



Title: A preliminary report from the Co. Waterford otter survey held on October 5th to October 7th, 2012

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Otter, Dungarvan Harbour, Co. Waterford. (Photo: Brian Power)

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Background

MISE is a project funded by the European Regional Development Fund under the Ireland-Wales Programme 2007-2013 (INTERREG IVA), and sets out to foster community involvement in Wales and Ireland in mammal conservation. One of the aims of the project is to organize public events such as field surveys, workshops and talks, where training in field skills such as otter surveying will be provided. People interested in getting involved in the conservation and study of wild mammals will be able to get help from expert ecologists working in the field. This is supported by the Molecular Ecology Research Group at WIT who provide an identification service using forensic DNA technology to identify mammal scat and hair samples.

Introduction

On Friday the 5th of October, 36 people gathered at the Gold Coast Hotel in Ballinacourty, Dungarvan, for a talk to begin the survey weekend. Peter Turner of WIT gave an overall description of the otter (*Lutra lutra*) and its distribution and conservation status in Ireland, based on surveys carried out over several decades by the National Parks and Wildlife Service (NPWS). He then went on to discuss the results of the 2011 Waterford Otter Survey, which was carried out by MISE staff and volunteers last October. In brief, 12 sites were surveyed in mid-Co. Waterford from which 254 samples were collected. DNA was extracted from these samples and 191 proved to be otter spraints when tested. Identifiable otter spraints were tested for sex and it was also possible to identify 59 individual otters by genotyping (or genetic “fingerprinting”) of suitable spraints. Peter also discussed the results of a similar survey which was piloted in March 2012 by MISE staff in the uppermost reaches of the rivers Tay and Nire in the Comeragh mountains. Otters in Snowdonia have been found to ascend from the lowlands to upland rivers and lakes in spring to feed on spawning frogs, and the object of this survey was to find out if a similar pattern occurs in the Comeraghs. During this survey 134 otter spraints were found, and 15 individual otters were identified, none of which had been previously detected during the October survey. This brings the total of individual otters identified in the area surveyed to 74. These results will be discussed in more detail in another report.

Training Workshop

33 people attended the Saturday morning otter survey workshop where, as with last year, Chris Hall (Snowdonia Mammal Group) gave a workshop describing otter survey techniques. This included pictures of different otter spraints and described the places where otters were likely to spraint, including bridges, rocks and visual features, which they use to mark their territories. Chris showed pictures of otter tracks and of mink tracks and scats for comparison. Chris encouraged people to photograph tracks which we could later examine. Everyone was then divided into teams to survey selected coastal and inland sites on the rivers Colligan, Glendine, Dalligan, Tay, Mahon and Nire. Each team had a leader from the MISE project and an otter survey expert (members of Snowdonia Mammal Group and Snowdonia National Park). Each team was given a survey pack which contained maps of their survey sites, landowner contact details and points of access. Each team was also provided with recorder sheets, site assessment forms and sample bags, each with a unique sample number. Each team leader had a GPS device and emergency first aid kit equipped with an emergency blanket and whistle. The survey continued on Sunday.

The survey

Method summary:

Landowner permissions were obtained for a selection of sites including both freshwater and coastal habitats (sites are listed in Table 1). All otter spraints collected within the site were bagged individually to avoid cross contamination, which was important for DNA analysis. A GPS location was recorded for each otter spraint. All potential otter tracks, field signs and holts (dens) were also recorded. For health and safety reasons, each team leader also noted any safety hazards which could be incorporated into documented site specific hazards for future surveys.

Preliminary Results

All rivers surveyed yielded samples, from every site that was surveyed (Table 2); in total, 13 sites were surveyed (up from 12 in 2011). As in 2011, the coastal sites were in general the most productive with 47% of all samples having been collected in these areas, the most being collected on the Lower Colligan at Dungarvan (46 samples). However, the single most productive site this year was an inland site, the Middle Tay at Lemybrien where 65 samples were collected. Another upland site was added this year on the Upper Nire, on the opposite side of the Comeraghs to the other rivers. The best upland site this year was the Upper Mahon (45 samples), which is a marked contrast with 2011 when no samples were collected there. Figure 1 shows the geographical location of spraints collected. The inclusion of the Upper Nire site and the discovery of spraints on the Upper Mahon this year adds further data on otters in the Comeragh Mountains Special Area of Conservation (SAC), and otter spraints were also found within the Glendine Wood SAC on the Upper Glendine site (Figure 2).

