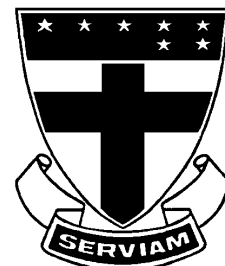# FOURTH INTERNATIONAL SYMPOSIUM ON GIS/SPATIAL ANALYSES IN FISHERY AND AQUATIC SCIENCES

PROGRAM

Universidade Santa Úrsula
Rio de Janeiro, Brazil
August 25(Mon)-29(Fri), 2008

Universidade Santa Úrsula
Instituto de Ciências Biológicas e Ambientais
Rio de Janeiro - Brasil

INTERNATIONAL FISHERY GIS SOCIETY

Summary of the presentations

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THEMES

"FUTURE OF GIS", "SPATIAL DECISION SUPPORT IN AQUACULTURE", "ECOSYSTEM APPROACH
TO AQUACULTURE (EAA)" AND "ECOSYSTEM APPROACH TO FISHERIES (EAF)"

THIS SYMPOSIUM HAS FOLLOWING FOUR SESSIONS:

(I) ORALS, (II) POSTERS, (III) GIS DEMONSTRATIONS WITH PCS AND (IV) PANEL DISCUSSION
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Number of presentations: 99   number of participants: 82 (as of Aug., 16, 2008)

Number of presentations by method and area

Presentation method	Area	Subject	no.	Sub total	total
Key note speech					5
Oral	Systems	Concepts	3	14	66
		Information systems and Software	5		
		Education	1		
		Monitoring systems	5		
	Site selection	Fresh water aquaculture	5	9	
		Mariculture	2		
		Identifying life history sites of marine fish	2		
	Ecosystem Approach	Aquaculture and inland fisheries	1	7	
		Marine fisheries	6		
	Socio economics	Aquaculture	1	2	
		Marine fisheries	1		
	Managements	Fresh water	3	21	
		MPA	7		
		Assessments and predictions	3		
		Offshore and distant waters fisheries	4		
		Sport fisheries	1		
		Costal fisheries	3		
	Habitats	Marine	7	10	
		Fresh water	3		
Poster					16
PC demo	12 demos by 10 presenters				12
Grand total					99

Outline of the program (page numbers of the abstracts by subject)

Time	Aug 24 (Sun)	Aug 25 (Mon)	Aug 26 (Tue)	Aug 27 (Wed)	Aug 28 (Thu)	Aug 29 (Fri)	Time
8AM-6PM		Registration and reception desk					8AM-6PM
09:00-09:20		Openings Group photo Tea break	key note (Spatial decision support in Aquaculture) (P. 23)	Key note (EAA) (p.39)	Management (MPA) (p.59-66)	Habitat (Marine) (p. 85-93)	09:00-09:20
09:20-09:40							09:20-09:40
09:40-10:00			Site selection (Fresh water & aquaculture) (p. 24-28)	Key note (EAF) (p. 40-41)			09:40-10:00
10:00-10:20							10:00-10:20
10:20-10:40				Ecosystem(fresh) (p.42)			10:20-10:40
10:40-11:00		Tea break					10:40-11:00
11:00-11:20		Key note (Future GIS) (p. 3)	Site selection (Fresh water & aquaculture and Mariculture) (p. 29-31)	Ecosystem (marine) (p.43-49)			11:00-11:20
11:20-11:40							11:20-11:40
11:40-12:00		Systems (concept) (p. 4-6)			Management (assessment & prediction) (p. 67-71)	Habitat (Fresh water) (p. 94-97)	11:40-12:00
12:00-12:20							12:00-12:20
12:20-12:40							12:20-12:40
12:40-14:00		LUNCH					12:40-14:00
14:00-14:20		Systems (information systems, software and education) (p. 7-13)	Site selection (identifcation of sites) (p. 32-35)	Socio economics (p.51-52)	Management (offshore, distant waters and sport fisheries) (p. 72-77 and p. 82)	Panel discussion	14:00-14:20
14:20-14:40							14:20-14:40
14:40-15:00							14:40-15:00
15:00-15:20			Poster presentation (p.101-120) and PC demo (p. 123-135) with tea & coffee	Management (fresh water) (p.53-56)			15:00-15:20
15:20-15:40							15:20-15:40
15:40-16:00		Tea break			Tea break		15:40-16:00
16:00-16:20	Registration	Systems (Monitoring systems) (p. 14-19)		Poster presentation (p.101-120) and PC demo (p.123-135) with tea & coffee	Management (coastal fisheries) (p.78-80)	Closings	16:00-16:20
16:20-16:40							16:20-16:40
16:40-17:00							16:40-17:00
17:00-17:20							17:00-17:20
17:20-17:40							17:20-17:40
17:40-18:00							17:40-18:00
18:30-20:30		Ice breaking party					18:00-20:00
19:30-21:30				Dinner			19:30-21:30

