

Sussex IFCA Annual Conservation and Research Report 2021-2022

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There was a wide range of conservation and research work undertaken between April 2021 and March 2022. 43 workstreams were described in the Annual Conservation and Research Plan, drawn from the strategic Four-Year Conservation and Research Plan 2020-2024. Each workstream sits under one of three themes: Fisheries, Habitats or Species. Here, each workstream is listed with a brief description, including its purpose, and the progress that has been made during the financial year from April 2021 to March 2022. The highest priorities for the year were: The development of, and consultation on, minimum size management, followed by district-wide hand gathering management; Tranche 3 MCZs management development - Selsey Bill and the Hounds and Beachy Head East; Nearshore Trawling Byelaw monitoring; research furthering understanding around natural capital and an ecosystem-based approach to fisheries management in Sussex; and Tranche 1 MCZs management reviews – Beachy Head West and Kingmere MCZ, with associated angler’s activity monitoring for the latter.

THEME	WORKSTREAM	DESCRIPTION	PURPOSE	PROGRESS
Fisheries	Intertidal resource gathering	The collection of bait for fishing or bivalves and other species for human consumption in intertidal areas takes place all along the Sussex coastline. In some coastal marine protected areas (Pagham and Beachy Head West MCZ), Sussex IFCA has restricted the amount of specific intertidal species which can be collected per person per day. Sussex IFCA will assess the amount of activity that takes place across the whole District to provide evidence to support potential management measures. Any management measures will be developed in consultation with stakeholders.	To inform district-wide management of this activity, to ensure it occurs at sustainable levels and does not hinder the conservation objectives of protected sites.	<ul style="list-style-type: none"> Proposed Hand Gathering Byelaw and Impact Assessment drafted, working with SMT Associated maps production Hand Gathering evidence summary report and other supporting documentation produced Informal and formal consultation conducted, including four surgeries across the district

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Fisheries	Fishing vessel effort	Since 2001, Sussex IFCA has collected data on observed fishing activity whilst on sea patrols. The continued collection of this essential data is useful for a number of projects including marine protected area assessments and byelaw development.	Marine Protected Area assessments, byelaw development and monitoring.	<ul style="list-style-type: none"> Fishing activity data continued to be collected during sea patrols Fishing effort maps updated, encompassing 2017-2021 data An updated fishing vessel effort report was created for 2017-2021 data
Fisheries	Netting activity	<p>Create guidance documents for the new netting byelaw, including potential ID training for bycatch reporting.</p> <p>If necessary, investigate concerns about netting bycatch, particularly seabirds, marine mammals, seahorses or endangered threatened protected species.</p>	To ensure a sustainable fishery	<ul style="list-style-type: none"> Still awaiting Netting Permit Byelaw confirmation. Subsequent to this, final guidance documents will be produced ID guide for elasmobranchs compilation No investigations regarding bycatch concerns required over the financial year
Fisheries	Potting activity	<p>Sussex IFCA will collect and analyse data from the Shellfish Permit monthly catch returns and record fishing vessel effort.</p> <p>A collaborative study to gather data on commercial lobster and crab (stock assessment and biometrics) is also being set up with Sussex University and BLUE Marine Foundation.</p>	To ensure a sustainable fishery	<ul style="list-style-type: none"> 2021 catch returns data analysed and reported on Worked with Blue Marine Foundation to design and carry out potting survey with a local Selsey fisherman Subsequent report produced Ongoing input into continuation and extension of study
Fisheries	Centuries of Sussex Seas	Research into the history of fishing and the marine environment, illuminating shifting baselines.	To increase understanding of the species and habitats that used to be present in	<ul style="list-style-type: none"> Research conducted, report compiled and made available online

