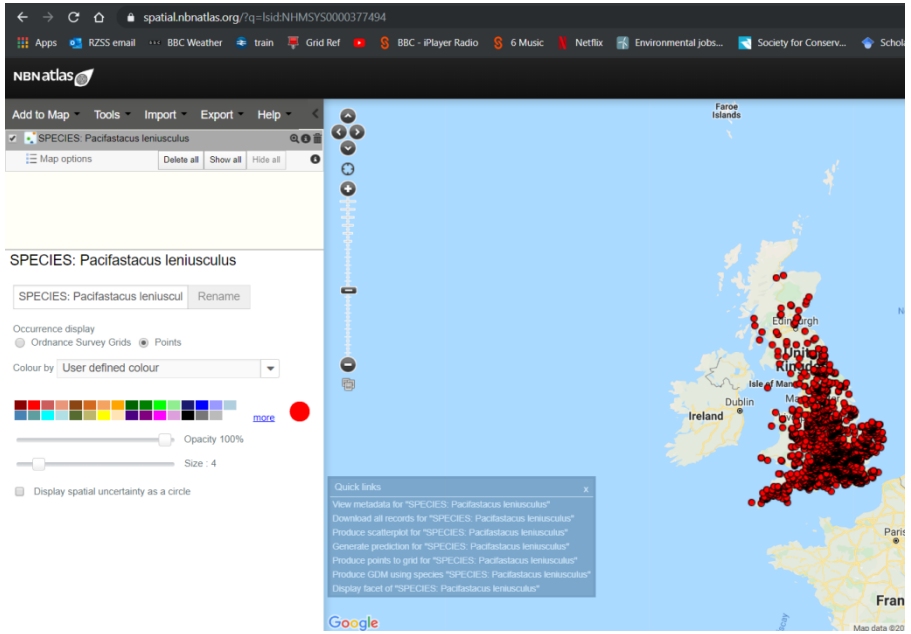
Using the NBN Atlas to Plan Conservation & Research



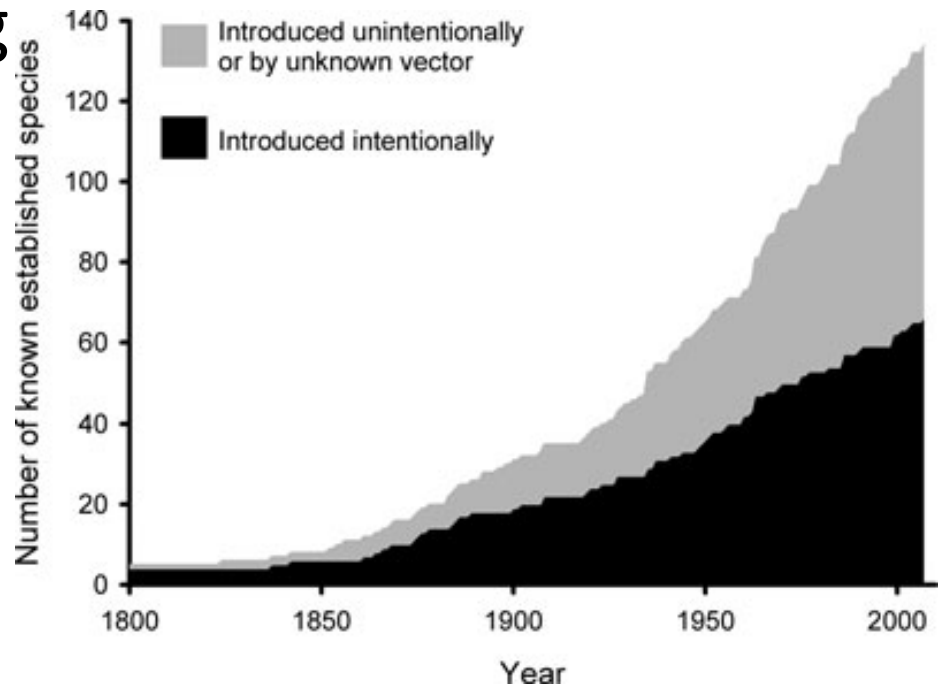
Thomas Doherty-Bone

Wearing many hats when using NBN!

