

Marine Resources Annual Status Report 2013

PREFACE

This annual report sets out the current status of the marine environment and details the monitoring, research and management programmes that the Department is currently engaged in. It also fulfils reporting requirements under various international agreements and obligations and provides an annual update on the marine aspects of the “State of Jersey” report.

The Report highlights work being undertaken to develop a Marine Resources Strategy and to further protect habitats and species, most notably by the development of a whelk fishing management plan and the closure of important Maerl beds to mobile gear fishing.

Landings of both shellfish and wetfish have decreased in weight compared to 2012 and whilst some of this is due to changes in fishing effort and variation in stocks, the unusually severe weather at the end of the year has also played a part. The fishing fleet has remained stable in terms of numbers.



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1. JERSEY'S TERRITORIAL WATERS

Jersey's territorial waters stretch out to 12 nautical miles or to the median line between France and Guernsey and cover almost 2,000 square kilometres. This is a surface area of over seventeen times greater than its territorial land mass at high water of 117 square kilometres. Our coastal and marine areas are of outstanding scenic, historic and cultural value boosting Jersey's image both at home and abroad and feature regularly in tourism marketing material, and influence Island life in almost every way.

Jersey's coastline is 90km long at high water mark, not including the offshore reefs. The length of sea edge is an important influence on the Island's character and perceptions of character. On spring tides the difference between low and high tide can be as much as 12m. The south, south-east and west coast have a very shallow, gently sloping shore profile which means that a very large intertidal area is exposed at low tide and the Island almost doubles in size to about 200 square kilometres. By contrast the north and south west coasts are characterised by steep granite cliffs and coastal heath. Both the inland character of Jersey and its marine environment are very much influenced by the great variation in aspect and exposure of its coastal edges.

Jersey's coastal zone is an area of increasingly intense activity, where complex interactions take place between physical, biological, social, cultural and economic activities. Jersey's location at the confluence of the cold and warm temperature marine biogeographical region together with the warming influence of the Gulf Stream results in important groups of animal and plants associated with the warmer waters of southern Europe, as well as species associated with the cold, northern waters of the UK.

The overall extent and character of the rocky reefs and intertidal sediment flats on the south east coast is not found anywhere else in Europe. At low tide an extensive and biologically rich area of 3,210 hectares is exposed. The steep rocky coast, granite rocky platform and beach coast comprise the Jersey shoreline and are equally important, although better studied than the subtidal environment of predominantly tideswept sands and gravels. Large reef systems surround Les Écréhous and the Paternosters and extensive areas of shallow water with mixed sediment habitat stretch southeast from the Violet Bank. Of special interest is the submerged Plateau des Minquiers, an area of water shallower than 10m covering 100 square kilometres.

The international importance of Jersey's coastal waters is recognised by the fact that almost 190 square kilometres of inter-tidal habitat, spread across Jersey's south-east coast and offshore reefs, are designated as wetlands of international importance under the Ramsar Convention.

The seas around Jersey are very productive. This is reflected in the economic importance of fishing and aquaculture. The fishing industry plays a significant role in Island life and the maintenance of the marine habitat is vital in safeguarding nursery

grounds and feeding areas for commercial species. Whilst on a different scale to the finance industry our marine and coastal areas support approximately 180 jobs directly related to fishing and aquaculture activities and more in associated industries.

Jersey is also rich in coastal and marine sites of cultural, archaeological and historical significance including one of the most important Palaeolithic sites in the British Isles at La Cotte de St Brelade; peat beds and remains of a Neolithic forest sealed beneath inter-tidal sands; and a rich density and diversity of coastal fortifications with excellent examples of Tudor, Napoleonic and Second World War structures.

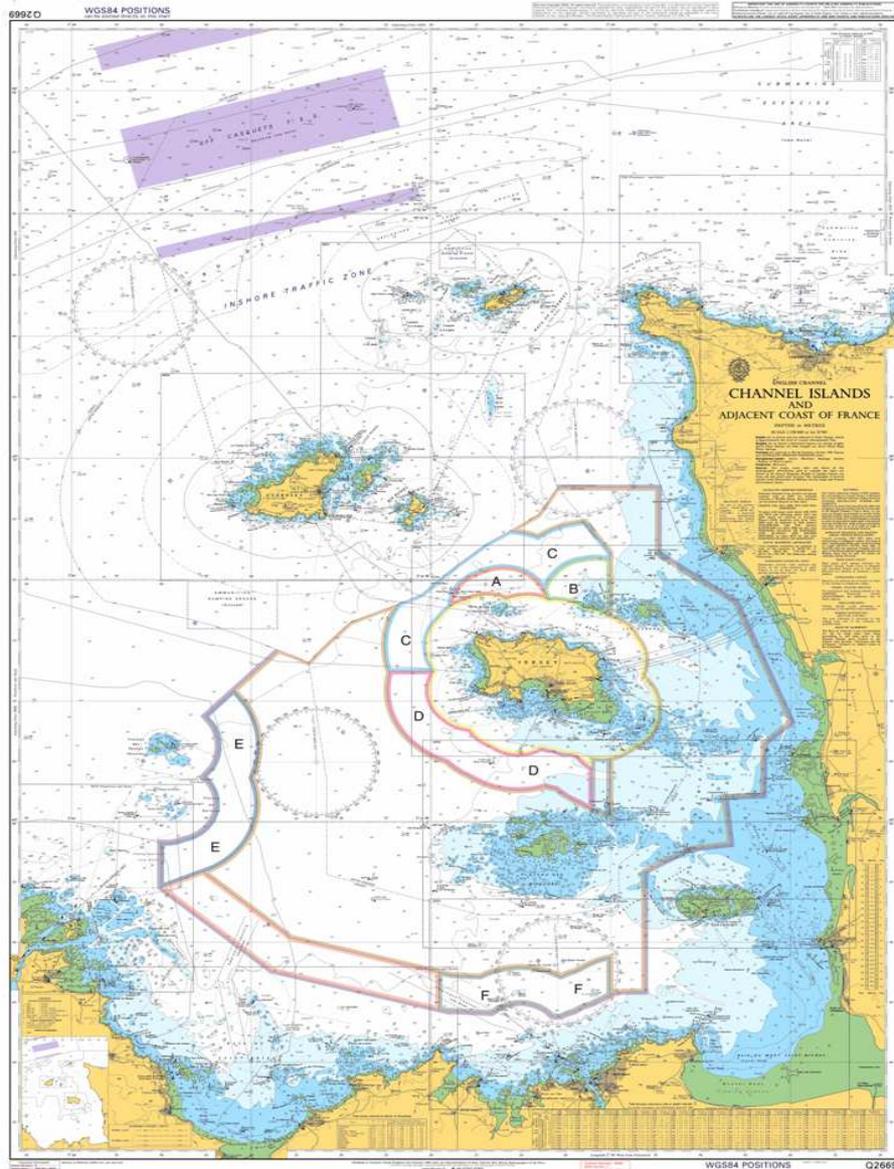


Figure 1. Normano-Breton Gulf (including fishing zones)(not for navigation)

2. USE OF LIVING RESOURCES

2.1. CAPTURE FISHING

2.1.1. Fishing Vessel Licensing

Any fishing vessel exploiting stock in local waters on a commercial basis requires a fishing licence. The Jersey fishing vessel licensing system is aligned directly with that of the UK and as such contributes to the stabilisation of fishing effort at a European wide level.

Table 1. Number and Vessel Capacity Units (VCUs) of licensed vessels.

	2000		2001		2002		2003	
Size	Nos.	VCU	Nos.	VCU	Nos.	VCU	Nos.	VCU
>10m	29	6,105	25	5,574	24	5,328	26	5,535
6-10m	66	4,453	68	4,608	65	4,371	65	4,472
<6m	128	2,874	120	2,809	123	2,826	119	2,747
Total	223	13,432	213	12,991	212	12,525	210	12,754

	2004		2005		2006		2007	
Size	Nos.	VCU	Nos.	Nos.	Nos.	VCU	Nos.	VCU
>10m	21	4,066	19	21	21	3,390	21	3,641
6-10m	65	4,251	60	61	61	3,958	61	4,176
<6m	112	2,579	105	89	89	2,335	89	2,037
Total	198	10,896	184	171	171	9,683	171	9,854

	2008		2009		2010		2011	
Size	Nos.	VCU	Nos.	VCU	Nos.	VCU	Nos.	VCU
>10m	17	3,069	17	2,984	17	2,974	16	2,858
6-10m	58	4,059	60	4,231	61	4,330	62	4,382
<6m	88	2,081	87	2,084	82	1,913	84	1,953
Total	163	9,209	164	9,299	160	9,217	162	9,193

	2012		2013	
Size	Nos.	VCU	Nos.	VCU
>10m	19	3224	18	2982
6-10m	59	4215	61	4451
<6m	81	1880	81	1877
Total	159	9319	160	9310

As of the 31st December 2013 the Jersey based fleet comprised of **160** (up 1) licensed fishing vessels, **89** (same) of which were shellfish qualified. This included **18** (down 1) over 10 metre licences and **142** (up 2) 10 metre and under licences. These licences equate to a fleet size of **749** (up 11 tonnes) gross tonnes, **13177** (down 40kw) kW and **9310** (down 9 vcus) Vessel Capacity Units (VCU's). *The figures show that the fleet has remained stable there being virtually no change in the capacity of*

the fleet in terms of overall engine power, tonnage or VCU's. There has been no significant change in the number of licensed vessels or the structure of the fleet over the last year. Although the fleet size and structure has not changed there has been a greater increase in licence transactions with a higher proportion of vessels changing hands or being replaced in 2013 than in the previous few years.

