

ERICA USERS' GROUP

Newsletter number 2

By Colin French

Welcome to the second ERICA Users' Group newsletter. It was not intended that this newsletter should be an annual publication, however, now that 12 months has elapsed since the first newsletter, the time for an update is overdue.

There remains just over 50 individual users of ERICA (including 13 VC Recorders), plus it is used by students and staff at Newquay College, where it is installed on their internal network. Natural England no longer has two copies of the database and the RSPB has one copy. ERICA is used as the main database in Cornwall by the Botanical Society for Britain and Ireland (BSBI) and Butterfly Conservation, and it is used as a supplemental database for the Moth Group, the Fungi Group, the Dragonfly Recorder, the Amphibian and Reptile Recorder, the Beetle Recorder, and by the Bryophyte Recorder (Matt Stribley has recently taken on this role), as well as by numerous individual recorders.

Thanks to an immense collective effort ERICA continues to grow at a rate of approximately 4000 records a week or just over 200,000 records a year. At the end of 2016 ERICA held the following:

	2016	2015	Difference
The number of biological records	3,602,064	3,386,224	215840
The number of Flowering Plants and Ferns	1,984,415	1,880,994	103,421
The number of edited biological records since 2007	115,410	105,055	10,355
The number of taxa	27,182	26,757	425
The number of people	20,494	20,090	404
The number of bibliographic sources	14,881	14,641	240
The number of places in gazetteer	15,512	15,504	8
The number of photographs	10,846	10,416	430

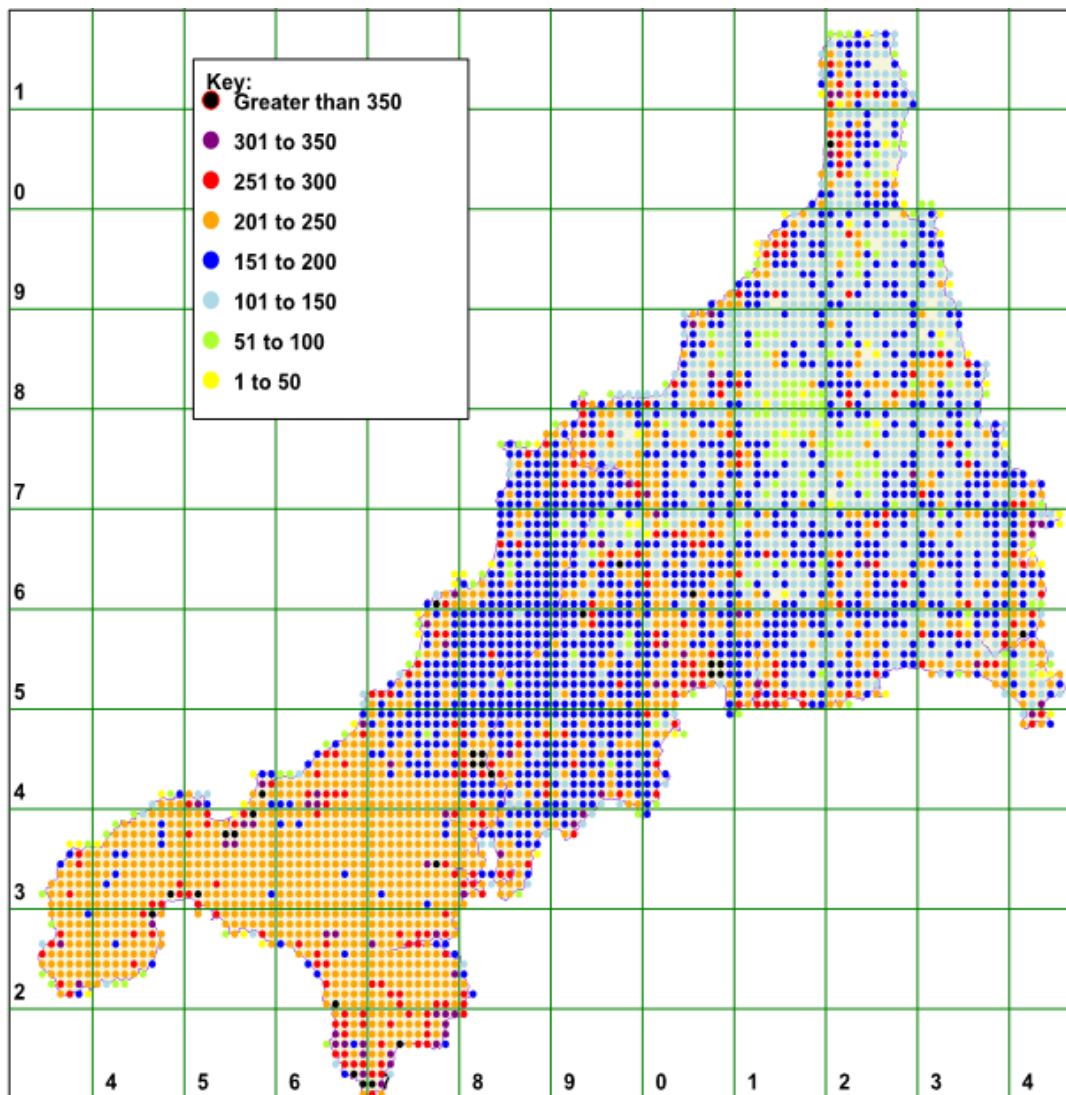
Perhaps the most amazing figure in the table above is the 425 taxa that were added to the Cornish list in 2016. This includes an orchid, new to science, a sizeable number of marine organisms that are either new to science or new to Britain (mainly discovered by David Fenwick), plus quite a few terrestrial invertebrates and fungi that are new to Britain.

