

Space invaders; biological invasions in marine conservation planning

Authors: Sylvaine Giakoumi, François Guilhaumon, Salit Kark, Antonio Terlizzi, Joachim Claudet, Serena Felline, Carlo Cerrano, Marta Coll, Roberto Danovaro, Simonetta Fraschetti, Drosos Koutsoubas, Jean-Batiste Ledoux, Tessa Mazor, Bastien Mérigot, Fiorenza Micheli and Stelios Katsanevakis

Table S1. Attributes of the 119 reviewed articles included in the analyses.

Study	Year	Scale	Location	Realms (Spalding et al. 2007)	Use of planning tool (e.g. Marxan, Zonation other...)	Targeted conservation features	Approach
Adams et al. 2010	2010	National	Fiji	Central Indo-Pacific	Marxan	Acanthuridae, Balistidae, Carangidae, Haemulidae, Lethrinidae, Lutjanidae, Scaridae, Serranidae (groupers only) and Siganidae	Ignore
Alessi and Fiori 2014	2014	Local	Ligurian and northern Tyrrhenian Seas, Italy	Temperate Northern Atlantic	MapInfo, kriging	Bottlenose dolphins	Ignore
Allen 2008	2008	Regional	Indo-Pacific	Central Indo-Pacific	ARCView GIS	3919 species of Indo-Pacific reef fishes	Ignore
AlRashidi et al. 2011	2011	Local	West coast of Saudi Arabia	Western Indo-Pacific	Generalised linear models (GLM)	Kentish Plover <i>Charadrius alexandrinus</i> ,	Ignore
Alvarez Romero et al. 2013	2013	Local	Gulf of California	Temperate Northern Pacific	Marxan	36 marine mammals, 655 plant species, 766 invertebrate and 87 fish species, large populations of marine birds	Ignore
Anadon et al. 2011	2011	Local	Gulf of California	Temperate Northern Pacific	ARCInfo GIS	Leopard grouper, hammerhead sharks, California brown pelicans and green sea turtles	Ignore
Anderson et al. 2009	2009	Local	Agulhas Marine Province, South Africa	Temperate Southern Africa	Cluster analysis and complementarity analyses	318 intertidal species (including 116 seaweeds)	Ignore
Andrello et al. 2015	2015	Regional	Mediterranean Sea	Temperate Northern Atlantic	Eigenvalue perturbation theory (EPT)	Larval dispersal	Ignore
Arakida et al. 2011	2011	National	Japan	Temperate Northern Pacific	Maxent	Shorebird species dunlin <i>Calidris alpina</i> , red-necked stint <i>Calidris ruficollis</i> , whimbrel <i>Numenius phaeopus</i> , grey-tailed tattler <i>Heteroscelus brevipes</i> , Kentish plover <i>Charadrius alexandrinus</i> , and grey plover <i>Pluvialis squatarola</i> .	Ignore
Ardron et al. 2014	2014	Global	High seas		Marxan	Vulnerable marine ecosystems	Ignore