Licence Transactions

Table 2. Fate of fishing vessel licences

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Jersey Fishing Boat Licences Issued	20	17	17	13	21	15	9	8	5	13
Jersey Additional (Piggy Back) Licences Issued	1	2	7	4	0	4	7	7	9	8
Total Licences Issued	21	19	24	17	21	19	16	15	14	21
Entitlements Imported - Guernsey	1	1	1	0	0	0	1	2	0	0
Entitlements Imported - UK	3	1	1	0	0	1	1	0	0	1
Jersey Disaggregated Entitlements Issued	-	-	-	-	-	-	6	0	0	2
Jersey Licence Entitlements Issued	35	30	30	24	26	16	19	13	12	15
Entitlements Used - Jersey	22	15	20	16	22	14	10	8	5	13
Disaggregated Entitlements Used – Jersey	-	-	-	-	-	-	4	0	0	3
Entitlements Used - Guernsey	7	4	3	1	2	1	0	0	1	1
Entitlements Used - UK	8	2	6	7	8	9	5	4	4	1
Entitlements Lost	3	1	0	0	1	0	0	0	1	0
Entitlements Used – Total	38	22	29	24	33	24	19	12	11	18
Valid Jersey Entitlements 31 December	14	25	28	26	19	12	20	22	25	23

During the year 21 (up 7) Jersey Fishing Boat Licences including 8 (down 1) Additional (Piggy Back) Jersey Fishing Boat Licences were issued and 15 (up 3) licence entitlements were issued.

A total of 18 (up 7) licence entitlements were used, 13 (up 8) to licence vessels in Jersey while 1 (down 3) transferred to the UK licensing system, where it was used to licence a Jersey vessel. One licence entitlement was used to licence a vessel in Guernsey.

One licence entitlement transferred from the UK to Jersey, Jersey fishermen preferring to take advantage of reciprocal licensing arrangements and keep their

main licence on the UK licensing system while applying for a Jersey Additional (piggy back) Licence to fish in Jersey Waters. As of the 31st December 2013 there were 23 valid Jersey licence entitlements (including 2 disaggregated entitlements) on the Jersey licensing system, 12 of which were shellfish qualified.

2.1.2. Landings

Other than Whelks, there has been an overall reduction on landings of all shellfish compared to 2012. Lobster landings, however, are still relatively high compared to the years 2007-2009 (Table 3).

Lobster landings per unit effort (LPUE) decreased by approximately 6.41% to average 12.15 kg per 100 pots over the year (Table 5). However, similar to total landings, Lobster LPUE still remains relatively high compared to previous years (Figure 2), whilst LPUE for Brown Crab and Spider Crab have continued to decline.

Table 3. Quantity of shellfish landed by the Jersey fleet (kg)

Species	2007	2008	2009	2010	2011	2012	2013
Brown crab	412,239	480,844	360,872	408,873	433,845	474,268	357,559
Crawfish	170	142	138	0	5	47	7
Lobster	154,704	162,560	177,087	225,494	257,112	237,395	197,657
Scallop^{1, 2}	371,837	330,997	362,528	401,475	285,273	283,817	280,855
Spider crab	105,734	178,692	177,158	173,298	144,475	108,087	76,801
Whelk	545,395	297,742	104,995	497,410	244,480	217,520	253,055
Others^{3,4}	2,047	2,400	2,249	4,657	5,731	7,343	4,369
Total	1,592,126	1,453,377	1,180,976	1,711,207	1,370,921	1,328,477	1,170,303

Notes

1. 2007 onwards includes dredged and commercial dived.
2. 2010 contained 1,020 kg of Queen Scallops.
3. Others include prawn, velvet crab, cuttlefish, squid, praire, amande.
4. Others include ormers from 2012.

In the wetfish sector, Bream had the most significant change, with a significant decrease compared to 2012's figures (Table 4). However 2012 had an abnormally high quantity of bream landed, primarily due to several larger Jersey vessels that had previously fished outside of the island's waters. Thus the reduction in bream landings in 2013 is seen to be a return to levels caught in previous years. Skate and Ray landings have also decreased from 34.5 tonnes to 19.4 tonnes, again considered to be due to changes in fishing activity and location.

Overall the wetfish sector landings have decreased by around 107 tonnes from 2012's landings of 183.9 tonnes to 76.5 tonnes, primarily due to changes in fishing activity by several larger vessels.

Table 4. Quantity of wetfish landed by the Jersey fleet (kg)

Species	2007	2008	2009	2010	2011	2012	2013
Angler	262	240	233	62	748	39	198
Brill	2,435	2,997	2,135	2,985	4,127	1,745	1,316
Bass	18,085	18,564	11,649	13,831	16,379	10,578	9,137
Cod	46	198	135	214	242	8	2
Conger	17,314	7,179	3,170	3,023	3,256	2,093	1,939
Dogfish	8,211	10,133	4,596	13,278	12,580	15,975	8,184
Gurnard/Latchet	1,570	2,085	104	413	85	907	461
Horse mackerel	63	3	226	3	0	185	149
John Dory	14	9	11	9	11	5	34
Ling	176	159	0	112	475	572	287
Mackerel	5,516	7,004	6,511	5,744	6,050	6,941	7,655
Mullet -grey	561	1,470	1,194	2,529	2,202	698	2,295
Mullet -red	900	372	248	195	430	1,526	241
Plaice	930	2,722	2,651	2,411	3,831	2,421	1,754
Pollack	2,690	7,334	7,915	6,657	16,553	8,849	6,233
Sea Bream ¹	3,066	4,215	3,158	10,428	17,904	85,654	11,501
Skate/Ray ²	49,801	79,961	22,699	37,390	34,611	34,557	19,392
Sole	1,807	2,194	1,344	1,463	1,630	1,234	1,767
Tope	1,593	747	187	30	270	550	248
Turbot	436	400	646	788	2,004	1,685	1,310
Other Species ³	2,124	2,586	3,352	5,096	2,813	7,631	2,366
Total	117,600	150,572	68,771	106,661	126,201	183,853	76,469

Notes

1. Gilt-head bream included in 2012 (300kg) and 2013 (7kg).

2. Blonde, small-eyed, and thornback only for 2012 onwards

3. Other species included flounder, herring, lemon sole, pouting, sandeel, sand sole, shark, smooth hound, snipe, trigger fish, whiting and wrasse.

2.1.3. Landing Per Unit Effort

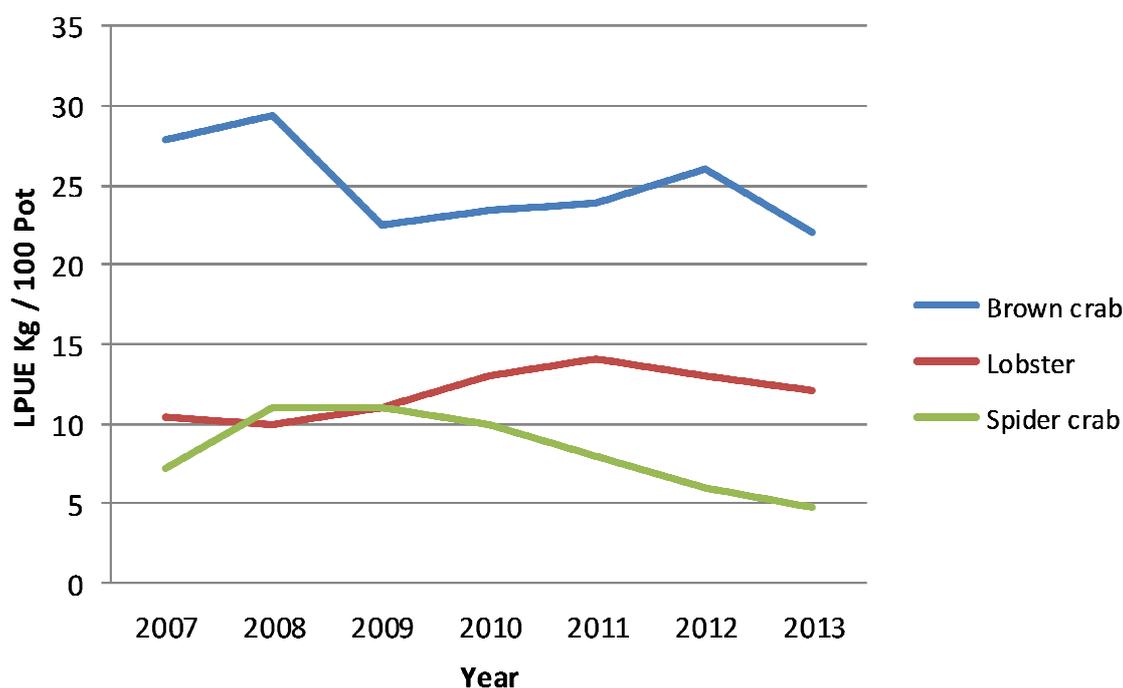
Table 5. Landings per unit effort (LPUE) for selected shellfish species

Species	Quantity landed (kg)	Nos. of pot lifts ¹	LPUE (kg per 100 pots)	% change from 2012
Brown crab	357,559	1,627,083	21.98	-15.28
Lobster	197,657	1,627,083	12.15	-6.41
Spider crab	76,801	1,627,083	4.72	-20.00

Notes

1. Pot lifts include parlour pots, inkwell, creels, D pots-

Figure 2. Landings per unit effort (LPUE) trend 2007 to 2013



2.2. MARICULTURE

Production of Pacific Oyster in 2013 increased slightly on 2012's 761 tonnes to approximately 869 tonnes (Table 6). Mussel production decreased to approximately 39 tonnes. There was no significant change in King Scallop production, by aquaculture.

There were no new Aquaculture concessions awarded in 2013.

