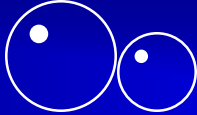


Water Beetles Atlas 2

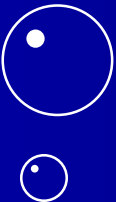
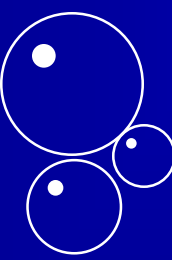
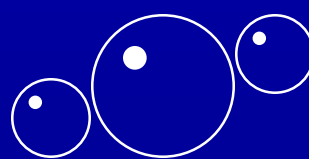
BRC Freshwater Recorders
Workshop October 2018

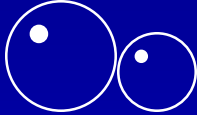
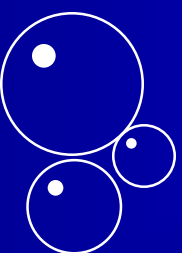
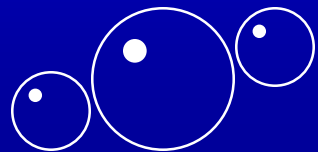
Garth Foster

The Balfour~Browne Club
The Aquatic Coleoptera Conservation Trust
latissimus@btinternet.com www.latissimus.org



Acknowledgements

- Biological Records Centre, Wallingford
 - photo credits to co-authors, Mike Samworth, John Halesworth
 - everyone else
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- **Atlas 1 144 species HYDRADEPHAGA**
 - ➔ Gyrinidae, Haliplidae, Noteridae, Dytiscidae
 - **Atlas 2 104ish species HYDROPHILOIDEA**
 - ➔ Helophoridae, Georissidae, Hydrochidae, Spercheidae, Hydrophilidae
 - **Atlas 3 120ish THE REST**
 - ➔ Hydraenidae, Dryopidae, Limnichidae, Heteroceridae, Elmidae, Scirtidae, the Beaver Beetle, the Microdot Beetle

Hydrophiloidea

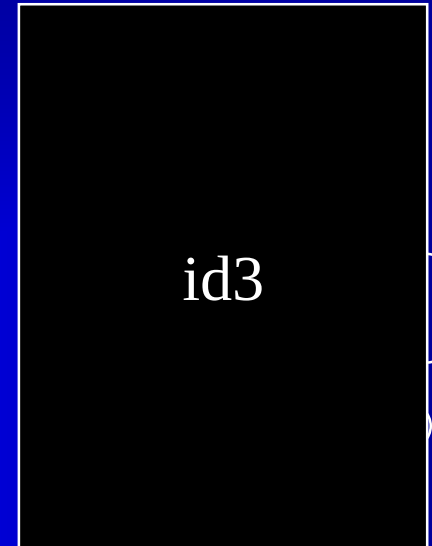
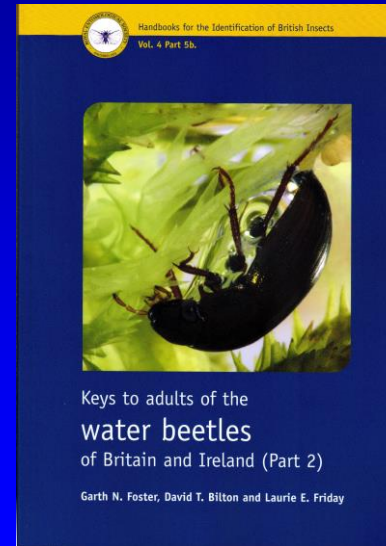
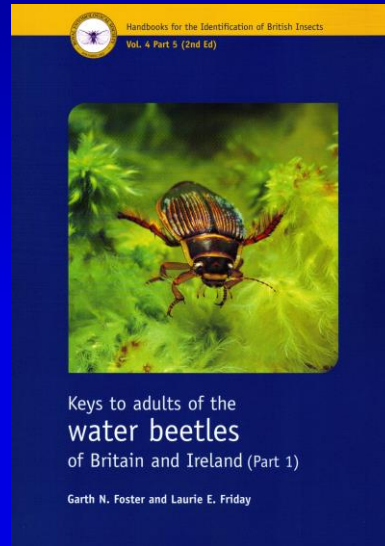
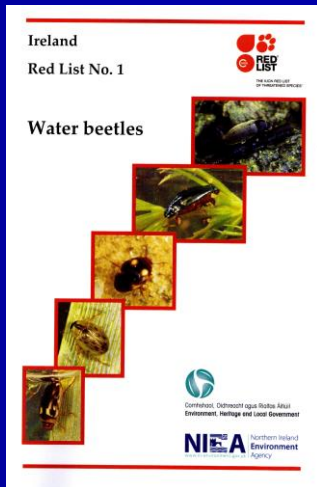