- Impacts of invasive species – University of Leeds doctoral study
- Species survey & conservation intervention – Wirral Amphibian & Reptile Group

Freshwater invasive species in UK

- Introductions increasing – 141 sp. and counting!
- Impacts of sp. often unknown
- Complications of multiple, co-existing invasive alien sp??



Keller et al 2009

Future of British freshwaters

White Clawed Crayfish (*Austropotamobius pallipes*)
Native, Endangered (IUCN

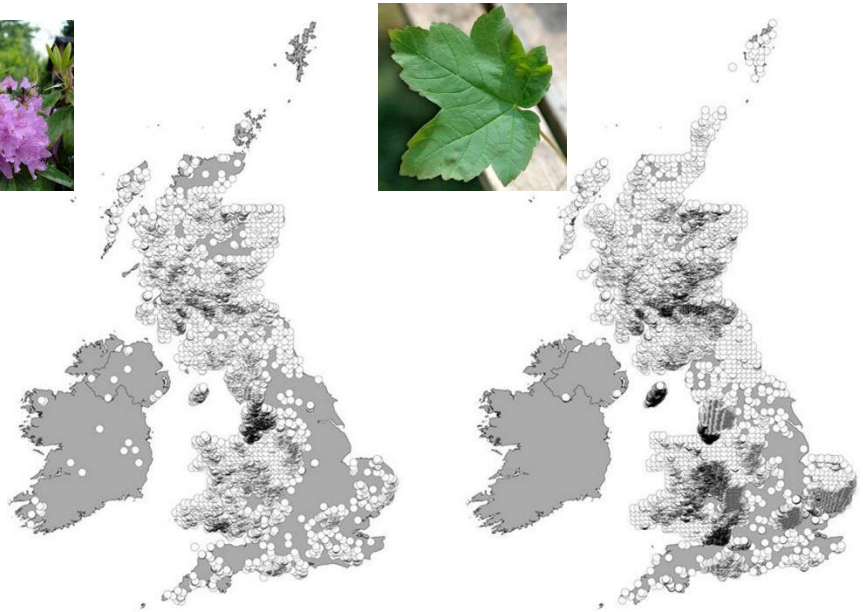
Chinese Mitten Crab (*Eriocheir sinensis*)
Invasive alien species

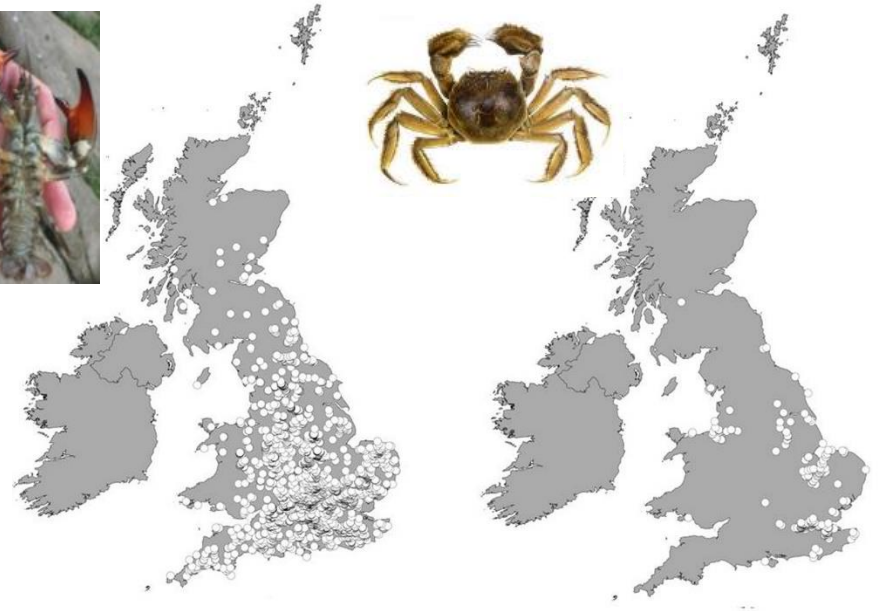
American Signal Crayfish
(*Pacifastacus leniusculus*)
Invasive alien species

Future of British freshwaters

Impacts of multiple invasions?