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colspan="13" align="center"	**August 25 (Monday) (Plenary at the Auditorium)**
Time	**Presentation method**	**Agenda**	**Subject**	**Speeches and papers**	**Presenter**	**Country**	**Page (abstract)**	**Reg. no**	**Moderator**	**Time keeper**	**MIC distributor**	
8AM-6PM		**Registration (Room 104)**
09:00-11:00	**Openings**		**Welcome speeches (4) (10-15 minutes each)**	**Organizer**	**ITOH**	Japan		119	**NI (Taiwan, 178)**			
				Local organizer	**SCOTT**	Brazil		121				
				University Chancellor (President)	**RAMOS**	Brazil		193				
				Fisheries Minister	**GREGOLIN**	Brazil		192				
			Remarks (1)	**Convener**	**NISHIDA**	Japan		118				
			**Group photos**	**Photographers**	**NAGANOBU KLEISNER**	Japan USA		161 191				
		**Tea break [helpers : TAABU(115) and MELLO (114)]**
11:00-11:40		**Key note speech (1)**		The Future of GIS and Spatial Analyses in Fisheries: Challenges and Opportunities	**FISHER**	USA	**3**	108	**LU (Taiwan, 173)**			
11:40-12:00			**Concept (3)**	The role of interoperable standards based applications in enabling enterprise wide fishery and environmental data management & access	**WOOD**	NZ	**4**	183				
12:00-12:20				A framework for storing, retrieving and analysing marine ecosystem data of different origin with variable scale and distribution in time and space	**WESTGÅRD**	Norway	**5**	136				
12:20-12:40				A robust, low cost, spatially enabled, semi-automatic fishery survey data capture system and GIS	**WOOD**	NZ	**6**	183				
12:40-14:00		**Lunch**
14:00-14:20	**Oral presentation**	**Concepts, Systems & Education (14)**	**Information systems and Software (5)**	A GIS interface to the French Fisheries Information System of Ifremer	**HARSCOAT**	France	**7**	133	**WOOD (NZ, 183)**	**BONETTI (142)**	**SILVESTRI (149) and MICELI (157)**	
14:20-14:40				A Web GIS developed for fishery and habitat information integration within Territorial Sea and Coastal Zones in Taiwan	**LU**	Taiwan	**8-9**	173				
14:40-15:00				New Zealand's National Aquatic Biodiversity Information System (NABIS) – lessons learnt on how to make a web mapping tool easy to use	**SELLARS**	NZ	**10-11**	145				
15:00-15:20				Information System for the Request of Exploitation Permits for Aquaculture in Federal Water Bodies in Brazil – SINAU	**ANDRADE**	Brazil	**12**	153				
15:20-15:40				14 years of Marine Explorer (ME) (Marine GIS) development and introduction to case studies mitigating high fuel price problem using the ME	**ITOH**	Japan	**13**	119				
15:40-16:00			**Education (1)**	Capacity building for GIS in the developing countries using the Marine Explorer	**NISHIDA**	Japan	**NA**	118				
16:00-16:20		**Tea break [helpers : TAABU(115) and MELLO (114)]**
16:20-16:40			**Monitoring systems (5)**	ICES EcoSystemData – Visualising data for the ecosystem approach	**PINTO**	ICES	**14-15**	160	**TAYLOR (USA, 167)**			
16:40-17:00				Development of a towed high resolution optical and acoustic imaging system for scallop (*Placopecten magellanicus*) assessment and Ecosystem-Based Management	**TAYLOR**	USA	**16**	167				
17:00-17:20				The use of GIS in a multi-sensor approach for sea surface monitoring in southern Brazil	**BENTZ**	Brazil	**17**	176				
17:20-17:40				NICAMS: a spatially enabled image analysis tool for photographic transect surveys	**WOOD**	NZ	**18**	183				
17:40-18:00				Dynamic Maps for Fishing Monitoring	**LESSA**	Brazil	**19**	169				
18:30-20:30		**The ice breaking party is hosted by the University Chancellor (President) (Professor Jeanete RAMOS) at O Casarão [address] Rua Jornalista Orlando Dantas, 36. (for details see the Map)**

August 26 (Tuesday) (Plenary at the Auditorium)										
Time	Presentation method	Agenda	Subject	papers	Presenter	Country	Page (abstract)	Reg. no	Moderator	time keeper	MIC distributor
8AM-5PM	Registration (Room 104)										
09:00-09:40		Key note speech(1)		Spatial Decision Support in Aquaculture: The role of Geographical Information Systems and Remote Sensing	ROSS	UK	23	162	AGUILAR-MANJARREZ (FAO, 124)	TAABU (115)	MELLO (114) and SOUZA (159)
09:40-10:00			Fresh water aquaculture (5)	Integrating socio-economic data into a spatial framework for aquaculture development	BRAKEL	WorldFish Center	24	137			
10:00-10:20				Developing a GIS-based decision support tool for identifying potential freshwater aquaculture sites	BAKELAAR	Canada	25	117			
10:20-10:40				The Use of Geographic Information System (GIS) for the Evaluation of Land Based Fresh Water Fish Farming Potentials in Nigeria	ABDULLAH	Nigeria	26	168			
10:40-11:00				Tea break [helpers: MAFRA (154) and ANDRADE (153)]							
11:00-11:20	Oral Presentation	Site selection (9)		Spatial modelling for freshwater cage location in the Presa Adolfo Lopez Mateos (El Infiernillo), Michoacán, Mexico	ROSS	UK	27	162			
11:20-11:40				GIS and remote sensing supported aquaculture potential assessment for the lower stretchof the SÃO JOÃO River - RJ, Brazil	VÖLCKER	Brazil	28	158			
11:40-12:00			Mariculture (2)	The potential for open ocean aquaculture in Exclusive Economic Zones from global and national perspectives	KAPETSKY	USA	29	125			
12:00-12:20				Integration of remote sensing and GIS for identification of suitable areas for Japanese scallop aquaculture in Funka Bay, southwestern Hokkaido, Japan	RADIARTA	Japan	30	134			
12:20-14:00				Lunch					Ross (UK, 162)		
14:00-14:20			Identifying life history sites of marine fish (2)	Geomorphological habitat of Nassau grouper, *Epinephelus striatus*, spawning aggregation in Belize	KOBARA	USA	33	116			
14:20-14:40				Identification of Nursery grounds along Italian waters at GSA spatial scale level	MURENU	Italy	34-35	181			
14:40-17:00	Poster presentations (Room 103) and PC demo (Auditorium Hall: Coffee break area) with tea & coffee [helpers for tea & coffee : MAFRA (154) and ANDRADE (153)]										