Droppings from mammals other than otters found at survey sites were also collected and surveyors tried to identify these to the best of their ability (Table 3).

River	Sites		
	Coastal area	Inland area	Upland area
Nire	n/a	n/a	Upper Nire
Colligan	Lower Colligan	Middle Colligan	n/a
Glendine	Lower Glendine	Upper Glendine	n/a
Dalligan	Lower Dalligan	Upper Dalligan	n/a
Tay	Lower Tay	Middle Tay	Upper Tay
Mahon	Lower Mahon	Middle Mahon	Upper Mahon

Table 1. List of sites for Waterford otter survey (NB Upper Nire was not surveyed in 2011).

River	Coastal area		Inland area		Upland area		Overall	
	Otter	Other	Otter	Other	Otter	Other	Otter	Total
Nire	n/a	n/a	n/a	n/a	33	0	33	33
Colligan	46	0	13	0	n/a	n/a	59	59
Glendine	42	2	11	1	n/a	n/a	53	56
Dalligan	33	3	17	4	n/a	n/a	50	57
Tay	14	0	54	11	10	0	78	89
Mahon	40	2	8	1	43	2	91	96
Overall	175	7	103	17	86	2	364	390

Table 2. The number of potential otter spraints and other samples that were collected in each river along coastal, inland and upland habitats. “Other” samples include samples collected that were not thought to be otter. “n/a” means that these areas were not surveyed. All samples will be species tested using DNA analysis.

River	Mink	Fox	Stoat	Pine Marten	Badger	Bird	Unknown	Total
Nire	-	-	-	-	-	-	-	0
Colligan	-	-	-	-	-	-	-	0
Glendine	3	-	-	-	-	-	-	3
Dalligan	4	2	-	-	-	-	1	7
Tay	10	-	-	1	-	-	-	11
Mahon	3	1	-	-	-	-	1	5
Total	20	3	0	1	0	0	2	26

Table 3. The “other” samples broken down into possible species based on surveyor opinions collected across the five rivers. All samples will be species tested using DNA analysis.