Table 6. Farmed shellfish production (area in hectares; production in kg)

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Intertidal area	62.65	62.88	62.88	68	68.76	68.76	68.76	68.76	68.76
Subtidal area	166	166	166	166	166	166	166	166	166
Pacific Oyster	579,915	651,148	737,395	829,952	903,000	628,760	972,000	760,865	868,700
King Scallop	8,484	2,540	4,100	8,841	2,571	2,462	2,493	4,516	3,870
Ormers	-	-	-	-	-	-	-	43	130
Mussels	50,000	117,500	50,000	117,000	101,000	201,278	89,205	102,664	38,600
Total	638,399	771,188	791,495	955,793	1,006,571	832,500	1,063,698	868,046	913,400

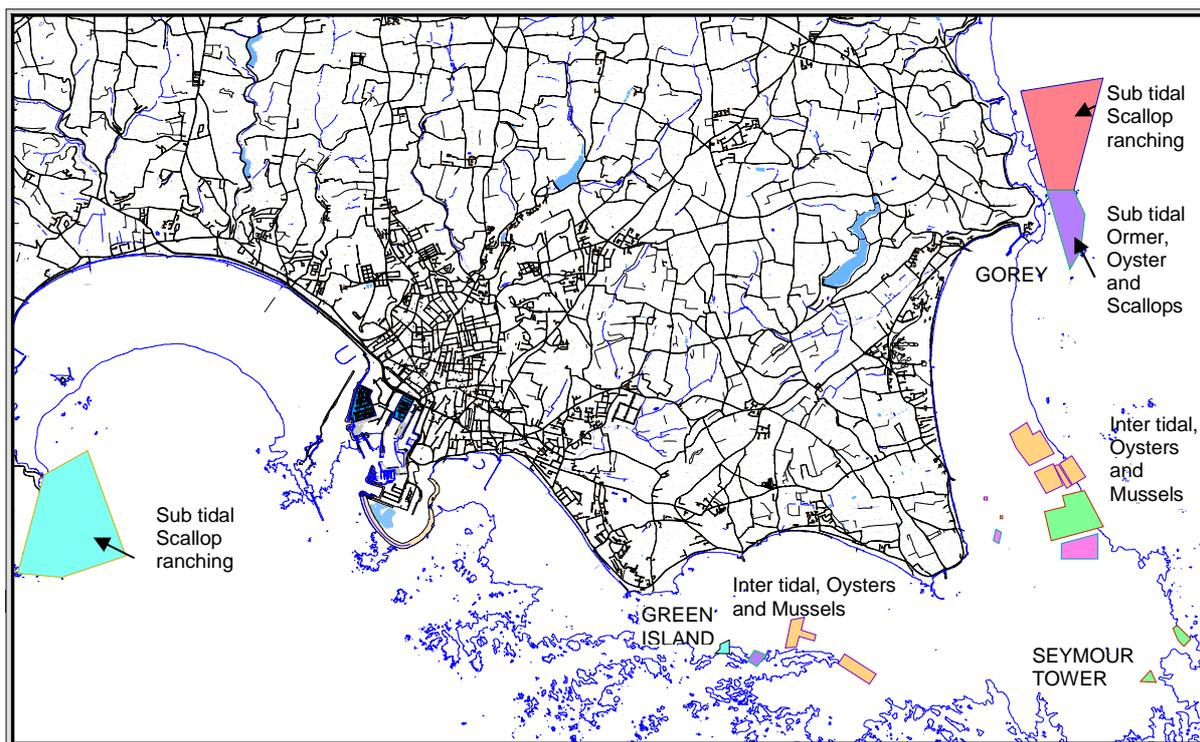


Figure 3 Aquaculture concessions as of December 2013

2.3. RESEARCH AND DEVELOPMENT PROGRAMME

2.3.1. Whelk

The annual study of whelk (*Buccinum undatum*) catch per unit effort (CPUE) was conducted in February 2013. The same study sites and methodology were used as in preceding years.

Overall, the CPUE in 2013 was 1.8 kg per pot (Fig. 3). This was a slight increase on the CPUE recorded in 2012 (1.71 kg), but still one of the lowest total CPUE on record since 1996. The large fraction (above minimum landing size) of 2013's catch was approximately the same, with a CPUE of 1.48 kg, compared to 1.42 kg in 2012. The small fraction (below minimum landing size) remains low at 0.32 kg per pot. Overall there is still a trend of decline in the stock, particularly so in the large fraction ($R^2=0.71$), with no significant improvement on catches from the last fourteen years (Fig. 4).

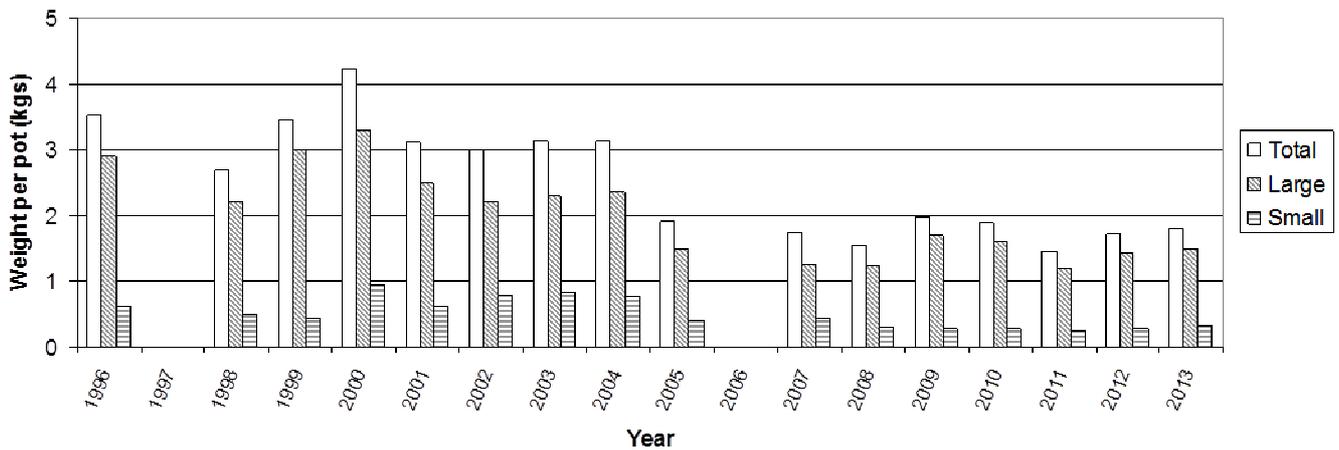


Figure 4. Average CPUE of Whelks (Total, large fraction, small fraction)

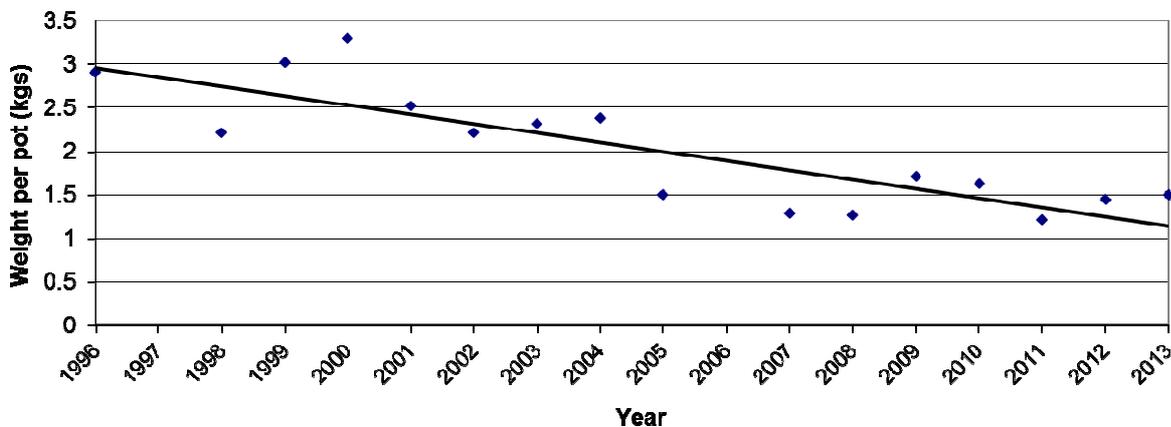


Figure 5. Comparison of catches for sized whelks (>45 mm Minimum Landing Size) for all surveys (1996-2012) with linear trend line fitted $R^2=0.71$.

2.3.2. Lobster

Since 2004, an annual study has been conducted by the Department to monitor changes in the number and structure of the juvenile Lobster population in Jersey waters. Each year the same equipment and sites are used, to allow comparison over time. The lobster pots used are of a parlour construction with no escape gaps and thus differ from commercial pots, to allow the capture and assessment of juvenile lobsters.

In 2013, the study had a reduced number of pot hauls due to bad weather. For 120 pot hauls, there were a total of 192 lobsters caught in 2013. This is compared to 287 caught in 2012, 335 caught in 2011 and 192 caught in 2010, all for 180 pot lifts each. Along with a decreased total catch of lobsters, there was also a decrease in Catch per Unit Effort (CPUE) for both sized and undersized lobsters (Table 7). However despite these lower figures, 2013's catch is still much higher than for the years 2004 to 2008, with the juvenile portion of the catch still having one of the highest CPUE's recorded since the study began.

Table 7. Catch Per Unit Effort (CPUE) of lobster (kg per 100 pots).

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Average CPUE Sized (kg/100 Pots)	7.3	8.6	6.3	12.3	10	31	18.2	27.5	21.8	17.63
Average CPUE Under-sized (kg/100 Pots)	26.7	32.6	32.3	31.6	27.4	89.8	28.2	49.1	42.8	40.58

The frequency distributions of lobster carapace lengths are also assessed and monitored to help analyse the structure of the juvenile lobster population. The frequency distribution has changed compared to 2012, with a larger proportion of lobsters found under the 87mm minimum landing size (MLS) (Figure 6).

Also in 2013, the Department analysed some of the data received from Fishermen who are participating in a volunteer log book scheme. Fishermen have been asked to measure the carapace length of all lobsters they catch from a single string and also record the location of the string, pot type, lay time, type of bait and whether the lobsters are carrying eggs or not. This data is then sent to the Department who input and collate the information to look at both seasonal trends in lobster egg production and lobster population structure. As a new project, the auto-recording of this information by fishermen has provided a wealth of data that is both spread out over the year and from a diversity of different locations around Jersey's territorial sea. As such the Department is very grateful to those fishermen who have volunteered their time to the project and looks forward to continuing the project in the future.