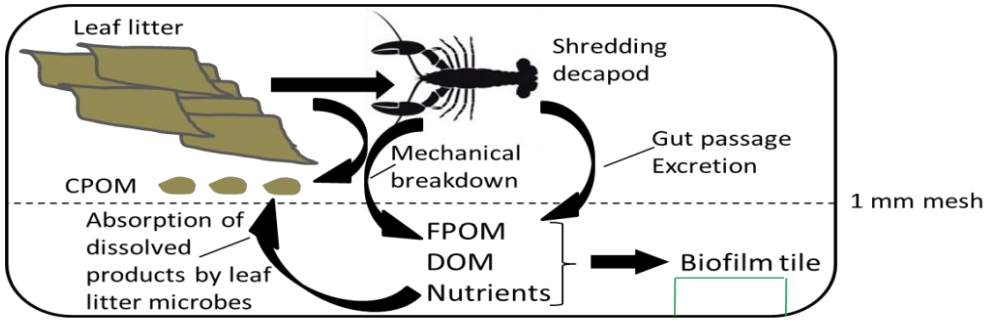
- Making use of NBN Atlas to verify overlap in distribution.

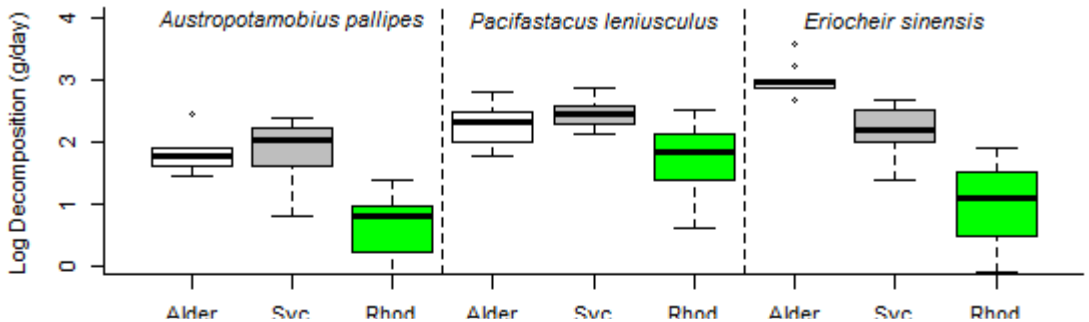


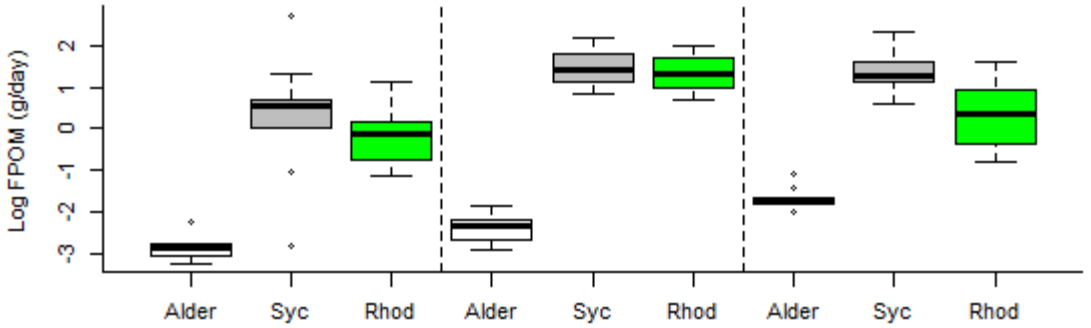



Experimental set-up

- 4 decapod Treatments
  - Control
  - Native
  - 2 X Invasives
- 3 leaf litter treatments
  - Alder (native)
  - Sycamore (invasive)
  - Rhododendron (invasive)
- 10 replicates
- 7 days
  - Decomposition rate
  - Derived products (FPOM, nutrients)