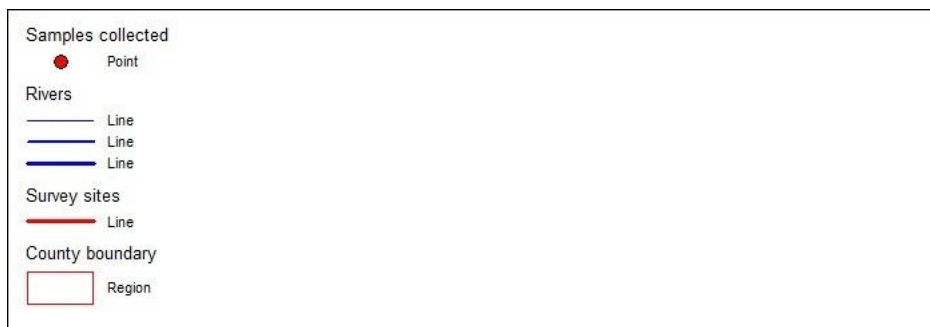
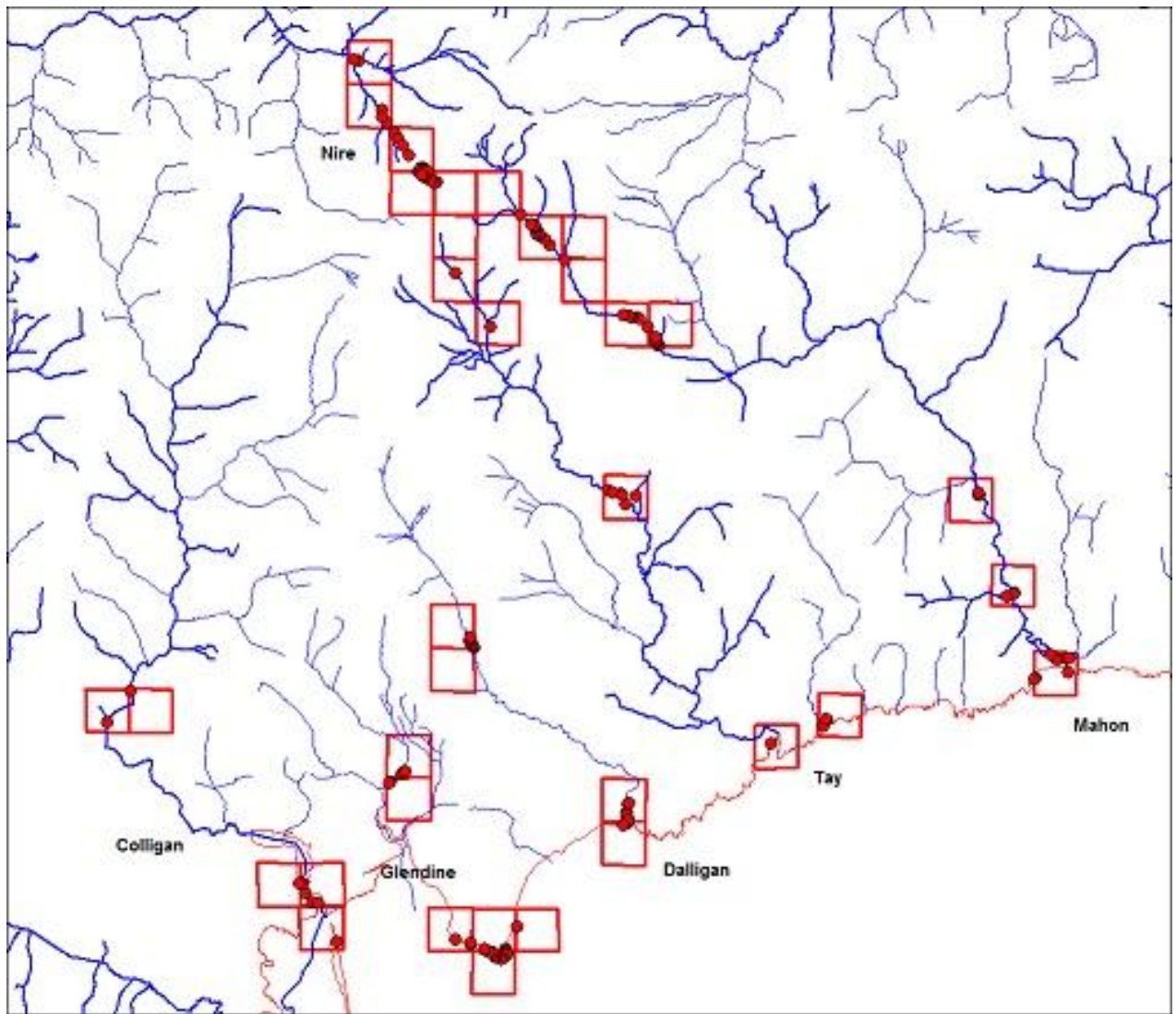


Fig. 1 A partial county map of Waterford's rivers. The rivers surveyed are, anticlockwise from the top, the Nire, Colligan, Glendine, Dalligan, Tay and Mahon. The legend below the figure describes the areas surveyed and areas where landowner permissions had been sought where applicable.