Figure 7 shows some initial data from this project. By comparing the frequency of different sizes of lobster in different pots, there is a clear difference between commercial parlour pots, traditional pots and the no escape gap pots used in the Department's own research work. Overall, commercial parlour pots with escape gaps catch more, larger lobsters than traditional pot types (Figure 7), which in turn, catch more, larger lobsters than the pots used in the Department's annual research trials (Figure 6).

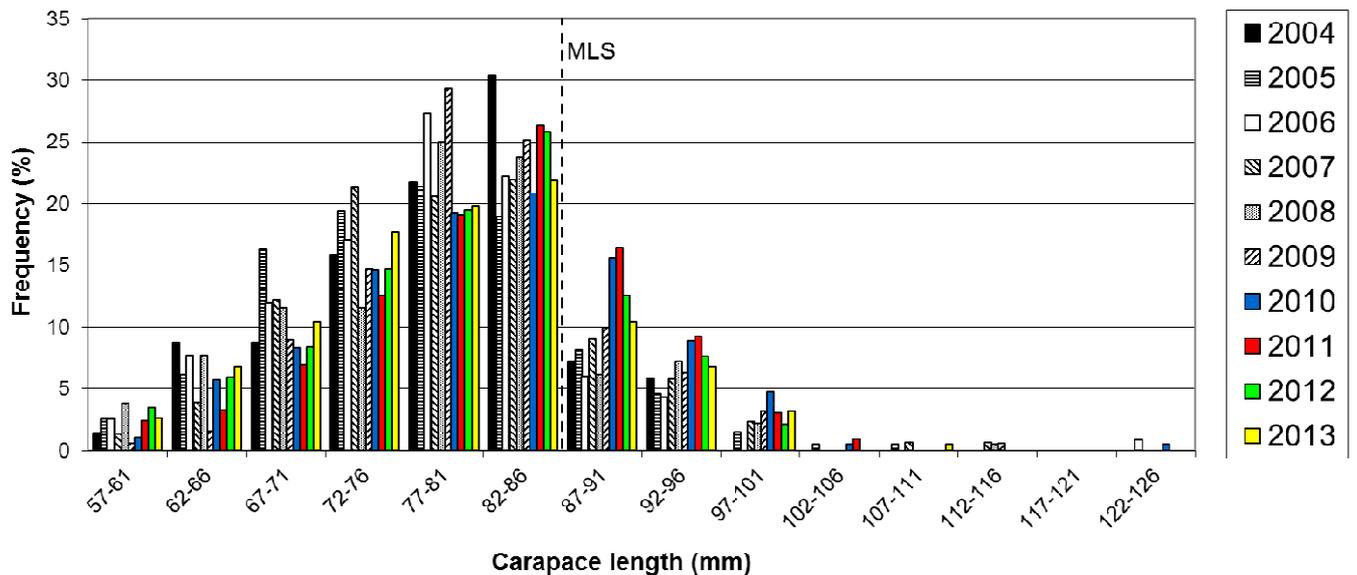


Figure 6. Length frequency distribution of lobsters from the Department's annual research

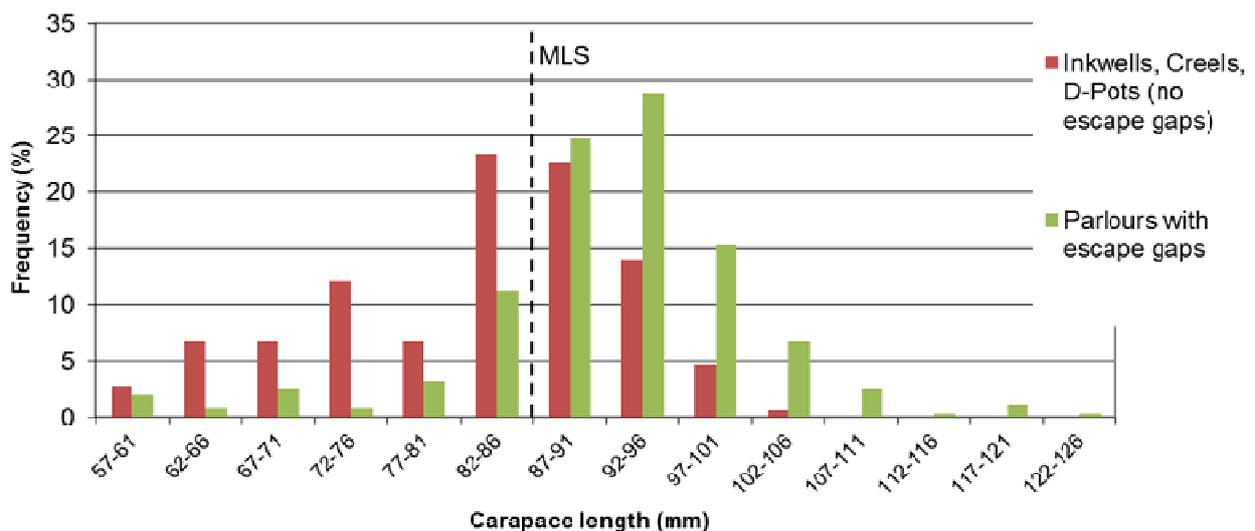


Figure 7. Length frequency distribution of lobster from volunteer Fishermen's records

2.3.3. Tagging Projects

The tagging of fish species, namely rays and bass, continued throughout 2013 by project partners and the Department. A bass tagging programme using external T bar tags commenced in June 2012 and continued throughout 2013. By the end of 2013 1486 bass had been tagged and ten tagged bass have been recaptured. This gives a tag recapture rate of less than 1% which is very low. There are several possible reasons for this including poor tag retention or low site fidelity. Further work will be done in 2014 looking at this important stock, including continuing the external tagging work and development of acoustic tagging projects with this species.

Information from these recaptures adds to our understanding of fish species biology and habitat use, which in turn contributes to the management of these stocks.

3. OTHER USES AND IMPACTS

3.1. MICROBIAL CONTAMINATION

3.1.1. Bathing Water

Monitoring of bathing water quality started in 1992, with 16 of the most popular beaches monitored weekly between May and September. In 2013 all bathing waters passed the imperative standard and 87.5% passed the stringent Guideline standard¹.

3.1.2. Mariculture

Table 8. Shellfish Production Classification Areas Grading (as of December 2013)

Production Area	Species	Grade
Green Island	<i>C. gigas</i>	B
	<i>O. edulis</i>	B
Le Hocq	<i>C. gigas</i>	B
	<i>M. edulis</i>	B
La Hurel holding bed	<i>C. gigas</i>	B
	<i>M. edulis</i>	B
La Hurel main bed north	<i>C. gigas</i>	B
	<i>M. edulis</i>	B
La Hurel main bed south	<i>C. gigas</i>	B

¹ For further information please see www.gov.ie

3.2. DEPOSITS IN THE SEA

Deposits in the sea are controlled under the Food and Environment Protection Act 1985 (Jersey) Order 1987. The following licences were issued during 2013².

Deposit of material

Licence Number	2013/01
Date Issued	March 2013
Project Title	Replacement of Elizabeth Harbour West Ro-RO and associated works
Project Description	Phase 1. Advanced Civil Works. Various modifications to bank seat required to accommodate larger ramp. Phase 2. Main Civil Works. Dredging of berth to accommodate buoyancy tank and fixing of lateral restraint guide frame. Phase 3. Installation of new linkspan and removal of old linkspan

Licence Number	2013/02
Date Issued	May 2013
Project Title	Clearance of seaweed (Brown) and deposit from various Island beaches
Project Description	Brown seaweed, known locally as Vraic, occur on sea beaches as part of natural processes. From time to time these deposits can be of significant quantities that can cause amenity and recreational use issues during the summer season, and on rare occasions at other times. The clearance of brown weed at selected sites and subsequent deposit at low tide is a short term but cost effective solution to these issues.

Licence Number	2013/03
Date Issued	May 2013
Project Title	Clearance of seaweed (Green) and deposit from St Aubins Bay
Project Description	Green seaweeds occur on sea beaches, in particular St Aubin's Bay. From time to time these deposits can be of significant quantities that can cause amenity and recreational use issues during the summer season. The clearance of green weed and subsequent deposit at low tide is a short term but cost effective solution to these issues.

Licence Number	2013/04
Date Issued	June 2013
Project Title	Clearance of seaweed (Brown) and deposit from Gorey

² Licence 2013/05 was issued but not activated in 2013

	Harbour
Project Description	Brown seaweed, known locally as Vraic, can occur within the harbour at Gorey, as part of natural processes. From time to time these deposits can be of significant quantities that can cause amenity and recreational use issues during the summer season. The clearance of brown weed at selected sites and subsequent deposit at low tide is a short term but cost effective solution to these issues.

Licence Number	2013/06
Date Issued	Nov 2013
Project Title	Deposit of material from harbour pierheads
Project Description	Routine activity by commercial vessels causes a scouring of the seabed at the point of turning to berth at Elizabeth Harbour. The displaced material is re-deposited at a location close to the pierhead, causing a bank, locally known as the Condor Hump that is significantly above charted height. This project will remove this bank and deposit the material at sea.

Burial at sea

No burial at sea licences were issued during 2012.

Construction

No construction licences were issued during 2012.

3.3. NON INDIGENOUS SPECIES

Non indigenous species can have a significant impact on a number of aspects of marine ecosystems including competition and biodiversity loss. The main routes for unintended importations include ballast waters, fouling on ships hulls and aquaculture. Some non-indigenous species have also been imported intentionally for aquaculture production, such as *Crassostrea gigas*.

Eradication of non indigenous species in the marine environment once established is considered virtually impossible due to logistic and resource issues.

