

Seasearch East Report 2021

This report summarises the activities of Seasearch in East Anglia during 2021



A striking Blue jellyfish – *Cyanea lamarckii* – seen off Weybourne in Norfolk

More species from less dives and a bigger spread of survey sites!

After the roaring success of 2020, 2021 has been a return to more 'normal' form numbers and survey events, but we have also made a start on encouraging our volunteers to try new sites and new methods of recording. Intertidal and snorkel surveys in Suffolk and Essex are now making up a larger part of the year's events and we hope to continue this trend into 2022.

The main advantage of this change is a big rise in species numbers for Norfolk and Suffolk compared to

2020 – Essex is up to 121 from 47 and Suffolk is up to 157 from 66! Lincolnshire is still trailing behind on just 8 species records, but we hope to join forces with a local club in 2022 now that travel has become easier. Norfolk's results were slightly up from 360 to 367, not bad from only half the number of dives in 2020!

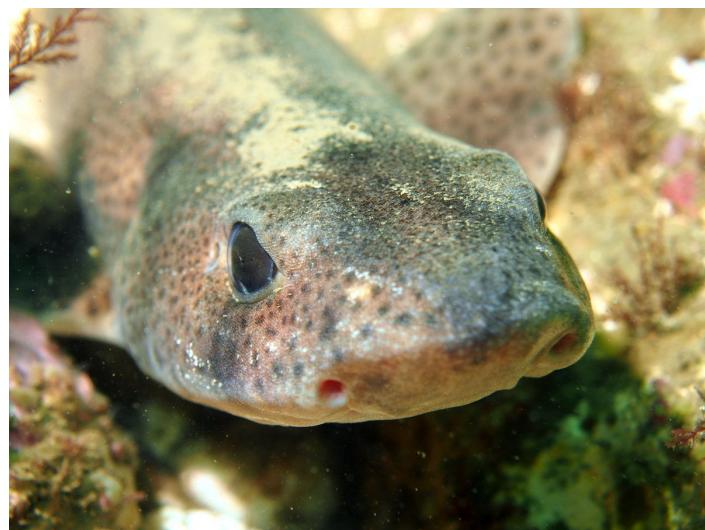
Our grand total of forms for the year was 143, made up of 73 (51%) Observation forms and 70 (49%) survey forms, a percentage split that remains steady year on year.

Our first record of the year was from a beach walk at Sea Palling on the 5th of January and first dive record from Wrabness in Essex on the 1st of June. Records then came in steadily throughout the year, despite some storms and lockdowns which knocked back opportunities for surveys; the final dive and survey of the year was on the 12th of November at Sheringham gullies.



Attempting to survey seagrass at Point Clear in Essex – it's a man's life in Seasearch East!

We ran an Observer course online via Zoom with 10 attendees from all over the UK, including 4 refreshers. Several managed to come along to a socially distanced shore event at West Runton the next day and others were also able to dive or snorkel with us over the summer months to complete their qualification.



Lesser spotted dogfish – *Scyliorhinus canicula* were recorded several times off Norfolk – Covid acting positively?

Several exciting new initiatives were undertaken beyond recording this year, including encouraging volunteers to give online lectures on subjects that interested them, mapping of intertidal seagrass beds, piloting recovery of lost fishing gear by cooperation between divers, the EIFCA and fishermen, working with groups such as beach cleaners and snorkellers to

better understand the loss and removal of fishing gear within the MCZ and setting up a conservation advocacy group which held an online conference centred on environmental issues around the Norfolk coast; all are expanded on later in this report.

Many of the new species recorded this year were identified by Elizabeth Beston using microscopy on seaweed and water samples brought back from surveys and confirming her results by sharing the resultant photos in online expert ID groups.



The rarely recorded seaweed *Griffithsia devoniensis* from a snorkel survey at Waldringfield in Suffolk

The following pages explore each of the survey sites in more detail, working roughly from North to South.

Lincolnshire

Ingoldmells Outfall

1 Observation form was received from this area in 2021, an intertidal record from Ingoldmells outfall, recorded by Michael Southwood on a beach walk. Unusually, there were no records for stranded fish over the winter months. There were no forms received from West Norfolk this year

N and NE Norfolk



A colourful Nut crab – *Ebalia* sp in the clay at Overstrand

This section covers all Seasearch records between Blakeney and Overstrand in North Norfolk, and several wreck and seabed sites accessed from Sea Palling in East Norfolk. All records from Weybourne onwards were within or adjacent to the Cromer Shoals MCZ.

Blakeney Quay

1 Observation form was received from this area in 2021, a clever use of a baited crab net lowered over the quay wall by Elizabeth Beston. This site would benefit from further investigation, as it is an extremely sheltered tidal estuary protected by a convoluted path through saltings.



Sea gooseberries – *Pleurobrachia pileus* – were common at Blakeney quay

Cley

4 forms were received for Cley this year, a very diverse site including a wave affected cobble plain, a WW1 wreck, vast Sandmason beds, an ice age forest reef and flint boulder plains.



The wooden reef at Cley supports many species

Unfortunately, large numbers of lost pots, rope, anchors and angling tackle were found on all dives at this site. Smaller items were removed and pots cut

open to release trapped animals, including a European eel. Pots were removed to the surface in a coordinated operation described later.



Long clawed porcelain crabs – *Pisidia longicornis* are frequent at Cley

The Iron Road



Barnea candida siphons in the clay at The Iron Road

1 form was received for The Iron Road (also confusingly known as East West Bank), a site newly discovered in 2019, along with West Bank, both between Salthouse and Cley. The Iron Road site has features in common with both Salthouse and Cley, with reefs of clay and wood with small amounts of chalk. It will be explored further in 2022, although the 650m walk from the parking to the sea is a little

off-putting, it's not nearly as off-putting as the 900m walk at West Bank, which didn't get a single survey in 2021!

Salthouse

Salthouse offers something for everyone, though finding it needs some determination! The site includes reefs of clay, chalk, wood, carstone and compressed peat, as well as scattered wreckage and huge amounts of fine mobile sand which constantly covers and reveals the other features. 4 forms were received for this site, a slight increase on previous years.



Part of the incredibly diverse carstone reef at Salthouse

The most popular feature is the carstone reef on a flat chalk plain 300m NE of shore, which stands at up to 1.4m above the seabed and is rarely inundated by sand.



Another view of the reef with *Nemertesia antennina* – Antenna hydrodroid and sponges

This densely inhabited area contains species such as *Flustra foliacea* and *Nemertesia ramosa* which are normally only seen much further out at other sites.



Palio nothus, a nudibranch which feeds on *Amathia* sp bryozoans, flourishes on the carstone reef at Salthouse

Weybourne

Weybourne was our 2nd most popular dive site once again this year, with 15 forms received. The WW1 wreck of the Rosalie continued to be popular with trainees and visiting divers, while more experienced surveyors preferred to explore the chalk reef directly under the cliffs and the disused telegraph cable which attracts many hydroids and bryozoans.



This pot had gathered so much life that it was made safe and left in place

Large amounts of fishing waste, including lost rope, anchors, angling tackle and cooked crab carcasses were observed on every survey. Lost pots were

gathered and removed at the end of the season in a coordinated event described later in this report

Spalla Gap

Seasearch survey coverage off Spalla Gap

2 forms were received for Spalla Gap, from a single survey event which also gave beach cleaners an opportunity to experience the access point to the beach for a later event. This site experiences a lot of sediment movement and can have gullies up to 3m deep on some years, with only the very top edges of the chalk appearing through the sand on others. On the years when the gullies are deep, very diverse lush seaweed covers all surfaces.



Doto sp nudibranchs at Spalla Gap

Sheringham

39 forms were received for Sheringham, a 64% increase on the previous year! This is mainly due to the rise in popularity of the Sheringham snorkel trail amongst our non diving volunteers, as well as expanding the sites dived off Sheringham between Robin Friend in the NW and off the end of the Promenade in the SE. The owners of The Offshore cafe have taken an interest in the snorkel trail and have sponsored a seasonal marker buoy (cut off and removed within a few weeks) in the summer of 2021, in addition to hosting two information boards.

