Important Invertebrate Areas: Putting Bugs on the Map

November 2026


Blue Ground Beetle
(*Carabus intricatus*) © John Walters


Large Pale Stonefly larvae
(*Perla carlukiana*) © Rebecca Lewis


Horrid Ground Weaver
(*Nothophantes horridus*) © TomThomson


Dark-edged Bee-fly
(*Bombylius major*) © Steven Falk

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Important Invertebrate Areas

1. What are Important Invertebrate Areas (IIA)?

2. Identifying the IIA network

3. Fine-scale mapping IIAs

4. Supporting better outcomes for invertebrates

1. What are Important Invertebrate Areas?

1. What are Important Invertebrate Areas (IIA)?







Important Invertebrate Areas

Nationally or internationally significant places for the conservation of invertebrates and the habitats upon which they rely.

A vital tool for the conservation of our most threatened species, and the maintenance of sustainable populations of declining species



Castlemartin Range © Liam Olds

Important Invertebrate Areas

The aim of IIAs

- Takes complex information and makes it understandable for decision-makers.
- Based on sound, verified invertebrate data.
- Following a repeatable methodology.
- Freely available resources that provide:
  - Easily access to information on IIA locations
  - Clear and understandable outlines of ecological interest.
  - Habitat and assemblage threats and opportunities.
- To support key decision makers including planners, ecologists, land managers, local authorities, statutory agencies, and more.
- **To help prioritise conservation efforts and deliver better outcomes for invertebrates**

2. Identifying the IIA network

1. What are Important Invertebrate Areas (IIA)?

Important Invertebrate Areas

- Stage 1: Initial expert consultation with steering group to agree approach, agree criteria for IIAs, define the process.

- Stage 2: Testing the process- data collation, mapping and analysis according to agreed criteria.

- Stage 3: Expert consultation- presentation of results, review and revise criteria to produce a finalised broad-scale IIA hectad (10km x 10km) map.

- **Stage 4: Fine-scale maps using local data and expertise to produce a finalise site level network for each named IIA.**

- **Stage 5: producing the supporting resources needed to promote IIA interest and deliver better conservation outcomes.**

dae Recording Scheme	Dipterists Forum, Stilt & Stalk Fly Study Group	Dipterists Forum, Dixidae Recording Scheme	Bumblebee Conservation Trust
norrhyncha Recording Scheme	Dipterists Forum, Conopidae, Lonchopteridae & Picture-winged Fly Recording Scheme	Soldier Beetles, Jewel Beetles and Glow-worms Recording Scheme	Gelechiid Recording Scheme
Myriapod and Isopod Group, Centipede Recording e	Dipterists Forum, Pipunculidae Study Group	Barkfly Recording Scheme	Dipterists Forum, Chloropid Study Group
era Interest Group	Bruchidae & Chrysomelidae Recording Scheme	Soldierflies and Allies Recording Scheme	Siphonaptera Recording Scheme
sts Forum, Empididae & Dolichopodidae Recording e	Parasitic Wasps Recording Scheme	Dipterists Forum, Tephritidae Recording Scheme	BAS, Spider Recording Scheme
ological Society of Great Britain and Ireland	Dermestidae Recording Scheme	Ladybird Recording Scheme	British Myriapod and Isopod Group, Non-marine Isopoda Recording Scheme
Wasps and Ants Recording Society			rists Forum, Sepsid Recording Scheme
dae Study Group			h Dragonfly Society
Myriapod and Isopod Group, Millipede e			rists Forum, Hoverfly Recording Scheme
sts Forum, Calliphoridae Recording Sch			tic Heteroptera Recording Scheme
orn Beetles Recording Scheme			idea Recording Scheme
rial Flatworm Recording Scheme	Earthworm Society of Great Britain and Northern Ireland	Ground Beetle Recording Scheme	Orthocerous Weevils Recording Scheme
sts Forum, Fungus Gnat Recording Scheme	Riverfly Recording Schemes: Ephemeroptera	British Dragonfly Society	Staphylinidae Recording Scheme
sts Forum, Tachinidae Recording Scheme	Riverfly Recording Schemes: Plecoptera	BAS, Opiliones Recording Scheme	Dipterists Forum, Drosophilidae Recording Scheme
riinae Recording Scheme	Tenebrionoidea Recording Scheme	Orthoptera Recording Scheme	Incurvarioidea Recording Scheme
e Recording Scheme	Terrestrial Heteroptera Recording Scheme	Collembola Recording Scheme	Scottish Natural Heritage
Moth Recording Scheme	Dipterists Forum, Cranefly Recording Scheme	Dipterists Forum, Chironomidae Study Group	Natural England
Isles Neuropterida Recording Scheme	Mosquito Recording Scheme	Crambidae & Pyralidae Recording Scheme	Natural Resources Wales
des (biting midges) Recording Scheme	Scirtidae Recording Scheme	Leaf-mining Moth Recording Scheme	SEPA
aeoidea Recording Scheme	Stenini Recording Scheme	Butterfly Conservation	Environment Agency

