

Oral Presentations
September 3 (Tuesday) : Openings, Key Note Speech and Marine Session
(Room A002, ARTS BUILDING)

(Time keeper: student helper B, Operation of the PC projector & Microphone distributor: student helper C)

Subject	Moderator	Time	Title	Authors <i><u>The presenter is underlined.</u></i> (): registration number	Abstract (page)
Opening speeches	James KAPETSKY (10)	10:30-11:05	Welcome speech (10')	<u>Kiyoshi ITOH</u> (6) (Organizer) Fishery/Aquatic GIS Research Group, Japan	
			Welcome speech (10')	<u>Geoff MEADEN</u> (57) (Local Co-organizer) Canterbury Christ Church University College, UK	
			Background, Objectives, Structure and Remarks (15')	<u>Tom NISHIDA</u> (14) (Convener) National Research Institute of Far Seas Fisheries, Japan	
Key Note Address		11:05-11:50	A critique of spatial data analysis and its application within aquatic GIS	<u>Tony BOOTH</u> (140) (key note speaker) Rhodes University, South Africa	5
		11:45-13:00	Lunch		
Remote sensing (Marine)	Vasilis VALAVANIS (43)	13:00-13:20	GIS Mapping of Marine Species Feeding Grounds through Analysis of Satellite Imagery	<u>Vasilis VALAVANIS</u> (43) Argiris KAPANTAGAKIS S.GEOGRAKARAKOS Isidora KATARA Andreas PALIALEXIS	6
		13:20-13:40	EFISAT project: Use of remote sensing and GIS technologies to predict pelagic fishing grounds in Chile	<u>Claudio SILVA</u> (61) Karen NIETO María A. BARBIERI Guillermo MARTÍNEZ Eleuterio YÁÑEZ	7
		13:40-14:00	Satellites Images Exploration GIS Tools for the Benguela Ecosystem	<u>Laurent DRAPEAU</u> (90)	8
		14:00-14:20	Study on relations between Japanese common squid (<i>Todarodes pacificus</i>) fishing ground formation and an advantage of fishing ports using RS/GIS	<u>Hidetada KIYOFUJI</u> (79)	9
		14:20-14:40	Using lights to track squid fishing fleets from space	<u>Claire M. WALUDA</u> (75)	10
		14:40-15:10	Tea break		
Systems & Software (Marine) (I)	Dale KIEFER (62)	15:10-15:30	Space-based surveillance and the role of SAR for operational fisheries and aquatic resource monitoring	<u>Simon CHESWORTH</u> (13)	11
		15:30-15:50	The GIS Component of a Web-based Integrated Knowledge Organization System	<u>Fabio CAROCCI</u> (105) Marc TACONET	12
		15:50-16:10	A new version of Marine Explorer (GIS)	<u>Kiyoshi ITOH</u> (6)	13
		16:10-16:30	Ontologies for Knowledge Representation and Semantic Interoperability in Marine Information Systems	<u>Zarine KEMP</u> (74) Robert FRANK	14
		16:30-16:50	A Dynamic Biogeographic Information system for the Gulf of Maine	<u>Dale A. KIEFER</u> (62) Vardis TSONTOS	15

19:00-21:00 ICE BREAKING COCKTAIL PARTY at Grapevine Bar, Level2, Bramber House

Oral Presentations
September 4 (Wednesday) : Marine Session
(Room A002, ARTS BUILDING)

(Time keeper: student helper B, Operation of the PC projector & Microphone distributor: student helper C)