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			Sussex coastal waters to help inform current day decisions.	
Fisheries	Trawling activity	<p>Monitoring work associated with the Nearshore Trawling Byelaw 2019. Sussex IFCA has established 8 north to south transects to be the focus of research efforts. These have been surveyed using a towed video array in 2019 and 2020 to establish conditions before any change in management and will continue to be surveyed to monitor change following the introduction of the byelaw</p> <p>A number of collaborative research projects are also being coordinated through the Help Our Kelp partnership. Involvement in the Fish INTEL project is being pursued.</p>	To monitor impact and associated habitat and fisheries benefits from the Nearshore Trawling Byelaw	<ul style="list-style-type: none"> Sussex initiated as an official case study site within the Fish INTEL project, led by Plymouth University. Sussex IFCA and the Fish INTEL team deployed the offshore acoustic array, comprising 12 receivers, and an additional 4 F-PODS to listen for passing cetaceans. The placement of the array relates to the Nearshore Trawling Byelaw and area of potential kelp restoration. Bass, Black Seabream and Pollack confirmed as the focus species. Tagging to commence in the next financial year and deployment of 4 coastal receivers. In addition to the Sussex Array, a fine-scale array, comprising 7 additional receivers, was deployed within Kingmere MCZ, funded by Natural England. Data collected will help provide evidence on essential fish habitat use: https://www.plymouth.ac.uk/research/marine-conservation-research-group/fish-intel-interreg Input into Blue and Plymouth University project looking at socioeconomic impacts of the byelaw and associated fisher survey formulation and roll out

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				<ul style="list-style-type: none"> • Initial discussions with New Economics Foundation and Marine Conservation Society about socioeconomic impacts on recreational anglers/charter fleet • Annual video survey transects conducted from Watchful to monitor seabed recovery • Collaboration with University Sussex on eDNA and BRUV surveys during the summer
Fisheries	Recreational angling	Sussex IFCA will continue to support the Sussex Angling Forum.	To maintain close ties with the angling community within Sussex.	<ul style="list-style-type: none"> • Officers continued to support this forum.
Fisheries	Stakeholder engagement	Sussex IFCA will consider how best it can engage with its broad range of stakeholders, including identifying key contacts and groups, their requirements and the most effective way to communicate. Key work will include continued support of the Wild Beach Project, to facilitate effective engagement with local children on the IFCA's work, sustainable fisheries and marine protected areas: supporting University lectures and involvement in coastal partnerships and forums.	To effectively engage with stakeholders	<ul style="list-style-type: none"> • Officers continued the redesign of the Sussex IFCA website to make information more accessible • Ongoing active participation in numerous local and national forums, groups and partnerships including: Sussex Marine and Coastal Forum; Solent Forum; SEMS NEG; TAG; SKRP; CHaPRoN; Three Harbours; NCEA programme; Biosphere/Living Coast; Rampion ETG; REACH; Sussex Bay Fish Brand Project; CHASM; Whelk WG; Seagrass WG; ReMeMaRE; Solent Oyster Restoration Group; Sussex Bay; Heritage Coast; statutory partner and bordering IFCA's bimonthly meetings • Continued support and participation in Wild Coast Sussex, in particular Wild

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				<p>Beach, Ghost fishing and end of life fishing gear recycling aspects</p> <ul style="list-style-type: none"> Continued close liaison with Agents of Change project / MCS around MCZ reviews and BHE MCZ management development University students SFS training
Fisheries	Inshore Vessel Monitoring System (iVMS)	Marine Management Organisation led project to fit all fishing vessels with VMS (currently only on over 12m long vessels).	To effectively monitor smaller vessels fishing activity	<ul style="list-style-type: none"> The project started in 2018 but was paused in 2019. Project now restarted. Sussex IFCA will continue to input and support roll out where required
Fisheries	Defining a vision for Sussex Seas	Sussex IFCA will work with the Committee and a full range of stakeholders to define a vision for the marine environment in Sussex coastal waters. What do we want the marine environment to look like, water quality, species, abundance, size, diversity, habitat structure and function, visioneering.	To help coordinate activity around protection of the local marine environment	<ul style="list-style-type: none"> Worked with partners to develop a shared vision for Sussex Seas through participation in the Sussex Marine and Coastal Forum and membership of the newly formed steering group, tasked with coordinating the forum's mission/vision. Visioneering taken forward through input into the 3 C's work and associated survey, interviews and report
Fisheries	Ecosystem approach to fisheries	Sussex IFCA will consider how fisheries management in Sussex can take the ecosystem approach, looking at all fisheries and other marine activities and their interaction with the whole marine environment	To help achieve sustainable fisheries and a healthy marine environment	<ul style="list-style-type: none"> Initiated and continued Portsmouth University liaison on a masters project creating an ecosystem-based fisheries management plan for European lobster and edible crab in Sussex. Assisted with formulation of an associated fisher survey to help inform the work and roll out Initiation of Sussex as a case study site for Fish INTEL, working to collect information on essential fish habitat