Time	Presentation method	Agenda	Subject	papers	Presenter	Country	Page (abstract)	Reg. no	Moderator	time keeper	MIC distributor
				August 27 (Wednesday) Plenary at the Auditorium							
8AM-6PM				**Registration and help (Room 104)**							
09:00-09:40	Oral presentation	Key note speech (4)		A review of the status of GIS, remote sensing and mapping in addressing the principles, objectives and practices of the ecosystem approach to aquaculture (EAA)	KAPETSKY	USA	39	125	BRAKEL (WorldFish Center, 137)		
					AGUILAR-MANJARRE	FAO		124			
09:40-10:20				A review of the status and potential of GIS in implementing the ecosystem approach to fisheries (EAF)	CAROCCI	FAO	40	123			
				Towards the use of GIS for an Ecosystems Approach to Fisheries Management: CHARM 2 - A Case Study from the English Channel	MEADEN	UK	41	126			
10:20-10:40			Aquaculture and inland fisheries (1)	An agro-ecosystems approach to aquaculture and inland fisheries: fish out of the water?	BRAKEL	WorldFish Center	42	137			
10:40-11:00				**Tea break [helpers: ANDRADE (153) and TAABU (115)]**							
11:00-11:20		Ecosystem approach (7)	Marine fisheries (6)	Study of Some of the Environmental Characteristics of the Ecosystem of the Strait of Khuran in the Persian Gulf	ZAKER	Iran	43	131	CAROCCI (FAO, 123)	BONETTI (142)	MELLO (114) and SOUZA (159)
11:20-11:40				Geospatial dynamics of Northwest Atlantic cod and crustacean fisheries in the 1990s and 2000s: environmental and trophic impacts	WINDLE	Canada	44	138			
11:40-12:00				Identifying spatial and temporal trends of fishery resources towards an ecosystem approach	FERRANDIS	Spain	45	190			
12:00-12:20				Relationships between oceanographic environment and distribution of krill and baleen whales in the Ross Sea and adjacent waters, Antarctica in 2004/05	NAGANOBU	Japan	46-47	161			
12:20-12:40				Reef ecology and fisheries analysis: a case study of GIS and RDBMS application	MWAURA	Kenya	48-49	113			
12:40-14:00				**Lunch**							
14:00-14:20				Integrated ecosystem approach for sustainable tuna longline fisheries (Case study: tropical tuna in the Indian Ocean)	NISHIDA	Japan	50	118			
14:20-14:40		Socio economics (2)	Aquaculture (1)	Spatial analysis for poverty targeted aquaculture development: what works and what doesn't?	BRAKEL	WorldFish Center	51	137	MEADEN (UK, 126)		
14:40-15:00			Marine fisheries (1)	Decrease in fishermen with aging in Japan: geodemographic and labor scientific analyses of set net fishery in rural and suburban regions	WATANABE	Japan	52	188			
15:00-15:20		Management (23) (continued to Aug 28)	Fresh water (3)	The use of the geographical information system (GIS) for management of the fisheries in the floodplain lakes at the Meddle Solimões Region - Amazon - Brazil	R. SOUSA	Brazil	53	122			
15:20-15:40				Integrated management of river basin and coastal zone: land-use, river flow and management zones	BARROSO	Brazil	54-55	165			
15:40-16:00				Spatial scales and landscape variables: Geoinformation contributing for fisheries management in Central Amazonian lakes	K. SOUSA	Brazil	56	164			
16:00-18:00				**Poster presentations (Room 103) and PC demo (Auditorium Hall: Coffee break area) with tea & coffee [helpers for tea and coffee: ANDRADE (153) and TAABU (115)]**							
19:30-21:30				**Symposium dinner (for details see the Map)**							