Sheringham has the most rugged chalk seen off Norfolk, with gullies and outcrops up to 3m high topped with mixed algae and covered in a turf of sponges, squirts, hydroids and bryozoans.



Horseshoe worms – *Phoronis hippocrepia*

Interesting species seen included Several large colonies of Horseshoe worms - *Phoronis hippocrepia*, a few Lesser spotted catsharks – *Scyliorhinus canicula* and their eggs, Pinhead seasquirts – *Pycnoclavella stolonialis* are now a frequently seen species, having been a rare sighting previously. Sheringham remains our most popular dive site.



The flint boulder plain beyond the chalk gullies at Sheringham

West Runton

26 forms were generated for West Runton, mostly intertidal records from Elizabeth Beston, a socially distanced survey after the Observer course and a seaweed identification session. Elizabeth has added greatly to our species list this year by identifying many microscopic species, such as diatoms, as well as several previously unrecorded seaweeds.

The intertidal chalk platform at West Runton contrasts nicely with the gently undulating subtidal

reef, which eventually leads to deeply undercut gullies and outcrops.



The soft chalk overhangs at West Runton are home to superabundant *Polydora ciliata* worms

East Runton

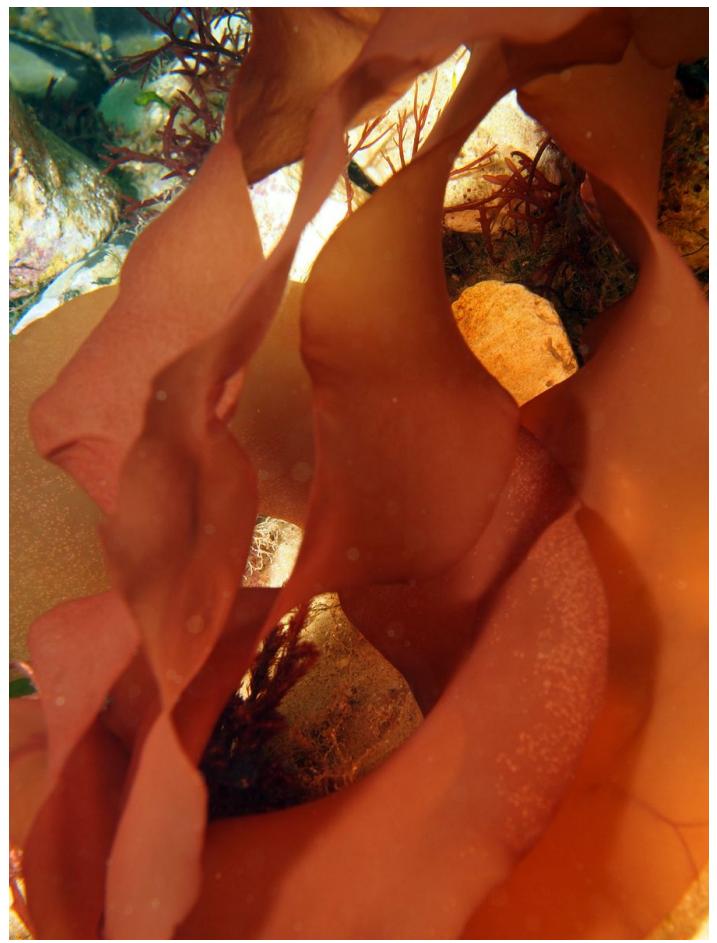
6 forms were received for East Runton. The site is not very popular due to the area directly off the beach being damaged by frequent boat traffic. The seabed is much healthier and more diverse to the west of the entry point and a NW transect eventually leads to a large chalk 'amphitheatre'.



Northern prawns – *Pandalus montagui* – are very common

The freshwater springs bubbling through the chalk provide a range of salinities and temperatures not

seen elsewhere. Because of this, East Runton remains the site with the highest number of algae species recorded, which increases all the time.



The invasive seaweed *Grateloupia turuturu* at East Runton

The two invasive alien species *Grateloupia subpectinaria* and *G turuturu* were both frequent in abundance by the end of the season and seemed much more resistant to storm damage than other species. The invasive worm *Pileolaria berkleyana* has now become abundant here and nearby West Runton, common everywhere but beginning to begin competing with other species on chalk and flint vertical surfaces.



The lone Stalked jelly *Calvadosia campanulata*

A more welcome sight due to the early start to the season was frequent Corkwing wrasse nests, very common here due to the large number of big hollow flints for the fish to stuff with snipped off pieces of algae.

The lush algae at East Runton in recent years provided a home to an expanding population of *Calvadosia campanulata* stalked jellyfish, but violent winter storms which stripped away all the algae seem to have knocked the population right down and only one individual was seen at this site in 2021.

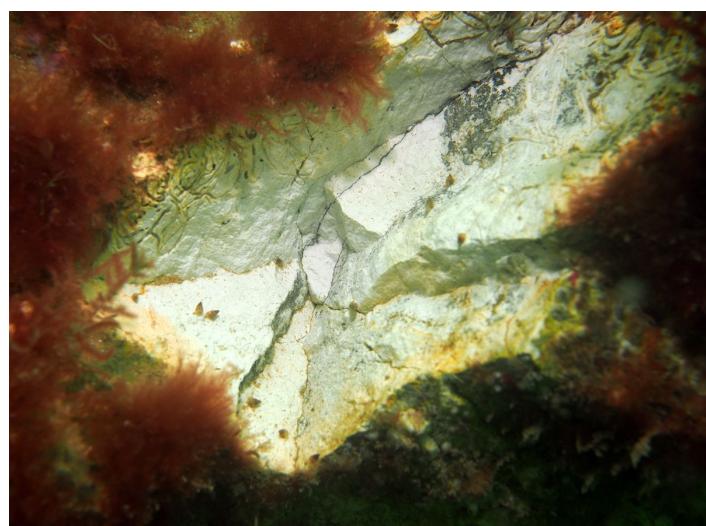
Cromer

2 forms were received for Cromer, one from a dive at Happy Valley at the East end of Town and the other an intertidal survey from the White Steps to the West, both requiring maximum fitness with at least 110 steps down the cliffs to navigate. Much fishing waste was in evidence on the dive, including a large midden of empty common whelk shells.



Part of a midden of empty Common whelk shells

Happy Valley remains the site of the most damaged chalk seen so far, undulating bedrock with over 70% of the surface damaged by pot strikes at depth and of



Damage to chalk reef from a direct strike from above by a sharp edged heavy object

almost no growth of algae or animal turf seen on the horizontal surfaces.

It was noted that the alien invasive spirorbid worm *Pileolaria berkeleyana* had become superabundant and well established on vertical chalk faces off Cromer, it had been seen only at East and West Runton in previous years.

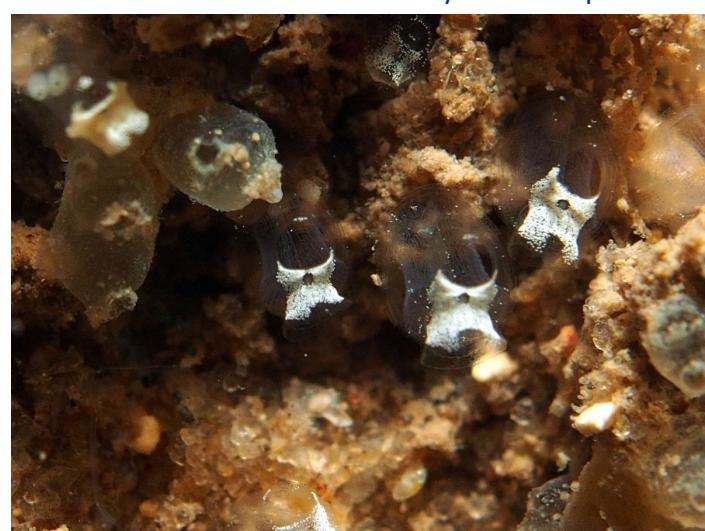
Interesting species seen included the rarely seen Hairy hermit crab, *Pagurus cuanensis*.

