

## Theme Session G

### Practical advice for implementing marine policy: combining ecosystem and societal indicators in stock and ecosystem assessments

Conveners: Gavin Fay (USA), Eva-Lotta Sundblad (Sweden), Scott Large (USA),  
and David Goldsborough (the Netherlands)

#### Agenda and Orders of the Day for:

Tuesday 16 September 2014, 10:30–19:30 – Gaviota  
Wednesday 17 September 2014, 09:00–13:00 – Gaviota  
Thursday 18 September 2014, 10:30–17:30 – Gaviota

- 1) Opening and introduction 10:30
- 2) Appointment of rapporteur
- 3) Presentation of papers

CM Code		Time
<b>TUESDAY 16 SEPTEMBER 2014, 10:30–19:30 – Gaviota</b>		
G: 01 Oral	<b>Title:</b> Structuring Societal Information for the Marine Strategy Framework Directive <b>Authors:</b> Anders Grimvall, Eva-Lotta Sundblad, and Lena Gipperth <b>Keywords:</b> Marine Strategy Framework Directive, actors, behaviour, programmes of measures	10:35
G: 02 Oral	<b>Title:</b> Social Indicators of Fishing Community Vulnerability and Resilience: An Emergent Method for Fisheries Social Impact Assessment in the United States <b>Authors:</b> Lisa L. Colburn and Michael Jepson <b>Keywords:</b> social indicators, social vulnerability and fisheries social impact assessment	10:50
G: 03 Oral	<b>Title:</b> Social Objectives and Indicators in Australian Fisheries Management Plans <b>Authors:</b> Kate Brooks <b>Keywords:</b> social objectives, social indicators, ESD, triple-bottom-line assessment, national guidelines, fisheries management	11:05
G: 04 Oral	<b>Title:</b> Social indicators of community-level vulnerability for the West Coast <b>Authors:</b> Karma Norman, Stacey Miller, Kristin Hoelting, and Stephen Kasperski <b>Keywords:</b> ecosystem management, California Current communities, social indicators	11:20

G: 05 Oral	<b>Title:</b> Actor-oriented societal indicators of man-made eutrophication of marine environments	11:35
	<b>Authors:</b> Eva-Lotta Sundblad, Anders Grimvall, and Lena Gipperth	
	<b>Keywords:</b> societal indicators, actors, behaviour, Marine Strategy Framework Directive	
G: 06 Oral	<b>Title:</b> Understanding artisanal fishery reality of Fonseca's Golf: socio-economic indicators and technical advice for a basic management	11:50
	<b>Authors:</b> Duarte Fernández-Vidal, Ana Tubío, Diana Fernández-Márquez, and Ramón Muiño	
	<b>Keywords:</b> social-economic indicators, participatory methods, artisanal fisheries, management, technical advice, LEK	
G: 07 Oral	<b>Title:</b> Economic dependence of fishing species in Galician and Cantabrian area (NW and N of Spain) – Socioeconomic indicators	12:05
	<b>Authors:</b> I. González Herraiz, P. Sampedro Pastor, J. Castro Pampillón, M. Marín González, A. C. Fariña Pérez, and D. Garabana Barro	
	<b>Keywords:</b> fishing activity, socioeconomic indicators, Galicia, Cantabrian Sea, Spain	
G: 08 Oral	<b>Title:</b> Combining Indicators for Policy Implementation? Let Form Follow Function	12:20
	<b>Author:</b> Jake Rice	
	<b>Keywords:</b> ecosystem indicators, management objectives, risk management, integration	
G: 09 Poster	<b>Title:</b> Assessing the ecological footprint of commercial fisheries using a spatially explicit semi-quantitative risk assessment for New Zealand deepwater fish stocks	12:35
	<b>Authors:</b> Charles Edwards and Alistair Dunn	
	<b>Keywords:</b> by-catch, deepwater, swept-area, risk, impact assessment	
G: 10 Oral	<b>Title:</b> An evaluation of the use of the Traditional Ecological Knowledge of the fishers in the management of their fisheries: the case of the Galician purse seine fleet	12:36
	<b>Authors:</b> Pablo Pita, Duarte Fernández-Vidal, and Ramón Muiño	
	<b>Keywords:</b> Purse seine, log-book, data-logger, TEK, mapping	
G: 12 Poster	<b>Title:</b> The times they are a-changin': the radical and successful transformation of the artisanal shellfisheries in Galicia	12:51
	<b>Authors:</b> Gonzalo Macho, Sebastián Villasante, Inés Naya, Juan Freire, Emilio Abella, José Manuel Parada, Antonio García-Allut, Ricardo Arnaiz, Elsa Vázquez, José María da Rocha, Jose Alberto de Santiago, Ana Parma, Jose Lobo Orensanz, and José Molares	
	<b>Keywords:</b> small-scale fisheries governance, community-based management, co-management, territorial tenure rights	
G: 13 Poster	<b>Title:</b> A Generic Matrix tool for identifying key regional pressure-impact links in marine management	12:52
	<b>Authors:</b> O. Kryvenko, T. Churilova, V. Suslin, K. Mazik, S. Barnard, K. N. Papadopoulou, C. J. Smith, S. Moncheva, J. Patricio, K. C. Bisel, O. Solaun, M. Elliott, and A. Borja	
	<b>Keywords:</b> pressure assessment, biodiversity, marine management, MSFD	