Subject	Moderator	Time	Title	Authors <u>The presenter is</u> <u>underlined.</u> (): registration number	Abstract (page)
Systems & Software (Marine) (II)	Fabio CAROCCI (105)	9:00-9:20	Visualisation of commercial fisheries data using GIS and multidimensional visualisation software	<u>Brent A. WOOD</u> (8)	16
		9:20-9:40	Development of visualization system for fish and plankton stock assessment using a quantitative echo sounder	K. MIYASHITA <u>K. TETSUMURA</u> (66) Ryo KAWABE	17
		9:40-10:00	Results from Using Electronic Logbooks in US and Canada	<u>Richard ARNOLD</u> (71)	18
		10:00-10:20	OLFISH: An electronic logbook : A demonstration of unique, wheelhouse, electronic solution for the collection, management and utilization of commercial fishing data (part I)	<u>Amos BARKAI</u> (27) Mike BERGH	19
		10:20-10:40	(part II)		
		10:40-11:10	Tea break		
Habitats & Mapping (Marine) (I)	Teruhisa KOMATSU (129)	11:10-11:30	Fish habitat suitability modelling and its application in managing human activities	Richard STOCKS <u>Stuart ROGERS</u> (91) Steven FREEMAN	20
		11:30-11:50	Introducing Greater Ecological Realism to Fish Habitat Models	<u>Paul D. EASTWOOD</u> (58) Geoff J. MEADEN	21
		11:50-12:10	Mapping global marine fisheries catches using taxa distributions and fishing	<u>Reg WATSON</u> (46)	22
		12:10-12:30	Assessment of the co-occurrence of Inshore Longfin Squid (<i>Loligo pealeii</i>) and Scup (<i>Stenotomus chrysops</i>) on the eastern U.S. continental shelf	<u>HENDRICKSON</u> (101)	23
		12:30-14:00	Lunch		
Habitats & Mapping (Marine) (II)	Alessandro GIMONA (68)	14:00-14:20	Scattered distribution of kichiji rockfish, <i>Sebastobolus macrochir</i> , on the continental slope of Jo-ban fishing ground, northeastern Japan: analysis of images recorded by the towing video camera system using GIS	<u>K. WATANABE</u> (112) T. WATANABE	24
		14:20-14:40	Geographical variation in the vertical distribution of cod and availability to survey gears	<u>B. STENSHOLT</u> (21) Eivind STENSHOLT	25
		14:40-15:00	GIS and geostatistical integration of acoustic census and environmental data to produce realistic distribution and abundance maps of North Sea Herring	<u>A. GIMONA</u> (68) P. G. FERNANDES	26
		15:00-15:20	Cartography of Posidonia meadows in Messouia off Zarzis, Tunisia, using multi-beam sonar and GIS	<u>T. KOMATSU</u> (129) Chiaki IGARASHI Koji SHIBATA Kazuhiro HANTANI Martine CARTON Takushi OHMURA K. BEN MUSTAPHA Cherif SAMMARI Amor EL ABED	27
		15:20-15:40	An unconstrained, interactive spatial analysis framework for developing habitat closure alternatives in New England, USA, fisheries from aggregated survey abundance and fishery productivity data	<u>A. APPLGATE</u> (63) Edward DURBECK	28
		15:40-16:00	Understanding the distribution of maerl, a calcareous seaweed, off Dorset, UK	<u>A. MITCHELL</u> (56) Ken COLLINS	29

16:00-17:30 Formal Session for the Poster presentation & Demonstration with PC (Mandela Hall) (refreshment available)

Oral Presentations
September 5 (Thursday) : Marine Session
(Room A002, ARTS BUILDING)

(Time keeper: student helper B, Operation of the PC projector & Microphone distributor: student helper C)