Overstrand



Eggs of *Alloteuthis subulata*, a small squid

4 forms were received for Overstrand, mainly from the isolated very tall chalk bedrock reefs off the East boat slip and the carstone boulder reef just below the car park at the West end of town. Overstrand continues to be one of the most diverse and unusual sites off Norfolk, mainly due to the strangely shaped seabed, which forms a basin to 17m deep inshore with an offshore chalk reef to only 7.5m deep.



Pycnoclavella stolonialis – the Pinhead squirt

This causes larger (and more sudden!) tidal streams than for any other shore diving site, with a much wider range of squirts, crustaceans and sponges, including *Raspailia ramosa*, *Polymastia penicilllus* and

Pycnoclavella stolonialis. The eggs of the small *Alloteuthis subulata* were also recorded.

The two inshore chalk reefs vary in height with sand movement, but can be up to 4m above the surrounding seabed and between 30 and 40m long, parallel to the coast. This year, they were mostly covered in dense *Molgula sp* squirts with red algae on the upper surfaces. The chalk has some severe rope cuts across the top.

Further Southeast – Sea Palling area

12 forms were received for dives and shore surveys around Sea Palling, mainly club wreck dives from Lucy Johnson and independent seabed drifts from Jane Harris and Rick Southwood.



Small Queen scallop – *Aequipecten opercularis*

These latter included records of Queen scallops *Aequipecten opercularis*, which are very rarely recorded for Norfolk, with most sightings being of old empty shells on beaches. A clingfish was also seen, but the photographs were not of sufficient detail to identify it to species. This was unfortunate, as there is only one record for a clingfish of any kind off East Anglia, which is a fairly dubious one from 1992.



Very tiny Clingfish – most probably 2 spot clingfish – *Diplogaster bimaculatus bimaculatus*

Suffolk

After 2016 being a very good year for Suffolk, with a brief period in September when visibility at the shore got up to a mighty 1-2m, visibility has returned to the usual 'drinking chocolate' ever since... Undeterred, we used new methods of recording including snorkelling in tidal estuaries, asking for angling records and diving in shingle lagoons.

Lowestoft

7 forms were received from Lowestoft, mainly intertidal and angling records from Mark Crame and one intertidal survey from Dawn Watson and Emily Swan. The intertidal records included a beached Minke whale, *Balaenoptera acutorostrata*, and a live Solonette, *Buglossidium luteum*.



Solonette - *Buglossidium luteum*



Planktonic crab larvae from Lowestoft seaweed samples

Aldeburgh

6 intertidal records were received following some severe winter storms in January. Amongst the usual victims was a headless pinniped. Aldeburgh has only been dived once in the past, due to very poor visibility for almost all of the year. It does have a very

interesting seabed of almost liquid mud alternating with thin sheets of coralline crag running parallel to shore.

Shingle Street



Mysida sp – Opossum shrimp infected with *Beggiatoa* bacteria

2 Survey forms were received for Shingle Street for a newly formed temporary marine lagoon. The lagoon is separated from the sea by a very narrow strip of shingle and follows the tides, so is a snapshot of the community that was trapped when it formed in 2020.



Ostreopsis sp dinoflagellates forming coherent structures up to 15cm long that detached and floated away

This includes a large Flounder, several goby species, shore crabs and Mysid shrimps. The lack of circulation is leading to a build up of anoxic mud with

a bacterial mat in the centre and potentially toxic *Ostreopsis sp* dinoflagellates becoming a dominant species.



Gobius niger – the Black goby having a lurk

Waldringfield

Another new site for 2021 was the tidal reaches of the river Deben at Waldringfield, where a snorkeling event yielded two forms and records of vast numbers of the slug *Haminoea navicula* with its bright yellow quaver shaped egg masses.



Haminoea navicula egg mass

The rarely seen algae *Chondria coerulescens* and *Griffithsia devoniensis* were also sampled and recorded.

This was a very interesting site requiring very specific conditions to explore – namely a low neap tide with a slack falling on a weekday, so that there was enough water to support snorkellers just above the delicate seabed at a time when there would be minimal boat traffic during the slightly hazardous crossing of the main channel. It also needed to be a low slack so that speedboat drivers would be unable to enter the survey area; all the sponges present had been clipped into broad flat plates by activity at high tide!



Haminoea navicula adult

Nacton shores/Levington marina

4 forms were received for this area from the pontoons in the marina and intertidal Seagrass - *Zostera noltei* beds along the shore. The *Zostera* beds were mapped using a GPS tracking app. The track was then uploaded to Google Earth where the beds could be visualised and measured.



Example of GPS mapping of *Zostera noltei* beds

Several invasive alien species were recorded, including a healthy and widespread population of the Brush clawed crab *Hemigrapsus takanoi*, found living under boulders with an equally healthy population of shore crabs, which it is rumoured to be displacing.



Hemigrapsus takanoi - Brush clawed shore crab at Nacton Shore

Essex

Point Clear



The soft mud on top of the London clay proved a little challenging at Point Clear

A single Survey form was received for an intertidal site at Point Clear; a beach of London clay with boulders and rockpools. It had been intended to map the *Zostera noltei* beds at this site, but a combination of flooding, Covid closures and an unexpected security fence meant that the point of historical records could not be reached and would have to be postponed.



The very cute, tiny anemone – *Cylista ornata* – was frequent under the cobbles at Point Clear

The time was spent instead surveying the surprisingly diverse intertidal species, which included the invasive aliens *Hemigrapsus takanoi* and *Sargassum muticum*, and the rarely seen algae *Scytophion lomentaria*, *Dumontia contorta* and *Cladophora serica*.

Wrabness

5 forms were received from a full day of dive surveys at the Wrabness beach huts on the river Stour.



Very civilised dive planning at Wrabness

No intertidal seagrass was found at low tide, but a further survey is required to find out if it exists further round the bay.



The sponges in Essex continue to look confusing; this is a selection of *Halisarca dujardinii*, *Sycon ciliatum* and *Leucosolenia sp*

Several shore dive surveys found *Haminoea navicula* sea slugs and their eggs, and some sea cucumbers, a *Thyone sp*, thought to be *Thyone fusus*.

Other activities

East Anglian Observer Course

The second online Observer course on June 12th and 13th was for students who would normally have come along in person to Sheringham. There were 10 attendees including 4 refreshers from as far afield as Oxford and Plymouth! They survived two days of online theory and several managed to come along to a socially distanced shore event at West Runton on the second day to put their new skills into practice with a group of other keen local volunteers. Most were also able to dive or snorkel with us or their own local coordinators over the summer months to complete their qualification.

Having practised by teaching 30 students in a weekend in 2020, we were able to split the teaching on the Sunday so that one tutor went through homework assignments in small groups, while the other travelled to Norfolk for the practical part.



Intertidal practical work at West Runton

Everything went surprisingly smoothly, although we were glad of the 'practice' session on the evening before the course to get the newer students familiar with online working.

Courselets and evening talks

A series of evening talks on various subjects, including looking more closely at particular phyla, site guides, seabed mapping techniques and Seasearch ID photography took place via Zoom from February to September to help everyone prepare for the season ahead, and then keep up enthusiasm while meeting in person was difficult. Each talk was free to attend and lasted between one and two hours on weekday evenings.



Will Nash did a very popular talk on echinoderms

Members of the Seasearch East group were encouraged to use the talk slots for any subjects they had interest or expertise in and included subjects such as diatom and echinoderm ID and a beginner's

guide to diving Norfolk. Useful looking talks given by other groups were shared via Facebook to keep the programme as diverse as possible and keep everyone entertained.

There were several talks to introduce and explain recovery of lost fishing gear - which was trialled late in the summer, working together with snorkellers, litter recovery groups and one local fisherman.

Dive weeks

The complications of lockdowns and unpredictable weather meant that no official dive weeks were planned for 2021. Instead, we made announcements on the Facebook groups whenever it was possible for tutors to be available, or for small groups to dive together over the season. All of our official dives were shore based, as it was not considered sensible to be close together on boats, but some volunteers were also able to undertake surveys later in the year on club boat events.



A selection of club dive boats at Sea Palling

Interactive dive map

This resource, which was produced by Rob Claxton using original paper Seasearch forms and funds from The North Sea Wildlife Trusts in 2020 is an interactive map of all the Seasearch surveys ever done (nearly 2000) in and around the Cromer Shoals MCZ and also shows all the categories of chalk damage and other man-made problems we had recorded.