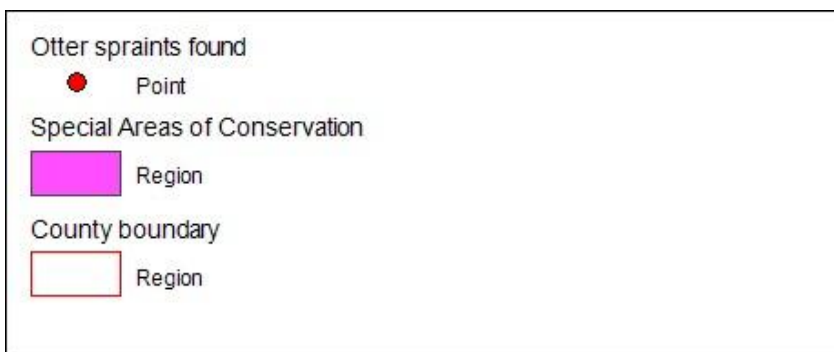
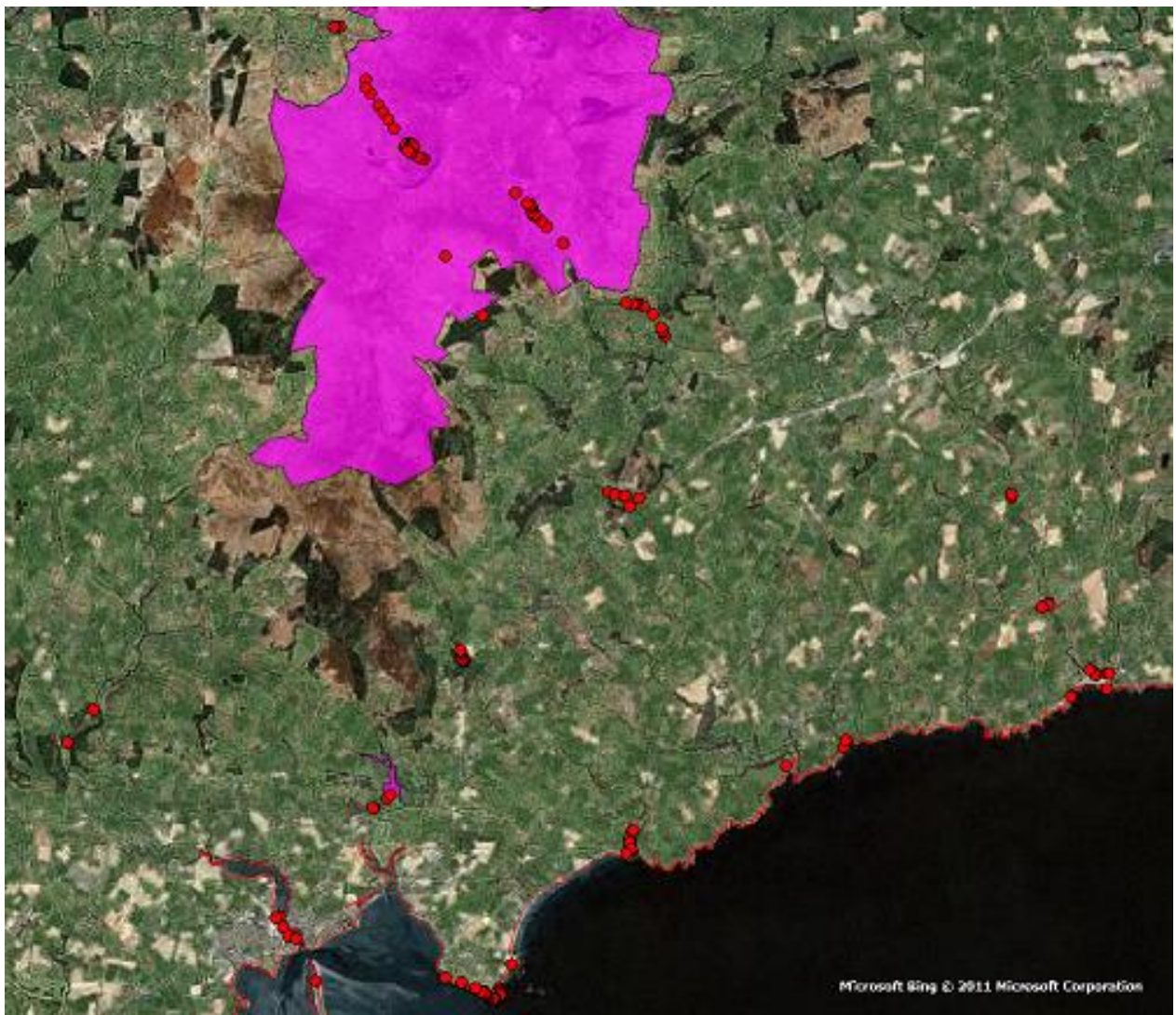


Fig. 2 A partial county map of Waterford showing Special Areas of Conservation (SACs), which are protected for species and habitats of European importance. The map shows areas where otters have been found within the boundaries of the Comeragh Mountains SAC (large area at top of map) and Glendine Wood SAC (small area between the Comeraghs and Dungarvan Harbour).

