	Survey Name	Lead Person	When	Repeated	Vessel	Aim
А	Clyde Acoustic Pelagic Survey (CAPS)	Susan Lusseau (MSS)	Nov-12 2013 cancelled Nov-14	Annually	Alba	Principal target is Clyde herring, but have also looked at pelagic juvenile whiting and euphausids
В	Clyde Industry / Science White Fish Survey (CISWFS)	Bill Turrell (MSS) Peter Gibson (MSS)	Feb-14	One off	1 x TR2 vessels	- To map the distribution of adult white fish in the Clyde in November, by age and species - To arrive at a survey based estimate of abundance, by species - To collect a small sub-set of representative stomach samples
С	West Coast Inshore Industry Science Surveys (WCIISS)	Nick Bailey (MSS)	Sep-13 Nov-13 Mar-14 Jun-14 Sep-14 Nov-14	Quarterly for 1-2 years	TR2 vessels who have undertaken fish sampling training (2 other vessels outside Clyde)	- To provide data on inshore fish populations
D	Arran Juvenile Demersal Fish Survey (AJDFS)	Sophie Elliott (Glasgow)	July – October 2013, 2014	Weekly	COAST RIB Actinia	Arrival times, distribution and behaviours of juvenile demersal fish.
E	West Coast Q4 Scottish Groundfish Survey (IBTS WCQ4)	Craig Davis (MSS) A N Other (MSS)	Nov-13 Nov-14	Annually	Scotia	Part of West Coast wide groundfish survey – 3 stations in Clyde
F	West Coast Q1 Scottish Groundfish Survey (IBTS WCQ1)	Finlay Burns (MSS)	Feb-13 Feb-14	Annually	Scotia	Part of West Coast wide groundfish survey – 3 stations in Clyde
н	Nephrops TV Survey	Adrian Weetman (MSS)	May / June 2013 Jun-14	Annually	Scotia	Surveys Clyde Nephrops grounds – part of wider survey ca. 40 randomly generated stations on mud in Clyde (2 to 3 days in area) Aims: 1) To obtain estimates of the abundance and distribution of Nephrops burrow complexes 2) To record the occurrence of other benthic fauna and commercial trawl activity.3) To collect sediment samples at each station 4) To carry out trawling for Nephrops , to obtain samples of Nephrops for size composition, reproductive condition and morphometric analyses.
I	Breeding black guillemots	Swann	Jul-05	Annually		TBC

	T					
Author	Organisation and Source/Publication	Title The fauna of the Clyde Sea area, being an attempt to record the zoological results	Key words	Key Words	Key Words	Date
Chumley, J.	Glasgow University Press. 200pp.	obtained by the late Sir John Murray and his assistants on board the S.Y. "Medusa" during the years 1884-1892.	Biodiversity	historical	survey	1918
	diagon officersky reast 200pp	The muds of the Clyde sea area. III. Chemical and Physical conditions; rate and nature of				
Moore, B.H	Journal of the Marine	sedimentation; and Fauna	Substrate	mud	sediments	1931
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Orr, A.P.	stages_of_the_Clyde_herring.pdf>	Growth and feeding of the larval and post-larval stages of the Clyde herring.	Herring	growth	feeding	1937
Craig, R. E	Journal of the Marine Biological Association, U.K. 38: 445-	Hydrography of Scottish Coastal Waters.	Tidal Dynamics	water quality	hyrdography	1959
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Parrish, B.B., Saville, A., Craig,	http://sabella.mba.ac.uk/2006/01/Observations_on_herring_spawning_and_larval_distribution_in_the_Firth_of_Clyde_	Observations on herring spawning and larval distribution in the Firth of Clyde in				