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				and help inform an ecosystem-based approach to fisheries management. See also: Trawling Activity
Fisheries	Sussex sustainable fish guide for consumers	Exploration of development of a Sussex specific guide for consumers to help guide choices toward supporting sustainably caught local seafood.	To support sustainable fisheries	<ul style="list-style-type: none"> Supported the Sussex Bay Fish Brand Project, through the provision of expertise, data and fishing community contacts. The project aims to establish if there is a business case for a brand that supports the marine environment, supports fishers and can support itself financially in the long term Commissioned a follow up report by specialist fisheries consultants, Nautilus, who conducted the original 'Navigating the Future: delivering sustainable fisheries' work in Sussex, reviewing the current status of Sussex's fisheries.
Habitat	Beachy Head East MCZ management development	Beachy Head East MCZ was designated in May 2019. Sussex IFCA will be gathering evidence and consulting with stakeholders to develop fisheries management measures which protect the designated features. Research will include towed video over specific features, collecting information on intertidal resource gathering, collating all relevant evidence and liaising with other organisations who are conducting research. The byelaw will be developed in consultation with stakeholders.	To support the achievement of the MCZ's conservation objectives.	<ul style="list-style-type: none"> Chalk and <i>Sabellaria</i> feature surveys conducted in BHE using the newly updated towed video system for the former and the IFCA's new ROV for the latter. Funding was secured from Natural England (NE) for video data analysis by ZSL and an associated report produced Seasearch survey liaison – dives planned for BHE, to further investigate the Bexhill Mussel bed habitat, but all cancelled due to weather BHE MCZ Assessment completed and submitted to NE, who agree with the conclusions of both part A and part B

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				<p>of the assessment and the overall conclusion that (once the management approaches are in place) the activities, are alone and in-combination, compatible with the conservation objectives and General Management Approach (GMA) of this marine protected area at current levels of fishing activity intensity.</p> <ul style="list-style-type: none"> • NE's CA package for BHE MCZ published in September 2021 • Hand gathering activity from Intelligence Reports collated as part of "Intertidal resource gathering" project and management of this activity within the site taken forward through Sussex IFCA's proposed Hand Gathering Permit Byelaw • Informal consultation plans began to be formulated, working in partnership with the Marine Conservation Society and it's Agents of Change Project

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Habitat	Kingmere MCZ management monitoring	<p>Kingmere Marine Conservation Zone (MCZ) was designated in 2013. After comprehensive evidence gathering and consultation, fisheries management (Marine Protected Areas Byelaw: Schedule 1) came into force in December 2016. Sussex IFCA has been monitoring the fishing activity in the site and working with other organisations to monitor other activities and to raise awareness of the MCZ. The byelaw has a four year review period, which means that the first review will take place in 2020. We will collate all relevant evidence and advice, and summarise research to date. We will continue to conduct fisheries activity research during the black seabream nesting season and will conduct questionnaire/ interviews with key stakeholders to see how activity has changed over past few years. There will be a public consultation if any changes to the byelaw are required.</p>	To support the achievement of the MCZ's conservation objectives	<ul style="list-style-type: none"> • Management review ongoing. SIFCA-SxIFCA close liaison around bream sites management to ensure coordination. Production of joint 'guiding principles for bream management' document, circulated to NE, awaiting comment in 2021-2022 FY • Ongoing close liaison with NE – bimonthly meetings, NE-SIFCA-SxIFCA bream workshop • Further circulation of Kingmere Summary of Evidence Report 2020 to partners, as well as and contractors to inform NE evidence project for informing a site condition assessment • Aggregates consortium liaison around bream nest evidence collection and monitoring programme design. Additional site within Nearshore Trawling Byelaw area incorporated within 2021 surveys • Updated NE Conservation Advice Package for Kingmere MCZ circulated in September 2021 – key changes include 2-month increase to the bream season, now March-July, and advice that catch and release of bream is incompatible with the site's conservation objectives • Rampion 2 – potential cable route corridor abuts Kingmere MCZ to the west. Continued participation in the Experts Topic Groups process and

