

Tutorial 2 Reading List

Lecture 10

General Overview - Taylor D Ward, Dirk A Algera, Austin J Gallagher, Emily Hawkins, Andrij Horodysky, Christian Jørgensen, Shaun S Killen, David J McKenzie, Julian D Metcalfe, Myron A Peck, et al. Understanding the individual to implement the ecosystem approach to fisheries management. *Conservation Physiology*, 4(1):cow005, 2016

Sex bias

Differential allocation hypothesis - Ben C Sheldon. Differential allocation: tests, mechanisms and implications. *Trends in Ecology & Evolution*, 15(10):397–402, 2000

Mating systems with a cod example - Sherrylynn Rowe and Jeffrey A Hutchings. Mating systems and the conservation of commercially exploited marine fish. *Trends in Ecology & Evolution*, 18(11):567–572, 2003

Phenotypic variation

Impact of fishing on phenotypic evolution - Richard Law. Fishing, selection, and phenotypic evolution. *ICES Journal of Marine Science: Journal du Conseil*, 57(3):659–668, 2000

Impact of harvest on phenotypic variation - Fred W Allendorf, Phillip R England, Gordon Luikart, Peter A Ritchie, and Nils Ryman. Genetic effects of harvest on wild animal populations. *Trends in Ecology & Evolution*, 23(6):327–337, 2008

Body Size

Impact of size declines from fishing - Edward A Trippel, Olav S Kjesbu, and Per Solemdal. Effects of adult age and size structure on reproductive output in marine fishes. In *Early life history and recruitment in fish populations*, pages 31–62. Springer, 1997

Incorporating body-size indicators into EAFM via reference points Simon Jennings and Nicholas K Dulvy. Reference points and reference directions for size-based indicators of community structure. *ICES Journal of Marine Science: Journal du Conseil*, 62(3):397–404, 2005

Behavior

Importance of behavioral syndromes - J Louise Conrad, Kelly L Weinersmith, Tomas Brodin, JB Saltz, and A Sih. Behavioural syndromes in fishes: a review with implications for ecology and fisheries management. *Journal of Fish Biology*, 78(2):395–435, 2011

Impact and role of environmental stressors on behavior and physiology - Shaun S Killen, Stefano Marras, Neil B Metcalfe, David J McKenzie, and Paolo Domenici. Environmental stressors alter relationships between physiology and behaviour. *Trends in Ecology & Evolution*, 28(11):651–658, 2013

Physiology

Cardiorespiratory physiological differences attributed to water temperature - Erika J Eliason, Timothy D Clark, Merran J Hague, Linda M Hanson, Zoë S Gallagher, Ken M Jeffries, Marika K Gale, David A Patterson, Scott G Hinch, and Anthony P Farrell. Differences in thermal tolerance among sockeye salmon populations. *Science*, 332(6025):109–112, 2011

Relationship between metabolic rate and behavior and its impact on survival - Peter A Biro and Judy A Stamps. Do consistent individual differences in metabolic rate promote consistent individual differences in behavior? *Trends in Ecology & Evolution*, 25(11):653–659, 2010

0.1 Lecture 20

General Overview

Incorporating EFH into models using habitat mapping - Vasilis D Valavanis, Graham J Pierce, Alain F Zuur, Andreas Palialexis, Anatoly Saveliev, Isidora Katara, and Jianjun Wang. Modelling of essential fish habitat based on remote sensing, spatial analysis and gis. *Hydrobiologia*, 612(1):5–20, 2008

Impact of oceanic conditions on chinook salmon - Brian K Wells, Churchill B Grimes, and James B Waldvogel. Quantifying the effects of wind, upwelling, curl, sea surface temperature and sea level height on growth and maturation of a california chinook salmon (*oncorhynchus tshawytscha*) population. *Fisheries Oceanography*, 16(4):363–382, 2007

Sea Surface Temperature

Impact of SST changes on corals and fish - Bernhard Riegl. Effects of the 1996 and 1998 positive sea-surface temperature anomalies on corals, coral diseases and fish in the arabian gulf (dubai, uae). *Marine biology*, 140(1): 29–40, 2002

Impact of SST changes on phytoplankton and food webs - Anthony J Richardson and David S Schoeman. Climate impact on plankton ecosystems in the northeast atlantic. *Science*, 305(5690):1609–1612, 2004

Sea Surface Salinity

Impact of SSS on salmon growth - Shoko H Morita, Kentaro Morita, and Hiroyuki Sakano. Growth of chum salmon (*oncorhynchus keta*) correlated with sea-surface salinity in the north pacific. *ICES Journal of Marine Science: Journal du Conseil*, 58(6):1335–1339, 2001

Impact of SSS on reproduction (i.e. anchovy egg density) - Anne Goarant, Pierre Petitgas, and Paul Bourriau. Anchovy (*engraulis encrasicolus*) egg density measurements in the bay of biscay: evidence for the spatial variation in egg density with sea surface salinity. *Marine Biology*, 151(5):1907, 2007

