**Introduction & Objectives**

As a top predator, the Eurasian otter (*Lutra lutra*) is exposed, through its diet, to contaminants that bioaccumulate and, in particular, bioconcentrate through food chains.

There is surprisingly little information on metals concentrations the Eurasian otter and very few studies have been conducted in the UK.

Those studies in the UK that have reported metals in otters are from limited spatial distributions or do not report the timeframe over which the samples were taken.

This study aims to

- Quantify exposure by measuring liver metal concentrations.
- Test whether hepatic residues vary with age and sex.
- Determine if residues vary spatially.
- Compare our results to other studies in Europe and relate them to levels associated with possible adverse effects.

**Methods**

- Livers were collected from otters found dead in all regions of England & Wales between 2007 and 2009.
- Age, sex and body condition were determined during a post-mortem examination.
- Liver samples were kept frozen prior to analysis, a 1g subsample was microwave-digested in 70% nitric acid.
- A suite of 17 metals and metalloids were quantified using inductively couple plasma – mass spectrometry (ICP-MS).

**Results & discussions**

**Variation of residue magnitude with age and sex (Fig. 1).**

There were no consistent differences in liver concentrations of metals between males and females. Cadmium and mercury liver concentrations generally increased with age, although statistically significant differences between age classes were only evident in females.

**Comparison with other studies (Fig. 3).**

The residues of cadmium and mercury measured in the current study are similar to those previously reported in otters from Scotland, Great Britain, and eastern Europe.

**Conclusions**

- Significant differences between demographic groups were detected for a number of metals.
- The concentrations of four of the elements reported varied spatially within England & Wales.
- The concentrations of inorganic elements measured in the present study were within the range previously reported for Eurasian otters and below those generally associated with toxic effects in mammals.