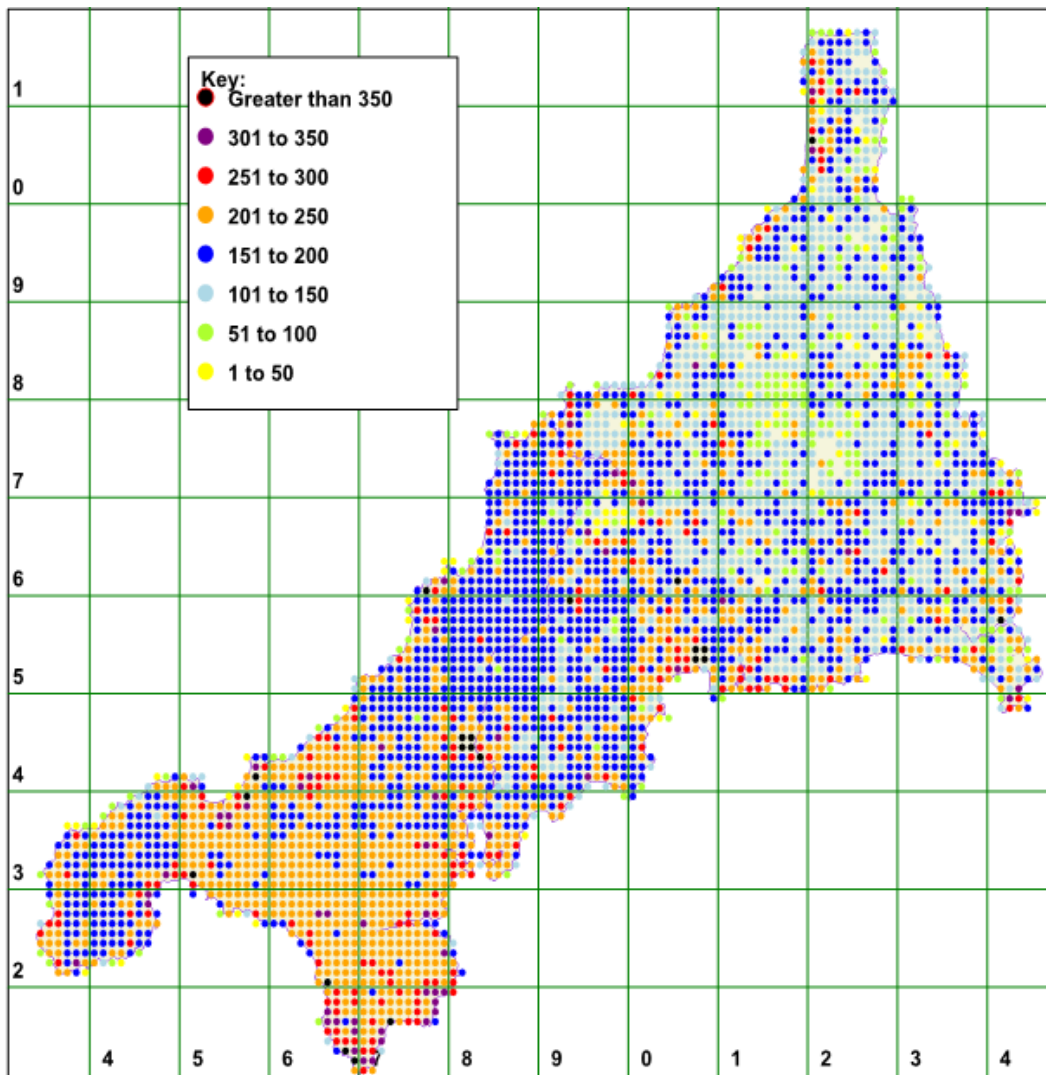
A breakdown of the number of records added to ERICA in 2016, by taxonomic group, can be seen in Appendix 1. I doubt that such a breadth of recording effort can be matched by any other region in Britain.