air bubble covering
whole underside

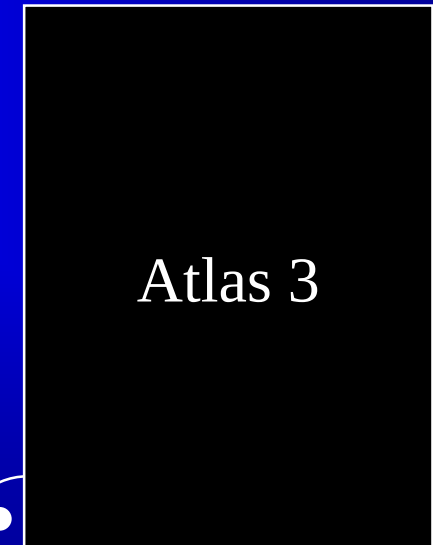
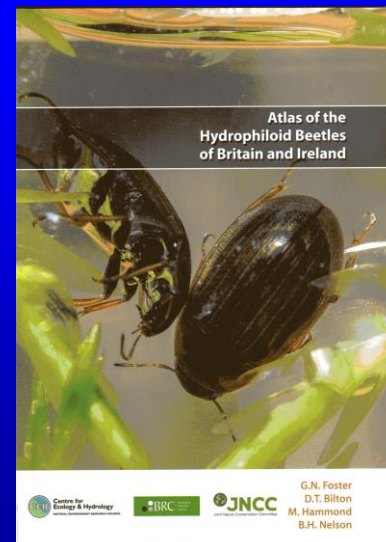
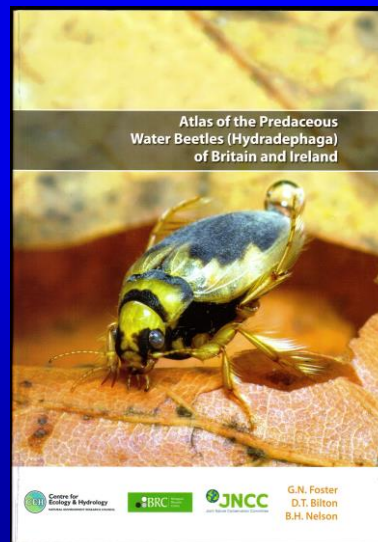
small antenna with
hairy club facilitating
air renewal

three-segmented
maxillary palp serving as
a feeler

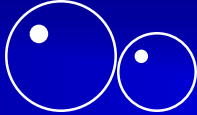
RES Handbooks



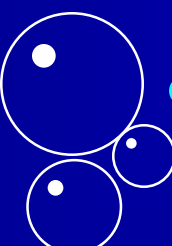
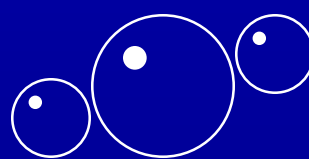
Red Lists



Atlases



Should hard copy Atlases be mandatory or are they old-fashioned??