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	Univ. Marine Biological Station, Millport, Isle of Cumbrae, Scotland KA28 OEG Estuarine,-Coastal-and-Shelf-Science.	Seasonal fluctuations and compositions of two populations of small demersal fishes on				
Nash,-RDM.; Gibson,-RN.	1982. 15(5), pp 485495, Dept. of Forensic Medicine & Sc., Univ. of Glasgow, Glasgow	the west coast of Scotland.	Demersal fish	populations	seasonal	1982
	G12 8QQ, Scotland. Marine-Environmental-Research. 1983.			metal		
armer,-JG	8(1), pp 1-28	Metal pollution in marine sediment cores from the west coast of Scotland	Sediments	contamination shoreline	pollution	1983
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Moore,-DC.; Rodger,-GK Moore,-DC.; Rodger,-GK Powell,-R.; Moore,-PG. Elliott,-AJ.; Perry,-OB.	SOAFD Marine Lab., Victoria Road, Aberdeen AB9 30BMarine-Ecology-Progress-Series. 1991. 75(2-3), pp 301- 308. SOAFD Marine Lab., Victoria Road, Aberdeen, Scotland, UKICES-Journal-of-Marine-Science. 1991. 48(2), pp 237-245. Marine Biological Station, Miliport, Isle of Cumbrae, KA28 OEG Journal-of-Natural-History. 1991. 25(2), pp 435-479. Hydrographic-Journal. 1992. 66, pp 11-15. Institute of Environmental and Biological Sciences, University	Recovery of a sewage sludge dumping ground Mass mortality of herring eggs associated with a sedimenting diatom bloom. The breeding cycles of females of seven species of amphipod (Crustacea) from the Clyde	Sewage Herring Crustacea Tidal Dynamics	recovery mortality breeding cycles	sediments Clyde Sea approaches	1991
Moore,-DC.; Rodger,-GK Moore,-DC.; Rodger,-GK Powell,-R.; Moore,-PG. Elliott,-AJ.; Perry,-OB. Laybourn-Parry,-J.; Rogerson,-A.;	SOAFD Marine Lab., Victoria Road, Aberdeen AB9 8DBMarine-Ecology-Progress-Series. 1991. 75(2-3), pp 301-308. SOAFD Marine Lab., Victoria Road, Aberdeen, Scotland, UKICES-Journal-of-Marine-Science. 1991. 48(2), pp 237-245. Marine Biological Station, Miliport, Isle of Cumbrae, KA28 OEG Journal-of-Natural-History. 1991. 25(2), pp 435-479. Hydrographic-Journal. 1992. 66, pp 11-15. Institute of Environmental and Biological Sciences, University of Lancaster, VIL A 4V Q Esturine, Coastal-and-Shelf-	Recovery of a sewage sludge dumping ground Mass mortality of herring eggs associated with a sedimenting diatom bloom. The breeding cycles of females of seven species of amphipod (Crustacea) from the Clyde Sea area. Tidal currents in the Clyde Approaches	Sewage Herring Crustacea	recovery mortality breeding cycles current	sediments Clyde Sea approaches Clyde and Loch	1991 1991 1992
Moore,-DC.; Rodger,-GK Moore,-DC.; Rodger,-GK Powell,-R.; Moore,-PG. Elliott,-AJ.; Perry,-OB.	SOAFD Marine Lab., Victoria Road, Aberdeen AB9 30BMarine-Ecology-Progress-Series. 1991. 75(2-3), pp 301-308. SOAFD Marine Lab., Victoria Road, Aberdeen, Scotland, UKICES-Journal-of-Marine-Science. 1991. 48(2), pp 237-245. Marine Biological Station, Miliport, Isle of Cumbrae, KA28 OEG Journal-of-Natural-History. 1991. 25(2), pp 435-479. Hydrographic-Journal. 1992. 66, pp 11-15. Institute of Environmental and Biological Sciences, University of Lancaster, UK LA 4YQ Estuarine, Coastal-and-Shelf- Science. 1992. 35(5), pp 533-543. Geological Conservation Review, Volume 4: British Tertiary	Recovery of a sewage sludge dumping ground Mass mortality of herring eggs associated with a sedimenting diatom bloom. The breeding cycles of females of seven species of amphipod (Crustacea) from the Clyde Sea area.	Sewage Herring Crustacea Tidal Dynamics Protozooplankt	recovery mortality breeding cycles	sediments Clyde Sea approaches	1991 1991