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				<p>response provided to the PEIR consultation on behalf of the Authority</p> <ul style="list-style-type: none"> • Monitoring of fishing activity and angling CPUE in the MCZ continued • Continued Agents of Change project liaison, including around analysis of Community Voice Method data pre and post management to help inform the management review. • As part of the Fish INTEL project, a fine-scale array was deployed within Kingmere MCZ by Sussex IFCA and the Fish INTEL team, comprising 7 acoustic receivers. These are being funded by NE to monitor fine-scale movements of black seabream within the MCZ.
Habitat	Beachy Head West management monitoring	<p>Beachy Head West MCZ was designated in 2013. After evidence gathering and consultation, fisheries management (Marine Protected Areas Byelaw: Schedule 2) came into force in December 2016. Sussex IFCA has been monitoring the fishing activity in the site and working with other organisations to monitor other activities and to raise awareness of the MCZ. The byelaw has a four year review period, which means that the first review will take place in 2020. We will collate all relevant evidence and advice, and summarise research to date. We will conduct questionnaire/ interviews with key</p>	To support the achievement of the MCZ's conservation objectives.	<ul style="list-style-type: none"> • Monitoring of fishing activity in the MCZ continued through shore and sea patrols. • Ongoing regular NE liaison on MPA workstreams continued, with bi-monthly meetings in addition to site / project-specific communications as required • NE Conservation Advice updated in September 2021 to reflect trawling management in place, altering the rock features recover CO to maintain • Summary of Evidence Report 2020 compiled to inform the management review • Report and review recommendation of no change in management taken to

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		stakeholders to see how activity has changed over past few years. There will be a public consultation if any changes to the byelaw are required.		<p>Technical Subcommittee meeting and subsequent Principal Committee meeting which was approved by members, completing the review process</p> <ul style="list-style-type: none"> • Participation in Sediment Sources and Impacts Workshop, of relevance to the site in relation to concerns around the impact of Brighton Marina dredged material disposal - https://netorgft6036314-my.sharepoint.com/:v:/g/personal/diana_wayforwardbrighton_com/EX85CACsbQ5Mi6Ym2Vix-HcBPW_yx4NrH6y_X7hjnd9DQw?e=plzthm • Ongoing input into research projects looking at the impacts of sediment on the marine environment. Specifically, the CHASM project and sedimentation working groups through the Sussex Kelp Restoration Project.
Habitat	Kelp restoration	There used to be an extensive, dense kelp forest off the coast of West Sussex which declined in the late 1980's. The proposed Nearshore Trawling Byelaw is currently awaiting final sign off from Government, but when it is in force, it is anticipated that the kelp forest can be restored. This may occur naturally or it may require intervention. Sussex IFCA is working with a range of organisations to monitor changes to the	To monitor habitat change following the introduction of the Nearshore Trawling Byelaw	<ul style="list-style-type: none"> • Repeat towed video transect conducted Sep 2021 • Input continued into the Sussex Kelp Restoration Project (previously named Help Our Kelp) steering and science groups to develop a number of research projects. • Projects include: Baited Underwater Video (BRUV) surveys, Potting studies, Environmental DNA project, Lobster study (literature review and biometrics), socio-economic

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		environment. We will continue towed video surveys in Sussex Bay and monitor fishing activity.		<p>benchmark assessment, kelp restoration feasibility study.</p> <ul style="list-style-type: none"> • Supervised placement student May-Sept working on remote sensing kelp project (Marianne) • See also "Trawling Activity" workstream
Habitat	Natural capital and ecosystem services	<p>Natural capital is the world's natural environmental resources from which processes and services arise. Understanding more about these complex systems and how human activities are affecting them is essential for supporting sustainable marine management. A number of projects feed into this, for example those under the kelp restoration and trawling activity workstreams.</p>	<p>To support sustainable management of inshore fisheries and the marine environment</p>	<ul style="list-style-type: none"> • Inputted into national Inshore and Estuarine Fish Natural Capital and Ecosystem Assessment Workshop to identify and prioritise the key aspects of inshore and estuarine fish in the context of Natural Capital, in order to inform the development of a Natural Capital and Ecosystem Assessment monitoring programme in English waters • Provided detailed comment on the 3 Harbours Natural Capital Baseline Report and share habitat data to inform • Continued to take pursue projects that map natural capital assets and define key fisheries services; what species and where their essential habitats are, for example through the Fish INTEL acoustic tracking project which will provide evidence on essential fish habitat use. Work will help identify where there should be more protection of natural capital which provides fisheries ecosystem services