Subject	Moderator	Time		Authors <i>The presenter is underlined.</i> (): registration number	Abstract (page)
Environment & Ecosystems (marine) (I)	William SEAMAN (22)	9:00-9:20	Characterising spatial and temporal variability of marine conditions	<u>Anne E. LUCAS</u> (89) W. Paul BUDGELL	30
		9:20-9:40	Between SST and bathymetry: Spatial techniques for defining the aquatic landscape	<u>Laura KRACKER</u> (108)	31
		9:40-10:00	Study of bathymetry effects on the nominal hooking rates of yellowfin tuna (<i>Thunnus albacares</i>) and bigeye tuna (<i>Thunnus obesus</i>) exploited by the Japanese tuna longline fisheries in the Indian Ocean	<u>Tom NISHIDA</u> (14) Masahiko MOHRI Kiyoshi ITOH Jun NAKAGOME	32
		10:00-10:20	Analysis of Fisheries Catch Data in Relation to Temperature Anomalies in SE Mediterranean using GIS	A. KAPANTAGAKIS <u>V. VALAVANIS</u> (43) S. GEOGRAKARAKOS Andreas PALIALEXIS Isidora KATARA	33
		10:20-10:40	Cancelled		
		10:40-11:10	Tea break		
Environment & Ecosystems (marine) (II)	William SEAMAN (22)	11:10-11:30	Environmental variability of Antarctic krill (<i>Euphausia superba</i>) in the Scotia Sea, Antarctica	<u>Mikio NAGANOBU</u> (26) Kiyoshi ITOH	34
		11:30-11:50	Spatio-Temporal Variations of Oceanographic Features and Their Influences on Pelagic Fishery in the Straits of Malacca Using GIS Analysis	<u>G. H. MUSSE</u> , (29) H.M. IBRAHIM M. A. AMBAK M. S. ABDUL RASHID H. YANAGAWA	35
Management (marine) (I)	Geoff MEADEN (57)	11:50-12:10	Data Collection Methods and GIS Uses to Enhance Catch and Reduce Bycatch in the North Pacific Fisheries	<u>Robert MIKOL</u> (125)	36
		12:10-12:30	Recent efforts towards effective management of the Gulf of Maine/Georges Bank fisheries using GIS technology	<u>R. R. TAYLOR</u> (126) C. F. POLLONI	37
		12:30-14:00	Lunch		
Management (marine) (II)	Geoff MEADEN (57)	14:00-14:20	A visualisation of the spatial and temporal dynamic in the Namibian hake trawl fishery - a tool to understand the complexity of a fishery	<u>Espen JOHNSEN</u> (141) Heinie LESCH	38
		14:20-14:40	Comprehensive mapping of commercial marine fisheries and their dependant coastal communities, south-eastern Australia	<u>J. LARCOMBE</u> (102) Kate BROOKS	39
		14:40-15:00	Spatial Fishing Effort Modelling Network	Alexis BENSCH <u>Fabio CAROCCI</u> (105) F. CORSI	40
		15:00-15:20	Spatial Distribution of Fishing Effort in the Seychelles Schooner Fishery	<u>Rondolph PAYET</u> (87)	41
		15:20-15:40	Using Vessel Monitoring System combined with landings data to calculate and map fishing effort and landings per unit effort for the Portuguese crustacean trawl fleet	<u>AFONSO-DIAS</u> (117), Joana SIMÕES Carlos PINTO	42
		15:40-16:00	Reefs at Risk in Southeast Asia: A map-based model on threats to coral reefs	Lauretta BURKE <u>Marco NOORDELOOS</u> (131)	43

15:30-17:00 Formal Session for the Poster presentation & Demonstration with PC (Mandela Hall) (refreshment available)

17:00-17:30 Dismantle the posters & PCs

19:00- Banquet at Downs Restaurant (only for those booked in advance)

Oral Presentations
September 6 (Friday) : Sessions for Numerical Analyses & Panel Discussion
(Room A002, ARTS BUILDING)

(Time keeper: student helper B, Operation of the PC projector & Microphone distributor: student helper C)

Subject	Moderator	Time	Title	Authors <i>The presenter is underlined.</i> (): registration number	Abstract (page)
<i>Numerical analyses (II) (Fresh water)</i>	Tony Booth (140)	9:00-9:20	Application of GIS in stock assessment: A practical experience from Lake Malawi, Malawi, Central Africa	<u>Dezio Missiri BANDA</u> (36)	44
		9:20-9:40	Predicting historical potential spawning occupancy upstream of anthropogenic barriers using a hierarchical statistical model, Willamette Valley, USA	<u>Mindi B. SHEER</u> (127) Elizabeth. A. STEEL David. JENSEN	45
		9:40-10:00	Spatial and temporal stream temperature prediction : Geostatistical modelling for networked data and non-stationary covariance structures	<u>Beth GARDNER</u> (76) Patrick J. SULLIVAN	46
		10:00-10:20	Application of Geostatistics to Estimating Stock Size in Estuaries: A Non-Euclidean Approach to Variogram Calculation and Kriging	<u>Olaf JENSEN</u> (95) Glenn MOGLEN Mary CHRISTMAN Thomas MILLER	47
		10:20-10:40	Cancelled		
		10:40-11:10	Tea break		
<i>Numerical analyses (III) (marine)</i>	Tony Booth (140)	11:10-11:30	A geostatistical t-test for spatially correlated data: Using variogram analysis to model spatial variability and to detect significant temporal changes in the distribution of Pacific halibut	<u>Din CHEN</u> (30) Richard LEICKLY	48
		11:30-11:50	Acoustical Substrate Classification For Stock Assessment of the Geoduck Clam	<u>Ian MURFITT</u> (115) Claudia HAND	49
		11:50-12:10	Developing a computer simulation program to determine optimal sampling strategies: a case study of the Maine sea urchin fishery	<u>Robert GRABOWSKI</u> (72) Yong CHEN Thomas WINDHOLZ	50
		12:10-12:30	Modelling the distribution of fish resources using oceanographic variables, statistical methods and GIS technologies	David BARRATT Adrian BUGG Simon BARRY Brent WISE <u>James LARCOMBE</u> (102)	51
		12:30-14:00	Lunch		
Panel discussion	Chair Geoff MEADEN (57) Co-Chair James KAPETSKY (10)	14:00-16:00	(Sum-up Session) The objectives of this Session are to highlight progress being made and to discuss ways to move forward. Each panelist will summarize trends in his subject area and there will be discussion from the floor that will help demonstrate where fisheries spatial analyses should now be going. Progress of the 'Numerical analyses' is especially emphasized as it is the theme of this 2 nd Symposium. Each subject plans to be completed in 20 minutes. Detail framework of this Session will be announced at the beginning of this Session from the Chair.	Panellists in six subjects: (1) Fabio CAROCCI (105) (GIS Systems) (2) Vasillis VALAVANIS (43) (Marine: Habitat, Ecosystem & Remote sensing) (3) Goeff MEADEN (57) (Marine : Management) (4) Tony BOOTH (140) (Numerical analyses) (5) William FISHER (45) (Fresh/inland water in general) (6) James KAPETSKY (10) (Aquaculture and Mariculture)	
Closings			Last remarks and the future	Tom Nishida (Convener)	