Moore,-DC.; Rodger,-GK Moore,-DC.; Rodger,-GK Powell,-R.; Moore,-PG. Elliott,-AJ.; Perry,-OB. Laybourn-Parry,-J.; Rogerson,-A.;	SOAFD Marine Lab., Victoria Road, Aberdeen AB9 3DBMarine-Ecology-Progress-Series. 1991. 75(2-3), pp 301- 308. SOAFD Marine Lab., Victoria Road, Aberdeen, Scotland, UKICES-Journal-of-Marine-Science. 1991. 48(2), pp 237-245. Marine Biological Station, Miliport, Isle of Cumbrae, KAZ8 DEG Journal-of-Natural-History. 1991. 25(2), pp 435-479. Hydrographic-Journal. 1992. 66, pp 11-15. Institute of Environmental and Biological Sciences, University of Lancaster, UK LA 4VQ Estuarine, Coastal-and-Shelf-Science. 1992. 35(5), pp 535-543.	Recovery of a sewage sludge dumping ground Mass mortality of herring eggs associated with a sedimenting diatom bloom. The breeding cycles of females of seven species of amphipod (Crustacea) from the Clyde Sea area. Tidal currents in the Clyde Approaches	Sewage Herring Crustacea Tidal Dynamics Protozooplankt	recovery mortality breeding cycles current	sediments Clyde Sea approaches Clyde and Loch	1991 1991 1992
Moore,-DC.; Rodger,-GK Moore,-DC.; Rodger,-GK Powell,-R.; Moore,-PG. Elliott,-AJ.; Perry,-OB. Laybourn-Parry,-J.; Rogerson,-A.; Crawford,-DW	SOAFD Marine Lab., Victoria Road, Aberdeen AB9 8DBMarine-Ecology-Progress-Series. 1991. 75(2-3), pp 301-308. SOAFD Marine Lab., Victoria Road, Aberdeen, Scotland, UKICES-Journal-of-Marine-Science. 1991. 48(2), pp 237-245. Marine Biological Station, Miliport, Isle of Cumbrae, KA28 OEG Journal-of-Natural-History. 1991. 25(2), pp 435-479. Hydrographic-Journal. 1992. 66, pp 11-15. Institute of Environmental and Biological Sciences, University of Lancaster, UK LA 4VQ Esturine, Coastal-and-Shelf-Science. 1992. 35(5), pp 533-543. Geological Conservation Review, Volume 4: British Tertiary Volcanic Province. Chapter 6: Isle of Arran. Site: South coast	Recovery of a sewage sludge dumping ground Mass mortality of herring eggs associated with a sedimenting diatom bloom. The breeding cycles of females of seven species of amphipod (Crustacea) from the Clyde Sea area. Tidal currents in the Clyde Approaches Temporal patterns of protozooplankton abundance in the Clyde and Loch Striven. The south coast of Arran site of special scientific interest. Earth science site documentation series (Tertiary Igneous Province,	Sewage Herring Crustacea Tidal Dynamics Protozooplankt on	mortality breeding cycles current abundance	sediments Clyde Sea approaches Clyde and Loch Striven	1991 1991 1992 1992
Moore,-DC.; Rodger,-GK Moore,-DC.; Rodger,-GK Powell,-R.; Moore,-PG. Elliott,-AJ.; Perry,-OB. Laybourn-Parry,-J.; Rogerson,-A.;	SOAFD Marine Lab., Victoria Road, Aberdeen AB9 30BMarine-Ecology-Progress-Series. 1991. 75(2-3), pp 301-308. SOAFD Marine Lab., Victoria Road, Aberdeen, Scotland, UKICES-Journal-of-Marine-Science. 1991. 48(2), pp 237-245. Marine Biological Station, Miliport, Isle of Cumbrae, KA28 OEG Journal-of-Matural-History. 1991. 25(2), pp 435-479. Hydrographic-Joumal. 1992. 66, pp 11-15. Institute of Environmental and Biological Sciences, University of Lancaster, UK LA 4YQ Estuarine, Coastal-and-Shelf-Science. 1992. 