The map has now been made available to our volunteers on the Seasearch East Facebook group and via the MCNAG website (see below) and will also be publicly available via the MCZ website in 2022.

Zostera mapping

As part of the ReMEDIES project, we were asked to locate and map seagrass beds in Essex. This proved surprisingly difficult, mainly due to a complete lack of

the subtidal species *Zostera marina* in all the places we looked. This could be due to the estuaries becoming much more turbid in recent years, or because it was misidentified in the first place; the number of species present in the UK have been reorganised several times over the years.

The intertidal species *Zostera noltei* was searched for without success at Wrabness and Point Clear, other planned sites in Essex were postponed due to Covid restrictions. *Zostera noltei* was found in extensive beds along the River Orwell in Suffolk and a project to map the extent was begun and will carry on through 2022, see the 'Nacton Shores' section earlier in this report for details.

Marine conservation advocacy group

Seasearch is not a campaigning project, but there is no effective voice for marine conservation in Norfolk, where there are a lot of problems related to commercial and recreational fishing. Several groups including beach cleaners, wild swimmers, snorkellers, divers, birdwatchers and marine mammal rescue groups have decided to combine forces to form a coherent community interest group called Marine Conservation For Norfolk Action Group (MCNAG) which can collect and collate relevant data to provide evidence and potential solutions to government agencies and other local bodies where necessary.



Damage to chalk reef by lobster pot ropes

The group has already trialled a marine protocol for recovery of lost lobster pots and ropes with divers, snorkellers and beach cleaners working together with a local fisherman, and a more compact version involving beach cleaners and fishermen for lost pots that have come ashore.

A website describing the group's activities and some of the marine wildlife of Norfolk can be found here: MCNAG.org

Online conference

MCNAG ran a Covid compliant online conference on July 5th to present existing datasets, newly established evidence gathering activities and augment and enhance recording going forward. The keynote speaker was Dr Claire Goodwin who first identified as unique the purple sponge endemic to the Norfolk chalk reef. Other speakers included Seawatch, beach cleaners, Surfers Against Sewage, British Divers Marine Life Rescue, Seasearch and the University of Essex. Talks were collected into related topics followed by panel discussions with Q&A sessions and it was very well attended. A recording of the conference is available via The YouTube channel of the Norfolk and Norwich Naturalist Society here: www.youtube.com/watch?v=GMXPY09tVzU



Typical chalk damage caused by a dropped lobster pot

Their second, in person conference will take place on 6th and 7th of August 2022 in partnership with the Norfolk Wildlife Trust at their Cley centre.

Snorkel trail



Mixed wildlife making use of the snorkel trail pipe!

The Sheringham snorkel trail, based around a disused Edwardian sewer pipe, has continued to grow in popularity, with its own Facebook group of 442 members exchanging tips and photographs. A large yellow buoy, donated by Charlie Ward of Blakeney and delivered by Chris Taylor, was put in place at the

start of the trail on August 2nd. Unfortunately, it was in place for only a couple of weeks before 'vanishing' during some very calm conditions. It was replaced by volunteers with fenders donated by Adrian Barker.

Equally unfortunately, spear fishing became very popular during lockdown and people new to the hobby were attracted to the easy conditions of the snorkel trail. Hopefully this is just a passing fad and nobody will get hurt.

Potting related damage mapping

Rob Spray has continued working with Jon Chamberlain of Essex University to define a method for reporting and mapping the extent and impact of chalk damage from the crab and lobster potting industry. Current work involves developing a more detailed method for assessing and classifying habitat damage in field from the review of Seasearch East's video archive.



Typical chalk damage caused by lobster pot ropes

3D photogrammetry

The University of Essex and Seasearch have been discussing various 3D photogrammetry methods that recreational divers can use to map parts of the chalk reef using their usual photography or video equipment without taking up too much of their dive time. These will be put into practice by our volunteers over the summer of 2022 after 2021 plans were scuppered by covid.

The images produced by this method can be used to 'fly through' chalk landscapes, giving a much better impression of scale than a simple photo or video.

Species lists

Species lists for Lincolnshire, Norfolk, Suffolk, Essex and East Anglia as a whole are presented below. As mentioned earlier, there are large increases in all counties except Lincolnshire, and we intend to remedy that in 2022!

Species lists

Scientific name	Common name/description	Lincs and Wash	Norfolk	Suffolk	Essex	East Anglia
Porifera	Sponges					
<i>Halichondria bowerbankii</i>	a sponge		R-F	O-C	O	R-C
<i>Halichondria panicea</i>	Breadcrumb sponge		R-C	R		R-C
<i>Oscarella sp</i>	a sponge		R-F			R-F
<i>Sycon ciliatum</i>	Vase sponge		R-F	F	O-F	R-F
<i>Grantia compressa</i>	Purse sponge		R-C			R-C
<i>Haliclona oculata</i>	Mermaid's glove		R-F	R-O	R-O	R-F
<i>Haliclona cinerea</i>	a sponge		R-F			R-F
<i>Halisarca dujardini</i>	a sponge		R-F		R-F	R-F
<i>Raspallia ramosa</i>	Chocolate fingers sponge		R-O			R-O
<i>Terpios gelatinosa</i>	a blue sponge crust		R			R
<i>Cliona sp</i>	Boring sponge		R-F		R	R-F
<i>Amphilectus fucorum</i>	Shredded carrot sponge		R-A			R-A
<i>Porifera sp</i>	blue shredded carrot		R-O			R-O
<i>Porifera sp</i>	yellow shredded carrot		O-F			O-F
<i>Leucosolenia sp</i>	Spiky lace sponge		R-F		O-C	R-C
<i>Porifera ind</i>	crust sponge sp		O-F			O-F
<i>Myxilla incrustans</i>	yellow sponge crust		O			O
<i>Dysidea fragilis</i>	Goosebump sponge		R-C		O	R-C
<i>Dysidina pallescens</i>	Pink goosebump		R-O			R-O
<i>Aplysilla sulfurea</i>	a sponge		R			R
<i>Hymedesmia sp</i>	Norfolk purple sponge		R-F			R-F
<i>Polymastia penicillus</i>	Chimney sponge		R-O			R-O
<i>Polymastia sp</i>	a yellow sponge			R		R
<i>Suberites massa</i>	a sponge			O	R-F	R-F
<i>Hymeniacidon perlevis</i>	Crumb of bread sponge		R-O			R-O
<i>Suberites ficus/carnosus</i>	a sponge		R-O			R-O
<i>Leucandra gossei</i>	a sponge		R			R
Cnidaria						
<i>Alcyonium digitatum</i>	Dead mens fingers		R-A			R-A
<i>Actinia equina</i>	Beadlet anemone		R-C	O	R	R-C
<i>Metridium dianthus</i>	Plumose anemone		R-A	R		R-A
<i>Cylistia elegans</i>	Elegant anemone		R-C			R-C
<i>Cylistia troglodytes</i>	an anemone		R-C	R	F	R-C
<i>Cylistia ornata</i>	an anemone			R-O		R-O
<i>Cylistia undata</i>	an anemone				R	R
<i>Urticina felina</i>	Dahlia anemone		R-C		R-F	R-C
<i>Urticina eques</i>	Horseman anemone		R		R	R
<i>Tubularia indivisa</i>	Oaten pipes		O-S	R	O	R-S
<i>Hydractinia echinata</i>	Hermit fur		R-F			R-F
<i>Sertularia cupressina</i>	White weed		R-F		O-F	R-F
<i>Eudendrium sp</i>	a hydroid		O-C			O-C
<i>Abietinaria abietina</i>	a hydroid		R			R
<i>Haleci um halecinum</i>	a hydroid		R-F			R-F
<i>Hydrallmania falcata</i>	Helter skelter hydroid		R-O		O-F	R-F