G: 14 Poster	<b>Title:</b> Impact of management measures, fish prices and stock abundance in the fleet dynamics of the otter-trawlers operating in Galician-Cantabrian Sea fishing ground	12:53
	<b>Authors:</b> M. P. Sampedro, I. González Herraiz, A. C. Fariña, J. Castro, and D. Garabana	
	<b>Keywords:</b> fleet dynamics, Cantabrian Sea, fish price, management measures, stock abundance	
G: 15	<i>Withdrawn</i>	
	<b>Discussion</b>	<b>12:54</b>
<b>LUNCH</b>		
G: 16 Oral	<b>Title:</b> Using Performance Indicators to Evaluate U.S. Fisheries	15:00
	<b>Authors:</b> Ayeisha Brinson and Eric Thunberg	
	<b>Keywords:</b> catch shares, performance indicators, economics	
G: 17	<i>Withdrawn</i>	
G: 11 Oral	<b>Title:</b> Propagation of Uncertainties in Fisheries Science for Advice: the case for Confidence Interval Harvest Control Rules (CI-HCRs)	15:15
	<b>Authors:</b> Dorothy J. Dankel, Sondre Aanes, and Jon Helge Vølstad	
	<b>Keywords:</b> stock assessment, harvest control rules, confidence intervals, uncertainty communication, hidden uncertainties, unknown knowns, science for policy advice, fisheries models, technoscience, technofeminism	
G:18 Oral	<b>Title:</b> Fuel use in fishing – an important indicator for sustainable fisheries	15:30
	<b>Authors:</b> F. Ziegler and S. Hornborg	
	<b>Keywords:</b> LCA, fuel use, fisheries management, trawling	
G: 19 Oral	<b>Title:</b> Using Bayesian belief networks to disclose interactions between small-scale fisheries and offshore aquaculture developments off south-east Portugal	15:45
	<b>Authors:</b> Jorge Ramos, Miguel Neves dos Santos, and Miguel Caetano	
	<b>Keywords:</b> Bayesian belief networks (BBN), fishing communities, offshore aquaculture, small-scale fishermen, socioeconomic indicators	
G: 20 Oral	<b>Title:</b> Towards a Shark and Ray Management Plan for the North Sea : the role of stakeholder participation	16:00
	<b>Authors:</b> P. A. Walker, I. Kingma, and M. van de Water	
	<b>Keywords:</b> sharks and rays; MSFD; stakeholder participation; management plan	
	<b>Discussion</b>	<b>16:15</b>
<b>BREAK</b>		
G: 21 Oral	<b>Title:</b> Providing advice in small-scale fisheries: The key role of the “Barefoot Fisheries Advisors” in the Co-managed TURF system of Galicia	17:00
	<b>Authors:</b> Gonzalo Macho, Inés Naya, Juan Freire, Sebastián Villasante, and José Molares	
	<b>Keywords:</b> Barefoot Fisheries Advisors, small-scale fisheries, co-management, scientific advice, knowledge collectors and translators	