One new non indigenous species was recorded in 2013, namely *Perophora japonica* on the Heron wreck off the Paternosters reef. There has been a rapid expansion in *Watersipora subtorquata*, occupying crevices and longhangs in the rocky lower shore, with inevitable displacement of other species. Increased distribution was also recorded in *Asparagopsis armata* and *Styela clava*.

Table 9. Non Indigenous Species

Species Name	First record	Vector	Probable Impact
<i>Janua brasiliensis</i>	1987	●	
<i>Elminius modestus</i>	1983	●	● ●
<i>Urocryptella diogeni</i>	1952		
<i>Hemigrapsus sanguineus</i>	2009	● ●	● ●
<i>Crepidula fornicata</i>	1974	●	● ●
<i>Urosalpinx cinerea</i>	1983		
<i>Crassostrea gigas</i>	1982	●	● ● ●
<i>Tapes philippinarum</i>	2009	●	●
<i>Bugula stolonifera</i>	2009	●	● ●
<i>Watersipora subtorquata</i>	2009		
<i>Styela clava</i>	2009	●	● ●
<i>Undaria pinnatifida</i>	2009		● ●
<i>Sargassum muticum</i>	1980	● ●	● ● ●
<i>Asparagopsis armata</i>	2005	●	
<i>Grateloupia filicina</i>	1865		
<i>Grateloupia subpectinata</i>	2011	●	
<i>Polyopes lancifolius</i>	2011	●	
<i>Antithamnionella ternifolia</i>	2011		
<i>Polysiphonia harveyi</i>	1994		
<i>Codium fragile fragile</i>	1983	● ●	● ● ●
<i>Codium fragile atlanticum</i>	2011		
<i>Perophora japonica</i>	2013		
<i>Grateloupia turatura</i>	1994		

Data supplied by Dr P Chambers

KEY

Vector	
●	Fouling
●	Ballast Water
●	Secondary Spread
●	Importation for aquaculture
●	Aquaculture

Probable Impact	
●	Competition
●	Habitat modification
●	Biodiversity loss

4. HAZARDOUS SUBSTANCES

4.1. HEAVY METALS

The monitoring programme commenced in July 1993 to assess whether any contamination of the marine biota was occurring from the Waterfront reclamation site. Two benthic mollusc species; the common limpet (*Patella vulgata*), an algal browser; the slipper limpet (*Crepidula fornicata*), a filter feeder and a serrated seaweed (*Fucus serratus*) were used as bio-monitors. All three species were present in large numbers around Jersey's coast. Common limpet and seaweed samples are taken from five locations around the coast and slipper limpet samples from four location and Les Ecrehous reef. The programme has now been extended to include a full suite of samples from all the offshore reefs.

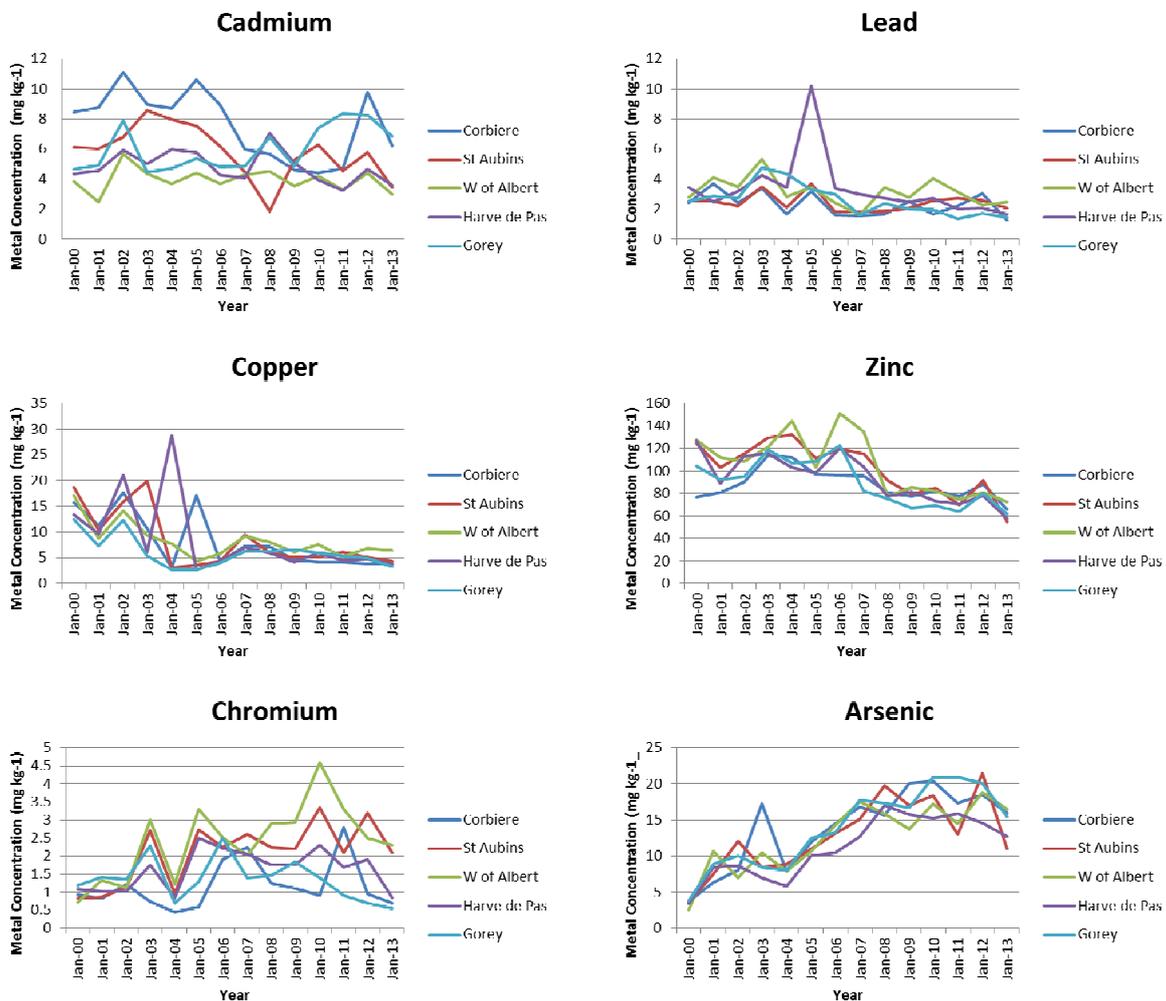


Figure 7. Metal concentrations in Common Limpet, *Patella vulgata*.

Whilst there is variation between metals, analysis shows that there is general correlation between sites indicating that trends are consistent around the locations sampled and therefore not indicative of a point source of these metals.

Data from 2013 shows a general decrease across metals and species but further analysis and study is required to assess trends in the data.

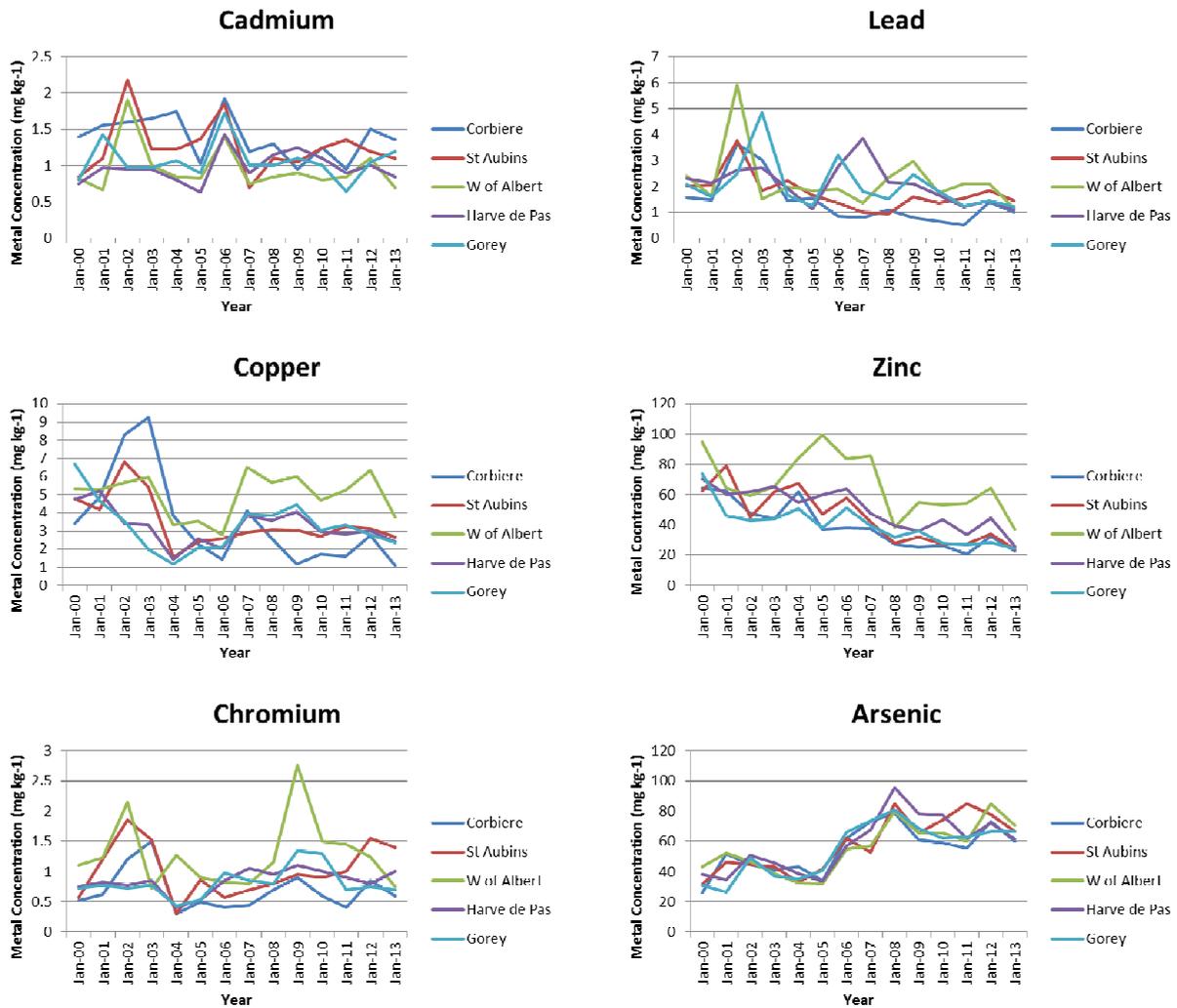


Figure 8. Metal concentrations in seaweed, *Fucus serratus*.