Oral Presentations
September 4 (Wednesday) : Fresh/Inland Water Session
(Room A001, ARTS BUILDING)

(Time keeper & Operation of the PC projector: Yoshinobu ODAIRA)

Subject	Moderator	Time	Title	Authors <i>The presenter is underlined.</i> (): registration number	Abstract (page)
Environment & Ecosystems (Fresh water)	Sena DE SILVA (1)	11:10-11:30	Use of GIS techniques to evaluate relationships between catchment land use & vegetation patterns and river fish communities, Victoria, Australia	<u>Nigel W. ABERY</u> (3) Sena S. DE SILVA Brad MITCHELL	52
		11:30-11:50	Modelling Sefidrood River of Iran in Term of Fishery	H. GANJIDOUST Varya RAHIMI <u>A. KHODADADI</u> (139) A. & R. YONG	53
		11:50-12:10	Fish yield prediction in lowland reservoirs of Sri Lanka through quantitative treatment of the influence of catchment features on fish production, using Geographical Information Systems	<u>Upali S. AMARASHINGHE</u> (2) Sena S. DE SILVA Chandana. NISSANKA	54
		12:10-12:30	Cancelled		
		12:30-14:00	Lunch		
Habitats & Mapping (fresh water)	Michael PORTER (52)	14:00-14:20	Mapping Indian inland fish diversity using historical occurrence data in FishBase	<u>S. SRIVASTAVA</u> (100) Rodolfo REYES Boris FABRES Alphis G. PONNIAH	55
		14:20-14:40	Analyzing changing river channel morphology using GIS for Rio Grande silvery minnow habitat assessment	<u>M. D. PORTER</u> (52) Tamara MASSONG	56
		14:40-15:00	Habitat fragmentation and modifications affecting distribution of the Rio Grande silvery minnow	<u>M. D. PORTER</u> (52) Michael HATCH	57
		15:00-15:20	The development of a GIS atlas of southern African freshwater fish	Lucy P. SCOTT Paul H. SKELTON <u>Tony BOOTH</u> (140) Lieven VERHEURST	58
		15:20-15:40	Fish diversity in the major rivers of southern Assam, Mizoram and Tripura with a note on their habitat parameters	<u>Devashish KAR</u> (70)	59

16:00-17:30 Formal Session for the Poster presentation & GIS Demonstration with PC (Mandela Hall) (refreshment available)

Oral Presentations
September 5 (Thursday) : Aquaculture & Fresh/Inland water Session
(Room A001, ARTS BUILDING)

(Time keeper & Operation of the PC projector: Yoshinobu ODAIRA)