Flora of Cornwall

For the next *Flora of Cornwall* there are 3962 1km squares being surveyed of which 26 1km squares (47 in 2015) have yet to be visited, 162 (267 in 2015) have less than 101 species, and 897 (1062 in 2015) less than 151 (all bar 13 are in East Cornwall). West Cornwall is in a state worthy of publication with few significantly under-recorded squares left, all of which have considerable access problems such as three at St Mawgan airfield.

The maps below show the number of species of Flowering Plant and Fern that have been recorded per 1km square since 1999. The top map shows the current state of the survey, whilst the bottom one shows the situation at the end of 2015.





We have decided to complete two more surveying seasons, focusing on East Cornwall as much as possible. Bodmin Moor and much of the interior of North Cornwall is genuinely species poor, so for large parts of East Cornwall the number of species will remain below that seen in West Cornwall.

A remarkable milestone will be reached in the next couple of months – the number of vascular plant records will exceed 2 million (I believe it is more than the BSBI has for the whole of Scotland!).

Recent Developments

The developments in ERICA during 2016 have been mainly preparatory changes for the Cornish Biodiversity Network. The first of these developments was to get ERICA online. Sarah Board, who used to be the manager of ERCCIS, now works for a company called the Magnificent Science Company, based on the Tremough Campus, Penryn. They offered to host ERICA online for free, just at the time I was about to sign up with an online hosting company (which would have cost me about £300 per year). Porting ERICA to the online server was a relatively simple task and was soon completed with the assistance of one of Sarah's work colleagues. What took considerably longer (many hundreds of hours) was the conversion of the ERICA software to work with the online database. The reason was that the online server was using a database management system called PostgreSQL, which I had never come across before, and the SQL syntax of PostgreSQL is different to that used by Microsoft or Oracle, which ERICA uses. Consequently, every SQL statement in ERICA had to be changed before the online version of ERICA would work. This was achieved in early July and since then everyone who had had an updated copy of ERICA now has the online version included.

A year ago I bought a new laptop to replace the one I do all the software development on because that machine has slowed up considerably and no longer has a working battery. Unfortunately, when I ported ERICA to the new machine I discovered that ERICA could not cope with its high resolution screen and only displayed in a window (sand box) on part of that screen. ERICA is written in Microsoft vb.net 2008 which evidently was developed before such high definition screen existed. I experimented with a number of work-arounds suggested by programmers online who had encountered the same problems. These all failed, so I downloaded a copy of Microsoft vb.net 2015 thinking that it would solve the problem, being the most recent version of the programming language software. Sadly, vb.net 2015 did not work either. So, I have finally bit the bullet and I am now developing a completely new version of ERICA written in a different programming environment called Windows Presentation Foundation (WPF). This displays properly on high definition screens, has better graphics, and appears to be faster all round. It will take me months to develop a fully working version of WPF ERICA and I am on a very steep learning curve because WPF is considerably different to vb.net.

