Sussex IFCA Annual Research Report 2017-2018

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There was a broad range of research undertaken between April 2017 and March 2018. Thirty seven projects were described in the Annual Research Plan, drawn from the Strategic Research Plan 2016-2020. Each project sits under one of three themes and various appropriate sub-themes. Here, each project is listed with a brief description, the purpose and how it has supported management decisions, as well as the progress that has been made on the project during the financial year from April 2017 to March 2018.

Theme	Sub-theme	Project	Description	Purpose	Progress
Sustainable marine resource exploitation	Fisheries biology data	Shellfish permit monitoring	Collation and analysis of catch return data from shellfish permit holders.	To support the Shellfish Permit Byelaw	Collection of catch returns, data entry/analysis, summary report of first 12 months of data.
Sustainable marine resource exploitation	Fisheries biology data	Lobster sampling	Measuring lobsters onboard and in port, opportunistic sampling as part of compliance duties.	The data was shared with Cefas to support their stock assessments. The data also supports the Shellfish Permit Byelaw.	Officers measured lobsters when appropriate. Data shared with Cefas. Sussex IFCA has been part of national discussions regarding the collection of monitoring data and research requirements for the sustainable management of lobsters.
Sustainable marine resource exploitation	Fisheries biology data	Whelk sampling	Measuring whelks onboard and in port, opportunistic sampling as part of compliance duties, in support of shellfish permit byelaw	To support Shellfish Permit Byelaw.	Sussex IFCA has led national discussions regarding whelk research and is working with partner organisations to develop a robust sampling program.

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Sustainable marine resource exploitation	Fisheries biology data	Cuttlefish eggs – Supporting Sustainable Sepia Stocks	Investigating options for improving the survival of eggs during cuttlefish potting.	To support Shellfish Permit Byelaw and sustainable cuttlefish stocks.	Secured funding from Hastings FLAG (Fisheries Local Action Group) to work with local fishers and the University of Brighton to increase egg survival and investigate the current fishing pressure on the Channel stock. Fieldwork to take place in summer 2018.
Sustainable marine resource exploitation	Fisheries biology data	Oyster stock monitoring	Monthly sampling by Environmental Health Officers (EHO), quarterly length-frequency with EHOs, stock assessment pre-season, CPUE monitoring during season (November), fishers catch data.	To support the Oyster Permit Byelaw and sustainable oyster stocks. Also recording of activity for European Marine Site monitoring.	Catch per unit effort data was collected every month. Biological data was collected in April, July and October. Pre-season stock assessment. Detailed catch and activity data during season. Information shared with EHOs, fishers and other stakeholders.
Sustainable marine resource exploitation	Fisheries biology data	Species specific management plans	Management plans for 25 priority species, including reference to Maximum Sustainable Yield	To support the sustainable management of key Sussex fisheries.	Half the plans have been written, with support from volunteers. The other plans will be completed in 2018.
Sustainable marine resource exploitation	Fishing activity	Fishing vessel effort	Location and activity of fishing vessels at sea as part of compliance duties, creating effort maps (activity corrected for patrol effort).	To inform the level of fishing activity across the District, in particular in Marine Protected Areas and to support the review of byelaws.	822 sightings of vessels were recorded Jan-Dec 2017. Fishing effort maps were created with the support of a volunteer and the fishing effort report updated showing activity for 2013-2017.
Sustainable marine resource exploitation	Fishing activity	Netting activity	Location and intensity of netting, environmental impacts, value of fishery.	To support new management measures as part of the review of byelaws.	A comprehensive review of netting activity, benefits and impacts was completed and a summary report complied.
Ecosystem interactions	Marine Protected Areas	Commercial landings data	Requesting data from MMO and other suitable sources, data analysis, for specific species or fishing gears in Marine Protected Areas.	To inform the amount and value of seafood landed in Sussex, to support management.	Black seabream landings data was requested from the MMO to understand fishing pressure in and near Kingmere MCZ.