- force a check of maps of all species....
 - ...perhaps in time to backtrack dodgy records
 - encourage last minute recording
 - place some obligation on those who have not sent in records
 - get recorders to check under-recorded areas
 - highlight other dodgy records by ignoring them
 - provide Twitcher's Guides
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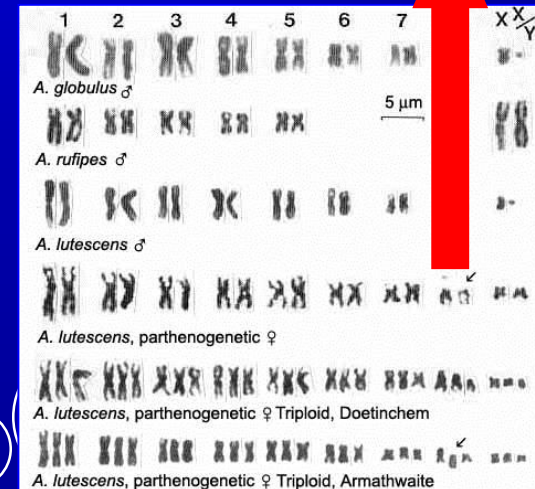
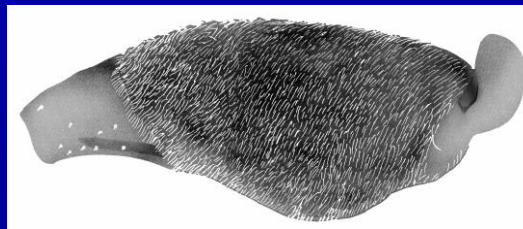
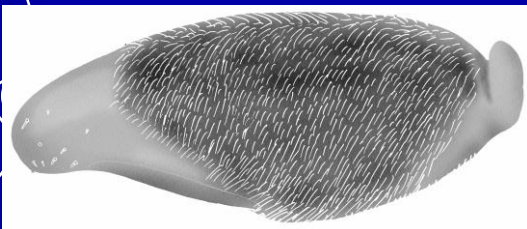
Complexes

- *Hydrobius fuscipes*
- *Enochrus fuscipennis*
- *Anacaena lutescens/limbata*
- *Megasternum concinnum/immaculatum*
- All need the full genetic treatment -
mitochondrial DNA, nuclear DNA, karyotypes
- plus museum work – types are still crucial