35(5), pp 533-543. Geological Conservation Review, Volume 4: British Tertiary Volcanic Province. Chapter 6: Isle of Arran. Site: South coast of Arran (GR ID: 1239). http://jncc.defra.gov.uk/pdf/gcrdb/GCRsiteaecount1239.pd fb- Dunstaffnage Marine Laboratory, P.O. Box 3, Oban, Argyll,	Recovery of a sewage sludge dumping ground Mass mortality of herring eggs associated with a sedimenting diatom bloom. The breeding cycles of females of seven species of amphipod (Crustacea) from the Clyde Sea area. Tidal currents in the Clyde Approaches Temporal patterns of protozooplankton abundance in the Clyde and Loch Striven. The south coast of Arran site of special scientific interest. Earth science site	Sewage Herring Crustacea Tidal Dynamics Protozooplankt	recovery mortality breeding cycles current	sediments Clyde Sea approaches Clyde and Loch	1991 1991 1992
Moore,-DC.; Rodger,-GK Moore,-DC.; Rodger,-GK Powell,-R.; Moore,-PG. Elliott,-AJ.; Perry,-OB. Laybourn-Parry,-J.; Rogerson,-A.; Crawford,-DW	SOAFD Marine Lab., Victoria Road, Aberdeen AB9 3DBMarine-Ecology-Progress-Series. 1991. 75(2-3), pp 301- 308. SOAFD Marine Lab., Victoria Road, Aberdeen, Scotland, UKICES-Journal-of-Marine-Science. 1991. 48(2), pp 237-245. Marine Biological Station, Miliport, Isle of Cumbrae, KAZ8 OEG Journal-of-Natural-History. 1991. 25(2), pp 435-479. Hydrographic-Joumal. 1992. 66, pp 11-15. Science. 1992. 35(5), pp 533-543. Geological Conservation Review, Volume 4: British Tertiary Volcanic Province. Chapter 6: Isle of Arran. Site: South coast of Arran (GCR ID: 1239). https://docs.org/chipsess-south-page-42 Geological Conservation Review, Volume 4: British Tertiary Volcanic Province. Chapter 6: Isle of Arran. Site: South coast of Arran (GCR ID: 1239).	Recovery of a sewage sludge dumping ground Mass mortality of herring eggs associated with a sedimenting diatom bloom. The breeding cycles of females of seven species of amphipod (Crustacea) from the Clyde Sea area. Tidal currents in the Clyde Approaches Temporal patterns of protozooplankton abundance in the Clyde and Loch Striven. The south coast of Arran site of special scientific interest. Earth science site documentation series (Tertiary Igneous Province,	Sewage Herring Crustacea Tidal Dynamics Protozooplankt on	mortality breeding cycles current abundance	sediments Clyde Sea approaches Clyde and Loch Striven	1991 1991 1992 1992

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Miller, P.I., Xu, W. and Lonsdale, P.	Scottish Natural Heritage Commissioned Report No. 538. http://www.snh.org.uk/pdfs/publications/commissioned_reports/538.pdf	Seasonal shelf-sea front mapping using satellite ocean colour to support development of the Scottish MPA network.	Tidal Dynamics	МРА	mapping	2014
Radford, A., Riddington, G and Gibson, H		Management of the Scottish Inshore Fisheries; Assessing the options for change.	Inshore Fishing			2014
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SNH	SNH Commissioned Report 780 SNH Commissioned Report 620	Validation of seabed habitat MPA search feature records relating to the South Arran Nature Conservation MPA	selection S Arran	MPA MPA	advice habitat	2014
SNH	SNH Commissioned Report 491	Development of detailed ecological guidance to support the application of the Scottish MPA selection guidelines in Scotland's seas	ecological	MPA	guidance	2014
		NWFA selection guidelines in Scotland's Seas Statistical approaches to aid the identification of Marine Protected Areas for minke whale, Risso's dolphin, white-beaked dolphin and basking shark			statistical	