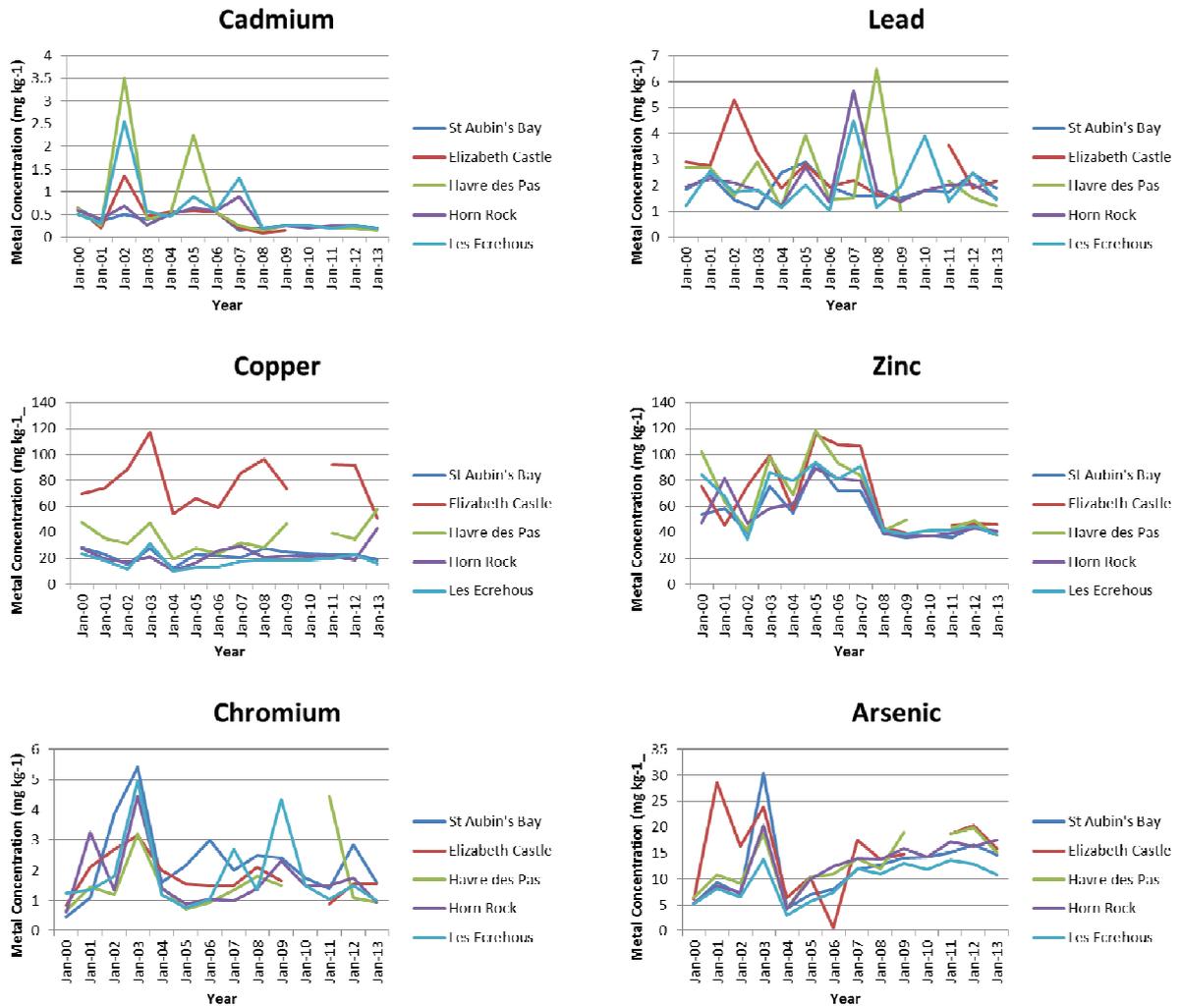


Figure 9. Metal concentrations in Slipper limpet, *Crepidula fornicata*

4.3. HARMFUL ALGAL BLOOMS

Shellfish and seawater samples are collected and analysed monthly from November to April and bimonthly from May to October. Samples are analysed for three algal biotoxins. In 2013, DSP and ASP biotoxins were either not detected or below level that required action or additional samples. On three occasions PSP was detected and re-sampled. All these samples were negative.

Table 10. Algal biotoxin examination from shellfish and seawater samples

	PSP		DSP		ASP	
	Shellfish	Seawater	Shellfish	Seawater	Shellfish	Seawater
2004	ND	<TP	Negative	<TP	ND	<TP
2005	ND	<TP	Negative	<TP	< RL	<TP
2006	ND	<TP	Negative	<TP	< RL	<TP
2007	ND	<TP	Negative	<TP	< RL	<TP
2008	ND	<TP	Negative	<TP	< RL	<TP
2009	ND	<TP	Negative	<TP	<LOQ	<TP
2010	ND	<TP	Negative	<TP	<LOQ	<TP
2011	ND	<TP	< RL	<TP	<LOQ	<TP
2012	ND	<TP	<RL	<TP	<LOQ	<TP
2013	ND	<TP	<RL	<TP	<LOQ	<TP

Key

ND Not Detected
 <TP Below Trigger Point for additional sampling
 < RL Below Reporting Limit
 <LOQ Below Limit of Quantitation

5. RADIOACTIVE SUBSTANCES

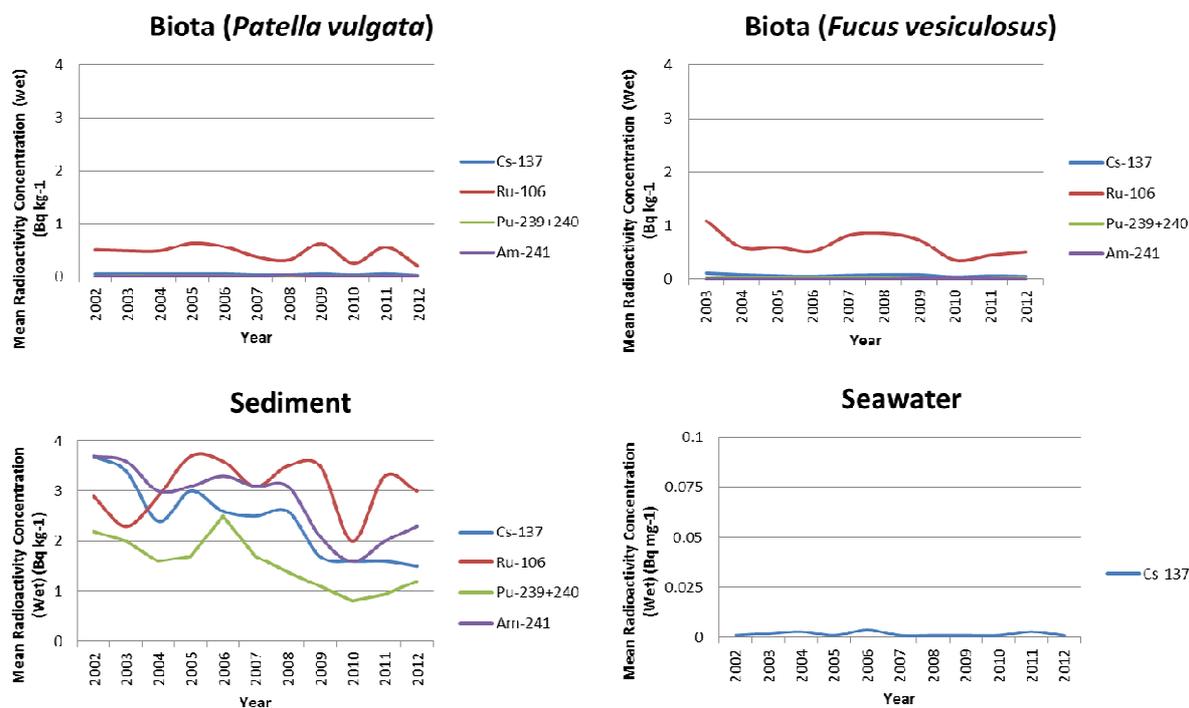


Figure 10. Radioactivity in marine environment

Radioactivity in the marine environment is monitored by an annual sampling programme and analysis as part of a UK wide programme. The programme monitors the effects of radioactive discharges from the French reprocessing plant at Cap de la Hague and the power station at Flamanville. It also serves to monitor any effects of the historical disposals of radioactive waste in Hurd Deep. Analysis shows that the concentration of artificial radionuclides in the marine environment and the effects of discharges from local sources continue to be of negligible radiological significance. No evidence for significant releases of activity from Hurd Deep was found³.

³ For further details see CEFAS website (RIFE 2013 report)

6. PROTECTION AND CONSERVATION OF BIODIVERSITY AND ECOSYSTEMS

6.1. MARINE PROTECTED AREAS

Jersey's current Marine Protected Areas (MPAs) network consists of sites designated under the Ramsar Convention (see section 6.2.) and sites protected under the Fisheries Law, the most important of those covered by restrictions on certain types of fishing activity. They are the no mobile gear zones to the south and east and the no dredging zones to the south, east and north⁴.