Awad et al. 2002	2002	National	South Africa	Temperate Southern Africa	Complementarity analyses	11 groups of South African marine invertebrates (2533 species)	Ignore
Ban 2009	2009	Local	British Columbia, Canada	Temperate Northern Pacific	Marxan	Seabirds, marine mammals, and marine flora and some invertebrates or fish	Ignore
Ban et al. 2009a	2009	Local	British Columbia, Canada	Temperate Northern Pacific	Marxan	Seabirds, marine mammals, and marine flora some invertebrates or fish	Ignore
Ban et al. 2009b	2009	Local	Danajon Bank, Philippines	Central Indo-Pacific	Marxan	Coral reef species	Ignore
Ban et al. 2014	2014	Local	British Columbia, Canada	Temperate Northern Pacific	Marxan	Indigenous fisheries	Ignore
Banks and Skilleter 2007	2007	Local	Queensland, Australia	Central Indo-Pacific	Marxan	Intertidal biodiversity	Ignore
Banks et al. 2005	2005	National	Queensland coast	Central Indo-Pacific	Marxan	63 intertidal habitat types	Ignore
Bass et al. 2011	2011	Regional	Melanesia	Central Indo-Pacific	Key Biodiversity Area (KBA) approach	5 marine turtle species; nesting data	Ignore
Beckley and Lombard 2012	2012	Local	Ningaloo Reef	Central Indo-Pacific	C-Plan	Benthic habitat types in each of the zone types (e.g., subtidal and intertidal coral reef communities, mangals)	Ignore
Brown et al. 2004	2004	Local	Prince William Sound	Temperate Northern Pacific	Analysis of biodiversity hotspots using a survey of Alaskans and a scientific workshop	Biologically important areas	Ignore
Campagna et al. 2007	2007	Regional	Extended Patagonian Marine Ecosystem	Temperate South America	The landscape species concept (LS)	33 candidate "seascape" species	Ignore
Cecere et al. 2013	2013	Local	Aride Island, Seychelles	Western Indo-Pacific	Global Positioning System (GPS) devices and geo-locator loggers	Wedge-tailed Shearwaters (<i>Puffinus pacificus</i>)	Ignore
Colloca et al. 2015	2015	Regional	European Union Mediterranean waters	Temperate Northern Atlantic	GLMM (generalized linear mixed models); GAMM (generalized additive mixed models); INLA (Bayesian GLMM); Z (zero inflated generalized additive models, ZIGAM); OK (ordinary kriging); IDW (interpolate distance weighting); Getis' G statistic; Index of Persistence (I); trawl fishery restricted areas (TFRA)	11 important commercial species of demersal fish and shellfish	Ignore
Coppa et al. 2010	2010	Local	Gulf of Oristano	Temperate Northern Atlantic	Population density and structure, spatial	<i>Pinna nobilis</i>	Ignore

					distribution, shell burial and orientation, and percentage of dead individuals		
Corkeron et al. 2011	2011	National	Oman	Western Indo-Pacific	Generalized linear model (GLM) or a spatial eigenvector mapping GLM (SEVM-GLM)	Humpback whales	Ignore
Crossman et al. 2005	2005	Local	Encounter region (South Australia)	Temperate Australasia	OSS (Optimization Support System)	biodiversity through the use of biophysical data to identify surrogate ecological regions	Ignore
Crossman et al. 2007	2007	Local	Encounter region (South Australia)	Temperate Australasia	CREDOS (Conservation Reserve Evaluation and Design Optimisation System)	biodiversity through the use of biophysical data to identify surrogate ecological regions (including 5 benthic habitats)	Ignore
Dalleau et al. 2010	2010	Local	Wallis Island	Central Indo-Pacific	rarity-complementarity-based algorithm (Garson & Sarkar 2002)	habitats (7, 10, 16 or 56 classes)	Ignore
Davis et al. 2015	2015	Local	central Chile	Temperate South America	spatial optimization model maximizing fisher's revenue	5 commercially fished species	Ignore
Delavenne et al. 2011	2011	Local	eastern English Channel	Temperate Northern Atlantic	Marxan - Zonation (comparison)	8 economically and ecologically important species, habitat types	Ignore
Downie et al. 2013	2013	Regional	Northern Baltic Sea	Temperate Northern Atlantic	Generalized additive models and MAXENT	<i>Zostera marina</i>	Ignore
Drumm et al. 2011	2011	Local	Cool Islands	Eastern Indo-Pacific	Analyses of variance on the most abundant species and multivariate ordination	reef-top macroinvertebrates	Ignore
Dunn et al. 2009	2009	Local	South Atlantic Bight	Temperate Northern Atlantic	logistic regression	hard bottom habitat	Ignore
Edgar et al. 2008	2008	Regional	Galapagos marine reserve	Tropical Eastern Pacific	Identification of threatened species and mapping	threatened marine species with restricted ranges	Ignore
Edwards et al. 2010	2010	Regional	Belize Barrier Reef	Tropical Atlantic	Marxan	conservation targets at landscape scales and spatial dependencies to incorporate spatial heterogeneity: ontogenetic migrations of fish from mangroves to coral reefs	Ignore
Embling et al. 2010	2010	Regional	Shelf waters off the west coast of Scotland	Temperate Northern Atlantic	Generalized additive models and perimeter-to-area ratio	harbour porpoises <i>Phocoena phocoena</i>	Ignore
Fisher et al. 2012	2012	Regional	Admiralty Bay and Current Basin, New Zealand	Temperate Australasia	Continuous time-lapse photography and boat-based surveys	New Zealand king shag (<i>Leucocarbo carunculatus</i>) distribution	Ignore