Time	Presentation method	Agenda	Subject	papers	Presenter	Country	Page (abstract)	Reg. no	Moderator	time keeper	MIC distributor
				August 28 (Thursday) Plenary at the Auditorium							
8AM-5PM				Registration (Room 104)							
09:00-09:20				Optimal Marine Closure Design	HAYNIE	USA	59	155	AGUILAR (Philippines, 172)		
09:20-09:40				A novel technique for assessing sea-bed sensitivity to potential threats in Marine Protected Areas	BREEN	UK	60	141			
09:40-10:00				GIS tools necessary for a complete biodiversity management within a Marine Protected Areas Network	DUQUE ESTRADA	Brazil	61	152			
10:00-10:20			MPA (7)	Coastal habitat mapping of Nogas Island, Philippines for conservation and management	AGUILAR	Philippines	62	172			
10:20-10:40				Spatial distribution assessment of small scale fishing activity from fishermen surveys : Case Study of the Banc d'Arguin National Park (Mauritania)	GRAS	Sénégal	63	132			
10:40-11:00				tea break [helpers : MAFRA (154) and SOUZA (159)]							
11:00-11:20				GIS and spatial metrics applied to the analysis of the composition and structure of seabed marine landscapes in Brittany	BONETTI	Brazil	64-65	142	MURFITT (Canada, 144)		
11:20-11:40				Geographic Information System as tool to manage octopus fishery in the Veracruz Reef System National Park, Mexico National Park, Mexico	JIMENEZ	Mexico	66	180			
11:40-12:00	Oral presentation	Management (23)	Assessment and prediction (3)	Modeling, mapping and predicting the spatial distribution of pelagic fishery resources	KLEISNER	USA	67	191		ANDRADE (153)	SILVESTRI (149) and FREITAS (112)
12:00-12:20				Estimated Sustainability of a Commercial Geoduck Harvest Area with Resident Sea Otter Predation	MURFITT	Canada	70	144			
12:20-12:40				Recent trends in distribution and abundance of commercial fish stocks in Lake Victoria (East Africa) based on GIS representation from of Acoustic surveys	TAABU	UGANDA	68-69	115			
12:40-14:00				Lunch							
14:00-14:20				A spatial and temporal analysis of New Zealand's commercial trawl and dredge data.	WOOD	NZ	72	183	HAYNIE (USA, 155)		
14:20-14:40			Offshore and distant waters fisheries (4)	Assessing the vulnerability of selected fish in UK waters to aggregate extraction: Toward a spatially explicit risk assessment for marine management	STELZEN-MÜLLER	UK	73	111			
14:40-15:00				Using Vessel Monitoring System Data to Estimate Spatial Effort for Unobserved Vessels in the Bering Sea Pollock Fishery	HAYNIE	USA	76	155			
15:00-15:20				Visualization techniques using GIS as a tool for managers of fishery resources: an example from the Northern Gulf of Mexico	RIEDEL	USA	77	107			
15:20-15:40			Sport fisheries (1)	Geospatial applications to assess recreational fisheries at Palma Bay	MARCH	Spain	82	148			
15:40-16:00				tea break [helpers : MAFRA (154) and SOUZA (159)]							
16:00-16:20				Geographic Information Systems in Coastal and Marine Research and Management	CLAUS	Belgium	78	182	CLAUS (Belgium, 78)		
16:20-16:40			Costal fisheries (3)	Fine Scale Assessment of small vessel fisheries: application of GIS to spatial performance measures	MUNDY	Australia	79	139			
16:40-17:00				A GIS model for management purposes in the costal areas of Sardinia (Central Mediterranean)	MURENU	Italy	80	181			

August 29 (Friday) : Plenary at the Auditorium

Time	Presentation method	Agenda	Subject	papers	Presenter	Country	Page (abstract)	Reg. no	Moderator	time keeper	MIC distributor
8AM-5PM	Registration (Room 104)										
09:00-09:20	Oral presentation	Habitats (11)	Marine (7)	Large pelagic fisheries and climate variability: a comparative analysis of the spatio- temporal patterns in the Tropical Indian, Atlantic and Pacific Oceans	CORBINEAU	France	85	143	GEITNER (140, Denmark)	MAFRA (154)	FREITAS (112) and MICELI (157)
09:20-09:40				3 d pelagic habitat mapping in the Baltic Sea	GEITNER	Denmark	86-87	140			
09:40-10:00				Distribution of bigeye tuna (*Thunnus obesus*) in relation to variability of net primary production in the Pacific Ocean	CAI	Taiwan	88-89	177			
10:00-10:20				Fishery Oceanography of Bigeye and Yellowfin Tunas in Pacific Kiribati Waters	NI	Taiwan	90	178			
10:20-10:40				Spatial analysis of Isada Krill (*Euphausia pacifica*) distribution in frontal environments in the North Pacific Ocean	TOJO	Japan	91	127			
10:40-11:00				tea break [helpers : MELLO(114) and SILVESTRI (149)							
11:00-11:20				Using GIS and remote sensing techniques to compare spatial distributions and habitat use of single fish versus fish schools in a coastal upwelling system	REESE	USA	92	156	FLITCOFT (135, USA)		
11:20-11:40				The Bottomfish GIS: a Tool Developed to Review and Modify Restricted Fishing Areas in the Main Hawaiian Islands	O'CONNER	USA	93	109			
11:40-12:00			Fresh water (3)	Modelling sea turtle nesting habitat potential for Rio de Janeiro state in a GIS using multi-criteria analysis	D. SOUZA	Brazil	94	159			
12:00-12:20				Assessing patterns of juvenile coho salmon (*Oncorhynchus kisutch*) occupancy: A stream network perspective	FLITCROFT	USA	95	135			
12:20-12:40				Using GIS to determine fish species distribution and composition in the Upper Rio Grande Basin, USA	CALAMUSSO	USA	97	189			
12:40-14:00	Lunch										

Panel discussion row (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 fishery GIS/spatial analyses should now be going. Progress of following three themes and two important areas presented and discussed during the Symposium is especially emphasized, i.e., (1) GIS systems, (2) Ecosystem Approach to Aquaculture (EAA), (3) Ecosystem Approach to Fisheries (EAF), (4) Management(MPA and other areas) and (5) Future GIS. Each subject plans to be completed in 20 minutes including presentations and discussions with the floor (10minutes for presentations and 10 minutes for discussions are ideal and suggested). Detail framework of this Session will be announced at the beginning of this Session from the Chair.