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				<ul style="list-style-type: none"> • See also: Crab and Lobster projects defining key grounds, kelp restoration and trawling activity workstreams
Habitat	Selsey Bill and the Hounds MCZ management development	Selsey Bill and the Hounds MCZ was designated in May 2019. Management of trawling within the site has been incorporated into the proposed Nearshore Trawling Byelaw. Sussex IFCA will undertake an MCZ assessment to ascertain whether further fisheries management measures will be required to protect the designated features. If further measures are required, Sussex IFCA will gather evidence and consult with stakeholders.	To support the achievement of the MCZ's conservation objectives	<ul style="list-style-type: none"> • Ongoing regular NE liaison on MPA workstreams continued, with bi-monthly meetings in addition to site / project-specific communications as required • Management of trawling throughout the site encompassed in Nearshore Trawling Byelaw • Management of bait and hand collection activities encompassed within proposed district-wide Hand Gathering Byelaw • MCZ Assessment drafted to assess management requirement for other fishing activities within the site, which concluded that no further fisheries management measures are required within the site. Recommendation to be taken to April 2022 Principal Committee for approval
Habitat	Solent EMS	Solent European Marine Site (EMS) incorporates Langstone and Chichester Harbours Special Protection Area (SPA) and Solent Maritime Special Area of Conservation (SAC) in Sussex. Sussex IFCA has a byelaw to protect intertidal seagrass beds in Chichester Harbour (within Sussex) and a byelaw to manage the oyster dredge fishery (in the whole of Chichester Harbour). We will continue	To comply with Defra's revised approach to fisheries in EMS and support achievement of the site's conservation objectives.	<ul style="list-style-type: none"> • Ongoing regular NE liaison on MPA workstreams continued, with bi-monthly meetings in addition to site / project-specific communications as required • Chichester Harbour (part of Solent Maritime SAC and Chichester and Langstone Harbours SPA) bait and hand collection AAs submitted to NE and formal comments received

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		to monitor fishing activity and work with other organisations regarding the overall environmental status of the EMS.		<ul style="list-style-type: none"> • Development of hand gathering management prescriptions to protect features, as part of district-wide management • Liaison with Chichester Harbour Conservancy ecologist around hand gathering management prescriptions to best protect bird and seal features within the site • Ongoing active engagement with the Solent Forum and SEMS management group, including contribution to annual report and meetings, and the Solent forum. • Oyster stock annual survey carried out. Beds not open this year • Seagrass project steering group input • CHaPRon project support
Habitat	Dungeness, Romney Marsh and Rye Bay EMS	Dungeness, Romney Marsh and Rye Bay EMS incorporates Dungeness, Romney Marsh and Rye Bay SPA and Dungeness SAC. We will continue to monitor fishing activity in the site, particularly in relation to the food availability for birds, both intertidally and in the coastal waters.	To comply with Defra's revised approach to fisheries in EMS and support achievement of the site's conservation objectives.	<ul style="list-style-type: none"> • Ongoing regular NE liaison on MPA workstreams continued, with bi-monthly meetings in addition to site / project-specific communications as required • Bimonthly meetings with KEIFCA continued, who's district encompasses part of this cross-boundary site • Liaison with SWT around potential hand gathering management prescriptions to best protect bird features within the site and feed into site-specific prescriptions within the proposed district-wide hand gathering byelaw

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Habitat	Solent and Dorset Coast SPA	Solent and Dorset Coast SPA was designated in January 2020. The site stretches from Lulworth Cove to Felpham and was designated for little, common and Sandwich terns. In line with other SPAs, Sussex IFCA will assess how fishing activities may affect the features of the SPA and consider whether fisheries management measures will be required. Any management measures will be developed in consultation with stakeholders.	To support achievement of the site's conservation objectives.	<ul style="list-style-type: none"> NE considers current management in place for the existing SPAs to be sufficient for any activities taking place in the Solent and Dorset Coast SPA. Further, all possible interactions (including those with prey species) will be assessed through the HRA process following the conclusion of T3 MCZ assessments and once Conservation Advice is available.
Habitat	Utopia MCZ management monitoring	Utopia MCZ was designated in a second tranche of sites in 2016. After evidence gathering and consultation, fisheries management (Marine Protected Areas Byelaw: Schedule 4) came into force in July 2018. The byelaw has a four year review period, which means that the first review is due to begin in 2022.	To support achievement of the site's conservation objectives.	<ul style="list-style-type: none"> Ongoing collection of fishing activity data to monitor activity in the site and help inform pending review in next financial year
Habitat	Pagham Harbour MCZ and SPA management monitoring	Pagham Harbour MCZ was designated in 2013. After evidence gathering and consultation, fisheries management (Marine Protected Areas Byelaw: Schedule 3) came into force in July 2018. The byelaw has a four year review period, which means that the first review is due to begin in 2022.	To support achievement of the site's conservation objectives.	<ul style="list-style-type: none"> Ongoing regular NE liaison on MPA workstreams continued, with bi-monthly meetings in addition to site / project-specific communications as required. Liaison around seagrass feature extent and planned monitoring work Ongoing collection of fishing activity data to monitor activity in the vicinity of the site and any potential