Austropotamobius pallipes
Pacifastacus leniusculus
Eriocheir sinensis
Log Decomposition (g/day)
0
1
2
3
4
Alder
Syc
Rhod
Alder
Syc
Rhod
Alder
Syc
Rhod


Log FPOM (g/day)
-3
-2
-1
0
1
2
Alder
Syc
Rhod
Alder
Syc
Rhod
Alder
Syc
Rhod

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ORIGINAL RESEARCH

WILEY Ecology and Evolution Open Access

Invasive alien shredders clear up invasive alien leaf litter

Thomas M. Doherty-Bone[1,2,3] | Alison M. Dunn[2,3] | Joel Brittain[2] | Lee Eric Brown[1,3]

[1]School of Geography, University of Leeds, Leeds, UK

[2]School of Biology, University of Leeds, Leeds, UK

[3]Water@Leeds, University of Leeds, Leeds, UK

Correspondence
Alison M. Dunn, School of Biology, University of Leeds, Leeds, UK.
Email: a.dunn@leeds.ac.uk

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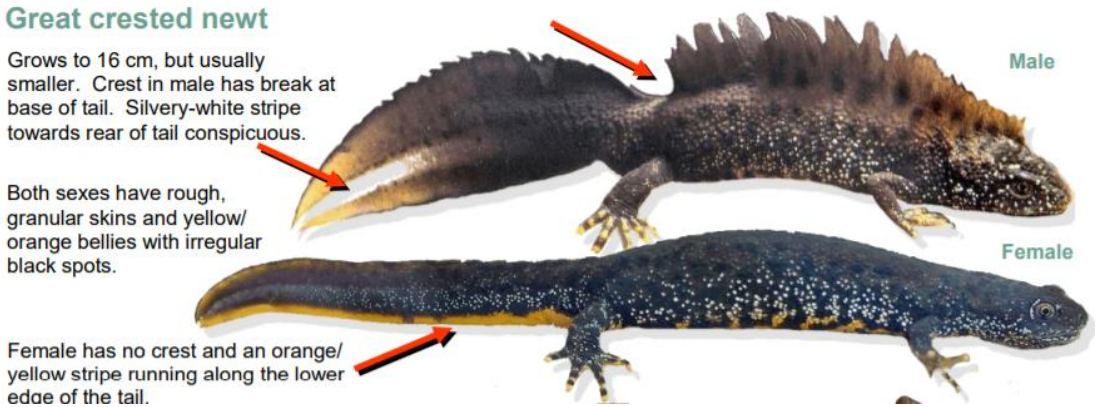
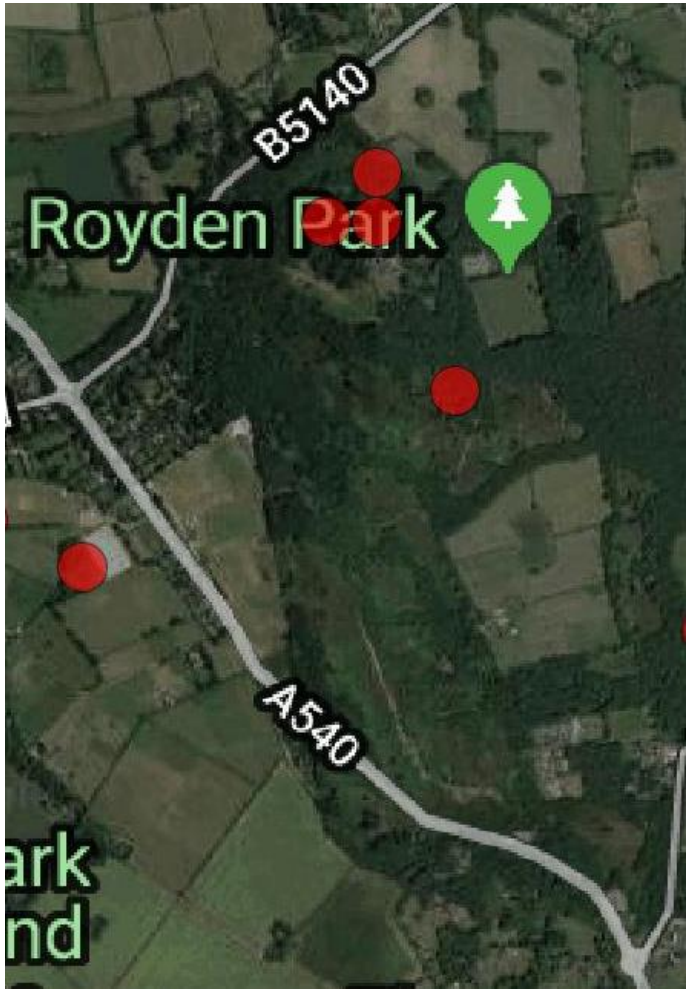
Abstract