Foster et al. 2013	2013	Regional	North East Atlantic	Temperate Northern Atlantic	SAR models	sessile benthic invertebrates	Ignore
Fraschetti et al. 2009	2009	Local	Apulian coastline, Italy	Temperate Northern Atlantic	Marxan	13 habitat classes	Ignore
Fuentes et al. 2015	2015	Local	Gulf of Carpentaria	Central Indo-Pacific	New framework using RobOff (Pouzols et al. 2012; Pouzols and Moilanen 2013)	Torres Strait flatback turtle: <i>Natator depressus</i>	Ignore
Game et al. 2008	2008	Local	Great Barrier Reef, Australia	Central Indo-Pacific	Marxan (modified version taking into account probability of catastrophic events)	30 distinct reef "bioregions"	Ignore
Geselbracht et al. 2009	2009	Local	Florida	Tropical Atlantic	Marxan	12 benthic habitat and 35 species/aggregation targets	Ignore
Giakoumi et al. 2011	2011	Local	Cyclades Archipelago, Greece	Temperate Northern Atlantic	Marxan	Three critical habitat types (the seagrasses <i>Posidonia oceanica</i> and <i>Cymodocea nodosa</i> and forests of the macroalgae <i>Cystoseira sp.</i>), abundance of fish species and types of physical habitat	Protect
Giakoumi et al. 2012	2012	Local	Greek Ionian Sea and the adjacent gulfs (Korinthiakos and Patraikos Gulfs)	Temperate Northern Atlantic	Marxan	Four high priority habitats and species (seagrass <i>Posidonia oceanica</i> , lagoons, <i>Caretta caretta</i> , <i>Monachus monachus</i>), and 13 lower priority habitats and species	Ignore
Giakoumi et al. 2013	2013	Regional	Mediterranean Sea	Temperate Northern Atlantic	Marxan	Three critical habitat types (seagrass <i>Posidonia oceanica</i> , coralligenous formations, marine caves)	Ignore
Gonzalez-Mirelis 2014	2014	Local	Kosterhavet National Park, Sweden	Temperate Northern Atlantic	Marxan	10 % of each biotope	Ignore
Grant et al. 2013	2013	Regional	Southern Ocean	Southern Ocean	Overlap analysis - GIS	Pelagic habitat types (14 bioregions)	Ignore
Grantham et al. 2011	2011	Local	Southern Benguela and the Agulhas Bank ecosystems, South Africa	Temperate Southern Africa	Marxan	5 Oceanographic process, 3 Biological processes, Species (Fisheries species, Coastal birds, By-catch species)	Ignore
Grech et al. 2011	2011	Local	Noth Eastern Australia	Central Indo-Pacific	Single Species density model - GIS	Dugong	Ignore
Green et al. 2009	2009	Local	Kimbe Bay, New Britain Island - Papua New Guinea	Central Indo-Pacific	Marxan	Coral reef habitats, Coral reef fish communities, Seagrass communities, Mangrove	Ignore