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Ecosystem interactions	Marine Protected Areas	Anglers' activity – black seabream	At sea and in port inspections to gather catch and biological information, mainly April-June.	To further understanding of the fishing activity in and near Kingmere MCZ.	33 vessels with bream were inspected on four patrols. 76 bream were measured. There were 97 angling vessel observations in Kingmere MCZ on 35 sea patrols. More information is available in the 'Kingmere MCZ 2017 research report'.
Ecosystem interactions	Marine Protected Areas	Kingmere Marine Conservation Zone (MCZ) management monitoring	Ongoing monitoring of Kingmere MCZ management, including elements of Anglers' Activity and Fishing Vessel Effort projects.	To support the achievement of the conservation objectives for the MCZ.	Monitoring of fishing activity in the MCZ. Liaison with partner organisations. Information sharing with stakeholders. Partaking in discussions regarding aggregate extraction and other licence activities.
Ecosystem interactions	Marine Protected Areas	Beachy Head West MCZ management monitoring	Ongoing monitoring of Beachy Head West MCZ management, promoting MCZ, developing Code of Conduct, supporting partner organisations.	To support the achievement of the conservation objectives for the MCZ.	Monitoring of fishing activity in the MCZ, shore and sea patrols. Information sharing with stakeholders. Liaison with partner organisations.
Ecosystem interactions	Marine Protected Areas	Pagham MCZ and EMS management development	Developing Pagham MCZ and EMS management, including analysis of existing data and identifying information gaps.	To support the achievement of the conservation objectives for the MCZ.	Formal consultation of Schedule in April 2017. Monitoring of fishing activity and liaison with partner organisations.
Ecosystem interactions	Marine Protected Areas	Utopia MCZ management development	Development of Utopia MCZ management, analysis of existing data and identifying information gaps, consultation with stakeholders.	To support the achievement of the conservation objectives for the MCZ.	Informal consultation of Schedule in June 2017. Formal consultation in October 2017. Monitoring of fishing activity and liaison with partner organisations.
Ecosystem interactions	Marine Protected Areas	Offshore Overfalls MCZ management development	Supporting the MMO in the development of management for Offshore Overfalls MCZ.	To support the achievement of the conservation objectives for the MCZ.	Shared information with the MMO as required, as they are the lead managers for this site.

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Ecosystem interactions	Marine Protected Areas	Selsey Bill and the Hounds MCZ management development	Supporting partner organisations by providing information as requested for the designation process of tranche 3 MCZs.	To support the achievement of the conservation objectives for the MCZ.	Data shared with Natural England and Defra as requested.
Ecosystem interactions	Marine Protected Areas	Beachy Head East MCZ management development	Supporting partner organisations by providing information as requested for the designation process of tranche 3 MCZs.	To support the achievement of the conservation objectives for the MCZ.	Data shared with Natural England and Defra as requested.
Ecosystem interactions	Marine Protected Areas	Rye Bay MCZ management development	Supporting partner organisations by providing information as requested for the designation process of tranche 3 MCZs.	To support the achievement of the conservation objectives for the MCZ.	Data shared with Natural England and Defra as requested.
Ecosystem interactions	Marine Protected Areas	Solent European Marine Site (EMS) management development	Ongoing monitoring of EMS management, may include elements of the Oyster Stock Monitoring, the Fishing Vessel Effort and Intertidal Resource Gathering projects.	To comply with Defra's revised approach to fisheries in EMS.	Ongoing monitoring of features and fishing activity. Active engagement with the Solent EMS management group, including contribution to annual report.
Ecosystem interactions	Marine Protected Areas	Dungeness, Romney Marsh and Rye Bay EMS monitoring	Ongoing monitoring of EMS management, may include elements of Intertidal Resource Gathering and the Fishing Vessel Effort projects.	To comply with Defra's revised approach to fisheries in EMS.	Ongoing monitoring of fishing activity in partnership with Rye Harbour Nature Reserve.
Ecosystem interactions	Marine Protected Areas	Non-commercial activities in EMS	Conducting Habitat Regulation Assessments on non-commercial fishing activities in EMSs.	To comply with Defra's revised approach to fisheries in EMS.	Collection of fishing activity data in collaboration with partner organisations.
Ecosystem interactions	Marine Protected Areas	Intertidal resource gathering	Location and activity of intertidal resource gathers in Marine Protected Areas.	To comply with Defra's revised approach to fisheries in EMS and to further understanding of the activity in MCZs.	Collection of data on the level and type of intertidal resource gathering activity, such as bait digging and cockle picking, in collaboration with partner organisations.