Five areas	Panelist	Rapporteur
(1) GIS systems	WOOD (183)	SELLARS(145)
(2) Ecosystem Approach to Aquaculture (EAA)	KAPETSKY (125)	AGUILAR-MANJARREZ (124)
(3) Ecosystem Approach to Fisheries (EAF)	CAROCCI (123)	KLEISNER (191)
(4) Managements	HAYNIE (155)	MURFITT(144)
(5) Future GIS	FISHER (108)	STELZEN-MÜLLER (111)
(6) General (overall) comments	MEADEN (Chair, 126)	MUNDY (139)

Each rapporteur is requested to send the report of the assigned panel to the Chief rapporteur by September 5 (Fri). Then the Chief rapporteur is requested to edit all the reports and send to the Secretariat by September 12 (Fri). The report of the panel discussion will be in the 4th Proceedings [GIS/Spatial analyses in Fishery and Aquatic Sciences (Vol. 4)].

Chair : Meaden (126)
Chief Rapporteur : Mundy (139)

Closings (16:00-16:20):

Last remarks and the future — NISHIDA (118) (Convener)

Farewell speech — SCOTT (121) (local organizer)

Area	Reg. no.	Title of the poster (16)	Presenter	Page (abstract)
Systems (2)	167	Development of a towed high resolution optical and acoustic imaging system for scallop (*Placopecten magellanicus*) Assessment and Ecosystem-Based Management	TAYLOR	101
	160	GeoPesca – a website proposal for the dissemination of geo-referenced information on the Portuguese trawl fisheries	PINTO	102-103
Site selection (1)	157	Selection of potential areas for marine reserves network supported by Geographic Information Systems: A large-scale case study from Southwest-South Region of Brazil	MICELI	104-105
Aquaculture (4)	149	The use of the SIG in the aquaculture mapping and research of the Cocanha Island, São Paulo State, Brazil	SILVESTR	106-107
	105	Cross-section of fish-breeding and fee-fishing systems in the state of Rio de Janeiro, Brazil	MACEDO	108
	166	Climate Change and Aquaculture in Hordaland, Norway	ANTONIJEVIC	109
	112	Integrated coastal zone management: use of Geographical Information Systems as a tool for characterization of sea shrimp farm areas in southern Brazil	FREITAS	110
Ecosystem (1)	127	Marine environment induced spatial interaction of recruited walleye pollock juveniles (*Theragra chalcogramma*) with prey, predator, and marine environment variables in Pacific coast of Hokkaido, Japan	TOJO	111
Management (5)	175	Fisheries catch effort study using MODIS data and non-parametric additive regression models in the ATSW area	PALENZUELA	112
	181	Usefulness of VMS to define trawlable areas: a case spatial analysis in the Central Mediterranean	ORTU	113
	195	Using GIS in the description of the spatial-temporal dynamic of an artisanal fishery around a Mediterranean Marine Protected Area	ALMARCHA	114
	150	Analysis of the relationship between the environmental parameters and the pirarucu (*Arapaima gigas*, Cuvier, 1819) abundance in Mamirauá Sustainable Development Reserve várzea lakes: a multi sensor approach to the community-based fishing management	AFFONSO	115
	175	Study of harmful algal events in the ria of Vigo (NW Spain) using geographical information systems and remote sensing techniques	PALENZUELA	116
Habitat (3)	170	How do climatic patterns affect fisheries resources? A case study from the Greek fisheries *(canceled?)*	someone for KATARA	117
	174	Spatial distribution characteristics of skipjack tuna schools in Western Central Pacific Ocean in association with ENSO	HSIEH	118-119
	123	Reef habitat area of the endangered Napoleon fish, Cheilinus undulatus (CITES Appendix II), estimated using remote sensing and GIS	CAROCCI	120

Subject	Reg. no.	Title of PC demo (12 by10 presenters)	Presenter	Page (abstract)
Information System and software (7)	119	14 years of Marine Explorer (ME) (Marine GIS) development and introduction to case studies mitigating high fuel price problem using the ME	**ITOH**	**123**
	160	ICES EcoSystemData – Visualising data for the ecosystem approach	**PINTO**	**124-125**
		GeoPesca – a website proposal for the dissemination of geo-referenced information on the Portuguese trawl fisheries		**126-127**
	124	Global Gateway to Geographic Information Systems (GIS), Remote Sensing and Mapping for Aquaculture and Inland Fisheries	**AGUILAR-MANJARREZ**	**128**
	153	Information System for the Request of Exploitation Permits for Aquaculture in Federal Water Bodies in Brazil – SINAU	**ANDRADE**	**129**
	139	Eonfusion: closely coupled visualization and analysis software for 4D fishery and aquatic data	**MUNDY**	**130**
	166	Climate Change and Aquaculture in Hordaland, Norway	**ANTONIJEVIC**	**131**
Monitoring system (5)	167	Development of a towed high resolution optical and acoustic imaging system for scallop (*Placopecten magellanicus*) Assessment and Ecosystem-Based Management	**TAYLOR**	**132**
	169	Dynamic Maps for Fishing Monitoring	**LESSA**	**133**
	183	NICAMS: a spatially enabled image analysis tool for photographic transect surveys.	**WOOD**	**134**
		A robust, low cost, spatially enabled, semi-automatic fishery survey data capture system and GIS.		**135**
	175	Using GIS methods to study the spatial and temporal distribution of commercial fisheries efforts for the Galician fleet in the ATSW area	**PALENZUELA**	**74-75**

HOW TO GET YOUR HOTEL IN COPACABANA FROM THE AIR PORT?