SNH	SNH Commissioned Report 594	Review of available statistical approaches to help identify Marine Protected Areas for	Cetaceans	MPA	approaches statistical	2014
SNH	SNH Commissioned Report 573	cetaceans and basking shark Can habitat modelling for the octopus Eledone cirrhosa help identify key areas for	Cetaceans	MPA	approaches	2014
SNH	SNH Commissioned Report 530	Risso's dolphin in Scottish waters?	Cetaceans	MPA	modelling	2014
SNH	SNH Commissioned Report 619	Lamlash Bay, Arran, 2010 survey report		MPA	survey	2014
SNH	SNH Commissioned Report 745	Infaunal and PSA analyses of grab samples collected from the Clyde Sea, in March and July 2013	infaunal	МРА	survey	2014
SSE (2014)	http://www.sse.com/Hunterston/ProjectInformation/	Hunterston offshore wind turbine test facility		renewable energy	test facility	2014
FAO Howarth, L. M., Roberts, C. M.,			nephrops	fishing	Clyde	2015
Hawkins, J. P., Steadman, D. J and Beukers-Stewart, B. D	Marine Population Modelling Group, Department of	Effects of ecosystem protection on scallop populations within a community-led temperate marine reserve.	No Take Zone	towed fishing gears	probabilistic	2015
R.M	Mathematics and Statistics, University of Strathclyde, 26 Richmond Street, Glasgow, G1 1XH, UK	Fishery-induced changes to age and length dependent maturation schedules of three demersal fish species in the Firth of Clyde	Demersal fish	maturation	maturation reaction norms	2015
Leigh M. Howarth · Callum M. Roberts · Julie P. Hawkins · Daniel	http://www.arrancoast.com/images/Research/Howarth_et_					
J. Steadman ·Bryce D. Beukers - Stewart 29 January 2015	a lEcosystem protetion benefit sscallops in a community led marine reserve.pdf DOI 10.1007/s00227-015-2627-7	Effects of ecosystem protection on scallop populations within a community-led temperate marine reserve	Scallop	ecosystem	Area Management	2015
	January Canada Color	Microplastic pollution in the Clyde sea area: a study using the indicator species Nephrops norvegicus	nephrops	pollution	Microplastic	2015
Welden, N.A.C		A review and validation of MPA search feature records relating to the South Arran third-				?2013
Welden, N.A.C	Scottish Natural Haritage Commissions - December 1	narty Nature Conservation MPA proposal				
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S. (in prep.).	Scottish Natural Heritage Commissioned Report No. 437.	the Clyde Sea area.	distribution	MPA	features	?2014
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Swann, R. (in prep.).	92.pdf	Marine Protected Area - related black guillemot surveys, 2014.	guillemot	MPA	survey	?2014
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P.G.	keystone species.	Aquatic Conservation: Marine and Freshwater Ecosystems 10: 267-277	molluscs	reef forming	Limaria hians	2000a
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		Basking shark satellite tagging project: insights into basking shark (Cetorhinus maximus)				Phase 1,
SNH	SNH Commissioned Report 752	movement, distribution and behaviour using satellite telemetry		MPA	survey	July 2014
		Economic Evaluation of the Impact of Restricting Trawling and Scallop Dredging Within 3				
Radford, A and Riddington, G	Grid Economics report for SIFT	Miles of the Shore in the Clyde Fishery Area	Analysis	Assessment	Mobile gears	2015
	York University					
	http://www.arrancoast.com/images/100_years_ecosystem.					