80+ invertebrate recording schemes contributed over 50 million records to identify the IIA network for GB

Important Invertebrate Areas

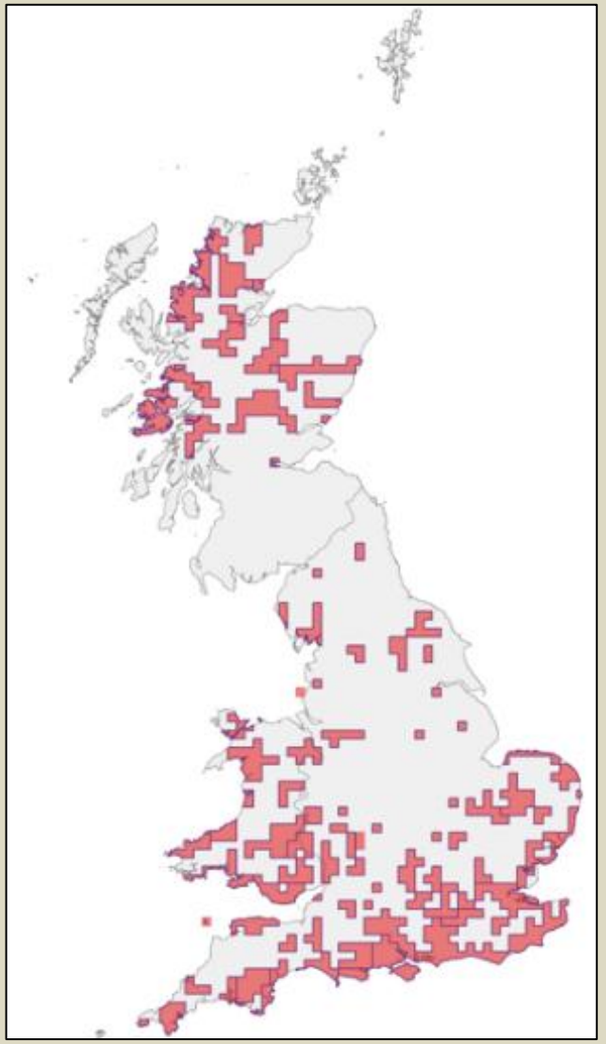
IIA Qualifying Criteria	Description
Category A: **Hectads support a single species in one of these criteria**	
(i) Area supports globally endangered species	Species listed as Critically Endangered (CR), Endangered (EN) or Vulnerable (VU) on IUCN global red lists.
(ii) Area supports European endangered species	Species listed as Critically Endangered (CR) or Endangered (EN) on IUCN European red lists.
(iii) Area supports nationally Critically Endangered species	Species listed as Critically Endangered (CR) on national red lists.
(iv) Area supports endemic species	Species recognised as endemics, only found in the UK and not widely distributed.
Category B: **Hectads support a nationally important assemblage of rare or threatened invertebrates**	A hectad exceeds a threshold for number of species meeting any of the criteria below. For England and Wales the threshold is 8 species, for Scotland it is 4 species. Qualifying species are: ▪ Species listed as Vulnerable (VU) on IUCN European red lists, or listed on Habitats Directive Annexes IIa and IVa, or Bern Convention Appendix II or III. ▪ Species listed as Endangered (EN) on national red lists. ▪ Species listed as nationally rare (GB NR or equivalent).

