152.668567
North Coordinate: -14.523517
South Coordinate: -23.890883

Projection: Lat/Long (Geographic)

TAFI—University of Tasmania Underwater Visual Census of Temperate Reefs Biodiversity

DRAFT

Title: Temperate Australian quantitative spatial and temporal abundance data for rocky reef biota (biodiversity)

Custodian: Tasmanian Aquaculture and Fisheries Institute (TAFI)

Contact:

Neville Barrett
Tasmanian Aquaculture and Fisheries Institute
University of Tasmania
Neville.Barrett@utas.edu.au

Abstract: The data is quantitative abundance of fish and megafuanal invertebrates and algal % cover derived from diver transects based counts at ca.490 sites at a wide range of locations across Temperate Australia.

Method, Project Description: The methods are described in detail in Edgar and Barrett (1997). Primarily the data are derived from SCUBA transects at 5 m depth (and/or 10 m depth) at each sited surveyed. Methods were initially developed for research on temporal changes following protection in Tasmanian MPAs (Maria Is, Tinderbox, Ninepin Point, Governor Island). Identical methods were used in a 1993 Tasmanian bio-regionalisation project giving state-wide coverage (repeated in 2006/7), in MPA planning surveys (e.g. St Helens, Waterhouse Region, Low Head, Lilico Beach, Rocky Cape), and oil spill assessment (Low Head), and in MPS studies and surveys in Tasmania and interstate (including Port Davey and the Kent Group (Tas), Port Philip Heads, Wilsons Promontory (Vic), Encounter Bay and Allthorpes Islands (SA), Jurien Bay and Esperence to Albany (WA), and Jervis Bay and Batemans Bay (NSW). In many cases the dataset involved temporal replication (year scale), particularly for the core Tasmanian MPAs.

Location: Temperate Australia

North: -30 *South:* -44
East: 112 *West:* 155

Datum: GDA 94

Spatial Representation: Tabular **Data Category:** Biota

Data Format: Excel Spreadsheet

Key Words: Marine Coasts, Marine Reefs, Marine Biology, Fisheries Marine, Fisheries Aquaculture