The Rio de Janeiro 'Tom Jobim International airport', AKA Galeão (GIG) is in Guanabara Bay. It is about 20 minutes by car to Copacabana. Transport options to Copacabana from the air port are as below:

1. Blue or white air-conditioning cabs - about 65 R$ (US$40).
2. Yellow cab about 45$ (US$27)
3. Real Bus 6.50R$ (US$4)- leaves every half hour

Tickets for the bus and for the blue/white cabs can be purchased immediately after passing customs gate, and before arriving at the main airport lobby.
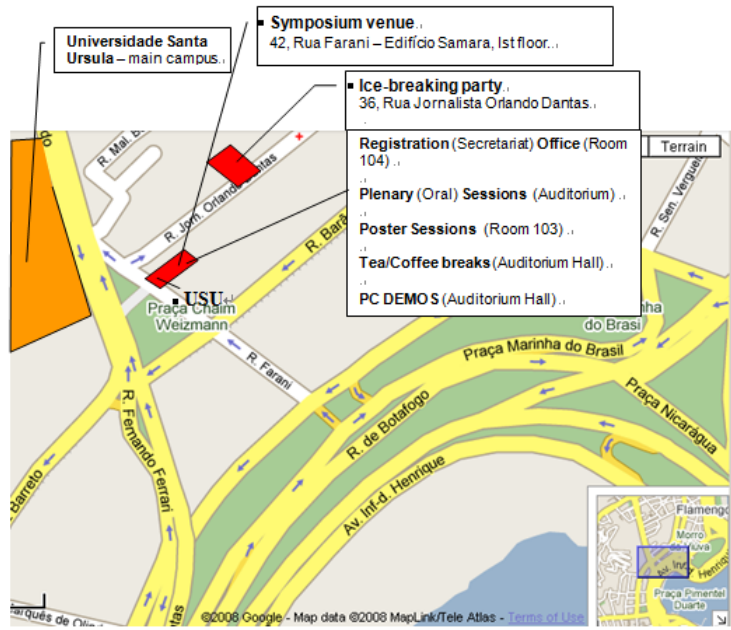

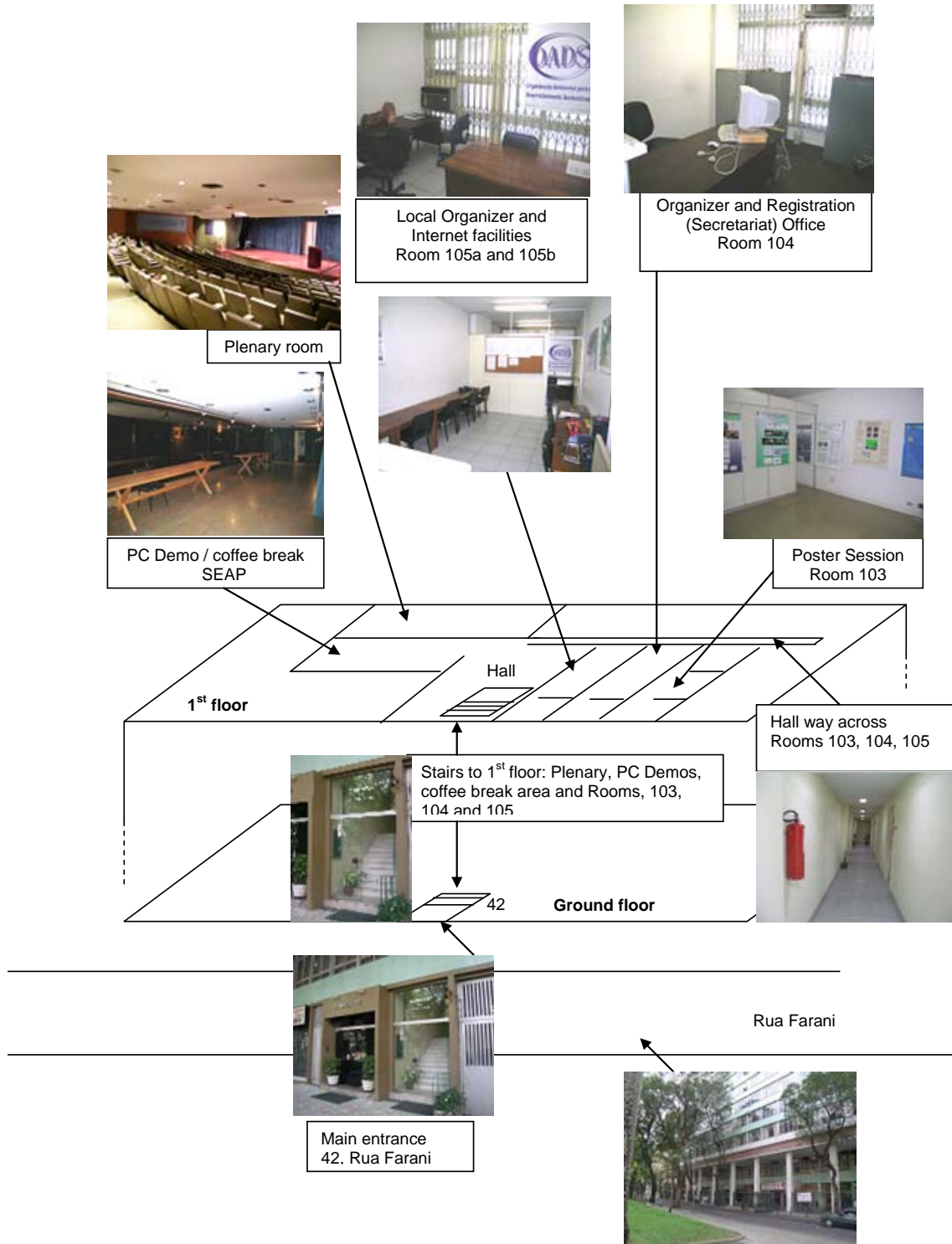
HOW TO GET THE VENUE FRON YOUR HOTEL?