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				<p>incursions, and help inform pending review in next financial year</p> <ul style="list-style-type: none"> • Consideration of evidence requirements - seagrass surveys by EA, bird surveys by RSPB • RSPB liaison re future SFS support
Habitat	Offshore Overfalls MCZ	Offshore Overfalls MCZ was designated in 2013. This is an offshore site located roughly 18km east of the southern part of the Isle of Wight, covering an area of 594 km ² . A small section of the MCZ falls within the Sussex IFCA District. The rest is outside 6nm and therefore the Marine Management Organisation is leading on its management. Sussex IFCA will provide evidence as requested.	To achieve the conservation objectives for the MCZ.	<ul style="list-style-type: none"> • Officers continued to seek updates from the MMO regarding the state of play with management development for the site.
Habitat	Interactive habitat map	Sussex IFCA has been working with Sussex Biodiversity Records Centre for several years to develop an online interactive map which shows seabed habitats (including video clips), bathymetry, Sussex IFCA spatial byelaws, marine protected areas, fishing activity, wrecks and ecosystem services. It is planned that this partnership will continue with ongoing maintenance and further development of the resource.	To create a publicly available resource showcasing Sussex's marine biodiversity.	<ul style="list-style-type: none"> • Worked with Sussex Biodiversity Records Centre to update the platform for our Interactive map and populate with data Sussex IFCA Map (arcgis.com) • Possibility to work with SBRC to develop a website using mapping to tell the story of the Trawling Byelaw and habitat restoration • Discussion with SMCF and 3 C's about possibility of utilising the interactive map as a platform for viewing/accessing Sussex wide projects, partnerships and work. To potentially be developed going forward

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Habitat	Wild Coast Sussex	<p>Sussex IFCA is part of this National Lottery Heritage Fund project. Sussex IFCA will continue to support the overall project, in particular the ghostfishing elements, including the collection and recycling of lost or discarded fishing gear, and Wild Beach training and education elements.</p> <p>The project champions the marine wildlife found locally and has four main aims:</p> <ul style="list-style-type: none"> •Inspire and connect people to the Sussex coast and sea •Engage people in direct action to protect the Sussex coast and sea •Enable learning and activities that encourage people to make positive lifestyle choices and behaviour change to reduce negative impacts on the Sussex Coast and sea •Empower people to share experience and influence others to protect the Sussex coast and sea 	To help protect the local marine environment	<ul style="list-style-type: none"> • Continued to support the ghost fishing, end of life fishing gear recycling and Wild Beach elements of this project. Work encompassed: The location and removal of ghost gear identified; supporting the development and circulation of a fishing gear disposal survey to help ascertain requirements for setting up a self-sustaining, long-term net recycling scheme in Sussex, and support and participation in Wild Beach training
Habitat	Highly protected marine areas (HPMAs)	<p>Highly protected marine areas (HPMAs) are a new type of marine protected area where all activities are restricted to provide sanctuary areas for designated habitats and species. In early 2021, the Government are considering a range of options for these sites. It is unclear at this stage</p>	To facilitate the sustainable management of our seas.	<ul style="list-style-type: none"> • Officers kept abreast of developments on HPMAs and inputted where required.

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		what the work requirement will be for Sussex IFCA.		
Habitat	Marine Sites of Nature Conservation Importance (SNCI)	MSNCIs are a local authority designation for locally important sites. Sussex IFCA is going to work with partner organisations to update the information for the sites within the District and to consider their current condition.	To contribute to the sustainable management of our seas.	<ul style="list-style-type: none"> Officers liaised with SWT regarding updating information for mSNCIs, and will support further work when initiated
Habitat	Environmental quality and biological limits	Sussex IFCA is interested in better understanding the environmental quality and biological limits of the marine environment and key species within Sussex coastal waters. Sussex IFCA will use the Sea View template to look at environmental quality across the district; what legislation/ targets/ monitoring already in place, what are the gaps. How does fishing help/hinder environmental quality? What are the biological limits of fishing activity? What is the carrying capacity of an area? What could the fish populations look like?	To help facilitate the sustainable management of Sussex's coastal waters	<ul style="list-style-type: none"> The decision was taken to explore taking this research forward as a student or intern project
Species	Whelk	Consideration of management requirements, Whelk Working Group and wider research support as appropriate.	To contribute to the sustainable management of the whelk fishery and support the Shellfish Permit Byelaw	<ul style="list-style-type: none"> Ongoing attendance and engagement with Whelk Working Group meetings and involvement in national discussions regarding whelk research and supported the Whelk Working Group. Discussion with Southern IFCA around including Sussex whelk samples for size at maturity student project.