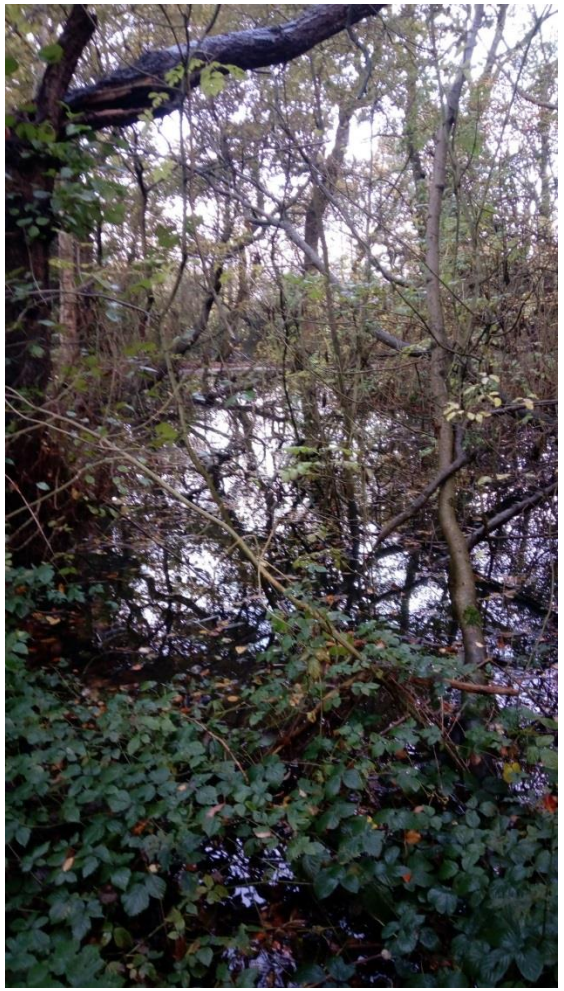
Biological invasions have the potential to alter ecosystem processes profoundly, but invaders are rarely found alone. Interactions between different invasive alien species, and their cumulative impact on ecosystem functioning, have led to hypotheses of invasion meltdown whereby effects become additive leading to further ecosystem stress. Invasive riparian plants (e.g., *Rhododendron ponticum*) deposit leaf litter in freshwaters, which may be unconsumed by indigenous species, potentially affecting habitat heterogeneity and flow of energy to the food web. However, invasive alien decapod crustaceans are effective consumers of leaf litter, and it was hypothesized that they would also consume inputs of invasive riparian leaf litter. This study shows that invasive alien signal crayfish (*Pacifastacus leniusculus*) and Chinese mitten crab (*Eriocheir sinensis*) effectively break down different types of leaf litter, including invasive alien *R. ponticum* at higher rates than indigenous white-clawed crayfish