Scientific name	Common name/description	Lincs and Wash	Norfolk	Suffolk	Essex	East Anglia
<i>Clytia hemisphaerica</i>	a hydroid		O-C			O-C
<i>Halopteris catharina</i>	a hydroid	R-C		R	R-C	
<i>Plumularia setacea</i>	a feathery hydroid	R-F		F		R-F
<i>Obelia dichotoma</i>	a hydroid	R-F				R-F
<i>Hydrozoa sp</i>	a feathery hydroid	C	O	O		O-C
<i>Kirchenpaueria pinnata</i>	a feathery hydroid	R-F	O			R-F
<i>Kirchenpaueria halecioides</i>	a feathery hydroid	R				R
<i>Laomedea sp</i>	a feathery hydroid			F		F
<i>Coryne eximia</i>	a hydroid	R-F				R-F
<i>Gonothyraea loveni</i>	a hydroid	R				R
<i>Dynamena pumila</i>	a hydroid	R-F		R-O		R-F
<i>Nemertesia antennina</i>	Antenna hydroid	R-F				R-F
<i>Nemertesia ramosa</i>	Branched antenna hydroid	R				R
<i>Sertularella rugosa</i>	a hydroid	O		F		O-F
<i>Tima bairdii</i>	a hydroid medusa			R		R
<i>Auralia aurita</i>	Moon jelly	R	R-O	R		R-O
<i>Chrysaora hysoscella</i>	Compass jelly	R-O				R-O
<i>Cyanea capillata</i>	Lion's mane jelly	R				R
<i>Cyanea lamarckii</i>	Blue jelly	R				R
<i>Calvadosia campanulata</i>	a stalked jelly	R				R

Annelida Segmented worms

	Segmented Worms		C	O-S	R-O	R-C
<i>Arenicola sp</i>	Lugworm		C	O-S	R-O	R-C
<i>Arenicola marina</i>	Lugworm		O-F		R-C	R-C
<i>Arenicola defodiens</i>	Black lugworm		O-F			O-F
<i>Lumbrineris sp</i>	an Annelid worm				R	R
<i>Phyllodoce sp</i>	a polychaete		R		R-O	R-O
<i>Pholoe inornata</i>	a Phyllodoce worm		R			R
<i>Sphaerodorum sp</i>	a Phyllodoce worm		R			R
<i>Proceraea picta</i>	a Syllid worm		R			R
<i>Eusyllis blomstrandii</i>	a Syllid worm		R			R
<i>Nereid sp</i>	a polychaete			R		R
<i>Nereis pelagica</i>	a polychaete		R			R
<i>Aphrodita aculeata</i>	Sea mouse		R	R-O		R-O
<i>Sabella pavonina</i>	Peacock fanworm		R-C	C	O	R-C
<i>Parasabella langerhansi</i>	a fanworm		R			R
<i>Lanice conchilega</i>	Sandmason worm		R-S	O-S	O-S	R-S
<i>Pectinaria belgica</i>	a tubeworm		R			R
<i>Cirratulus cirratulus</i>	a worm			F	O	O-F
<i>Cirratulus sp</i>	a worm		R			R
<i>Harmothoe sp</i>	a scaleworm		R			R
<i>Gattayana cirrhosa</i>	a scaleworm		R			R
<i>Polydora ciliata</i>	a tubeworm		O-S			O-S
<i>Polydora sp</i>	a tubeworm		O		O	O
<i>Salmacina dysteri</i>	Coral worm		R-F			R-F
<i>Spirobranchus</i>	Keel worms		R-C	R		R-C
<i>Sabellaria spinulosa</i>	Ross worm		R-A	R-F		R-A
<i>Spirorbis spirorbis</i>	a spiral worm		R			R
<i>Janua pagenstecheri</i>	a spiral worm				R	R

Scientific name	Common name/description	Lincs and Wash	Norfolk	Suffolk	Essex	East Anglia
<i>Pileolaria berkleyana</i>	a spiral worm		O-S			O-S
<i>Terebellid sp</i>	a tubeworm		R	R		R
<i>Oerstedia dorsalis</i>	a nemertean worm		R			R
<i>Nemertea sp</i>	a nemertean worm			O		O
<i>Tubulanus annulatus</i>	Football jersey worm		R			R
<i>Lineus sp</i>	a ribbon worm				O	O
<i>Leptoplana tremellaris</i>	a flatworm			O		O
Crustacea						
<i>Cirripedia</i>	a barnacle	C	R-A	O	O-S	R-S
<i>Austrominius modestus</i>	a barnacle		O-S	O-A	C	O-S
<i>Semibalanus balanoides</i>	a barnacle		O-C	O		O-C
<i>Balanus crenatus</i>	a barnacle		O			O
<i>Verruca stroemia</i>	a barnacle		R			R
<i>Decapoda sp</i>	Crab naupli			R		R
<i>Cancer pagurus</i>	Edible crab		R-C	R	R-O	R-C
<i>Carcinus maenas</i>	Shore crab		R-F	R-C	R-O	R-C
<i>Hemigrapsus takanoi</i>	Brush clawed crab			O-F	R	R-F
<i>Necora puber</i>	Velvet swimming crab		R-F	R		R-F
<i>Pilumnus hirtellus</i>	Hairy crab		R			R
<i>Portumnus latipes</i>	Pennant's swimming crab		R			R
<i>Liocarcinus depurator</i>	Harbour crab		O-C			O-C
<i>Liocarcinus holsatus</i>	Flying crab		R-O		R	R-O
<i>Coryistes cassivelaunus</i>	Masked crab		R-O			R-O
<i>Hyas araneus</i>	Sea toad		R-O			R-O
<i>Inachus sp</i>	Sponge spider crab		R-F			R-F
<i>Macropodia sp</i>	Long legged spider crab		R-F	O	R-O	R-F
<i>Pisidia longicornis</i>	Long clawed porcelain crab		R-O	R		R-O
<i>Ebalia sp</i>	a nut crab		R			R
<i>Pagurus bernhardus</i>	Common hermit crab		R-C	R		R-C
<i>Pagurus cuanensis</i>	Hairy hermit crab		R			R
<i>Paguridae</i>	a hermit crab		O			O
<i>Galathea squamifera</i>	Brown squat lobster		R-C			R-C
<i>Homarus gammarus</i>	Common lobster		R-F	R		R-F
<i>Palaemon serratus</i>	Common prawn		R-F	R	O	R-F
<i>Palaemon elegans</i>	Rockpool prawn		R-C			R-C
<i>Palaemon sp</i>	a prawn			O		O
<i>Crangon crangon</i>	Brown shrimp		R-O			R-O
<i>Pandalus montagui</i>	Northern prawn		O-F			O-F
<i>Eualus sp</i>	a prawn		R-O			R-O
<i>Hippolytes varians</i>	Chameleon prawn		R			R
<i>Athanas nitescens</i>	Hooded shrimp		R			R
<i>Caprella sp</i>	a skeleton shrimp		R-F	O		R-F
<i>Mysida sp</i>	a mysid shrimp		R-F	F-C	R	R-C
<i>Talitridae sp</i>	a shrimp		R	O-F	O-C	R-C
<i>Amphipoda sp</i>	an amphipod on <i>Tubularia</i>		O-F	R-O		R-F
<i>Iphimedia obesa</i>	an amphipod		R			R
<i>Jassa sp</i>	an amphipod		F-S	R	R-O	R-S

