

Summary of DSFC Lobster Tagging Programme Results 2008-2010

Devon Sea Fisheries' lobster survey work commenced in 2008. DSFC officers accompanied Natural England's survey team which had been looking at the effect of the NTZ on lobster Population, scallops and sessile organism since 2003. DSFC survey work involved a tagging programme where all lobster caught were measured, sexed and tagged with a unique number and exact location of where the lobster were returned to the sea was noted. Tagging took place at 6 locations around the Lundy Island, 2 in the NTZ and 4 control sites within the MCZ. A North Devon control site at Hartland was also used. The fishing industry have been involved in the survey work from the beginning and when a tagged lobster is caught by a fishing vessel the tag number size sex and location of recapture have been recorded and this information is forward to DSFC.. This tagging worked continued in 2009 and 2010. Natural England was able to fund the work in 2008 and 2009. Cefas accompanied DSFC on the survey in 2009 to investigate the health of the lobster population in the NTZ and the University of Swansea have been working with DFSC in 2010 as part of a European project they are involved in looking at Crustacea shell disease.

Investigations of the benefits of closing an area to fishing are very important. It is likely that more areas will become no fishing areas especially as part of the MCZ process and the need for reference areas within them and therefore demonstrating any benefits of closing an area to fishing are vital. As the first NTZ, Lundy Island provides the opportunity to carry out these investigations. The DSFC tagging programme has been very successful. In total 2382 lobsters have been tagged. More than 55% of the lobsters tagged in the NTZ were male show the dominance of male lobsters in the NTZ. In the NTZ males were on averaged 6mm larger than females. In 2008 and 2009 over 20% of the lobsters tagged were recaptured by the fishermen. This has provided invaluable data on the movement and growth of lobster around the Island and in the NTZ. A majority of the lobsters tagged have moved only short distances (less than 2.7km) though a few appear to be more nomadic and migrate longer distances. To date on average 2.34% of the lobsters tagged in the NTZ have been recaptured outside of the NTZ by the fishermen. However there needs to be more collection of data to test whether this 'spillover' is statistically significant. The No Take Zone provides a protected brood stock of adult lobsters and this is likely to be providing a high level of recruitment into the surrounding fishery. Larval collectors will be placed around the Island throughout 2011 to investigate the prevalence of lobster larvae. Other investigations currently being carried out include analysis of 10 years worth of diaries of fishermen potting in the MCZ around Lundy Island. This will provide information on the catches of lobster per unit pot or string to evaluate any changes in lobster landings from the waters around the Island over time since the closure of the area along the east coast to fishing.

From the data collected:

	Male	Female
NTZ Mean carapace length mm	100.5	94.6
Control Mean carapace length mm	86	86
Reference/North Devon Coast mean carapace length mm	78.6	82.7

Year Tagged	total	male	female	berried	No. lobsters tagged in NTZ	no. males tagged in NTZ	No. females tagged in NTZ	no. tagged lobsters recaptured	No. tagged lobsters recaptured outside NTZ but tagged in NTZ	no. lobsters recaught within NTZ	no. male lobsters moving out of NTZ	no. female lobsters moving out of NTZ	no. male lobsters moving into NTZ	no. female lobsters moving into NTZ
2008	905	444	461	50	272	136	136	224 (24.64%)	13 (4.78%)	37 (13.60%)	8	5	3	2
2009	814	434	380	83	495	285	210	161 (19.78%)	12 (2.42%)	113 (22.83%)	11	1	1	0
2010	663	361	302	70	513	284	229	28 (4.22%)	5 (0.975%)	18 (3.51%)	5	0	0	0
totals	2382	878	841	203	1280	705	575	325 (13.64%)	30 (2.344%)	168 (13.13%)	24	6	4	2

	2008			2009		
Parameter measured	Female lobsters	Male lobsters	Overall	Female lobsters	Male lobsters	Overall
min distance Moved km	0.15	0.051	0.051	0.052	0.037	0.052
max distance moved km	26.82	28.61	28.61	3.344	7.624	7.624
mean distance moved km	2.96	2.76	2.83	0.428	0.811	0.652
mean days at sea	323	236	262	207	198	201
Max number of days at Sea	754	791	791	393	427	427
Min number of days at sea	2	1	1	1	1	1
range of growth increment -CL mm	4-57.5mm	4-33mm	4-31mm	4-30mm	4-34mm	4-34mm
mean growth -CL mm	12	13.22	12.64	7.45	11.19	10.5
modal growth- CL mm	9	9	9	9	8	9
no. Lobsters showing growth	55	67	122	41	27	68
Estimated number showing more than 1 moult	12	21	9	2	3	5