Ruth Thurstan	<u>pdf</u>	Changes in the Firth of Clyde marine ecosystem over the last 100 years	Ecosystem	changes	100 years	
		Optimal remote sensing for coastal and estuarine waters: current capabilities and future				
University of Glasgow	Dave Mckee	developments	Sensing	coast	Estuary	
Tuck, I.D., Chapman, C.J. and		Population biology of the Norway lobster, Nephrops norvegicus (L.) in the Firth of Clyde,				
Atkinson, R.J.A.	ICES Journal of Marine Science 54:125-135.	Scotland I: Growth and density.	Nephrops	growth	density	1997
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Wright	cesjms.fsv144	Evaluating the effectiveness of a seasonal spawning area closure	Cod	spawning	closures	2015

Who	Contact	Title	Date
SIFT		Information Pack on Proposed Firth of Clyde Regulating Order	2015
SIFT		Aquaculture Information Pack	2014
Firth of Clyde	Firth of Clyde Forum	Firth of Clyde Biosecurity Plan, 2012-2016, Viewed on 12 th February 2014,	
Forum (2012)	Firth of Clyde Fordin	Firth of Clyde Biosecurity Plan, 2012-2016, Viewed on 12 February 2014,	2014
Scottish	http://www.sff.co.uk/sustainable fisher		
Fishermen's	ies_	Scalloping Fact Sheet	
Federation	103		2015
Clyde Inshore			
Fisheries Group		Fisheries Management Plan, Prestwick: Clyde Inshore Fisheries Group.	2011
COAST		Proposed Marine Protected Area South Coast of Arran	2012
Seafish	Watson, W.H and Bryson, J.T.	The Clyde inshore fishery study – Key features. SEAFISH, Edinburgh.	Jul-03
CLYDE INSHORE	http://ifgs.org.uk/files/4414/0188/9882		
FISHERIES GROUP	/SWIFG Clyde IFG MP.pdf	FISHERIES MANAGEMENT PLAN	Nov-11

HEI Partner Institutuions	Funding Source (e.g. MSS, MASTS, NERC)	Name of student	MSS Supervisor / HEI Supervisor	Title of Study Project	Starts	Ends
University of Strathclyde		Alessandro Sabatino	Mike Heath (Strathclyde) Alejandro Gallego (MSS) Alan Hills (SEPA)	Modelling water circulation and the dispersal of shellfish larvae in the Firth of Clyde	2012	2015
Glasgow University		Neil Burns	David Bailey (Glasgow) Peter Wright (MSS) Bill Turrell (MSS)	How has gadoid biomass in the Clyde Sea been sustained? (Looking at reasons for abundance: life history traits , e.g. reduced mortality rate? more "r" selected? or connectivity e.g. immigration).	ТВС	TBC
Glasgow University University of Strathclyde		Sophie Elliot	David Bailey (Glasgow) Mike Heath (Strathclyde) Bill Turrell (MSS)	The importance of coastal environments for the resilience of fish populations	2013	2015
University of Aberdeen	MASTS (100 %)	Michelle McCutchen (TBC)	Francis Neat (MSS) Cath Jones Les Noble	Population genomics and spatial planning for conservation of endangered common skate species complex	2013 (TBC)	2016 (TBC)
University of Strathclyde		Aiden Hunter	Mike Heath (Strathclyde) Doug Speirs (Strathclyde)	Changes in growth and maturation of fish in the Clyde (using EwE Model)		
University of Strathclyde		Peter Jones		17th and 18th century fisheries in the Clyde (Points at possible overfishing as cause for whitefish decline in the Clyde)		
Glasgow University			Douglas Neil	Dinoflagelate parasite infection of Nephrops in the Clyde		
Glasgow University		Natalie Welden		Micro-plastic pollution in the Clyde		
University of Strathclyde		Ruaraidh McPike	Mike Heath	Coupled socio-ecological modelling of coastal systems. (Using e2e ecosystem model)		
University of Strathclyde	co-funded by Marine Scotland acting through the Marine Alliance for Science and Technology (MASTS)	Hazel Smith	Mike Heath	Nethrops and the parasite Hematodinium	2015	2018
University of Strathclyde		Keshav Dutia	Mike Heath	Scallop population modelling	2015	2018