Scientific name	Common name/description	Lincs and Wash	Norfolk	Suffolk	Essex	East Anglia
<i>Ampelisca sp</i>	an amphipod		F			F
<i>Corophium sp</i>	an amphipod			O		O
<i>Apherusa sp</i>	an amphipod		R			R
<i>Dyopedos sp</i>	Whip amphipods		O-F			O-F
<i>Idotea sp</i>	an isopod		R			R
<i>Idotea neglecta</i>	an isopod		O	R		R-O
<i>Idotea baltica</i>	an isopod		R			R
<i>Idotea granulosa</i>	an isopod		R			R
<i>Idotea pelagica</i>	an isopod			O		O
<i>Jaera sp</i>	an isopod				O	O
<i>Lekanesphaera rugicauda</i>	an isopod				O	O
<i>Sphaeromatidae</i>	an isopod		R			R
<i>Ostracoda sp</i>	an Ostracod			F		F
Mollusca	Molluscs					
<i>Polyplacophora</i>	a chiton		O	R	R	R-O
<i>Lepidochitona cineraria</i>	a chiton		R-O	O	R	R-O
<i>Haminoea navicula</i>	a sea slug			R-F	R-C	R-C
<i>Aplysia punctata</i>	Sea hare		R			R
<i>Nudibranchia sp</i>	nudibranch eggs		R		R	R
<i>Doto sp</i>	a nudibranch		O			O
<i>Doto pinnatafidita</i>	a nudibranch		F			F
<i>Doto dunnei</i>	a nudibranch		O			O
<i>Doto coronata</i>	a nudibranch		O			O
<i>Doto millbayana</i>	a nudibranch		F			F
<i>Dendronotus sp</i>	Xmas tree nudibranch		R-O			R-O
<i>Onchidoris bilamellata</i>	a nudibranch		R-O			R-O
<i>Doris pseudoargus</i>	Sea lemon		R			R
<i>Fjordia brownii</i>	a nudibranch		R-O			R-O
<i>Edmundsella pedata</i>	Violet sea slug		R			R
<i>Polycera faeroensis</i>	a nudibranch		R			R
<i>Antipella cristata</i>	Crystal slug		R-O			R-O
<i>Facelina auriculata</i>	a nudibranch		R			R
<i>Palio nothus</i>	a nudibranch		R-F			R-F
<i>Eubranchus exiguum</i>	a nudibranch		F-C			F-C
<i>Eubranchus sp</i>	a nudibranch		R			R
<i>Catriona aurantia</i>	a nudibranch		R			R
<i>Aeolidia filomenae</i>	a nudibranch		O			O
<i>Gastropoda sp</i>	a gastropod			R		R
<i>Crepidula fornicata</i>	Slipper limpet		R	O-F	F	R-F
<i>Steromphala cineraria</i>	Grey topshell		R-F	O		R-F
<i>Calliostoma zizyphinum</i>	Painted topshell		R-F			R-F
<i>Buccinum undatum</i>	Common whelk		R-O	R		R-O
<i>Littorina saxatilis</i>	Rough periwinkle	R	O-F	R-C	F	R-C
<i>Littorina littorea</i>	Common periwinkle		O-C	F	O-F	O-C
<i>Littorina fabialis/obtusata</i>	a flat periwinkle		R-F		R	R-F
<i>Rissoa sp</i>	a gastropod		O-A	R	R	R-A
<i>Nucella lapillus</i>	Dog whelk		R-C			R-C
<i>Ocenebra erinacea</i>	Sting winkle		R		R	R

Scientific name	Common name/description	Lincs and Wash	Norfolk	Suffolk	Essex	East Anglia
<i>Peringia ulvae</i>	a gastropod			O-A		O-A
<i>Leucophysa bidentata</i>	a gastropod			O		O
<i>Patella vulgata</i>	Common limpet		O-C	R-F	O	O-C
<i>Tectura virginea</i>	White tortoiseshell limpet		R			R
<i>Bivalvia sp</i>	Bivalve siphons indet				R	R
<i>Aequipecten opercularis</i>	Queen scallop		R			R
<i>Mytilus edulis</i>	Edible mussel	C	R-O	R-O		R-C
<i>Ruditapes philippinarium</i>	Manila clam				O	O
<i>Cerastoderma edule</i>	Common cockle			R-F		R-F
<i>Magallana gigas</i>	Pacific oyster			R-F	O-F	R-F
<i>Ostrea edulis</i>	Native oyster				R	R
<i>Barnea candida</i>	White piddock		R-F			R-F
<i>Ensis magnus</i>	a razor shell		C-A			C-A
<i>Sepiola atlantica</i>	Little cuttlefish		R-O			R-O
<i>Alloteuthis subulata</i>	small squid eggs		R			R
<i>Eledone cirrhosa</i>	Curled octopus		R			R
Bryozoa						
<i>Bryozoa</i>	encrusting bryozoan indet		R-F			R-F
<i>Conopeum reticulatum</i>	encrusting bryozoan		O-C	F	O	O-C
<i>Electra pilosa</i>	Frosty sea mat		R-C	R-F		R-C
<i>Oshurkovia littoralis</i>	encrusting bryozoan		R			R
<i>Schizomavella linearis</i>	encrusting bryozoan		R-F	R		R-F
<i>Schizoporella unicornis</i>	encrusting bryozoan		O			O
<i>Cryptosula pallasiana</i>	encrusting bryozoan		O-F	R		R-O
<i>Amathia citrina</i>	a bryozoan		R-F			R-F
<i>Amathia pustulata</i>	a bryozoan		R-C			R-C
<i>Bicellariella ciliata</i>	a bryozoan		R-F			R-F
<i>Flustra foliacea</i>	Hornwrack		R-C	F		R-C
<i>Alcyonidium diaphanum</i>	Finger bryozoan		R-C		R-F	R-C
<i>Alcyonidium hirsutum</i>	a bryozoan		R			R
<i>Alcyonidium gelatinosum</i>	a bryozoan		R			R
<i>Flustrellidra hispida</i>	a bryozoan		R-O			R-O
<i>Scrupocellaria sp</i>	a bryozoan		O-F	F		O-F
<i>Vesicularis spinulosa</i>	a bryozoan		R			R
<i>Bugula neritina</i>	an invasive bryozoan			F		F
<i>Crisularia plumosa</i>	Spiral bryozoan		R-C			R-C
<i>Bugulina flabellata</i>	a spiral bryozoan		O			O
<i>Bugulina turbinata</i>	a spiral bryozoan		O			O
<i>Caberea boryi</i>	a bryozoan		R-F			R-F
<i>Crisia sp</i>	a bryozoan		R-O			R-O
<i>Nolella stipata</i>	a bryozoan		O			O
<i>Aetea anguinella</i>	Snakeshead bryozoan		F			F
<i>Disporella hispida</i>	a disc bryozoan		R-O			R-O
Echinodermata						
<i>Ophiura albida</i>	Sand brittlestar		O-F		R-O	R-F
<i>Ophiura ophiura</i>	Sand brittlestar		O	C		O-C
<i>Ophiura sp</i>	Sand brittlestar				R	R
<i>Amphipholis squamata</i>	a brittlestar		R	R	R	R

Scientific name	Common name/description	Lincs and Wash	Norfolk	Suffolk	Essex	East Anglia
<i>Ophiothrix fragilis</i>	Common brittlestar		R			R
<i>Asterias rubens</i>	Common starfish		R-C	O-F		R-C
<i>Henricia sp</i>	Bloody henry		R-O			R-O
<i>Crossaster paposssus</i>	Common sunstar		R	O		R-O
<i>Thyone sp</i>	a cucumber				R	R
<i>Echinus esculentus</i>	Edible urchin		R-O			R-O
Tunicata	Sea squirts					
<i>Perophora listeri</i>	a tunicate		R-C			R-C
<i>Perophora japonica</i>	an invasive tunicate		R-C			R-C
<i>Ascidia aspersa</i>	a tunicate		R	R-O	O-C	R-C
<i>Ascidia mentula</i>	a tunicate				O	O
<i>Ascidia sp</i>	a tunicate				C	C
<i>Molgula complanata</i>	a tunicate		R-O			R-O
<i>Molgula sp</i>	a tunicate		R-A	R-O	O	R-A
<i>Dendrodoa grossularia</i>	Baked bean squirt		R			R
<i>Styela clava</i>	Leathery squirt			R-F	R-C	R-C
<i>Ciona intestinalis</i>	Yellow ringed squirt			O	R-C	R-C
<i>Polycarpa scuba</i>	a tunicate		R		F	R-F
<i>Polycarpa violacea</i>	a tunicate		R			R
<i>Styela coriacea</i>	a tunicate		R-F		O	R-F
<i>Diplosoma spongiforme</i>	Sponge squirt		R-F			R-F
<i>Diplosoma listerianum</i>	a tunicate		R-O			R-O
<i>Botrylloides leachii</i>	a tunicate		O-F	R	R	R-F
<i>Botrylloides leachii var radiata</i>	a tunicate		O-F			O-F
<i>Botrylloides diagensis</i>	an invasive tunicate			F		F
<i>Botrylloides violaceus</i>	an invasive tunicate			F		F
<i>Botryllus schlosseri</i>	Star squirt		R-O		R	R-O
<i>Didemnum maculosum</i>	Snowflake squirt		R-S			R-S
<i>Trididemnum cereum</i>	a tunicate		O-C			O-C
<i>Lissoclinum perforatum</i>	a tunicate		R			R
<i>Polyclinum aurantium</i>	a tunicate		R-F			R-F
<i>Clavelina lepadiformis</i>	Lightbulb sea squirt		R-A	F		R-A
<i>Pycnoclavella stolonialis</i>	Pinhead tunicate		O-F			O-F
<i>Corella eumyota</i>	an invasive tunicate		R-O	O		R-O
<i>Archidostoma aggregatum</i>	a tunicate		R-C			R-C
<i>Polysyncraton bilobatum</i>	a tunicate		R-F			R-F
<i>Morchellium argus</i>	a club squirt		R-F			R-F
<i>Aplidium turbinatum</i>	a tunicate		R-F			R-F
<i>Aplidium glabrum</i>	a tunicate		R-F		R	R-F
<i>Aplidium pallidum</i>	a tunicate		O			O
<i>Distaplia rosea</i>	a tunicate		R-F			R-F
Pisces	Fishes					
<i>Scyliorhinus canicula</i>	Lesser spotted catshark		R	R-O		R-O
<i>Mustelus asterias</i>	Starry smoothhound			R		R
<i>Raja clavata</i>	Thornback ray			R		R
<i>Anguilla anguilla</i>	European eel		R			R
<i>Syngnathus sp</i>	a pipefish sp		R			R
<i>Syngnathus acus</i>	Greater pipefish		R-O		R	R-O