Subject	Moderator	Time	Title	Authors <i>The presenter is underlined.</i> (): registration number	Abstract (page)
Aquaculture	James KAPETSKY	9:00- 9:20	Development of a scale using GIS, for the selection of non-perennial reservoirs for culture-based fishery activities, Sri Lanka	<u>Sena S. DE SILVA</u> (1) W.M.H. Kelum WIJENAYAKE A.B. Ajith Kumara GUNARATHE Upali S. AMARASINGHE	60
		9:20- 9:40	Aquaculture sustainability and GIS	<u>James KAPETSKY</u> (10)	61
		9:40-10:00	Use of GIS for placement of mariculture	<u>Kerstin GEITNER</u> (85)	62
		10:00-10:20	Integration of hydrological index and GIS for shrimp culture in subtropical Brazilian coast	<u>Jarbas BONETTI FILHO</u> (128) Elpidio BELTRAME Carla BONETTI	63
		10:20-10:40	Planning of shellfish farming in a tropical estuary: A spatial analysis approach	<u>Gilberto Fonseca BARROSO</u> (114) Jarbas BONETTI FILHO	64
		10:40-11:10	Tea break		
Management (fresh water)	José AGUILAR-MANJARREZ	11:10-11:30	Manual on the use of Geographical Information Systems (GIS) in fisheries management and planning	Gertjan DE GRAAF Felix MARTTIN <u>J. AGUILAR-MANJARREZ</u> (111)	65
		11:30-11:50	GIS applications in stream and river fisheries	<u>William L. FISHER</u> (45) Frank J. RAHEL	66
		11:50-12:10	The African Water Resource Database: GIS-based analytical tools for inland fisheries management and planning	Jeff JENNESS Joe DOOLEY <u>AGUILAR-MANJARREZ</u> (111)	70
		12:10-12:30	Floodplain fisheries monitoring and Geographical Information Systems	<u>Gertjan DE GRAAF</u> (50)	68
		12:30-14:20	Lunch		
Numerical analyses (I) (Fresh water)	William FISHER	14:00-14:20	Geospatial techniques for developing a sampling frame of watersheds across a region	Robert E. GRESSWELL <u>Douglas S. BATEMAN</u> (99) George W. LIENKAEMPER	71
		14:20-14:40	Pattern detection and longitudinal analysis of linear networks : Quantifying spatial variability in stream Fishes	<u>Christian E. TORGERSEN</u> (98) Robert E. GRESSWELL Douglas S. BATEMAN	72

15:30-17:00 Formal Session for the Poster presentation & Demonstration with PC
(Mandela Hall) *(Refreshment available)*
17:00-17:30 Dismantle of the posters & PCs
19:00- Banquet at Downs Restaurant *(only for those booked in advance)*

Poster Presentations (I) (Marine)

Mandela Hall

(Formal Sessions: 4-5:30pm, Sept 4 and 3-5pm, Sept 5)

No.	Title	Authors <i>The presenter is underlined.</i> (): registration number	Abstract (page)
Habitats			
1	Using 3D raster GIS to analyse habitat profiles of marine top predators	<u>Henrik SKOV</u> (20)	75
2	Typology of the demersal communities off Senegal	<u>Didier JOUFFRE</u> (24) Gilles DOMALAIN Alain CAVERIVIERE	76
3	Identifying spawning and nursery areas of Red mullet (<i>Mullus barbatus</i> , L., 1758) in the Strait of Sicily	<u>Germana GAROFALO</u> (113) Fabio FIORENTINO Gioacchino BONO Salvatore GANCITANO Giacomo NORRITO	77
4	Analysing Animal Habitat Selection in Trade-off Situations (Cancelled)	<u>Mette MAURITZEN</u> (44) Andrew E. DEROCHER Rolf. A. IMS Øystein WIIG Nigel YOCCOZ	78
Environments and ecosystems			
5	Predicting the habitat distribution for the deep sea coral, <i>Lophelia pertusa</i> , based on environmental parameters	<u>Tanya LEVERETTE</u> (94)	79
6	Between SST and bathymetry: Spatial techniques for defining the aquatic landscape	<u>Laura KRACKER</u> (108)	80
7	Southern Ocean Mollusc Database, SOMBASE - a tool for Biogeographic analysis in diversity and ecology	<u>Huw J. GRIFFITHS</u> (107) Katrin LINSE J. Alistair CRAME	81
Reefs			
8	Reefs at Risk in Southeast Asia: A map-based model on threats to coral reefs	Lauretta BURKE <u>Marco NOORDELOOS</u> (131)	82
9	Integrating GIS and satellite imagery to underpin the coastal management practices of the Buccoo Reef Marine Park, Tobago	<u>Steven FREEMAN</u> (137) Will AICKEN Peter DOVEY Owen DAY Richard LANGTON Craig MILLS Stuart ROGERS Arthur POTTS	83
10	Geographic Information Systems in Assessment of Marine Human-made Reefs in Florida, USA	<u>William SEAMAN</u> (22)	84