Conservation Project Planning: Great Crested Newts on the Wirral

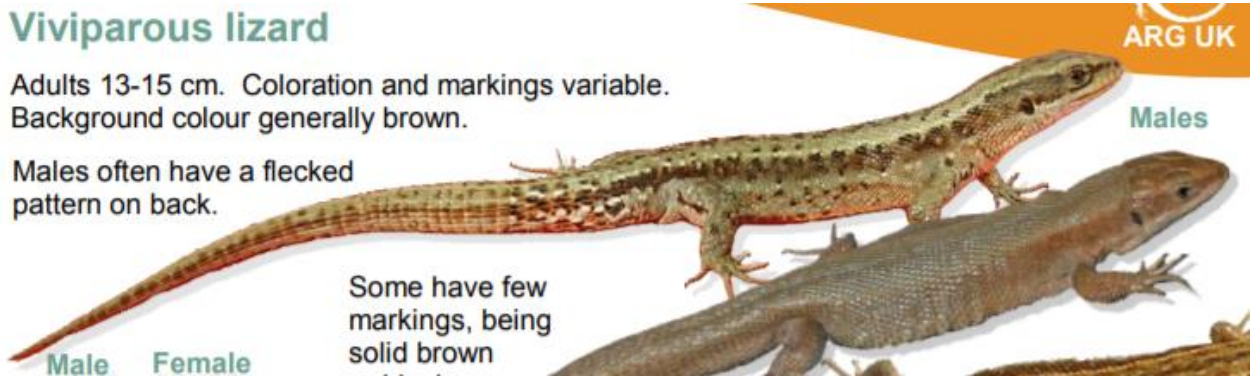


Royden Park pond restoration project

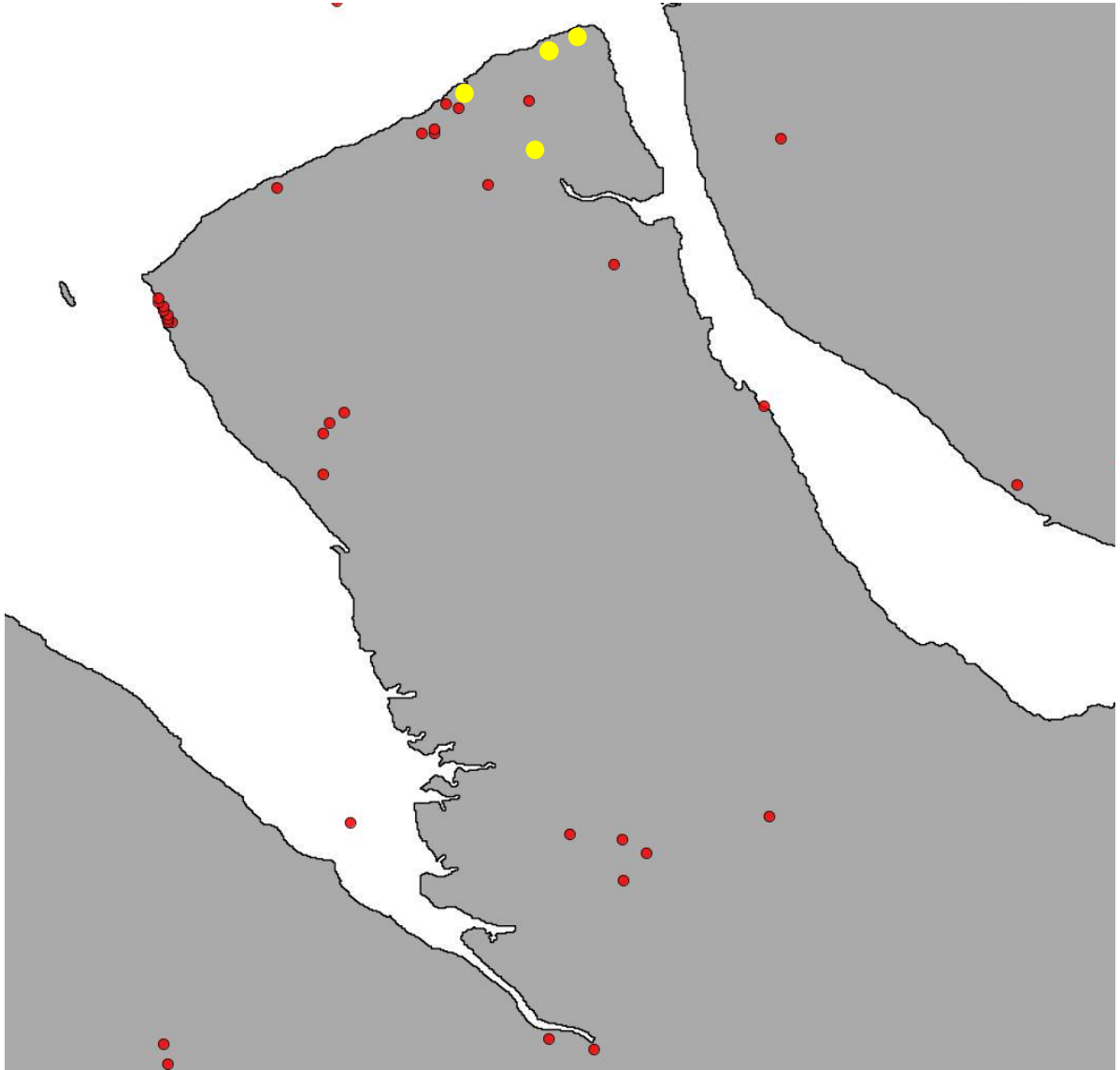




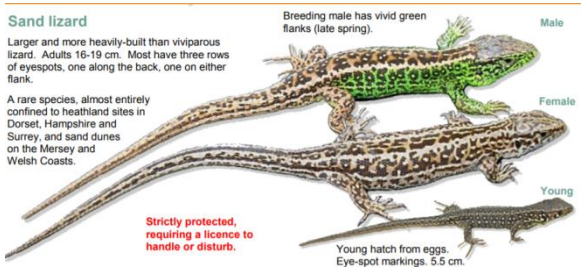
Common Lizards on Wirral