G: 22 Oral	<b>Title:</b> Practical application of food web indicators in a fisheries context	17:15
	<b>Authors:</b> Stuart Rogers, Jason Link, and Mark Dickey-Collas	
	<b>Keywords:</b> food web, structure, function, resilience	
G: 23 Oral	<b>Title:</b> Environmental impacts of a demersal freeze trawler on a fishing trip basis	17:30
	<b>Authors:</b> F. Ziegler, E. Groen, S. Hornborg, E. Bokkers, K. M. Karlsen, and I. J. M. de Boer	
	<b>Keywords:</b> LCA, fuel use, fisheries management, trawling	
G: 24 Oral	<b>Title:</b> Spatio-temporal biodiversity indicators for monitoring common objectives of the German Maritime Spatial Plan and the Marine Strategy Framework Directive	17:45
	<b>Authors:</b> Henrike Seidel and Vanessa Stelzenmüller	
	<b>Keywords:</b> ecological indicators, spatio-temporal analysis, biodiversity, functional traits analysis, demersal finfish, marine spatial planning, MSFD, policy objectives	
G: 25 Oral	<b>Title:</b> The Large Fish Indicator in North Sea waters: Does it respond to the recent decline in fishing?	18:00
	<b>Authors:</b> Antonios Stamoulis, Hans Polet, Els Torreele, and Adriaan D. Rijnsdorp	
	<b>Keywords:</b> indicators, Large Fish Indicator (LFI), MSFD, North Sea, EAFM, demersal fish community	
G: 26	<i>Withdrawn</i>	
G: 27 Oral	<b>Title:</b> How to be "good" – Comparing methods to assess time series of ecological indicators	18:15
	<b>Author:</b> Wolfgang Nikolaus Probst	
	<b>Keywords:</b> indicator assessment; ecological indicator, time series analysis, trend-based assessment, breakpoint analysis	
G: 28 Oral	<b>Title:</b> Incorporating ecological and societal indicators to identify ecosystem reference points in response to multiple pressures	18:30
	<b>Authors:</b> Scott I. Large, Gavin Fay, Kevin Friedland, and Jason S. Link	
	<b>Keywords:</b> ecosystem thresholds, EBFM, gradient forest, The IndiSeas Project	
G: 29 Oral	<b>Title:</b> Detection of unique multispecies demersal-fish communities in high-diversity systems and modeling the impact of environment on their stability	18:45
	<b>Authors:</b> Joshua P. Kilborn, David L. Jones, and Ernst B. Peebles	
	<b>Keywords:</b> multispecies community dynamics, environmental drivers, minimum spanning tree, dissimilarity profile, groundfish trawl survey	
	<b>Discussion</b>	<b>19:00</b>

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**WEDNESDAY 17 SEPTEMBER 2014, 09:00–13:00 – Gaviota**

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G: 30 Oral	<b>Title:</b> Ecosystem models for fisheries management: finding the sweet spot	09:00
	<b>Authors:</b> Jeremy S. Collie, Louis W. Botsford, Alan Hastings, Isaac C. Kaplan, John L. Largier, Patricia A. Livingston, Éva Plagányi, Kenneth A. Rose, Brian K. Wells, and Francisco E. Werner	
	<b>Keywords:</b> ecosystem-based management, fisheries, marine, model complexity, trade-off	
G: 31 Oral	<b>Title:</b> Use and advice on incorporating ecosystem indicators In the stock assessment of North Atlantic swordfish	09:15
	<b>Author:</b> Michael J. Schirripa	
	<b>Keywords:</b> swordfish, stock assessment, ecosystem indicators, advice considerations	
G: 32 Oral	<b>Title:</b> Evaluating projection methodology for Northwest Atlantic groundfish with consideration of biological assumptions and environmental influence	09:30
	<b>Authors:</b> E. N. Brooks and C. M. Legault	
	<b>Keywords:</b> Retrospective forecast, projection methodology, projection time horizon, environmental driver	
G: 33 Oral	<b>Title:</b> A state-space age-structured assessment model that accommodates environmental effects on demographic parameters and biological reference points	09:45
	<b>Authors:</b> Timothy J. Miller and Saang-Yoon Hyun	
	<b>Keywords:</b> space models, stock assessment, environmental effects	
<b>BREAK</b>		
G: 34 Oral	<b>Title:</b> Moving towards multi species/integrated management	10:30
	<b>Authors:</b> Rosa Mato Amboage, José-María Da-Rocha, and Santiago Cerviño	
	<b>Keywords:</b> mixed fisheries, harvesting control rules, overfishing risk	
G: 35 Oral	<b>Title:</b> Simple As Necessary approach to the Baltic Sea holistic assessment	10:45
	<b>Authors:</b> Oleg P. Savchuk and Maciej T. Tomczak	
	<b>Keywords:</b> Baltic Sea, fishery and eutrophication, modeling	
G: 36 Oral	<b>Title:</b> Incorporating species interactions in a statistical catch-at-age model of the Georges Bank fish community	11:00
	<b>Authors:</b> Kiersten L. Curti, Jeremy S. Collie, Christopher M. Legault, and Jason S. Link	
	<b>Keywords:</b> multispecies model, ecosystem approach to fisheries, population dynamics	