Poster Presentations (II) (Marine)
Mandela Hall
(Formal Sessions: 4-5:30pm, Sept 4 and 3-5pm, Sept 5)

No.	Title	Authors <i><u>The presenter is underlined.</u></i> (): registration number	Abstract (page)
Management			
11	Spatial distribution of the French fishing fleet in the English Channel and the Atlantic in 2000?	<u>S. BERMELL-FLEURY</u> (64)	85
12	Measuring fishing effort using remote sensing	<u>Claire M. WALUDA</u> (75)	86
13	Cartographic representation of fishing sites of the artisanal fishery target species around the Gallinaria Island (Ligurian sea - Western Mediterranean)	<u>Maria E. PICCIONE</u> (110) Sabrina AGNESI Andrea MOLLINARI Leonardo TUNESI	87
14	Recent efforts towards effective management of the Gulf of Maine/Georges Bank fisheries using GIS technology	<u>Richard R. TAYLOR</u> (126) Christopher F. POLLONI	88
Geostatistics			
15	Geostatistical analysis of bioturbation: Integrated effects of Nereis diversicolor (O. W. Müller) on oxygen distribution at the sediment-water interface in marine sediments	<u>Detlef HENNING</u> (84) Gerd-Peter ZAUKE Peter STIEF Ekkehard VARESCHI	89
16	Geostatistical modelling of biogenesis distribution in the Strait of Sicily	<u>G. GAROFALO</u> (113) Michele GRISTINA Marco TOCCACELI Giovannibattista GIUSTO Pietro RIZZO Giuseppe SINACORI	90
17	Meso-scaled investigation on spatial distribution of the flatfish species: A geostatistical approach	<u>V. STELZENMÜLLER</u> (40) Gerd-Peter ZAUKE Siegfried EHRICH	91
Mariculture			
18	Use of GIS for placement of mariculture	<u>Kerstin GEITNER</u> (107)	92

Poster Presentations (III)
(Fresh/Inland Water and Estuary)

Mandela Hall

(Formal Sessions: 4-5:30pm, Sept 4 and 3-5pm, Sept 5)

No.	Title	Authors <i><u>The presenter is underlined.</u></i> (): registration number	Abstract (page)
19	Regionalization of Stream Fisheries Management Using GIS	<u>William L. FISHER</u> (45) Ellen C. TEJAN Paul E. BALKENBUSH	93
20	Acoustic and Optical Monitoring of Sea grass Association Changes in the Estuary of the River Otsuchi, the Northeast Japan	<u>Kenichi TATSUKAWA</u> (73) Keiko AIOI Akihisa MORIYAMA	94
21	Strategic mapping for the assessment of cyanobacteria bloom potential in a small water supply reservoir (Duas Bocas Reservoir, ES, Brazil)	<u>Gilberto F. BARROSO</u> (114) A. DELAZARI-BARROSO	95
22	Geosalar - Modelling Atlantic salmon smolt production using remote sensing and GIS-based methods	<u>Normand BERGERON</u> (120) Julian DODSON Francis Bérubé Daniel BOISCLAIR Denis GRATTON, Stuart LANE, Michel LAPOINTE Asit MAZUMDER Marco RODRIGUEZ Joe RASMUSSEN	96
23	Relationship between juvenile salmonid populations and catchment features	<u>Alexander COLEY</u> (31)	97

GIS Demonstrations with PC

Mandela Hall

(Formal Sessions: 4-5:30pm, Sept 4 and 3-5pm, Sept 5)

No.	Title	Authors <i><u>The presenter is underlined.</u></i> (): registration number	Abstract (page)
1	A new version of Marine GIS software: Marine Explorer Ver 4.0	<u>Kiyoshi ITOH</u> (6)	101
2	A New Marine Geographical Information System	<u>Dale A. KIEFER</u> (62)	102
3	Development of visualization system for fish and plankton stock assessment using a quantitative echosounder	Kazushi MIYASHITA <u>Koutarou TETSUMURA</u> (66) Ryo KAWABE	103
4	GeoCrust 1.0 – A dedicated GIS to estimate and map fishing effort and LPUE using VMS and landings data	Manuel AFONSO-DIAS <u>Joana SIMÕES</u> (118) <u>Carlos PINTO</u> (119)	104
5	Recent efforts towards effective management of the Gulf of Maine/Georges Bank fisheries using GIS technology	<u>Richard R. TAYLOR</u> (126) Christopher F. POLLONI	105