						communities, Estuarine communities, Seamounts, Fish spawning aggregation sites, Sea turtle Nesting areas, Important bird habitat	
Greenlaw et al. 2011	2011	Local	Nova Scotia, Canadian Province	Temperate Northern Atlantic	Scoring method	inlet diversity and productivity	Ignore
Hamel et al. 2013	2013	Local	3 Islands: Wallis, Alofi, and Futuna, Pacific Ocean	Central Indo-Pacific	Marxan	habitat features	Ignore
Hansen et al. 2011	2011	Local	Danajon Bank, Philippines	Central Indo-Pacific	Marxan	habitats, depth, longitude, ecological regions, distance from river mouth	Ignore
Jung et al. 2011	2011	Local	Port Phillip, Victoria, Australia	Temperate Australasia	planning based on ecological processes - identifying distinct and ecologically relevant habitat types by cluster analysis	24 variables of the biophysical habitat and 4 ecological indices of fish assemblage	Ignore
Kaplan et al. 2014	2014	Local	Galapagos Marine Reserve	Tropical Eastern Pacific	vulnerability assessments	threatened species	Ignore
Klein et al. 2008	2008	Local	California	Temperate Northern Pacific	Marxan	47 biodiversity features	Ignore
Klein et al. 2010	2010	Local	California	Temperate Northern Pacific	Marxan with Zone	32 habitat features	Ignore
Klein et al. 2013	2013	Local	California	Temperate Northern Pacific	Marxan (modified version taking into account the condition of the habitat)	32 habitat features	Avoid
Knudby et al. 2013	2013	Local	Kubulau, Vanua Levu, Fiji	Central Indo-Pacific	Modelling with R using Automap and Gstat packages	6 key coral reef resilience indicators: stress-tolerant coral taxa, coral diversity, herbivore biomass and coral recruitment, herbivore functional group richness and cover of live coral and crustose coralline algae	Ignore
Lauer & Aswani 2008	2008	Local	Roviana Lagoon, Solomon Islands	Central Indo-Pacific	Participatory remote sensing methods (analyses of multi-spectral satellite images by indigenous with supervised classification techniques)	4 marine habitat classes: intertidal sand banks, pools, grass beds and reefs	Ignore
Leslie et al. 2003	2003	Regional	Florida Keys	Tropical Atlantic	SPEXAN (SPatially EXplicit ANnealing)	26 habitat types	Ignore
Levin et al. 2013	2013	Regional	Mediterranean Sea	Temperate Northern Atlantic	Marxan	77 threatened species, IUCN classification	Ignore

Levy & Ban 2013	2013	Regional	Indo-west Pacific region	Western Indo-Pacific	Marxan	areas continually holding sea-surface temperatures less than 1 °C above maximum non-extreme historic temperatures from 1984–2009	Ignore
Lombard et al. 2007	2007	Local	Prince Edward Islands	Southern Ocean	C-plan	19 fish species, 21 combinations as surrogates of benthic habitats, biodiversity processes	Ignore
Maiorano et al. 2009	2009	Local	Ligurian and Tyrrhenian coasts, Italy	Temperate Northern Atlantic	Marxan	Fish, cephalopods, and crustacean species	Ignore
Makino et al. 2013	2013	Local	Vanua Levu island (Fiji)	Central Indo-Pacific	Marxan	Dense forest on the land and fringing and non-fringing reefs in the sea	Ignore
Makino et al. 2014	2014	National	Japan	Temperate Northern Pacific	Marxan	3 different temperature ranges as surrogates for three coral ecoregions: temperate, subtropical and tropical	Ignore
Malcolm et al. 2010	2010	Regional	Solitary Islands Marine Park	Temperate Australasia	Identification of hotspots of species richness and endemic species	Cross-shelf patterns of reef fish assemblage structure and biogeographic representation	Ignore
Malcolm et al. 2012	2012	Regional	Solitary Islands Marine Park	Temperate Australasia	Marxan	138 fish species and 10 habitat types	Ignore
Mallory & Fontaine 2004	2004	Regional	Nunavut and the Northwest Territories, Canada	Arctic	Population estimates of Canadian migratory bird species	34 key marine habitat sites	Ignore
Mazor et al. 2013	2013	Regional	Mediterranean Sea	Temperate Northern Atlantic	Marxan	77 threatened species, IUCN classification	Ignore
Mazor et al. 2014a	2014	Regional	Mediterranean Sea	Temperate Northern Atlantic	Marxan	77 threatened species, IUCN classification	Ignore
Mazor et al. 2014b	2014	National	Israel territorial waters	Temperate Northern Atlantic	Marxan with Zones	Native fish species, sea turtles (<i>Caretta caretta</i> and <i>Chelonia mydas</i>), the dolphin <i>Tursiops truncatus</i> and physical habitat types.	Ignore
McClellan et al. 2014	2014	Regional	North Sea, English Channel	Temperate Northern Atlantic	Predictive modelling based on presence, Maxent	Marine Megafauna (i.e. 78 species including seabirds, cetaceans, pinnipeds, sharks, marine turtles and large pelagic teleost fish). Almost all of them are included in the IUCN red list	Ignore
McGowan et al. 2013	2013	Local	Gulf of the Farallones and Cordell Bank National Marine Sanctuaries, California	Temperate Northern Pacific	Marxan	5 focal seabirds species	Ignore