The most significant development was detailed discussions around the introduction of additional non mobile zones to the east of the Island and at the offshore reefs mainly for the protection of maerl beds, an OSPAR critical habitat. Using data from the University of Plymouth project and additional information from Jersey Seasearch areas where mobile gear is not allowed inside the three mile exclusive limit were signed off by the Minister and came into effect as a licence condition at the beginning of 2014.

The offshore reefs of Les Ecrehous and Les Minquiers are outside of the three limit exclusive limit and therefore, under the terms of the Granville Bay Treaty, require discussions with French colleagues around fishing activity. Preliminary discussions have occurred and it is hoped an agreement can be reached to protect these important areas during 2014.

6.2. RAMSAR

Some progress was made in the management of Jersey's four Ramsar sites in 2013. The work around protection of the maerl beds highlighted above is a major development in the protection of the Ramsar sites locally and should be seen as a significant success in achieving the sustainable use of marine resources.

The Ramsar Management Authority (RMA) conducted an annual audit of the management plans in April 2013.

In general there was good compliance with Objectives 1 and 2 of the Management Plans but the audit highlighted some issues with Objectives 3 and 4. Objective 3 looks to "Improve awareness among all key stakeholders, including the wider community, of the natural value of the Ramsar sites and principals expressed in the management plan" and it is felt this is not being achieved as the RMA would like. Several proposals were put forward to try to address this including improved links with ESC and EDD around the local curriculum and Beach signs and interpretation although resource issues prevented much development in this areas. Objective 4 which requires a funding plan to be put in place for the implementation of the Management Plans was not achieved and remains the significant barrier to any further implementation of the plans.

⁴ See Fisheries and Marine Resources Annual Report 2010

Table. 11 Ramsar Management Plan – Audit 2013

Objective 1

Integrated environmental management of the south east coast with monitoring of biotic indicators to ensure the sustainable, multiple use of the region; and monitoring of management performance against the plan objectives.

Action Plan	SE Coast	Paternosters	Les Ecrehous	Les Minquiers
RMA - Plan and hold RMA meetings				
P&E - Review current legislation, strategies and policies				
RMA - Publish monitoring strategy for the Ramsar site				
SJ – Plan and survey set of permanent transects				
ENV – Heavy metal monitoring				
ENV/SJ – Habitat Assessment				Q2/Q3 2013
SJ/ENV/Seasearch – Plan annual Seasearch survey		Q2 2013	Q2 2013	Q2 2013
SJ – Annual seabird survey				

Objective 2

Protection of species and habitats and restoration of degraded habitats in the Ramsar area and their conservation for future generations

Action Plan	SE Coast	Paternosters	Les Ecrehous	Les Minquiers
RMA-TS – Meet when required to discuss project/plan				
Jersey Harbours – up to date with ballast water legislation and risk assessment of ballast water discharge locally				
FMRP – Continue to manage exploited species				
FMRP – Aquaculture imports of non native controlled				
ENV – Continue to work with farmers to improve farm management practices and the DPP				
TTS – Separate storm drains from foul sewer to reduce potential for accidental discharge during storm events				
JEC – Continue research into use and type of biocide employed to ensure environmental best practice				
JAA – Plan vehicle routes to service aquaculture interests				
ENV – Publish seaweed/strandline Habitat Action Plan				
Jersey Harbours – Oil spill response plan produced and updated. Training programme established				
ENV – Ensure facilities and education in place to reduce marine litter				
ENV – Programme designed for habitat mapping				
ENV – Seabird Protection Area (s) Established				

Objective 3

Improved awareness among all key stakeholders, including the wider community, of the natural value of the Ramsar sites and principals expressed in the management plan

Action Plan	SE Coast	Paternosters	Les Ecrehous	Les Minquiers
ENV – Review IT support for Ramsar and CEPA programme				
ENV/ESC – Produce schools programme				
RMA – Publish interpretation material for the site				
RMA – Review existing code of conduct and amend if required to encompass all issues relating to Ramsar				
ENV – Organise WiSe course as required				
ENV – Attend Ramsar and N2K forum and steering group meeting in the UK				
ENV – French interpretation material available in France at key locations				
LERA – Code of conduct to encompass all issues relating specifically to Les Ecrehous and to Ramsar ethos				
LMRA – Code of conduct to encompass all issues relating specifically to Les Minquiers and to Ramsar ethos				
Jersey Harbours – Licence and detailed code of conduct for commercial operators				

Objective 4

Ongoing funds and resources to achieve the objectives of the management plan

Action Plan	SE Coast	Paternosters	Les Ecrehous	Les Minquiers
RMA – Produce funding plan				

2014 is likely to be a challenging year in terms of Ramsar Management Plans and the Authority. Department and section resources continue to be spread to cover an increasing remit including work around the Coastal National Park. Also it has been difficult to engage with some members of the Authority particularly around suggestion of items for discussion and management plan actions. A re-think of the RMA structure and remit should be considered in 2014.

6.3. CETACEANS

Dolphins were sighted on 21 separate occasions in 2013, increasing the number of sightings per patrol compared to 2012 (Figure 12). All sightings were identified as bottlenose dolphins. Sightings occurred mainly to the north, east and south of the Island ranging from Les Écréhous in the north to Les Minquiers in the south. In total 98 adult dolphins and 8 Juveniles were observed. Juveniles represented 8% of sightings in 2013, compared to 11% in 2012, 12% in 2011, 10% in 2010 and just 3% in 2008.

Pattern and frequency of patrols was reduced in 2013, with days at sea slightly less than in 2011 and 2012 due to section re-structuring. Grey seals were sighted on two occasions, with a total of 5 adults, but no pups recorded. One adult seal was recorded at Les Minquiers and 4 adults were recorded at the Rocks east of La Conchiere buoy.

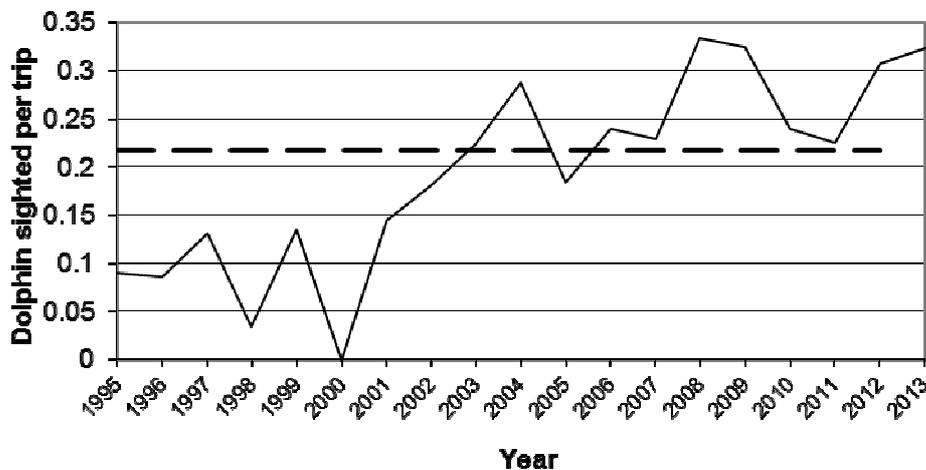


Figure 11. Total dolphin sightings from Fisheries Protection Vessels. The dotted line is the 2000-2010, ten year average. (Note Vessel and patrol pattern changed 1997/1998)

Table 12. Reported marine mammal strandings

Date	Location	Species	Comments
15/07/13	South Coast	Risso's Dolphin	Observed at various locations along the south coast over a period of a few days
12/08/13	St Ouen's Bay	Striped Dolphin	Juvenile male. Tooth and Blubber samples taken.
30/10/13	Bel Royal	Bottlenose Dolphin	Juvenile
25/11/13		Unknown	Very decomposed

Table 13. ASCOBANS report 2013

A. HABITAT CONSERVATION AND MANAGEMENT	
1. Direct Interaction with Fisheries	
Investigations of methods to reduce bycatch	None reported or observed bycatch
Implementation of methods to reduce bycatch	None
2. Reduction of Disturbance	
Anthropogenic noise	No investigations undertaken
Ship strike incidents	None reported or observed
Major incidents affecting significant numbers of cetaceans	None reported or observed
Pollution and hazardous substance	No pollution incidents or presence of hazardous substances reported or recorded that impacted on cetaceans.
Other forms of disturbance	None observed or reported
3. Marine Protected Areas for small cetaceans	
Specific measures for cetaceans	Ramsar Managements Plans published highlighting importance of cetaceans. Monitoring strategy includes monitoring on cetacean activity.
B. SURVEYS AND RESEARCH	
Abundance, distribution and population structure	The marine biology section of the Societe Jersiaise receive and collate information from the public concerning cetacean sightings. This data is available online. Sighting data is also recorded by the

	States of Jersey Fisheries Protection Vessel.
New technology developments	None
Other relevant research	Jersey continues to participate in the NHM's strandings programme.
C. USE OF BY CATCH AND STRANDINGS	
Post-Mortem Research Scheme	None undertaken
D. LEGLISATION	
Relevant new legislation, regulation and guidelines	No new legislation
E. INFORMATION AND EDUCATION	
Any public awareness and education activities	Code of conduct available for fishermen and general public. Code reviewed and updated as necessary. WiSe courses run as required for commercial operators and other interested individuals.

6.4. CRITICAL HABITATS AND SPECIES

Under various International Agreements, Jersey is obliged to monitor and assess the status of critical marine habitats and species. For certain species groups specific monitoring programmes are well established (e.g. cetaceans) or part of a wider reporting obligations (e.g. fishing vessel logsheets and landing declarations). Monitoring of critical habitats is undertaken as part as other programmes such as Ramsar monitoring plans or as specific assessments (e.g. seagrass and maerl).

The section was able to secure the services of an excellent student through the undergraduate internship scheme to undertake a specific study looking at the intertidal seagrass, *Zostera noltii*, around the coast with focus on the impact of the Wastewater treatment works. The study concluded that the seagrass and the infaunal abundance and diversity were being negatively affected by the presence of the outfall pipe in St Aubin's Bay. This study is currently being written up to be published in a peer reviewed scientific journal.