Sea Surface Height

Impact of SSH on sardine recruitment - NJ Hardman-Mountford, AJ Richardson, DC Boyer, A Kreiner, and HJ Boyer. Relating sardine recruitment in the northern benguela to satellite-derived sea surface height using a neural network pattern recognition approach. *Progress in Oceanography*, 59(2): 241–255, 2003

Dissolved oxygen

Impact of low dissolved oxygen on survival and recruitment - D Miller, S Poucher, and L Coiro. Determination of lethal dissolved oxygen levels for selected marine and estuarine fishes, crustaceans, and a bivalve. *Marine Biology*, 140(2):287–296, 2002

Impact of low dissolved oxygen on trophic interactions - Denise L Breitburg, Timothy Loher, Carol A Pacey, and Adam Gerstein. Varying effects of low dissolved oxygen on trophic interactions in an estuarine food web. *Ecological Monographs*, 67(4):489–507, 1997

Chlorophyll *a*

Impact of low chlorophyll *a*, an indicator for primary production, on fishery production - LC Gomes, LE Miranda, and AA Agostinho. Fishery yield relative to chlorophyll *a* in reservoirs of the upper paraná river, brazil. *Fisheries Research*, 55(1):335–340, 2002

Pelagic fish distribution and abundance changes associated with chlorophyll *a* concentration changes - LV Shannon, L Hutchings, GW Bailey, and PA Shelton. Spatial and temporal distribution of chlorophyll in southern african waters as deduced from ship and satellite measurements and their implications for pelagic fisheries. *South African Journal of Marine Science*, 2(1):109–130, 1984

Mesoscale Oceanographic Features

Population level impacts of mesoscale oceanographic features - Francisco E Werner, John A Quinlan, Brian O Blanton, and Richard A Luettich. The role of hydrodynamics in explaining variability in fish populations. *Journal of Sea Research*, 37(3-4):195–212, 1997

Incorporating mesoscale features into EAFM via satellite remote sensing - Emmanuel Chassot, Sylvain Bonhommeau, Gabriel Reygondeau, Karen Nieto, Jeffrey J Polovina, Martin Huret, Nicholas K Dulvy, and Herve Demarcq. Satellite remote sensing for an ecosystem approach to fisheries management. *ICES Journal of Marine Science: Journal du Conseil*, 68(4):651–666, 2011

Marine Protected Areas

Practical guide for developing MPAs - Alison Green, A White, and Stacey Kilarski. Designing marine protected area networks to achieve fisheries, biodiversity, and climate change objectives in tropical ecosystems: A practitioner guide. *The Nature Conservancy, and the USAID Coral Triangle Support Partnership, Cebu City, Philippines. viii*, 2013

when to use MPAs in fisheries management - Ray Hilborn, Kevin Stokes, Jean-Jacques Maguire, Tony Smith, Louis W Botsford, Marc Mangel, José Orensanz, Ana Parma, Jake Rice, Johann Bell, et al. When can marine reserves improve fisheries management? *Ocean & Coastal Management*, 47 (3):197–205, 2004

Incorporating into EAFM

Modeling habitat information for EAFM using remote sensing, spatial analysis, and GIS - Vasilis D Valavanis, Graham J Pierce, Alain F Zuur, Andreas Palialexis, Anatoly Saveliev, Isidora Katara, and Jianjun Wang. Modelling of essential fish habitat based on remote sensing, spatial analysis and gis. *Hydrobiologia*, 612(1):5–20, 2008

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Trophic Cascades

Predatory trophic cascades following MPAs or intensive resource exploitation - JK Pinnegar, NVC Polunin, P Francour, F Badalamenti, R Chemello, M-L Harmelin-Vivien, B Hereu, M Milazzo, M Zabala, G d'Anna, et al. Trophic cascades in benthic marine ecosystems: lessons for fisheries and protected-area management. *Environmental Conservation*, 27(02):179–200, 2000

Top-down trophic cascades initiated by the removal of cod - Kenneth T Frank, Brian Petrie, Jae S Choi, and William C Leggett. Trophic cascades in a formerly cod-dominated ecosystem. *Science*, 308(5728):1621–1623, 2005

General Overview

Trophic indicators and their calculations - Maria Grazia Pennino and José Maria Bellido. Can a simple pelagic-demersal ratio explain ecosystem functioning. *Biodiversity J*, 3(1):69–78, 2012

Trophic indicators and their calculations - PM Cury, LJ Shannon, JP Roux, GM Daskalov, Astrid Jarre, CL Moloney, and Da Pauly. Trophodynamic indicators for an ecosystem approach to fisheries. *ICES Journal of Marine Science: Journal du Conseil*, 62(3):430–442, 2005

Marine Trophic Index

Calculating and interpreting MTI in relation to biodiversity - Daniel Pauly and Reg Watson. Background and interpretation of the ‘marine trophic index’ as a measure of biodiversity. *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, 360(1454):415–423, 2005