ERICA has been installed on at least a dozen Windows 10 computers, but, for some unknown reason would not install on 2 machines with Windows 10 and one Windows 8 machine. The issue is something to do with the operating system itself, however, I am hopeful that converting ERICA to WPF will sort out this infuriating problem too.

Cornish Biodiversity Network

During 2015 and the spring of 2016 negotiations took place between ERCCIS/CWT and representatives of the Recording Community following the decision by ERCCIS/CWT to stop receiving data from ERICA. With hindsight, this decision was obviously a failed attempt to bring about the demise of ERICA. They reasoned that, without endorsement by ERCCIS/CWT, the ERICA database would not have a future, especially as they had developed an alternative in the ORKS database. Needless to say the mass migration from ERICA to ORKS did not happen, partly because ERICA is a far superior product (even if I say so myself), and instead the negotiations failed to reach any agreement. The sticking points were the lack of data sharing by ERCCIS, the lack of verification of records received by ERCCIS from sources other than the established local recording community (ORKS has lots of erroneous records because they do not pass through the hands of the VC Recorders) and thirdly the wholly inadequate support provided to the recording community by ERCCIS.

Following the failure of these negotiations and following several well-attended meetings by local recorders and ERICA users, it was decided to create the Cornish Biodiversity Network (CBN) as a means of overcoming the inadequacies of ERCCIS ourselves - a fully electronic 21st century online alternative to ERCCIS.

Does this mean the CBN is a Local Records Centre? If you think the National Biodiversity Network Gateway is a Records Centre then the answer is yes. If you think otherwise then the answer is no.

In reality, the recording community has been fulfilling half of the role of ERCCIS for many years - surveying in the field, computerisation, validation and verification of those data, ongoing data management, and dealing with enquiries, and in return for the highly polished set of data ERCCIS were provided each year, we received very little. The CBN will continue what we have done in the past but will not replace ERCCIS in all its activities.

In essence, the CBN is fundamentally about supporting biological recording, sharing information, driving up standards and collaboration. Working together to improve what we do best! ERCCIS wants to be no part of this future.

The CBN is under development. A small Steering Group has been formed and is overseeing the phased development process. Putting ERICA online was the first stage in this process. Next, the taxonomic database used by ERICA has been reconciled with that maintained by the Natural History Museum for the NBN Gateway (the process is about 80% complete). We have decided to set up a Community Interest Company to run the CBN on a day to day basis overseen by the Steering Group and intend starting that in the next few months. A website for the CBN is being constructed and should mark the visible launch of the CBN later this month. When the website is launched we will be able to service consultancies with up to date species data and so will generate an income. Initially the income will be needed for the modest start up costs and from then onwards, profits will be ploughed back into supporting the local Biological Recording Community.

ERCCIS has not been supplied with records from ERICA for nearly two years and so is effectively two years out of date for most terrestrial groups (c. 400,000 records). In future, consultancies will need

to use the services of the CBN for planning purposes as the data holdings of ERCCIS increasingly become out of date and poorer quality, given the lack of data verification.

