



# In otter news.....

## Cardiff University Otter Project Newsletter 1.

Welcome to the Cardiff University Otter Projects first annual newsletter. 2011 was an exceptionally busy time for the project with plenty of interesting results in the lab, a host of new faces joining team otter and lots of exciting new scientific publications.

### Lab results

So far 1908 otters have been received by the project for post mortem and the breakdown from the latest annual report is as follows:

**Sex** - 53% male, 46% female, 1% unknown

**Age** - 49.2% adult, 38.5% sub-adult, 5.3% juvenile and 7% unknown

**Cause of Death** – road traffic accident 85%, other 15%  
Of the other causes of death the most common remain drowning and juvenile abandonment. Multiple incidents of otters drowning in crayfish traps have been noted over the past few years, and we are advising individuals involved in crayfish trapping to see the Environment Agency website for [details on fitting otter guards](#) to traps. A juvenile received recently was one of three abandoned cubs found alive in reeds adjacent to a dyke, near the River Slea. Though two of them died (one of which was sent to us), one survived and is now thriving at Secret World Somerset.



Otter guard

### Scent communication

**Humans conduct spraint surveys to assess otter distribution - but what information do otters get from sniffing spraint?** This was the focus of Eleanor Kean's PhD thesis at CUOP.

Chemical analysis of over 200 otter scent secretions revealed differences in scent relating to the age, sex and reproductive status of otters (Kean et al 2011). Publication of this finding gained a great deal of media interest, with articles in BBC News, BBC Wildlife Magazine and a live interview on BBC Radio Wales. Eleanor has also investigated if otters have an individual "scent fingerprint" and carried out work on behavioural responses of captive otters to spraint. Watch this space for further news and publications.....



### Genetics

**Understanding population structure is often a key element of conservation planning, and can illuminate population history.** Geoff Hobbs, a PhD student with CUOP, gained his doctorate in 2010. His recently published work on population structuring within the UK otter population (Hobbs et al 2011) used 566 muscle samples from CUOP archives. Samples were genotyped for 15 microsatellite loci; analyses suggested 4 genetically distinct regions, divided into 11 sub-regions, with limited dispersal between these groups. Dave Stanton is currently preparing a paper analysing genetic data from Scottish samples in conjunction with Geoff's data from Wales and England.



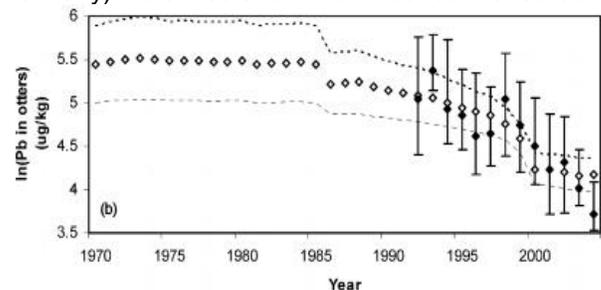
**Four genetic regions** (areas shown in green had insufficient data for analysis)

### Contaminant analysis

**As a top predator otters are a valuable sentinel of contaminants in freshwater systems**

**Organic contaminants** - Statistical models have been used to investigate which factors explain variation in contaminant levels in otter livers collected by CUOP and analysed for PCBs and organochlorine pesticides by the Environment Agency. The majority of contaminants have declined significantly over the last 18 years, continuing trends reported in previous decades. A report has been submitted to the Environment Agency (Kean & Chadwick, 2012) and the findings were presented at the European Mustelid colloquium in Dec 2011.

**Inorganic contaminants** - A 73% fall in lead (Pb) levels has been shown in otter rib bones collected between 1992 and 2004, following legislative control of emissions (Chadwick et al 2011). Complex interactions between environmental variables (weather, emissions and stream chemistry) were also shown to influence measured Pb.



Decline in Pb levels as measured (◆) and modelled using emission data (◇)



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### Mitigation work

Clare Wilkinson is currently undertaking an analysis of mortality “hotspots” in Wales, using combined Environment Agency and CUOP datasets in order to produce reports for the three Welsh Trunk Road Agencies, who are kindly funding the work.



### Bike fluke adventure

CUOP PhD student Ellie Sherrard-Smith, working on otter parasites, recently completed an epic cycle journey from Cardiff to France with colleague Dr Sarah Perkins. Ellie and Sarah collected samples from collaborator Franck Simonnet as part of a larger project looking at the phylogeny of biliary parasites (Trematodes, Opisthorchiidae: *Pseudamphistomum truncatum* and *Metorchis albidus*) in their native range (mainland Europe) compared to the UK. The work aims to establish whether these parasites are invaders or recently discovered natives in England and Wales. These parasites damage the gall bladder of their otter host and are clustered geographically; *P. truncatum* is found most frequently in South Wales and Somerset whilst *M. albidus* is associated with areas of South East England.



### Recent publications

- Chadwick EA, Simpson VR, Nicholls AE. et al (2011) Lead levels in Eurasian otters decline with time and reveal interactions between sources, prevailing weather, and stream chemistry. *Environmental Science & Technology*, 45, (5), 1911-1916
- Hobbs GI, Chadwick EA, Bruford MW and Slater FM (2011) Bayesian clustering techniques and progressive partitioning to identify population structuring within a recovering otter population in the UK. *Journal of Applied Ecology*, 48 1206–1217
- Kean EF, Müller CT, Chadwick EA (2011) Otter Scent Signals Age, Sex, and Reproductive Status. *Chemical Senses*, 36 (6) 555-564
- Chadwick EA (2011) Dead mammals leave their bodies to science... *Professional Pest Controller, J of the British Pest Management Industry*.



### Otters in Italy

2011 saw the XIth IUCN International Otter Colloquium, hosted in Pavia, Italy, 30th Aug-4th Sept 2011. Otter experts from all over the world met to discuss otter research and conservation. This year's theme was 'Otters in a warming world', focusing on the effects of climate change on otters as well as covering other threats such as habitat modification, direct persecution and pollution. Due to a kind donation from the Somerset Otter Group both Ellie Sherrard-Smith and Sarah Paul were able to attend and present work, ESS a talk and SP a poster.

### New year, new look!

We have recently updated the projects website ([www.otterproject.cf.ac.uk](http://www.otterproject.cf.ac.uk)), complete with new interactive map of otter casualties. Check the map to see otters found in your area. We also now have a Facebook group (Cardiff University Otter Project) and twitter account (@Otter\_Project) like our page or follow our feed to see what we've been up to. Many thanks also to Howard Gray ([www.wix.com/howardgray/illustrations](http://www.wix.com/howardgray/illustrations)) for helping us design our snazzy new logo!



**A big thank you to our funders, finders and volunteers for all of your help and support so far. If you would like any further information please feel free to contact us ([paulsc@cardiff.ac.uk](mailto:paulsc@cardiff.ac.uk)) or see the website.**