Universidade Santa Úrsula is closest to the Flamengo station of the metropolitan underground, only two stops away from the Copacabana beach. The hotels suggested by Metropol are all along Copacabana beach **(indicated in the left map with the red boxes)**

Important locations

Universidade Santa Ursula – main campus.

Symposium venue.
42, Rua Farani – Edifício Samara, Ist floor..

Ice-breaking party.
36, Rua Jornalista Orlando Dantas.

Registration (Secretariat) Office (Room 104).

Plenary (Oral) Sessions (Auditorium).

Poster Sessions (Room 103).

Tea/Coffee breaks (Auditorium Hall).

PC DEMOS (Auditorium Hall).

Ice-breaking venue – 36, Rua Jornalista Orlando Dantas

Dinner

Rua Jornalista Orlando Dantas

**Symposium Venue
42, Rua Farani, 1st floor**

Rua Farani

Main entrance 42, Rua Farani

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Insides of the symposium venue: University Auditorium

Local Organizer and
Internet facilities
Room 105a and 105b

Organizer and Registration
(Secretariat) Office
Room 104

Plenary room

Poster Session
Room 103

PC Demo / coffee break
SEAP

Hall

1st floor

Hall way across
Rooms 103, 104, 105

Stairs to 1st floor: Plenary, PC Demos,
coffee break area and Rooms, 103,
104 and 105

42   **Ground floor**

Rua Farani

Main entrance
42, Rua Farani

PROFILE OF THE KEY NOTE SPEAKERS

Listed by the order of the presentation

WILLIAM L. FISHER

William L. Fisher is a Research Ecologist and the Assistant Leader of the USGS, Oklahoma Cooperative Fish and Wildlife Research Unit and an Adjunct Professor at Oklahoma State University where he has been since 1991. He received his MA from DePauw University and BA and PhD in biology from the University of Louisville.

He worked as an fisheries and aquatic biologist for state and federal agencies and universities after completing his graduate degrees. His research interests are in fisheries science, stream ecology, and GIS applications in natural resources, and he teaches graduate courses in these areas. He has authored or co-authored 70 peer-reviewed articles in scientific journals and book chapters, and he is the co-editor an American Fisheries Society (AFS) book titled *Geographic Information Systems in Fisheries*. He has advised 17 M.S. and 3 Ph.D. students.

Dr. Fisher and his students have presented their research findings at over 200 state, regional, national and international scientific meetings and conferences. He has been a member of the AFS since 1980 and actively involved in Society leadership and service. He was president of the Alabama Chapter and the Southern Division, Associate Editor of *Transactions of the American Fisheries Society* and Science Editor of *Fisheries*, and has chaired and served on many AFS committees.

He is the current President of the AFS Computer User Section and Second Vice President of the AFS. After 17 years at the Oklahoma Coop Unit, Bill will be leaving this Oklahoma this fall to become the Leader of the New Cooperative Fish and Wildlife Research Unit at Cornell University.

LINDSAY G ROSS

Professor of Aquatic Physiology
Head of the GIS group at the Institute of Aquaculture, Stirling, UK.
Dean of the Faculty of Natural Sciences 1997 - 2003
Member of the Scottish Deans of Science and Engineering Committee.
Professor Ross is a co-editor of the key Wiley-Blackwell journal **Aquaculture Research**
Professor Ross has over 30 years of experience in aquaculture. Current research interests are based on:

- Geographic Information Systems and Remote sensing for Aquaculture Planning and Management.
- Investigation of indigenous species for Aquaculture development in Central and South America.
- Metabolic and energetic studies in warm water cultured fish and shrimp; physiology of cultured animals, including tilapias, carps, salmonids and crustaceans, tropical and temperate, at the whole animal level.

He has been involved in development work and consultancy in a number of countries and is currently managing long-term projects aimed at exploitation of indigenous species for aquaculture in Mexico. He has published almost 300 articles in his various fields of interest.

JAMES McDAID KAPETSKY

Ph.D. Fisheries The University of Michigan

25 years with the FAO/UN Fisheries and Aquaculture Department first in Colombia (1974-78) as a fishery biologist then at FAO HQ in Rome as a fishery resources officer and senior fishery officer (1979-1999).