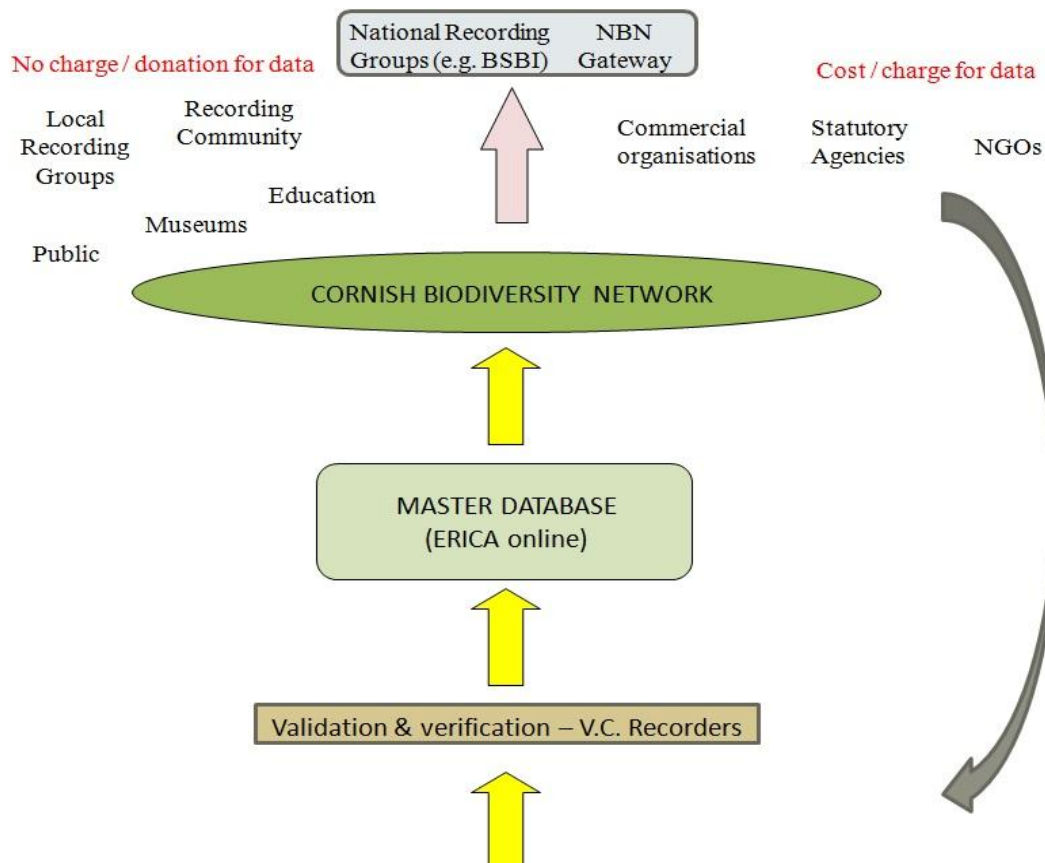
Principles of the CBN

The Cornish Biodiversity Network has been set up by the local Biological Recording Community. It is designed to provide a fair, sustainable and supportive resource that looks after the needs of Cornwall's Biological Recording Community.

- Free, open and complete access to the Recording Community.
- Agencies, consultancies, etc. pay for data and income (minus running costs) is ploughed back into supporting the Recording Community.
- All records go through the right channels (VCRs and taxonomic specialists) for verification.
- No records added directly to the live online database. This is important for quality control.
- Records go to National Recording Schemes and NBN Gateway for their strategic purposes, providing it is not detrimental to local recorders.

Conceptual design

The design of the Cornish Biodiversity Network has at its core an online version of the ERICA database.



Appendix 1

For those of you that like looking at tables of numbers, the table below breaks down the number of records entered into ERICA in 2016 according to taxonomic group and shows those added in 2015 for comparison. Whilst the majority of the records made are vascular plants and insects, this table demonstrates a remarkable breadth of recording underway in Cornwall, both on land and offshore.