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Species	Lobster	<p>Inspection of shellfish permit catch return data indicates a decrease in both lobster landings weight and landings per unit effort (LPUE), suggesting a decline in the local population. This is supported by anecdotal reports from local fishers. The reasons for this decline are unclear at this stage. Sussex IFCA will review existing information on stock boundaries, biology and ecology, and consider what management may be required within the District to support a sustainable fishery.</p>	<p>To collect evidence to inform management needs for a sustainable fishery</p>	<ul style="list-style-type: none"> • Worked with Blue Marine Foundation to design and carry out a potting survey with a local Selsey fisherman. Subsequent analysis and reporting undertaken by Blue • Worked in partnership to further develop the survey for the following financial year • Contact with local fishers to take measurements to feed into Cefas stock assessments • Officers supported the Crustacean Habitat and Sediment Movement (CHASM) project, including sample collection. This project was developed to better understand the factors affecting the decline of crab and lobster catch noted by the Selsey fishing industry along the coasts of Selsey and Bracklesham Bay, in particular, investigation of potential impacts from increased sedimentation and pollutants
Species	Shellfish permit monitoring	<p>After extensive evidence gathering and stakeholder consultation, the Shellfish Permit Byelaw came into force in 2016. Sussex IFCA will periodically review the management measures to ensure they are still fit for purpose. Part of the ongoing evidence collection is the analysis of the monthly catch return data that is a requirement of the byelaw.</p>	<p>To support the Shellfish Permit Byelaw</p>	<ul style="list-style-type: none"> • Ongoing collation of monthly catch data, quality assurance and compliance, data entry and analysis. • Shellfish Permit Catch returns Annual Report 2021 written and available on website. • Work on the permit database continued, including transfer of catch return data from spreadsheet to database.

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Species	Oysters	Monthly sampling by EHOs, stock assessment pre-season	To support a sustainable fishery and the Chichester Harbour Oyster Permit Byelaw .	<ul style="list-style-type: none"> • Pre-season stock assessment conducted, insufficient oysters to open fishery in 2021. • Supported the Solent Oyster Restoration Working Group, part of the Solent Oyster Restoration Blue Marine Foundation Project, aiming to restore native oyster populations throughout Solent sites.
Species	Elasmobranch evidence	<p>To support minimum sizes regulatory management proposals, Sussex IFCA will explore voluntary management measures for elasmobranchs (sharks, skates and rays).</p> <p>Sussex IFCA will work to set up an Elasmobranch Network, bringing together organisations interested in sharks, skates and rays, aiming to increase communication, collaboration and coordination of research which helps inform management decisions.</p>	To help protect endangered threatened protected species in the district and contribute to a sustainable fishery	<ul style="list-style-type: none"> • Volunteer identified with elasmobranch specialism to take forward development of a Code of Conduct with support of officers • Research conducted and proposals formulated • Voluntary MLS formulated and non-TAC species list produced • Leaflet for CoC produced incorporating MLS recommendations, welfare guidance, as well as a rationale • Supporting ID guide in process, to be inserted as pull-out in CoC leaflet • See also minimum / maximum sizes workstream • Elasmobranch network set up in 2018
Species	Minimum/maximum size limits	In 2019, the EU Technical Conditions changed to explicitly exclude recreational fishing from needing to abide to minimum conservation reference sizes. Some IFCAs are considering transposing the size limits while other IFCAs are considering reviewing them to ensure they provide appropriate protection (ie	To develop a minimum size byelaw	<ul style="list-style-type: none"> • Byelaw and impact assessment written and formally consulted on. Byelaw with Defra for confirmation • Ongoing liaison with SIFCA on longer term minimum/maximum sizes evidence collection, including inputting into gilt head bream work • Worked with a volunteer to take forward further exploration of species