In 1999 founder of Consultants in Fisheries and Aquaculture Sciences and Technologies (C-FAST, Inc.) collaborating with FAO and other international organizations up to the present. Experience with remote sensing for fisheries began in 1983 and with GIS for aquaculture in 1986.

Active in promoting the use of GIS, remote sensing and mapping to address issues in inland fisheries and aquaculture lately via GISFish. Author and co-author of several book chapters, journal articles and technical papers. Main current interest is in GIS and RS approaches for estimating the potential for open ocean aquaculture.

JOSÉ AGUILAR-MANJARREZ (note: most people known me as Pepe Aguilar)

Dr. José Aguilar-Manjarrez brings with him many years of experience on aquaculture planning and management using Geographic Information Systems (GIS). His experience with GIS began with the use of GIS for aquaculture site selection in Tabasco State, Mexico as the basis of his MSc dissertation from 1991 to 1992 at the Institute of Aquaculture (IOA) in Scotland. He then carried out a Ph.D. dissertation from 1992 to 1996 at the IOA by developing GIS based models for planning and management of coastal aquaculture in Sinaloa State, Mexico.

From 1996 to 1998, he worked at the Aquaculture Management and Conservation Service (FIMA) of the FAO Fisheries and Aquaculture Department as a visiting scientist with focus on the use of GIS for potential for estimating fish farming potential in Africa, and later as a consultant on spatial modeling for inland fishery potential. From November 1998 to July 2001, he worked as an Information Systems Officer at the Knowledge and Communication Department of FAO, designing and developing FAO's GIS map repository and carrying out a GIS study to assess locations that have potential for the production of Barbara groundnut across the world.

Prior to joining FAO-FIMA, from 1990 to 1991 he worked in Mexico City as an aquaculture consultant at a private consulting company with focus on environmental impact studies of navigation ports and shrimp farming site selection for the states of Sinaloa, Chiapas and Veracruz. He then worked at the Bank of Mexico (FIRA), also as an aquaculture consultant developing feasibility study reports for shrimp farming in Sinaloa.

Dr. Aguilar was appointed Fishery Resources Officer at FIMA in Rome, effective 1 August 2001. His responsibilities at FAO-FIMA from 2001 to date broadly include: (a) the development of methodologies, technical guidelines and technical papers, reviews and training materials on GIS applications to aquaculture and inland fisheries; (b) the development of applications of geo-referenced information systems like GISFish; (c) the formulation, implementation and review of field projects that have a GIS and/or remote sensing component; and (d) the build-up of synergies in the applications of new technologies, such as GIS and Remote Sensing related to aquatic resource management.

At present, Dr. Aguilar's activities at FIMA include: (a) improvement and expansion of the GISFish portal; (b) a review on GIS, Remote Sensing and Mapping in Support of the Ecosystem Approach to Aquaculture: Status and Future Initiatives; (c) a reconnaissance study to assess the potential for Open Ocean Aquaculture in Exclusive Economic Zones from global and national perspectives; and (d) assistance to field projects that have a GIS related component.

FABIO CAROCCI

Fabio Carocci, an Italian national, joined FAO in 1993 as Research Assistant in the Marine Resource Services of the Fisheries Department of the Food and Agriculture Organization (FAO). Graduated in geological science, he has been engaged in the computer science applied to geography and cartography and for the last 15 years covering the development of GIS and remote sensing activities for the Fisheries Department. In the last 10 years he has been providing technical support to several projects with GIS activities in support to fisheries management at national and regional levels in different areas of the world. He has gained experience with training activities, ranging from postgraduate students to fisheries managers. He is involved in the development of paper-based training materials, as well as in applying multimedia technology. In the last decade he has been also involved in the analysis of the spatial correlation between fishery resources and fishing activities. His current main focus is on the development of principles and guidelines for the application of GIS in Ecosystem Approach to Fisheries.

GEOFF MEADEN

Geoff has just retired from his post as Principal Lecturer in Geography at Canterbury Christ Church University in the UK. Since he started full time work in 1957 he feels that it is time to put his feet up and he looks forward to being slightly less busy in the future. Geoff completed a first degree and Masters degree at London University, and his 1978 dissertation for his Masters was on the "Changing location of catfish farming on the Mississippi Delta".

It would now be very interesting to do a 30 year follow-up study of this topic. His PhD was on seeking "Optimum locations for freshwater fish farms in England and Wales". The fact that one of the other keynote speakers (James Kapetsky) read the outputs from this thesis lead Geoff to doing a number of assignments for the Food and Agriculture Organisation of the UN, and he is still doing assignments for them today.

At his University Geoff has run a 'Fisheries GIS Unit' for the past 12 years - he thinks that it may be the only such Unit in the world. This Unit has done a large number of small research projects and you will hear the results of the latest project (called CHARM 2) given at this meeting.

Geoff gave the first keynote speech at the First Fisheries GIS Symposium in this series, held in Seattle (USA) in 1999. He helped organise the 2nd Symposium in Brighton, UK in 2002, but in 2005 he sent his research assistant along to the 3rd Symposium in Shanghai, China. He is now very pleased to again be joining up with past colleagues at this Symposium. He has just been told that if you go to 'Google - Scholar' on your computer and type in "Fisheries GIS" he is given as the leading author in this field. He will now be more than happy to pass this task on to someone else !