Species name	Number of records 2016	Number of records 2015
CYANOPHYTA - BLUE GREEN ALGAE	5	5
RHODOPHYTA - RED ALGAE	187	183
PHAEOPHYTA - SEAWEEDS	169	86
CHLOROPHYTA - GREEN ALGAE	90	43
CHAROPHYTA - STONEWORTS	3	218
FUNGI - ALL TYPES	7610	7285
MYXOMYCOTA - SLIME MOULDS	13	11
EUMYCOTA - FUNGI	21	3
MASTIGOMYCOTINA	12	2
ZYGOMYCOTINA	9	0
ASCOMYCOTINA	3927	4043
LICHENS	5453	5193
BASIDIOMYCOTINA	2452	1740
RUSTS & SMUTS	921	415
MUSHROOMS, TOADSTOOLS & PUFFBALLS	1390	1164
DEUTEROMYCOTINA	704	943
BRYOPHYTA - MOSSES & LIVERWORTS	11804	1065
BRYOPSIDA (MUSCI) - MOSSES	9085	897
SPHAGNA	529	550
HEPATICEAE - LIVERWORTS	2719	168
FERNS AND ALLIES	5110	4144
FLOWERING PLANTS AND FERNS	100346	85877
LYCOPSIDA - CLUB MOSSES	8	98
SPHENOPSIDA - HORSETAILS	219	169
FILICOPSIDA - FERNS	4883	3877
CONIFERS & ANGIOSPERMS	95236	81733
GYMNOSPERMS	376	205
FLOWERING PLANTS	92481	78936
ORCHIDS	246	204
THE PROTOZOA	20	27
PROTOZOA - CILIOPHORA	1	2
PORIFERA - SPONGES	26	22
CNIDARIA - COELENTERATA	154	192
HYDROIDS	33	26
JELLYFISH	32	130
SEA ANEMONES AND CORALS	89	36
CTENOPHORA - COMB JELLIES	0	1
PLATYHELMINTHES - FLATWORMS	47	40
ASCHELMINTHES - ROUND WORMS ETC.	43	34
NEMATODES	3	0
ECHIUROID WORMS	1	0

Species name	Number of records 2016	Number of records 2015
NEMERTEA	43	32
ROTIFERA - ROTIFERS	0	1
GASTROTRICHS	0	1
ENTOPROCTA	0	4
GASTROPODA - GASTROPODS	938	548
GASTROPODA - PROSOBRANCHIA	188	99
GASTROPODA - OPISTHOBRANCHIA	86	177
GASTROPODA - PULMONATA	664	272
LAMELLIBRANCHS - BIVALVIA	90	39
CEPHALOPODA - SQUIDS - CUTTLEFISH - OCTOPUSES	2	7
ANNELIDA - SEGMENTED WORMS	162	153
POLYCHAETA - BRISTLE WORMS, MARINE WORMS	138	145
OLIGOCHAETA - EARTHWORMS ETC.	15	5
HIRUDINEA - LEECHES	9	3
POLYZOA - BRYOZOANS, MOSS ANIMALS	59	38
ARTHROPODA - ARTHROPODS	82937	92632
CRUSTACEA - CRUSTACEANS	1	2
OSTRACODA - OSTRACODS	0	1
CLADOCERA - WATER FLEAS	0	1
COPEPODA - COPEPODS	1	0
CIRRIPEDA - BARNACLES	51	23
DECAPODA - SHRIMPS, CRABS ETC.	146	68
AMPHIPODA - SANDHOPPERS ETC.	45	32
ISOPODS - WOODLICE ETC.	163	170
CHILOPODA - CENTIPEDES	31	23
DIPLOPODA - MILLIPEDES	45	95
INSECTA - INSECTS	81675	91048
COLLEMBOLA - SPRINGTAILS	73	11
THYSANURA - 3 BRISTLETAILS	8	24
PLECOPTERA - STONE FLIES	1	4
EPHEMPTERA - MAYFLIES	2	3
ODONATA - DRAGONFLIES & DAMSELFLIES	478	8540
DICTYOPTERA - COCKROACHES	4	5
DERMAPTERA - EARWIGS	45	24
PHASMATIDAE - STICK INSECTS	14	1
ORTHOPTERA - GRASSHOPPERS & CRICKETS	345	228
ORTHOPTERA - GRASSHOPPERS ETC	209	134
ORTHOPTERA - CRICKETS	136	94
THYSANOPTERA - THRIPS	0	1
PSOCOPTERA AND ANOPLURA - PSOCIDS LICE, BOOKLICE E	60	7
HEMIPTERA - HETEROPTERA - TRUE BUGS	868	630
HEMIPTERA - HOMOPTERA - FROGHOPPERS, APHIDS	1124	451
HOMOPTERA - FROGHOPPERS	28	22
HOMOPTERA - APHIDS	506	156
COLEOPTERA - BEETLES	3147	1861
CARABIDAE - GROUND BEETLES	76	212
LADYBIRDS	257	154
MEGALOPTERA ETC - ALDER FLIES	0	1