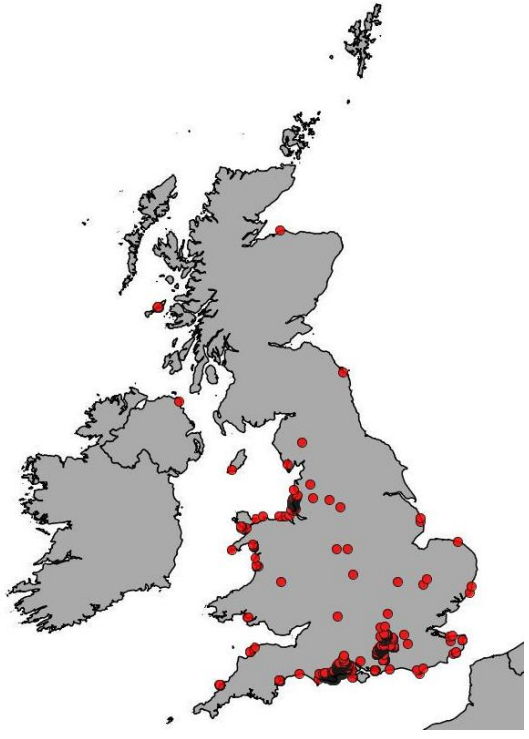


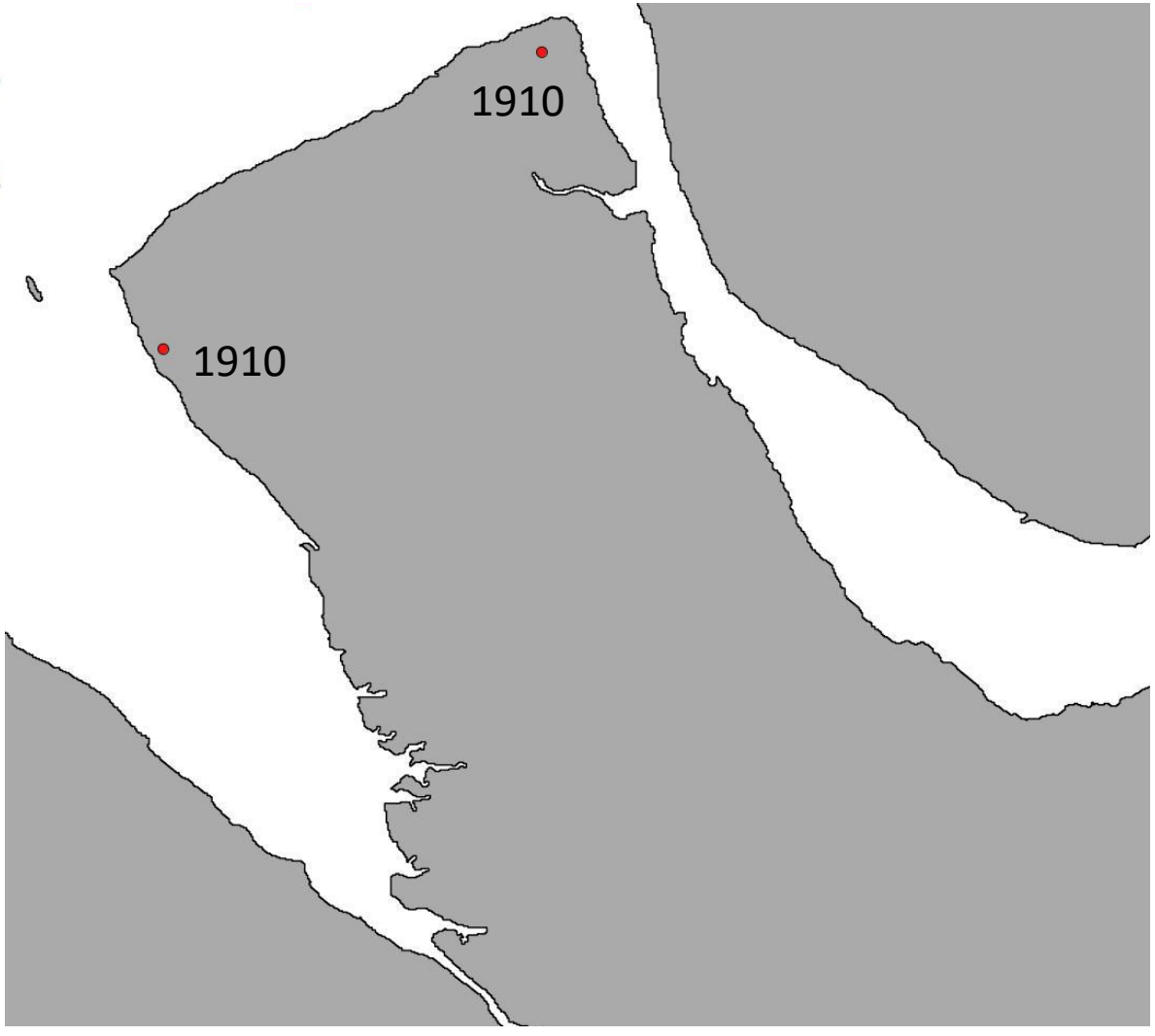
New records 2018



Sand Lizards on the Wirral?








14 A554
Wallasey, England
Google
Street View - Aug 2018
A554
Coastal Dr
Bayview Dr
Conservation projects challenging here!

Questions? (if not already cut-off!)

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- University of Leeds – Alison Dunn & Lee Brown
- ARG-UK – Julian Whithurst, Angela Julian
- Wirral Council Rangers – Dave Stephenson, Paul Sinclair, Paul Greenslade