Discussion

As with last year, the 2012 otter survey was a great success from both a volunteer and community involvement and scientific data collection point of view. We were very pleased to work with volunteers who were with us on this survey in 2011, as well as seeing new faces on our survey teams. Otter surveyors of all levels of proficiency were able to improve their skills over the weekend and this is reflected in the increase in samples collected- 390 in total, up from 254 last year. All samples collected this year will be DNA tested for species using DNA sequence analysis or real-time PCR. Those which are identified as otter and are suitable for further testing will be subjected to sex identification and genotyping (genetic "fingerprinting" to identify individuals). Not all otter spraints will be suitable for genotyping, but based on the analysis of last year's samples, a success rate of approximately 30% could be expected (out of those that can be identified as otter). Due to the large number of samples collected, this process will probably take several months to complete. The results from this year's survey will be added to and compared with the data from 2011 to possibly begin to identify patterns of movement of otters within and between territories and rivers.

It is interesting to note how the number of samples collected from each site this year has changed in some ways from the 2011 survey (which are shown in Appendix 2). Of particular note is the large increase (53%) in the number of samples collected in total in 2012 compared with 2011. Part of this increase is due to the addition of an extra survey site (the Upper Nire), but this does not fully explain the pattern. One site showed a steep drop in the number of samples found compared to 2011 (the Lower Tay), but this is probably due to the high tide making parts of the site at Stradbally Cove inaccessible this year that were more easily reached last year. Several sites showed a steep increase in the number of samples found: the Lower Colligan, Middle Colligan and Upper Mahon in particular. There are several possible reasons for this. Certain parts of these sites that could not be reached or were simply not surveyed last year may have been surveyed this year with new otter sprainting sites being found (as at the Cunnigar sand bar in the Lower Colligan site). Another factor could be the improving skill of the otter survey teams that visited these sites at finding otter sprainting sites. Finally, it is possible that otters were not present or were less numerous at these sites in 2011 than in 2012 for a variety of possible reasons, but this would be very difficult to know or to prove for certain. Also of note is the unusually high number of samples found at the Middle Tay compared with other inland sites, but it is difficult to know why this is the case; it should be noted that at many coastal sites the sheer quantity of otter spraints found meant that many were not collected, so the real number of spraints in those areas is probably still much higher than what was found at the Middle Tay site.

We plan to repeat this survey again in October 2013, as well as a possible Comeragh Mountains otter survey in spring 2013 to continue to gather data on the otter population in this part of Co. Waterford.

Acknowledgements: We would like to thank all of our volunteers, speakers and experts for the wonderful weekend that was enjoyed by everyone. We hope to be able to update you with our DNA results and final report in due course and we hope that you will join us again on future surveys.

Appendix 1. Otter signs found in 2012.



(a) Otter spraint (Photo: Brian Power)



(b) Pair of otters swimming off Ballinacourty Point, Dungarvan Harbour (Photo: Brian Power)



(c) Surveying for otter signs around mountain lakes in Coumfea, in the upper Nire Valley (Photo: Catherine O'Reilly)



(d) Volunteers relaxing after a hard day's surveying! (Photo: Catherine O'Reilly)

Appendix 2. Number of samples collected by site in 2011

River	Coastal area		Inland area		Upland area		Overall	
	Otter	Other	Otter	Other	Otter	Other	Otter	Total
Colligan	11	1	0	1	n/a	n/a	11	13
Glendine	24	6	3	0	n/a	n/a	27	33
Dalligan	44	2	6	3	n/a	n/a	50	55
Tay	37	5	31	5	17	2	85	97
Mahon	46	1	10	3	0	0	56	60
Overall	136	15	42	7	17	2	229	258