Species name	Number of records 2016	Number of records 2015
NEUROPTERA - LACE WINGS	15	8
HYMENOPTERA - SYMPHYTA - SAWFLIES	162	119
HYMENOPTERA - PARASITICA - PARASITIC WASPS	394	116
HYMENOPTERA - ACULEATA - ANTS BEES WASPS	2213	1367
MECOPTERA - STONE FLIES	9	7
TRICHOPTERA - CADDIS FLIES	1	1
LEPIDOPTERA - MOTHS AND BUTTERFLIES	66725	73990
MICROLEPIDOPTERA - MICRO MOTHS	8808	11149
LEPIDOPTERA - BUTTERFLIES	19067	26544
MACROLEPIDOPTERA - LARGER MOTHS AND BUTTERFLIES	57917	62841
DIPTERA - TWO WINGED FLIES	5980	3636
HOVERFLIES	2378	2035
SCORPIONIDA - SCORPIONS	0	1
SPIDERS & HARVESTMEN	545	1117
OPILIONES - HARVESTMEN	52	155
ARANAE - SPIDERS	491	952
ACARI - TICKS & MITES	208	37
PYCNOGONIDA - SEA SPIDER	4	6
CRINOIDS - FEATHER STARS	1	2
ECHINODERMATA - ECHINODERMS	58	33
HOLOTHURIOIDEA - SEA CUCUMBERS	1	2
ECHINOIDEA - SEA URCHINS	4	1
ASTEROIDEA - STAR FISHES	34	17
OPHIUROIDEA - BRITTLE STARS	18	11
CHORDATA (UROCHORDATA) - TUNICATES	37	55
PROCHORDATES - ASCIDIANS ETC	37	55
ALL THE FISH	421	68
CHORDATA (VERTEBRATA = CRANIATA)	5076	12679
AGNATHA - LAMPREYS & HAGS	0	1
ELASMOBRANCHS, CHONDRICHTHYES - SHARKS AND RAYS	6	7
PISCES (= OSTEICHTHYES) - BONY FISH	415	60
OSTEICHTHYES - STURGEONS	0	2
BONY FISHES	415	58
SALMONIFORMES - SALMONID FISH	11	2
ANGUILLIFORMES - EELS	18	0
AMPHIBIANS	108	122
CAUDATA - NEWTS & SALAMANDERS	21	9
SALIENTIA (= ANURA) - FROGS & TOADS	87	113
REPTILES	83	58
TESTUDINES - TORTOISES & TERRAPINS	11	2
SQUAMATA (SAURIA) - LIZARDS	51	42
SQUAMATA (SERPENTES) - SNAKES	21	14
BIRDS - AVES	3847	11759
DIVERS, FISHING SWIMMING BIRDS, CORMORANTS, SHAGS	65	631
HERON, STORKS AND THE LIKE	45	166
GEESE, SWANS, DUCKS	179	1151
BIRDS OF PREY	207	431
GAME AND WATER BIRDS	95	395

Species name	Number of records 2016	Number of records 2015
WADERS AND THE LIKE	105	1468
GULLS, SKUAS	219	1128
SEAGULLS	200	1012
PIGEONS, DOVES, CUCKOOS	235	367
OWLS	24	24
ERINACEIDAE - HEDGEHOG	11	26
INSECTIVORA - INSECT AND WORM EATING MAMMALS	155	151
MAMMALIA - MAMMALS	617	672
SORICIDAE - SHREWS	4	9
CHIROPTERA - BATS	67	157
LAGOMORPHA - HARES AND RABBITS	165	128
RODENTIA - RODENTS	81	69
SCUIRIDAE - SQUIRRELS	46	31
MOUSE LIKE RODENTS	35	37
CANIDAE - FOX	28	36
CARNIVORA - CARNIVORES	118	131
MUSTELIDS - OTTERS, BADGERS, WEASELS, STOATS	80	91
PINNIPEDIA - WALRUSES, SEALS, SEA LIONS	10	4
CETACEA - WHALES	6	4
MARINE MAMMALS	6	4
PORPOISES, DOLPHINS	5	2
HOOFED UNGULATES	25	32
CERVIDAE - DEER	24	32
FERAL SHEEP & GOATS	1	0