McInerney et al. 2012	2012	Local	Strangford Lough and Lough Hyne, Ireland	Temperate Northern Atlantic	Identification of areas maximising genetic variability (with Anova and PCO)	Pattern of genetic similarities in 3 species (<i>Littorina littorea</i> , <i>Gibbula cineraria</i> , <i>Littorina saxatilis</i>)	Ignore
Mellin et al. 2012	2012	Local	Great Barrier Reef, Australia	Central Indo-Pacific	Hierarchical (mixed-effect) linear models and distance-based partial redundancy analysis	Coral reef fish biodiversity (251 fish species from 10 families)	Ignore
Metcalfe et al. 2015	2015	Regional	Eastern English Channel	Temperate Northern Atlantic	Marxan, Marxan with Zones, Ecospace, Ecopath with Ecosim	34 species and 24 benthic habitats	Ignore
Mills et al. 2012	2012	National	Fiji islands	Central Indo-Pacific	Maxent, Marxan with Zones	Fishing grounds within inshore waters, 8 habitats	Ignore
Moura et al. 2013	2013	Local	Abrolhos Bank, Brazil	Temperate Northern Atlantic	overlap of megahabitats, human threats & MPAs	3 habitats	Ignore
Neely & Zajac 2008	2008	Local	Long Island Sound, Northeastern USA	Temperate Northern Atlantic	Marxan	6 sedimentary texture as a proxy for habitats. Then effectiveness of MPA by comparing benthic species richness and community composition inside and outside solutions	Ignore
Parravicini et al. 2012	2012	Local	Isola di Bergeggi MPA, Italy	Temperate Northern Atlantic	geospatial modeling approach	coastal habitat (status from composite indices, vague)	Ignore
Peckett et al. 2014	2014	Local	Lyme Bay, western English channel	Temperate Northern Atlantic	Marxan	reefs - an important habitat for <i>Eunicella verrucosa</i> (pink sea fan)	Ignore
Ramos et al. 2013	2013	Regional	Azores to the Canaries	Temperate Northern Atlantic	Foraging movements of Cory's shearwaters (<i>Calonectris borealis</i>) through tracking	Birds	Ignore
Raymond et al. 2015	2015	Regional	Antarctica	Southern Ocean	Combined tracking data of marine birds and mammals and estimation of overlap	seals, penguins and albatross	Ignore
Rengstorf et al. 2013	2013	Regional	Ireland	Temperate Northern Atlantic	Habitat suitability models - Maxent	Cold corals	Ignore
Ruiz-Frau et al. 2015	2015	Local	Wales, UK	Temperate Northern Atlantic	Marxan	51 habitats and special conservation features (species and habitats)	Ignore
Ruiz-Frau et al. 2015	2015	Local	Wales, UK	Temperate Northern Atlantic	Marxan with Zones	24 representative habitats and 13 special conservation features	Ignore
Runting et al. 2015	2015	Regional	South East Queensland	Central Indo-Pacific	Zonation	15 vegetation types / marine and terrestrial habitats	Ignore