Application of the MTI to large marine ecosystems - D Pauly, J Alder, S Booth, WWL Cheung, V Christensen, C Close, UR Sumaila, W Swartz, A Tavakolie, R Watson, et al. Fisheries in large marine ecosystems: descriptions and diagnoses. *The UNEP large marine ecosystem report: a perspective on changing conditions in LMEs of the World’s Regional Seas. UNEP Regional Seas Reports and Studies*, (182):23–40, 2008

Fishing in Balance

Combining MTI and FiB to create FSI - Kristin Kleisner and Daniel Pauly. The marine trophic index (mti), the fishing in balance (fib) index. *Fisheries Centre Research Reports*, 19:41, 2011

application of FiB - Kátia MF Freire and Daniel Pauly. Fishing down brazilian marine food webs, with emphasis on the east brazil large marine ecosystem. *Fisheries Research*, 105(1):57–62, 2010

Pelagic/Demersal Index

Application of the P/D index - JI de Leiva Moreno, VN Agostini, JF Caddy, and F Carocci. Is the pelagic-demersal ratio from fishery landings a useful

proxy for nutrient availability? a preliminary data exploration for the semi-enclosed seas around europe. *ICES Journal of Marine Science: Journal du Conseil*, 57(4):1091–1102, 2000

Application of P/D index - Lynne J Shannon, Marta Coll, and Sergio Neira. Exploring the dynamics of ecological indicators using food web models fitted to time series of abundance and catch data. *Ecological Indicators*, 9(6):1078–1095, 2009

Lecture 40

General Overview

Global climate change overview - Anthony J McMichael, Diarmid Campbell-Lendrum, Sari Kovats, Sally Edwards, Paul Wilkinson, Theresa Wilson, Robert Nicholls, Simon Hales, Frank Tanser, David Le Sueur, et al. Global climate change. 2004

Ocean acidification overview - Scott C Doney, Victoria J Fabry, Richard A Feely, and Joan A Kleypas. Ocean acidification: the other co2 problem. *Annual review of marine science*, 1:169–192, 2009

GCC and OA's fisheries impact - Adel Heenan, Robert Pomeroy, Johann Bell, Philip L Munday, William Cheung, Cheryl Logan, Russell Brainard, Af-fendi Yang Amri, Porfirio Aliño, Nygiel Armada, et al. A climate-informed, ecosystem approach to fisheries management. *Marine Policy*, 57:182–192, 2015

GCC impact on marine ecosystem - Ove Hoegh-Guldberg and John F Bruno. The impact of climate change on the world's marine ecosystems. *Science*, 328 (5985):1523–1528, 2010

GCC impact on SST

Trends in SST in terms of climatic changes from GCC - David W Lea, Dorothy K Pak, and Howard J Spero. Climate impact of late quaternary equatorial pacific sea surface temperature variations. *Science*, 289(5485): 1719–1724, 2000

Impact of SST change on the distribution and life history characteristics of marine fishes - Allison L Perry, Paula J Low, Jim R Ellis, and John D Reynolds. Climate change and distribution shifts in marine fishes. *science*, 308(5730):1912–1915, 2005

GCC impact on Primary Production

Impact of sea ice melt on annual primary production in the arctic - Kevin R Arrigo, Gert van Dijken, and Sudeshna Pabi. Impact of a shrinking arctic ice cover on marine primary production. *Geophysical Research Letters*, 35(19), 2008

Changes in NPP correlated to sea ice extent and temperature - Kevin R Arrigo and Gert L van Dijken. Secular trends in arctic ocean net primary production. *Journal of Geophysical Research: Oceans*, 116(C9), 2011

GCC impact on Wind/Currents

Antarctic circumpolar current shifts attributed to water temperature and fresh water fluxes - Claus W Böning, Astrid Dispert, Martin Visbeck, SR Rintoul, and Franziska U Schwarzkopf. The response of the antarctic circumpolar current to recent climate change. *Nature Geoscience*, 1(12):864–869, 2008

Increased intensity of coastal upwellings from GCC - Andrew Bakun. Global climate change and intensification of coastal ocean upwelling. *Science*, 247(4939):198–201, 1990

Biogeochemistry and Ocean Acidification

Water pH and ocean acidification - John E Dore, Roger Lukas, Daniel W Sadler, Matthew J Church, and David M Karl. Physical and biogeochemical modulation of ocean acidification in the central north pacific. *Proceedings of the National Academy of Sciences*, 106(30):12235–12240, 2009

Calcium carbonate saturation projections in relation to GCC - James C Orr, Victoria J Fabry, Olivier Aumont, Laurent Bopp, Scott C Doney, Richard A Feely, Anand Gnanadesikan, Nicolas Gruber, Akio Ishida, Fortunat Joos,

et al. Anthropogenic ocean acidification over the twenty-first century and its impact on calcifying organisms. *Nature*, 437(7059):681–686, 2005

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