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Ecosystem interactions	Habitats	Interactive habitat map	Development of a publically accessible map that highlights the important diversity in the coastal waters of Sussex.	To create a publically available resource showcasing Sussex's marine biodiversity.	Working with Sussex Biodiversity Records Centre, the online interactive map has been further developed with seabed habitats and video clips, MPAs, wrecks, byelaws and fishing effort. Follow the link on our website.
Ecosystem interactions	Habitats	Habitats and fishing activity interactions	Analysis of the interaction between habitats, species and fisheries, to support management.	To further understanding of the importance of the marine environment and fisheries impacts.	As part of the Research Manager's MSc in GIS and Environmental Management (completed August 2017), data on seabed habitats and their value have been combined with fishing pressure to highlight priority areas for further research and potential management measures. Report is on the website.
Ecosystem interactions	Small fish monitoring	Medmerry small fish survey	Seine, fyke and hand net, five locations (two days), twice a year, every year, since 2014, funding from Environment Agency.	Monitoring of the colonising fish population, to understand the relevance of the site as a nursery for commercially important species, as a source of food for birds and to inform other realignment schemes.	Surveys were conducted June and September. There were 1695 fish of 14 species. 16 people from 9 organisations supported the surveys. There is further information in the 'Medmerry Small Fish Surveys 2017' report. Officers also supported the Cefas Solent Bass Survey in September.
Ecosystem interactions	Small fish monitoring	Rye small fish survey	Seine net on Rye beach (one day) three times a year, beam trawl in Rye Bay once a year, in partnership with Rye Harbour Nature Reserve.	To monitor the small fish population, in particular its influence on the tern population within Rye Harbour Nature Reserve and Dungeness, Romney Marsh and Rye Bay EMS.	Surveys were conducted May, June and July. There were 501 fish of 23 species. 22 people from 10 organisations supported the surveys. There is further information in the 'Rye Small Fish Surveys 2017' report.

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Ecosystem interactions	Anthropogenic	Netting bycatch – birds and cetaceans	Collection of information to further understanding of amount of bird and cetacean bycatch and ways to reduce it.	To support potential netting management measures.	Discussions with RSPB and the University of St Andrews. Most of the bycatch took place during the bass drift net fishery which has been prohibited under EU bass legislation, so need for this project has reduced.
Ecosystem interactions	Anthropogenic	Environmental policy	Develop an environmental policy which considers the Authority's impact on the environment and how to reduce it.	To reduce Sussex IFCA's environmental impact in areas such as energy, water and fuel use.	Environmental audit conducted by University of Brighton students in 2016, highlighted main issues and provided recommendations. Following the audit, a University of Brighton student wrote an Environmental Policy for Sussex IFCA.
Socio-economics	Archaeology	FIPAD2 (Fishing Industry Protocol for Archaeological Discoveries)	Fishing industry protocol for archaeological discoveries and historic environment fisheries liaison support.	To support IFCA's role in the sustainable management of the marine (including historic) environment.	Support of the Historic Environment Fisheries Liaison Officer and the Protocol.
Socio-economics	Community engagement	Planning and reporting	Production of an annual research plan and an annual research report.	To support the research activities of the IFCA and share the results in a clear, concise manner.	The Plan and the Report were written, shared with the Authority and made available on the website. In addition, project specific reports were produced for various projects.
Socio-economics	Community engagement	Groups and forums	Participation in various groups and forums, sharing knowledge, best practice and coordinating research.	To facilitate partnership working.	There has been participation in a wide range of groups and forums, sharing information and ideas. The Research Manager has been chair of the Technical Advisory Group which aims to promote and facilitate collaboration and communication between the IFCAs and the Defra family.