THEME	WORKSTREAM	DESCRIPTION	PURPOSE	PROGRESS
		allowing the species to breed before capture). There is also some consideration of setting maximum size limits to protect large fecund individuals. Sussex IFCA will review the size limits for all key species, with consideration to the byelaws in other IFCA Districts. Any byelaw will be developed with robust evidence and in consultation with stakeholders.		and sizes to include within an elasmobranch code of conduct to sit alongside the byelaw – see also elasmobranch workstream.
Species	Small fish surveys	Sussex IFCA will continue to support partner organisations to conduct small fish surveys along the Sussex coast, predominantly in Chichester Harbour, Medmerry managed realignment site and Rye Harbour Nature Reserve.	To collect data on local juvenile fish populations	<ul style="list-style-type: none"> Continued to liaise with partners regarding SFS plans and support required. Supported Sparsholt college with SFS within Chichester Harbour, training students in ID and sampling techniques. The new SxIFCA Small Fish ID guide was utilised and proved invaluable with great feedback received. Supported Rye Nature Reserve warden with SFS design and methods in preparation for 2022 survey season
Species	Environmental DNA	Environmental DNA (eDNA) is genetic material (mucus, urine, faeces, etc) shed by species into the water. Collection and analysis of water samples can indicate the presence of local species.	To identify species community structure (invertebrate and vertebrate) and monitor success of the Nearshore Trawling Byelaw	<ul style="list-style-type: none"> The team purchased an eDNA water sampler for planned collaborative work with the University of Sussex on eDNA sample collection within the kelp monitoring area. Sampling support was not required by the University in 2021 but this collaboration will be taken forward into subsequent survey seasons. Samples will be taken from the same locations as the towed video transects to identify species

THEME	WORKSTREAM	DESCRIPTION	PURPOSE	PROGRESS
				communities associated with different local habitats.
Species	Species specific management plans	Under the previous Four Year Research Plan (2016-2020), management plans were written for twenty-five species which are commercially important in Sussex. These plans will be disseminated and shared with stakeholders and partner organisations.	To share fisheries knowledge with stakeholders	<ul style="list-style-type: none"> Completed and renamed "Species Specific Fisheries Information Reports". Can be found on Sussex IFCA's website here. Portsmouth University masters student identified for Sussex ecosystem-based Fisheries Management Plan. Crab and Lobster focused project formulated in partnership with Blue Marine Foundation. Results can help inform subsequent information reports updates and feed into national Fisheries Management Plans
Species	Marine mammals	Sussex IFCA will continue to collect sightings of dolphins and porpoises whilst on routine sea patrols and work with the Brighton Dolphin Project to raise awareness of these local species.	Raise awareness and collect species data	<ul style="list-style-type: none"> Officers continued to collect and share sightings data, including with Brighton Dolphin Project 4 F-PODs deployment as part of the Fish INTEL project to listen out for passing cetaceans
Species	Cuttlefish	Sussex IFCA will continue to work with other organisations to support sustainable cuttlefish fishing.	To promote sustainable cuttlefish fisheries	<ul style="list-style-type: none"> Sussex IFCA research into cuttlefish survival rate and egg quality has contributed to a manuscript on cuttlefish conservation - led by Cefas and co-author on In response to concerns raised, cuttlefish conservation workshop planned for next financial year (led by Cefas)

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				<ul style="list-style-type: none"> Officer conducted a presentation on Sussex IFCA research at a Cuttlefish Symposium
Species	Animal welfare	There is increasing media attention and general public concern regarding animal welfare in the wild capture and processing of seafood. Sussex IFCA will work with appropriate organisations in consideration of the options to improve animal welfare in the fishing industry.	To improve animal welfare in the fishing industry	<ul style="list-style-type: none"> Officers will continue to consider options to improve animal welfare in the fishing industry
Species	Seabirds	Investigate concerns about seabirds netting bycatch	To protect seabirds and facilitate sustainable netting fisheries	<ul style="list-style-type: none"> No investigations regarding bycatch concerns required over the financial year See also netting activity workstream

The continued hard work of all staff is evident in the breadth and quality of the conservation and research work produced in this financial year, despite continued challenging times through a global pandemic. Collaborative working with partner organisations is a great strength, providing mutual benefits in the sharing of resources, experience, skills and data. In addition, volunteers and work experience students have also made a valuable contribution and IFCA has been able to provide valuable experience to students and early career scientists. Research has been directly applied in providing evidence for the development of new byelaws, which aim to protect the marine environment, balanced against the social and economic benefits of fishing.