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G: 37 Oral	<b>Title:</b> Reading the crystal ball: using multi-species stock-assessment models to predict climate-driven changes to recruitment, mortality, and biological reference points for Bering Sea (USA) fisheries	11:15
	<b>Authors:</b> Kirstin K. Holsman, Kerim Aydin, James Ianelli, Anne Hollowed, and Albert Hermann	
	<b>Keywords:</b> Climate change, multi-species, stock assessment models, predator-prey, trophic interactions, Alaska, groundfish	
	<b>Discussion</b>	<b>11:30</b>
G: 38 Oral	<b>Title:</b> Towards operational assessments: selection, vetting, and standardized analysis of ecosystem indicators for the Northeast US Large Marine Ecosystem	11:45
	<b>Authors:</b> S.Gaichas, J. Link, J. Hare, M. Fogarty, P. Pinto da Silva, G. DePiper, J. Cournane, J. Manderson, S. Lucey, M. Lowe, S. Large, and G. Fay	
	<b>Keywords:</b> ecosystem indicators, integrated ecosystem assessment, risk assessment, Northeast US Large Marine Ecosystem	
G: 39 Oral	<b>Title:</b> Environmental risk assessments in the context of marine spatial management: Current approaches and some perspectives from the German EEZ of the North Sea	12:00
	<b>Authors:</b> V. Stelzenmüller, H. O. Fock, A. Gimpel, H. Seidel, R. Diekmann, W. N. Probst, U. Callis, F. Bockelmann, H. Neumann, and I. Kröncke	
	<b>Keywords:</b> Bayesian believe network, disturbance indicator, fishing frequency, GIS, marine spatial planning	
G: 40 Oral	<b>Title:</b> Broadening the perspective on fisheries management actions: assessing resource use and environmental impacts from seafood products	12:15
	<b>Authors:</b> Sara Hornborg and Friederike Ziegler	
	<b>Keywords:</b> LCA, sustainable development, fuel use, fisheries management	
G: 41 Oral	<b>Title:</b> Evaluation of spatial management scenarios supporting an ecosystem-based approach to MSP – the German case	12:30
	<b>Authors:</b> Antje Gimpel and Vanessa Stelzenmüller	
	<b>Keywords:</b> geographic information system-based multi criteria evaluation (GIS MCE), German EEZ, marine spatial planning (MSP), spatial management scenario, species distribution model (SDM)	
	<b>Discussion</b>	<b>12:45</b>

**THURSDAY 18 SEPTEMBER 2014, 10:30–17:30 – Gaviota**

G: 42 Oral	<b>Title:</b> Investigating spatial and demographic indicator-based Harvest Control Rules for the Eastern English Channel mixed fisheries	10:30
	<b>Authors:</b> Sigrid Lehuta, Paul Marchal, and Youen Vermard	
	<b>Keywords:</b> harvest control rules, spatial indicators, demographic indicators, simulation study, mixed fishery, Eastern Channel	