Scientific name	Common name/description	Lincs and Wash	Norfolk	Suffolk	Essex	East Anglia
<i>Syngnathus rostellatus</i>	Lesser pipefish		R			R
<i>Entelurus aequoreus</i>	Snake pipefish		R			R
<i>Callionymus sp</i>	a dragonet		R			R
<i>Callionymus reticulatus</i>	Reticulated dragonet		R-O			R-O
<i>Callionymus lyra</i>	Common dragonet		R-O			R-O
<i>Pomatoschistus sp</i>	a sand goby		O-C	O-F	O	O-C
<i>Pomatoschistus minutus</i>	Sand goby		O-F	O	O	O-F
<i>Pomatoschistus pictus</i>	Painted goby		O-F	O-C	O	O-C
<i>Pomatoschistus microps</i>	Common goby		O	O-F		O-F
<i>Gobiusculus flavescens</i>	Two spot goby		R-O		O	R-O
<i>Gobius paganellus</i>	Rock goby			O-F		O-F
<i>Gobius niger</i>	Black goby			O-F	R	R-F
<i>Diplecogaster bimaculata bimaculata</i>	2 spot clingfish		R			R
<i>Lipophrys pholis</i>	Shanny		F	O		O-F
<i>Parablennius gattorugine</i>	Tompot blenny		R			R
<i>Liparis sp</i>	Sea snail		R			R
<i>Aphia minuta</i>	Transparent goby		O			O
<i>Agonus cataphractus</i>	Pogge		R			R
<i>Ciliata mustela</i>	5 bearded rockling		R	R		R
<i>Echiichthys vipera</i>	Lesser weever		R-F			R-F
<i>Taurulus bubalis</i>	Long spined sea scorpion		R-O			R-O
<i>Myoxocephalus scorpius</i>	Short spined sea scorpion		R			R
<i>Sprattus sprattus</i>	Sprat		O-C			O-C
<i>Scomber scombrus</i>	Mackerel		F			F
<i>Trachurus trachurus</i>	Horse mackerel		R			R
<i>Pollachius pollachius</i>	Pollack		R-O			R-O
<i>Dicentrarchus labrax</i>	Sea bass		O-F	R		R-F
<i>Trisopterus luscus</i>	Bib		R-S			R-S
<i>Gadus morhua</i>	Cod		R			R
<i>Merlangius merlangus</i>	Whiting		R	R		R
<i>Pholus gunnellus</i>	Butterfish		R-O			R-O
<i>Syphodus melops</i>	Corkwing wrasse		O-F	R		R-F
<i>Labrus bergylta</i>	Ballan wrasse		R-O			R-O
<i>Ammodytes sp</i>	a sand eel		R-F			R-F
<i>Eutriglia gurnardus</i>	Grey gurnard		R			R
<i>Platichthys flesus</i>	Flounder		R	R		R
<i>Pleuronectes platessa</i>	Plaice		R			R
<i>Limanda limanda</i>	Dab		R-O	O		R-O
<i>Buglossidium luteum</i>	Solenette			R		R
<i>Pisces sp</i>	Juvenile flatfish				R	R
Algae	Seaweeds					
<i>Algae</i>	mixed algae		C			C
<i>Ulva sp</i>	a sea lettuce	C	O-C	O-A	O	O-A
<i>Ulva lactuca</i>	Sea lettuce			O-F	O	O-F
<i>Ulva compressa</i>	a sea lettuce		R-F			R-F
<i>Ulva rigida</i>	a sea lettuce			F	O-F	O-F
<i>Ulva clathrata</i>	a sea lettuce			F		F

Scientific name	Common name/description	Lincs and Wash	Norfolk	Suffolk	Essex	East Anglia
<i>Ulva fenestrata</i>	a sea lettuce			F	O	O-F
<i>Ulva intestinalis</i>	Gutweed		R-C	F-A	O-S	R-S
<i>Ulva pseudocurvata</i>	a sea lettuce			O		O
<i>Ulva prolifera</i>	a sea lettuce			C		C
<i>Ulva compressa</i>	a sea lettuce				R	R
<i>Chaetomorpha linum</i>	Brick weed		R-O	O-C	R	R-C
<i>Ulothrix sp</i>	'green fluff'		C			C
<i>Derbesia tenuissima</i>	a green algae		R	F-C		R-C
<i>Cladophora sp</i>	a green algae		F	O-C		O-C
<i>Cladophora rupestris</i>	Rope weed		F-C			F-C
<i>Cladophora serica</i>	a rope weed				O	O
<i>Cladophora hutchinsae</i>	a rope weed		R			R
<i>Bryopsis plumosa</i>	Mossy feather weed		O-F	O		O-F
<i>Bryopsis hypnoides</i>	Mossy feather weed		R	F		R-F
<i>Rhizoclonium riparium</i>	a green algae		F	O-C		O-C
Diatoms	diatoms		F-C	F-A	F	F-A
<i>Sundstroemia setigera</i>	a diatom		P			P
<i>Gyrodinium sp</i>	a diatom		P			P
<i>Navicula sp</i>	a diatom		P			P
<i>Cocconeis sp</i>	a diatom		P			P
<i>Grammatophora sp</i>	a diatom		P			P
<i>Licmopha sp</i>	a diatom		P			P
<i>Ulnaria sp</i>	a diatom		P			P
<i>Nitzschia longissima</i>	a diatom		P			P
<i>Odontella aurita</i>	a diatom		P			P
<i>Odontella regia</i>	a diatom		P			P
<i>Thallasiosira sp</i>	a diatom		P			P
<i>Euglena sp</i>	a diatom		P			P
<i>Phaeophyta</i>	brown algae	R	C	O		R-C
Sphacelariaceae	a brown algae		R			R
<i>Undaria pinnatifida</i>	Wakame			F	R-F	R-F
<i>Sargassum muticum</i>	Wireweed				R-F	R-F
<i>Ectocarpus sp</i>	a brown algae		O			O
<i>Dictyota dichotoma</i>	Brown fanweed		O-F	R	R-F	R-F
<i>Taonia atomaria</i>	Dotted peacock weed		O-A			O-A
<i>Cutleria multifida</i>	Cutler's many cleft weed		O			O
<i>Petalonia fascia</i>	Broad leaf weed				R	R
<i>Cladostephus hirsutus</i>	Hairy sand weed			O		O
<i>Colpomenia peregrina</i>	Oyster thief		O			O
<i>Pylaiella littoralis</i>	a filamentous brown			O-F	R-O	O-F
<i>Scytosiphon lomentaria</i>	Sausage weed				R-O	R-O
<i>Fucus vesiculosus</i>	Bladderwrack		O-S	O-C	R-S	R-S
<i>Fucus serratus</i>	Serrated wrack		C-A			C-A
<i>Fucus spiralis</i>	Spiral wrack	R	C			R-C
<i>Fucus sp</i>	a wrack			F	R	R-F
<i>Ascophyllum nodosum</i>	Egg wrack			O-F	O-S	O-S
<i>Halidrys siliquosa</i>	Podweed		R-O			R-O
<i>Rhodophyta</i>	red algae	R			R	R