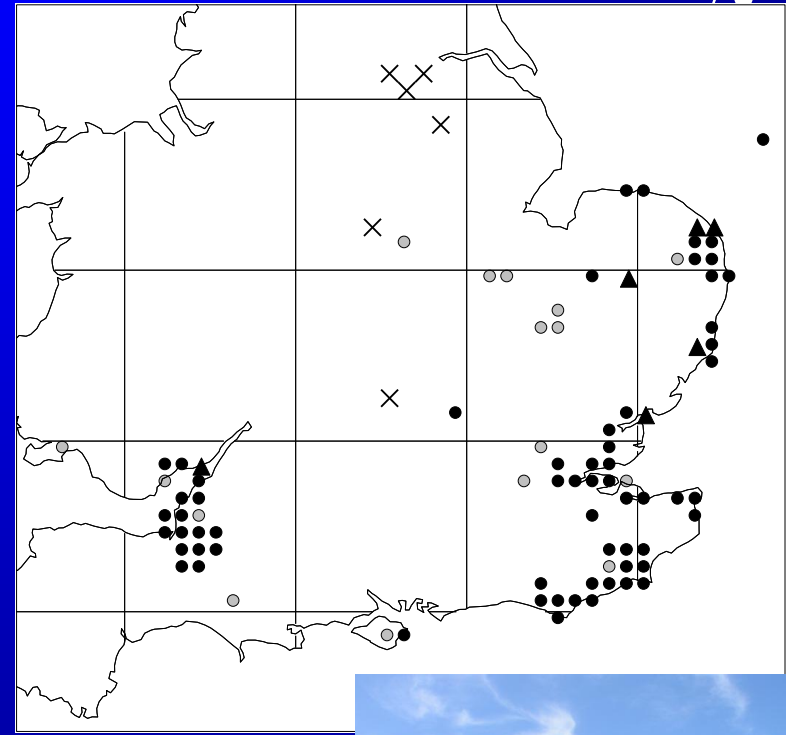


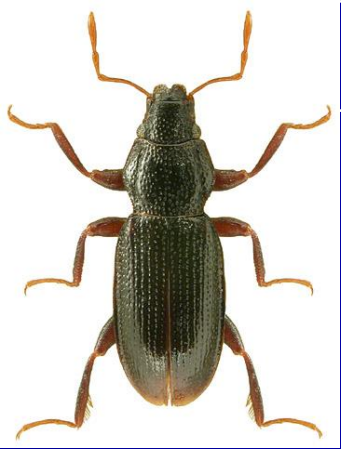
Anacaena

Anacaena lutescens/limbata - there have got to be more species



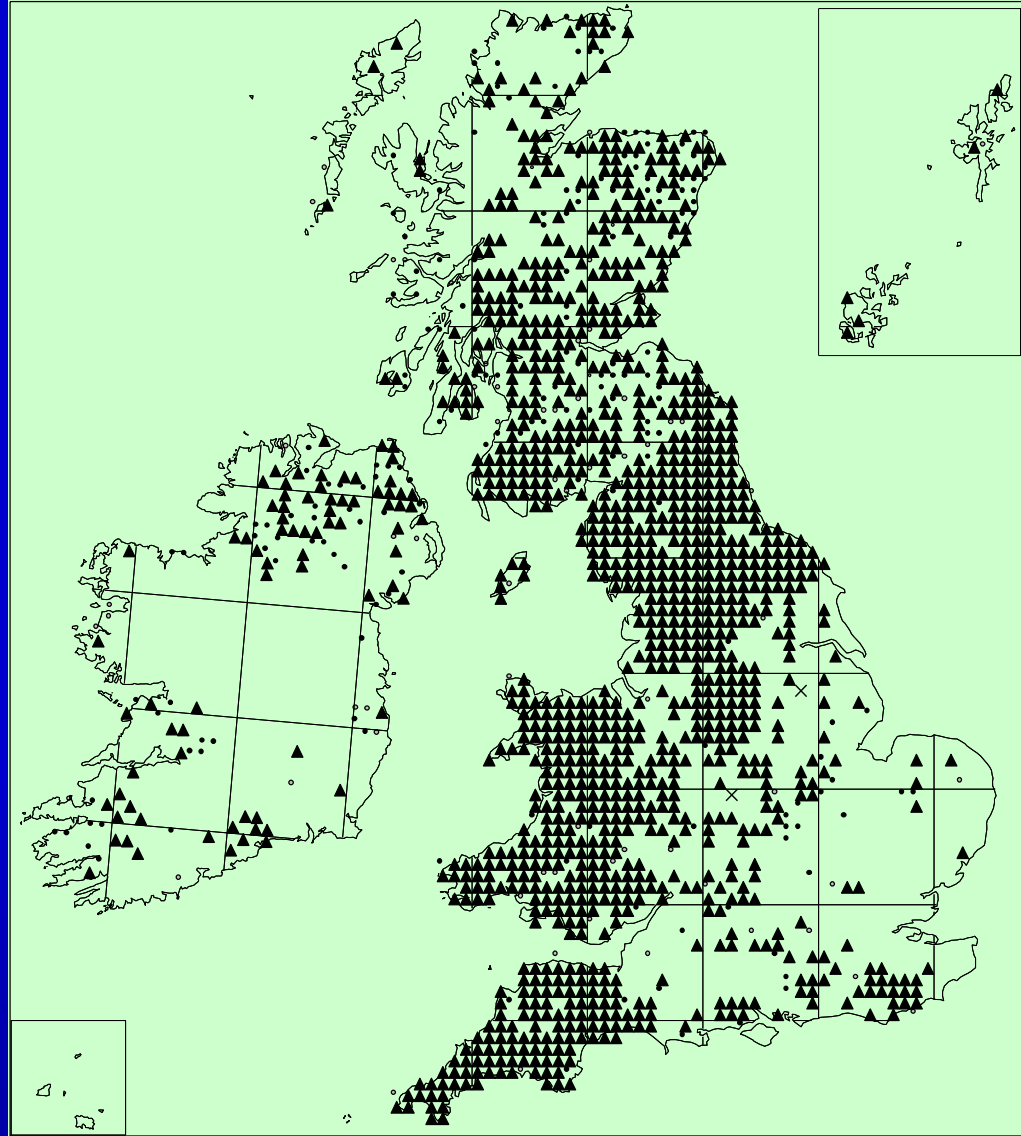
GSWB *Hydrophilus piceus*





*Hydraena
gracilis*

- at last recognising the existence of the Millennium
- need to involve EA, SEPA, NRW and Irish agencies for *Hydraena* and elmids – 140,000 extra records



The Balfour-Browne Club 1976 onwards





Cercyon sternalis