G: 43 Oral	<b>Title:</b> Management performance of ecological indicators in the Northeast US: evaluation using a whole-of-system model	10:45
	<b>Authors:</b> Gavin Fay, Jason S. Link, Robert J. Gamble, Rebecca Gorton, Scott I. Large, and Elizabeth A. Fulton	
	<b>Keywords:</b> management strategy evaluation, Atlantis, ecosystem-based fisheries management, Northwest Atlantic, ecosystem modeling	
G: 44 Oral	<b>Title:</b> A multi-model evaluation of ecosystem indicators' performance	11:00
	<b>Authors:</b> Yunne-Jai Shin, Jennifer Houle, Sylvain Bonhommeau, Alida Bundy, Marta Coll, Lynne Shannon, Laure Velez, Ekin Akoglu, Caihong Fu, Beth Fulton, Clément Garcia, Arnaud Grüss, Chris Lynam, Ricardo Oliveros, and Baris Salihoglu	
	<b>Keywords:</b> ecosystem indicators, ecosystem models, indicator performance, fishing and climate effects	
G: 45 Oral	<b>Title:</b> Designing stable management strategies: linking ecosystem biodiversity, catches, and stakeholder preferences for stability	11:15
	<b>Authors:</b> José-María Da-Rocha, Javier García Cutrín, María José Gutiérrez, Julia Touza, and Julia Torralba	
	<b>Keywords:</b> stakeholder preferences, biodiversity, HCR	
G: 46 Oral	<b>Title:</b> Translating the stock assessments into socio-economic effects	11:30
	<b>Authors:</b> Jose L. Santiago, Juan C. Surís-Regueiro, and Julia Torralba-Cano	
	<b>Keywords:</b> EAFM, socio-economic effects, input-output, fisheries	
G: 47 Oral	<b>Title:</b> A Bio-economic Model of European Fleets	11:45
	<b>Authors:</b> Griffin Carpenter and Aniol Esteban	
	<b>Keywords:</b> bio-economic model, socio-economic indicators, MSY, ecosystem-based management	
G: 48 Oral	<b>Title:</b> Trading yield against precautionarity and the need for stability in the fishing sector	12:00
	<b>Authors:</b> Mikael van Deurs, Anna Rindorf, Morten Vinther, Henrik Mosegaard, and Lotte Worsøe	
	<b>Keywords:</b> MSE, stability, precautionarity, sandeel, sprat	
G: 49 Oral	<b>Title:</b> Modelling the spatio-temporal interplay between North Sea saithe ( <i>Pollachius virens</i> ) and multiple fleet segments for management evaluation	12:15
	<b>Authors:</b> Sarah Laura Simons, Ralf Döring, and Axel Temming	
	<b>Keywords:</b> fleet dynamics, socio-economics, spatial structure, stock assessment, population dynamics	
	<b>Discussion</b>	<b>12:30</b>
<b>LUNCH</b>		
G: 50 Oral	<b>Title:</b> Assessing the relative importance of economic valuation, ecological and socio-economic ecosystem indicators: a multi-criteria application to Australian coastal development	15:00
	<b>Authors:</b> Jean-Baptiste Marre, Olivier Thebaud, Sean Pascoe, Sarah Jennings, and Jean Boncoeur	
	<b>Keywords:</b> multi-criteria analysis, Analytic Hierarchy Process, indicators, ecosystem services, coastal development, economic valuation	

G: 51 Oral	<b>Title:</b> Choosing a response when supporting information is contradictory and stakeholders disagree	15:15
	<b>Authors:</b> Deirdre E. Duggan, Keith D. Farnsworth, Sarah B. M. Kraak, Dave G. Reid, and Dorothy J. Dankel	
	<b>Keywords:</b> uncertainty, fisheries science, post-normal science, paradigm shift, communication framework, NUSAP	
G: 52 Oral	<b>Title:</b> Managing ecosystems of the high seas of the Southern Ocean practicing consensus-based decision-making	15:30
	<b>Authors:</b> Jessica Nilsson, Marcus Haward, Elizabeth Fulton, and Craig Johnson	
	<b>Keywords:</b> Antarctica, ecosystem-based management, CCAMLR, by-catch mitigation, Southern Ocean, consensus-based management	
G: 53 Oral	<b>Title:</b> Fish are Normal, Fisheries are Post-Normal: A Post-Normal Science characterization of quantifying uncertainty in datasets by using the NUSAP approach	15:45
	<b>Author:</b> Dorothy J. Dankel	
	<b>Keywords:</b> uncertainty, fisheries science, post-normal science, paradigm shift, communication framework, NUSAP	
G: 54 Oral	<b>Title:</b> Linking information use to societal contexts in ecosystem-based management: knowledge interaction and policy-integration at different scales of EU fisheries governance	16:00
	<b>Authors:</b> Sebastian Linke and Alfred Sandström	
	<b>Keywords:</b> fisheries co-management, information use, knowledge interaction, policy analysis	
	<b>Discussion</b>	<b>16:15</b>
<b>BREAK</b>		
	<b>Discussion / Review paper planning</b>	17:00
	<b>End of session</b>	17:30