Sala et al. 2002	2002	Local	Gulf of California, USA	Temperate Northern Pacific	SITES Optimization algorithm	Fish species, Habitat types, Nursery grounds, Spawning grounds	Ignore
Schalcher et al. 2010	2010	Local	Submarine canyon off the west coast of Tasmania	Temperate Australasia	Site prioritisation simulation models. Five scenarios with different information: a) random, b) depth gradient, c) fauna coverage, d) sponge cover, e) sponge species richness	Substrate type/ Geomorphology/ Megabenthic assemblages/ Sponges fauna	Ignore
Schmiing et al. 2013	2013	Local	Azores Islands	Temperate Northern Atlantic	Species distribution models + GIS, hotspots	Fish assemblages / Environmental predictors	Ignore
Schmiing et al. 2014	2014	Local	Azores Islands	Temperate Northern Atlantic	Marxan	Habitat / Biotope/ Assemblage / Species abundance / Species probability of presence / Species spawning biomass / Species probability of presence of mature individuals / Species potential fecundity / Focused on Fishes	Ignore
Schoefield et al. 2013	2013	Local	Zakynthos, Greece	Temperate Northern Atlantic	Home range analysis (GPS) + Optimization of MPA based on a newly developed effectiveness index	Sea Turtles	Ignore
Shackell and Frank 2003	2003	Local	Scotian Shelf, Canada	Temperate Northern Atlantic	Species richness based on non- parametric estimators, Species accumulation curves, Regional Species Pool (similarity of species composition), Relation between species richness and Swept area and depth range (Modelling)	Finfishes	Ignore
Shokri and Gladstone 2009	2009	Local	Brisbane Water Estuary (Australia)	Temperate Australasia	C-Plan, comparison of different surrogates	Macroinvertebrates (> 5 mm) in 5 estuarine habitats (intertidal mud flats, seagrass meadows, mangroves, submerged unvegetated substrates, intertidal hard substrates)	Ignore
Shokri et al. 2009	2009	Local	Pith Water, Brisbane, New South Wales, SouthEast Australia	Temperate Australasia	C-Plan, test of the potential value of the flagship group using a species	Syngnathids and other fishes in seagrass bed	Ignore

					accumulation approach		
Skov et al. 2007	2007	Regional	North Sea and Baltic Sea	Temperate Northern Atlantic	Identification of important areas per seabird species using the Marine Classification Criterion, Selection of priority areas across species using GIS.	30 seabird species	Ignore
Smith et al 2014	2014	Regional	Alaska, USA EEZ	Temperate Northern Pacific	Hotspot analysis based on sea birds distribution	45 seabird species	Ignore
Stewart and Possingham 2005	2005	National	South Australia	Temperate Australasia	Marxan Biogeographic regions, (mesoscale, hundreds to thousands of kilometers), biounits, (microscale, tens to hundreds of kilometers), marine, benthic habitats, coastal saltmarsh and mangrove habitats, and bathymetry (depth classes New Zealand fur seals <i>Artocephalus forsteri</i>) and species occurrence (Australian sea lions <i>Neophoca cinerea</i>)	Ignore	
Tallis et al. 2008	2008	Local	Northwest Pacific coast ecoregion, USA	Temperate Northern Pacific	Marxan 387 habitats and species (55% terrestrial, 45% marine)	Avoid	
Tear et al. 2014	2014	Regional	Africa		Return-on-investment, Use of biodiversity return values Ecological information on terrestrial, freshwater and coastal/marine features. Coastal/marine features included richness of: marine mammals, seabirds, seagrass species, coral species, mangrove species and area of mangrove forest.	Ignore	
Teh et al. 2013	2013	Local	Sabah, Malaysia	Tropical Eastern Pacific	Protected Area Suitability Index (PASI) - a fuzzy logic spatial planning tool conservation targets: endangered species, seagrass presence, coral cover, fish abundance and fisheries targets: catch, distance, depth, revenue, number of boats	Ignore	
Tognelli et al. 2009	2009	National	Chile	Temperate South America	Marxan 2513 marine species (1900 invertebrate species, others)	Ignore	
Tulloch et al. 2013	2013	Local	Kubulau, Vanua Levu, Fiji	Central Indo-Pacific	Marxan with Probability 24 habitat categories	Ignore	