Scientific name	Common name/description	Lincs and Wash	Norfolk	Suffolk	Essex	East Anglia
<i>Rhodophyta ind crust</i>	red encrusting algae		O-F	F		O-F
<i>Rhodophyta</i>	'red fluff'		O-F		C	O-F
<i>Corallinaceae crusts</i>	pink encrusting algae		O-A	R	C	R-A
<i>Corallina officianalis</i>	Common coral weed		O-F	R	R	R-F
<i>Gracilaria gracilis</i>	Slender wartweed		R-A	O		R-A
<i>Gracilaria sp</i>	a wartweed		O		R-O	R-O
<i>Chondria dasyphylla</i>	Diamond cartilage weed		R-F			R-F
<i>Chondria coerulescens</i>	Iridescent cartilage weed			O-F		O-F
<i>Halurus flosculosus</i>	Mrs Griffith's little flower			O		O
<i>Halurus equisetifolius</i>	Sea Horsetail		R-F			R-F
<i>Chondrus crispus</i>	Irish moss		O-F	F	R	R-F
<i>Gymnogongrus crenulatus</i>	a red algae		O			O
<i>Ceramium deslongchampsii</i>	a pincer weed		F	F	O	O-F
<i>Ceramium gaditanum</i>	a pincer weed		O			O
<i>Ceramium cimbricum</i>	a pincer weed		O			O
<i>Ceramium sp</i>	a pincer weed		O-F	R-F	O-F	R-F
<i>Spermothamnion repens</i>	a red algae		R-F			R-F
<i>Vertebrata fucoides</i>	Black siphon weed		R-O			R-O
<i>Vertebrata nigra</i>	Twisted siphon weed		F		R	R-F
<i>Vertebrata lanosa</i>	Black siphon weed				R-F	R-F
<i>Vertebrata byssoides</i>	Brongniart's threadweed		R-C			R-C
<i>Polysiphonia elongata</i>	Siphon weed		O-F	R-F		R-F
<i>Polysiphonia stricta</i>	Pitcher siphon weed		O-F	R	O	R-F
<i>Polysiphonia sp</i>	a Siphon weed		O			O
<i>Delessaria sanguinea</i>	Sea beech		R			R
<i>Cryptopleura ramosa</i>	Fine-veined crinkle weed		R-F	R	R	R-F
<i>Phyllophora pseudoceranoides</i>	Stalked leaf bearer		F			F
<i>Gratelouphia filicina</i>	Gratelouphi's fern weed		R			R
<i>Gratelouphia subpectinata</i>	a Gratelouphia species		R-O		R	R-O
<i>Gratelouphia turuturu</i>	Devil's tongue weed		R-F			R-F
<i>Plocamium maggsiae</i>	Small combweed		O-F	R		R-F
<i>Plocamium sp</i>	Comb weed		O-A	R	R-F	R-A
<i>Plumaria plumosa</i>	Soft feather weed		O	O		O
<i>Hypoglossum hypoglossoides</i>	Under tongue weed		R-F	R-O		R-F
<i>Scinaia furcellata</i>	Scina's weed		R-F			R-F
<i>Rhodymenia holmesii</i>	Holme's rose weed		O-C	R		R-C
<i>Rhodymenia pseudopalmata</i>	Rose weed			R		R
<i>Rhodymenia ardissoniae</i>	Spikey rose weed		O			O
<i>Heterosiphonia plumosa</i>	Siphoned feather weed		O-C			O-C
<i>Calliblepharis ciliata</i>	Eyelash weed		R-A			R-A
<i>Rhodothamnion floridula</i>	Sandbinder		C			C
<i>Osmundea sp</i>	a fern weed		R-O			R-O
<i>Osmundea oederi</i>	a fern weed		O			O
<i>Osmundea hybrida</i>	a fern weed		R			R
<i>Gastroclonium reflexum</i>	Reflexed grape weed		R-F			R-F
<i>Porphyra sp</i>	Lava	R	R-C	O-F	O	R-C
<i>Porphyra purpurea</i>	Lava		O			O
<i>Halarachnion ligulatum</i>	Sea spider weed		R-O			R-O

Scientific name	Common name/description	Lincs and Wash	Norfolk	Suffolk	Essex	East Anglia
<i>Polyides rotunda</i>	Discoid fork weed		O-C			O-C
<i>Furcellaria lumbricalis</i>	Clawed forkweed		R-O			R-O
<i>Ahnfeltia plicata</i>	Black scour weed		R-F			R-F
<i>Mastocarpus stellatus</i>	Grape pip weed		R-F	O-F	R	R-F
<i>Gelidium sp</i>	a red algae		O			O
<i>Chylocladia verticillata</i>	a red algae		R			R
<i>Dumontia contorta</i>	a red algae		R	O	O	R-O
<i>Griffithsia devoniensis</i>	Mrs Griffiths' weed			O		O
<i>Griffithsia corallina</i>	Mrs Griffith's coral weed		R			R
<i>Cystoclonium purpureum</i>	Purple claw weed			R-F		R-F
Others	Other phyla					
<i>Pedicellina sp</i>	entoprocts				C	C
<i>Ostreopsis sp</i>	a dinoflagellate			C		C
<i>Beggiatoa</i>	a bacterial mat			C		C
<i>Pycnogonidae</i>	a white sea spider		R	O	R	R-O
<i>Nymphon brevirostre</i>	a red sea spider		R-O	R		R-O
<i>Endeis spinosa</i>	a sea spider		R			R
<i>Amoenella longipes</i>	a sea spider		R			R
<i>Tanystylum conirostre</i>	a sea spider		R			R
<i>Phoronis hippocrepia</i>	Horseshoe worm		R-O			R-O
<i>Halyphysema tumanowiczii</i>	a foraminiferan		R-F			R-F
<i>Pleurobrachia pileus</i>	Sea gooseberry		O	C		O-C
<i>Phragmites sp</i>	Reeds			F		F
<i>Zostera noltei</i>	Seagrass			A		A
<i>Xanthoria parietina</i>	Sunburst lichen		R			R
<i>Balaenoptera acutorostrata</i>	Minke whale (dead)			R		R
Total		8	367	157	121	442

Acknowledgements

This report has been written by Dawn Watson based on Seasearch Survey records made by Dawn Watson, Rob Spray, Michael Southwood, Lucy Johnson, Rick Southwood, Kat Gerasimova, Jane Harris, Penny Withers and Elizabeth Beston, Observation records made by Michael Southwood, Lucy Johnson, Elizabeth Beston, Penny Withers, Ben Nurse, Mark Boyd, Chris Tucker, Chris Taylor, Will Stewart and Louise Heinemann, and intertidal records made by Elizabeth Beston, Dawn Watson, Chloe Long, Brian Tibbenham, Louise Spelling, Mark Catchpole, Jane Clark, Kimberley Bennett-Abbiss, Will Stewart, Penny Withers, Emily Swan, Mark Crame, Kat Gerasimova and Michael Southwood.

All photographs in this report were taken by Dawn Watson and Rob Spray, except for Queen scallop and Clingfish by Rick Southwood and Point Clear mud victims Kat Gerasimova.

Seasearch East Coordination activities are supported by the Marine Conservation Society and we would like to thank the volunteer divers and intertidal surveyors for their records, and NBIS, The Wildlife Trusts, NNNS and many others for all their additional help and support. Report published by Marine Conservation Society for Seasearch www.seasearch.org.uk



Beadlet anemone – *Actinia equina* – at Sheringham

MARINE
CONSERVATION
SOCIETY

seasearch
★ 1988-2018 30 YEARS