Table 14. Critical habitats and species monitoring status

Species	Listing	Monitoring Status	Key Pressures
MOLLUSC			
Dog Whelk, <i>Nucella lapillus</i>	OSPAR	●	●
Flat Oyster, <i>Ostrea edulis</i>	OSPAR		●
Ocean Quahog, <i>Arctica islandica</i>	OSPAR	●	
FISH			
Sea Lamprey, <i>Petromyzon marinus</i>	BERN OSPAR, Habitats Directive	●	● ●
Porbeagle Shark, <i>Lamna nasus</i>	OSPAR	●	●
Basking Shark, <i>Cetorhinus maximus</i>	BERN OSPAR	●	● ● ●
Spiny Dogfish, <i>Squalus acanthias</i>	OSPAR	●	●
Angel Shark, <i>Squatina squatina</i>	OSPAR	●	●
Thornback Ray, <i>Raja clavata</i>	OSPAR	●	●
Spotted Ray, <i>Raja montagui</i>	OSPAR	●	●
European Sturgeon, <i>Acipenser sturio</i>	BERN OSPAR Habitats Directive CITES	●	● ●
European Eel, <i>Anguilla Anguilla</i>	OSPAR	●	● ●
Allis Shad, <i>Alosa alosa</i>	BERN OSPAR, Habitats Directive	●	●
Twait Shad, <i>Alosa fallax</i>	BERN	●	●
Atlantic Salmon, <i>Salmo salar</i>	BERN OSPAR, Habitats Directive	●	●
Short-snouted Seahorse, <i>Hippocampus hippocampus</i>	BERN OSPAR CITES	●	
Common Goby, <i>Pomatoschistus microps</i>	BERN	●	
Sand Goby, <i>Pomatoschistus minutus</i>	BERN	●	
Atlantic Bluefin Tuna, <i>Thunnus thynnus</i>	OSPAR	●	●

REPTILE

Loggerhead Turtle, <i>Caretta caretta</i>	BERN CMS OSPAR Habitats Directive	●	●	●	●	●
Hawksbill Turtle, <i>Eretmochelys imbricata</i>	BERN CMS Habitats Directive	●	●	●	●	●
Leatherback Turtle, <i>Dermochelys coriacea</i>	BERN CMS OSPAR Habitats Directive	●	●	●	●	●

MARINE MAMMAL

Harbour Seal, <i>Phoca vitulina</i>	BERN CMS Habitats Directive	●	●			
Grey Seal, <i>Halichoerus grypus</i>	BERN CMS Habitats Directive	●	●			
Striped Dolphin, <i>Stenella coeruleoalba</i>	BERN ASCOBANS Habitats Directive CITES	●	●			
Short-beaked Common Dolphin, <i>Delphinus delphis</i>	BERN ASCOBANS Habitats Directive CITES	●	●			
Bottlenose Dolphin, <i>Tursiops truncatus</i>	BERN ASCOBANS Habitats Directive CITES	●	●			
Atlantic White-sided Dolphin, <i>Lagenorhynchus acutus</i>	BERN ASCOBANS Habitats Directive CITES	●	●			
White-beaked Dolphin, <i>Lagenorhynchus albirostris</i>	BERN ASCOBANS Habitats Directive CITES	●	●			

Orca Whale, <i>Orcinus orca</i>	BERN ASCOBANS Habitats Directive CITES	●	●
Risso's dolphin, <i>Grampus griseus</i>	BERN ASCOBANS Habitats Directive CITES	●	●
Harbour Porpoise, <i>Phocoena phocoena</i>	BERN ASCOBANS OSPAR Habitats Directive CITES	●	● ●
Fin Whale, <i>Balaenoptera physalus</i>	BERN Habitats Directive	●	

ALGAE

Maerl, <i>Phymatolithon calcareum</i>	Habitats Directive	●	●
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FLOWERING PLANT

Shore dock, <i>Rumex rupestris</i>	BERN Habitats Directive	●	●
Seagrass, <i>Zostera marina</i>	BERN	●	● ●

Habitat	Listing	Monitoring Status	Key Pressures
Intertidal mudflats	OSPAR	●	● ●
Intertidal sandbanks	OSPAR	●	● ●
Zostera beds	OSPAR	●	● ● ●
Maerl beds	OSPAR	●	●

KEY

Monitoring Status	
●	Actively Monitored
●	Part of Wider Monitoring Programme
●	Not Monitored

Key Pressures	
●	Removal of target or non-target species
●	Oil Pollution
●	Hazardous Substances
●	Ship Strike
●	Anthropogenic Disturbance
●	Habitat Loss or Damage

7. MANAGEMENT

7.1. LEGISLATION AND STRATEGIES

Draft Aquatic Resources (Jersey) Law

Work continued throughout the year on the drafting of a law to manage aquatic resources not covered by the Sea Fisheries (Jersey) Law 1994 and on 24 September the draft Aquatic Resources (Jersey) Law 201- was lodged au Greffe. The draft law does not of itself regulate aquatic resources, but it puts in place an enabling framework under which appropriate regulations can be developed. Following discussions with Scrutiny it is anticipated that the draft law will be debated early in 2014.

Draft Sea Fisheries (Miscellaneous Provisions) (Amendment No 6) (Jersey) Regulations

This draft was sent to the UK Secretary of State for approval in June, such approval being required under the terms of the Jersey/UK Fisheries Management Agreement. The draft amendment allows the Minister to close an area to netting during the annual spider crab closure by Ministerial Order and was requested by French and Jersey fishermen some years ago. The intention is that it will prevent unnecessary damage to spider crabs at a time when their shells are soft and they cannot be taken or sold.

Draft Sea Fisheries (Log Books, Transhipment and Landing Declarations) (Jersey) Regulations and draft Sea Fisheries (Vessel Monitoring Systems) (Jersey) Regulations

These drafts were sent to the UK Secretary of State for approval in October, such approval being required under the terms of the Jersey/UK Fisheries Management Agreement. They both replace existing Jersey regulations and reflect fisheries control measures already introduced elsewhere in Europe. They introduce for larger vessels an electronic log book reporting system and further electronic tracking devices. Such devices are now an integral part of fisheries management.

7.2. MARINE STEWARDSHIP COUNCIL ACCREDITATION

In 2011, Jersey and Normandy became one of the first clawed lobster fisheries in Europe to successfully achieve Marine Stewardship Council (MSC) accreditation and one of the few international “cross frontier” fisheries to be certified. Representatives from the Jersey Fishermen’s Association, Comite Regional des Peches Maritime de Basse Normandie and the Department collaborated to achieve this important certification, further strengthening the relationship between Jersey and France to manage joint stocks as set out in the Bay of Granville Agreement.

2013 was the second year that the joint MSC accreditation received an annual audit by the independent consultants of MacAlister, Elliott and Partners Ltd..Whilst

successfully passing the 2013 audit, the auditors did set out further targets for 2014, including an assessment of the number of soft eyed creels used by local fishermen. The department circulated a questionnaire in the annual newsletter, requesting fishermen who used this pot type, to kindly contact fisheries officers.

7.3. MARINE RESOURCES STRATEGY CONSULTATION

This consultation was launched on 3 July with a closing date of 27 September and asked members of the public, the marine industries and stakeholders for their views on a wide range of topics including 45 draft policies. The responses were collated and during 2014 it is intended to produce a draft strategy for further consultation.

7.4. MANAGEMENT OF WHELK FISHERY

The whelk working group was formed in 2012 following concern at the decline of whelk stocks in Island waters and as a result of its recommendations, new licence conditions to restrict whelk fishing effort were introduced at the start of 2013. The group met regularly during 2013 to develop a long term strategy and several of these meetings were opened to all fishermen currently fishing for whelks. Discussions have also occurred with French colleagues during the routine Granville Bay meetings. A draft two year management plan has been developed and it is intended to seek political endorsement of that plan early in 2014.

7.5. ONLINE CUSTOMER SERVICES

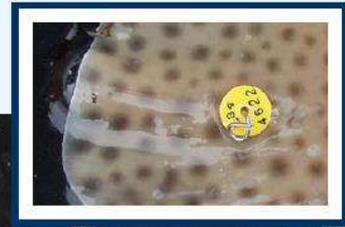
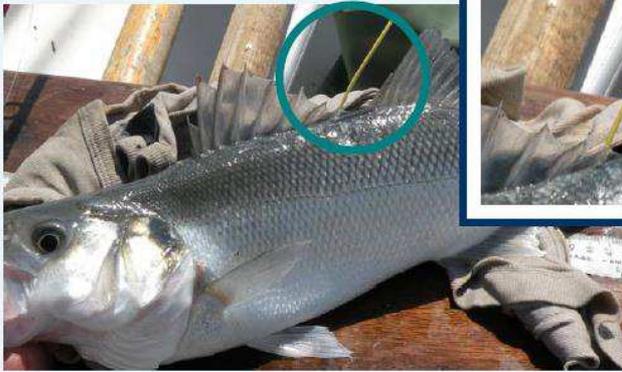
An on line reporting system to replace the current under 10 metre fishing vessel logbooks has been developed and trials have commenced with a small number of volunteer fishermen.

The current system of issuing permits to take scallops by diving has been reviewed and a customer focussed on line application system developed. It is intended to launch that system early in 2014 for the 2014 diving season.

WANTED...

States of Jersey
of Jersey

Tagged Fish



Return the tag with details of capture:

- Date
- Place of capture
- Total fish length & width-
(wingtip to wingtip of ray)

Tagged fish include all ray and bass

REWARD
£6

Marine Resources, Department of the Environment:

Howard Davis Farm, Trinity, Jersey, JE3 5JP

Tel: 00 44 1534 441600 - fisheries@gov.je - www.gov.je/fisheries

Partner Organisations