Van Wynsberge et al. 2012	2012	Regional	New-Caledonia	Western Indo-Pacific	Iterative heuristic algorithms (software R 2.13.0) to create MPA networks	Fish taxonomic and functional list / habitat classes	Ignore
Vila et al. 2015	2015	Regional	Chile	Temperate South America	Marxan	39 features	Ignore
Vilar et al. 2015	2015	Regional	Brazil	Temperate South America	Zonation	61 seabirds, 35 marine mammal, five marine turtles, 649 marine and estuarine fishes	Ignore
Villanueva MC et al. 2011	2011	Regional	France and United Kingdom	Temperate Northern Atlantic	ECOPATH and MARXAN	Inventories on environment, living resources, exploitation and sensitive areas	Ignore
Wedding et al. 2013	2013	Regional	Clarion – Clipperton fracture	Temperate Northern Pacific	Empirically driven geospatial approach	Bathymetry (m); (ii) seamounts; (iii) organic nitrogen flux in sinking particulate organic carbon, (iv) polymetallic nodule abundance, macroinvertebrate abundance, organic nitrogen flux.	Ignore
Weeks et al. 2010	2010	Local	Siquijor province, Philippines.	Western Indo-Pacific	Marxan	barangays, prominent coastal features and marine habitats (coral reefs, seagrass, mangroves), fishery data	Ignore
Weeks et al. 2014	2014	Regional	Coral Triangle	Western Indo-Pacific	Marxan with Zones	Different case studies: 298 species of coral and 576 species of fish /coral reef, mangrove, and seagrass habitats as well as several rare and endangered species, including dugongs, sea otters, humpback whales, and sea turtles / critically endangered species of marine mammals and turtles, along with populations of economically important pelagic and reef-associated fish species	Ignore
Williams et al. 2014	2014	Global	Global analysis		Marxan	Marine mammals	Ignore
Wilson et al. 2014	2014	Regional	Chukchi Sea	Arctic	Zonation using home range and weekly models	Polar Bears	Ignore
Winiarski et al. 2014	2014	Local	Rhode Island, North America	Temperate Northern Atlantic	Spatial conservation prioritization (SCP)	Seabird species	Ignore
Wood L.J. & S. Dragicevic, 2006	2007	Local	Brittish Columbia, Canada	Temperate Northern Pacific	Multicriteria Decision Analysis (MCDA)	Conservation targets: Habitat and Species distribution and persistence and fisheries targets: fishery	Ignore

						replenishment, costs to fishery, equitable distribution of costs	
Woodhouse S. et al. 2000	2000	Local	Wales (UK)	Temperate Northern Atlantic	GIS-based MCLP approach	Seabirds, marine mammals, and marine flora and a dearth of invertebrates or fish	Ignore
Yates & Schoeman, 2015	2015	Local	Northern Ireland (UK)	Temperate Northern Atlantic	Marxan	45 habitats, 2 foundation species, 2 spawning areas, 5 nursery grounds and 6 depth zones	Ignore
Yates et al. 2015	2015	Local	Northern Ireland (UK)	Temperate Northern Atlantic	Marxan with Zones	Biodiversity features: 45 habitats, 2 foundation species, 2 spawning areas, 5 nursery grounds and 6 depth zones Fisheries data, Marine Renewable Energy Systems	Ignore