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Socio-economics	Community engagement	Data sharing	Sharing data with local and national schemes and organisations, ensuring IFCA data is accessible, making best use of others' data.	To promote the principle of 'collect once, use many times', to make best use of existing data to support management.	Progress has been made on sorting IFCA data, increasing accessibility and ease of sharing. Data sharing has occurred between partner organisations.
Socio-economics	Community engagement	Website and social media	Preparing material to be shared on the website and social media, in addition to project reporting, keeping website up to date.	To meet Success Criterion 1: IFCAs are recognised and heard	The new website has been further developed and kept up to date with relevant information. Social media has been used successfully to share information.
Socio-economics	Community engagement	Consultations and enquiries	Responding to consultations and enquiries from other organisations and the public.	To meet Success Criterion 1 by providing information and advice to the public and partner organisations.	All consultations and queries have been fully addressed in a timely manner.
Socio-economics	Community engagement	Events	Attending various events such as fairs and festivals, ensuring IFCAs are seen, heard and recognised, preparing material for public engagement.	To share information with the general public and interested parties.	Attended numerous events, mainly over the summer, raising awareness of the work of IFCAs. Also supported Wild Beach training, session development, staff training and running educational sessions.
Socio-economics	Community engagement	Students and Universities	Engagement with local universities to maximise collaborative working where research priorities align.	To maximise collaborative working where research priorities align.	There has been liaison with several local universities and colleges, eight work experience students have been supported and collaborative projects have been developed.
Socio-economics	Community engagement	Volunteers	Engagement with volunteers from a range of backgrounds to support research.	To provide work experience for students and early career marine scientists in a mutually beneficial arrangement.	There have been ten volunteers April 2016 to March 2017, contributing a total of over 430 hours of time to a range of IFCA projects.

In addition to those projects described in the Research Plan 2017-2018, the following projects were also undertaken as required during the period:

Theme	Sub-theme	Project	Description	Purpose	Progress
Sustainable marine resource exploitation	Fishing activity	Trawling activity	Location and intensity of trawling, catch per unit effort, environmental impacts, value of fishery, to support management	To support new management measures as part of the review of byelaws.	A comprehensive review of trawling activity, benefits and impacts was completed and a summary report complied. This was due to start the following year but was brought forward in line with the netting review.
Ecosystem interactions	Anthropogenic	Clear Seas	Production of leaflets, posters and other materials to promote good practice recommendations to boat/coastal users about looking after their local marine environment, specifically Chichester Harbour and Brighton Marina.	To promote good environmental stewardship.	Partnership project with the Environment Agency, clear engaging posters and leaflets were produced and shared with stakeholders in Chichester Harbour and Brighton Marina, and shared via the website.
Ecosystem interactions	Small fish monitoring	Tide Mills (Newhaven) small fish survey	Seine and fyke net in Tide Mills, a tidal lagoon off the lower reaches of the Ouse, one-off survey in October.	To investigate which species were present in this area, with particular interest in the presence of juvenile bass.	620 fish of three species were caught; bass (94%, group 0 age class), common goby (5%) and three-spined stickleback (1%).
Ecosystem interactions	Small fish monitoring	Chichester Harbour	Surveys conducted in partnership with Sparsholt College in the autumn.	To provide fieldwork experience to college students whilst collecting useful fish population data and contributing to a long term dataset.	This new partnership was established and seine netting was completed successfully at two sites within the Harbour. 220 fish of 8 species were caught.
Socio-economics	Fisheries value	Cost-benefit analysis of Chichester Harbour shellfish	Assessing the costs and benefits of the shellfish fisheries in Chichester Harbour supporting improvements in water quality.	To support the sustainable management of shellfish fisheries and promote the benefits of shellfish to the wider ecosystem to support improvements in water quality.	Partnership project with the Environment Agency and New Economics Foundation, created report and model to assess the potential increase in ecosystem services associated with improved water quality.

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Socio-economics	Archaeology	Understanding Fishermen's Fasteners	Using multibeam and video cameras to further understanding of sites of potential archaeological significance, funding from Historic England.	To develop methods for furthering understanding of marine archaeological sites.	The completion of this project was delayed due to limited opportunities of suitable weather conditions for the camera work. Fieldwork completed in September.

The continued hard work of all staff is evident in the breadth and quality of the research produced in this financial year. Collaborative working with partner organisations is a great strength, providing mutual benefits in the sharing of resources, experience, skills and data. Research has been directly applied in providing evidence for the development of new byelaws, which aim to protect the marine environment, balanced against the economic benefits of fishing. There has been particular effort focussed on Marine Protected Areas, recognising the importance of these special sites. Next year's Research Plan promises to build on existing strengths, enthusiasm and determination to deliver the diverse, high quality projects required by the Authority.