Important Invertebrate Areas

A first broad-scale IIA map for GB

- Just the beginning!
- Areas outside of the IIA network can still be important. This highlights areas we know <u>are</u> important, not areas that aren't.
- Initial broad-scale selection is entirely data led
- Analysis only as good as the data fed in.

- The broad-scale network includes areas of low interest within hectads, requiring fine-scale mapping and local expert input.



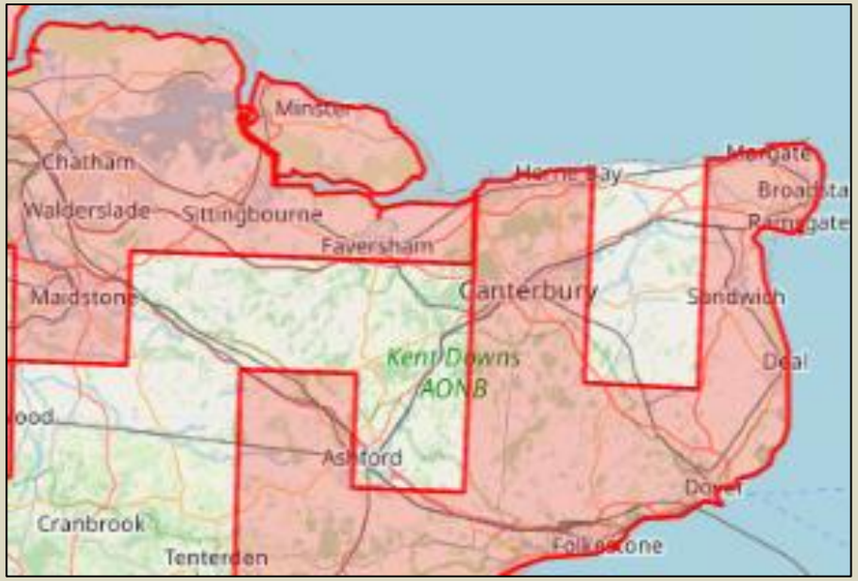
3. Fine-scale mapping IIAs

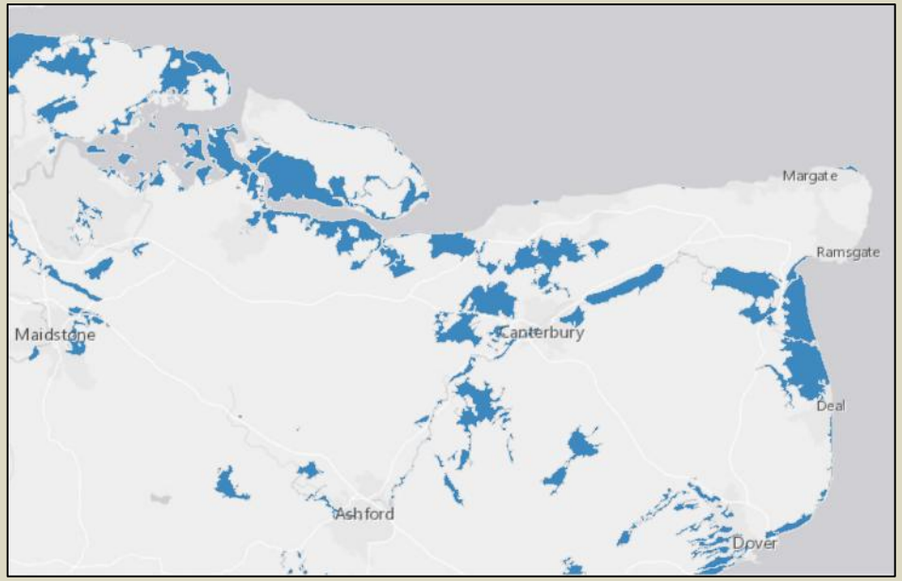
1. What are Important Invertebrate Areas (IIA)?

Important Invertebrate Areas

Fine-scale mapping

- For effective on the ground conservation of invertebrates, fine-scale mapping needs to be undertaken in each of the IIAs.
- Builds on entirely data led broad-scale mapping by using fine-scale data from Local Environmental Records Centres and recorders.
- Brings expert and local knowledge into play.





Important Invertebrate Areas

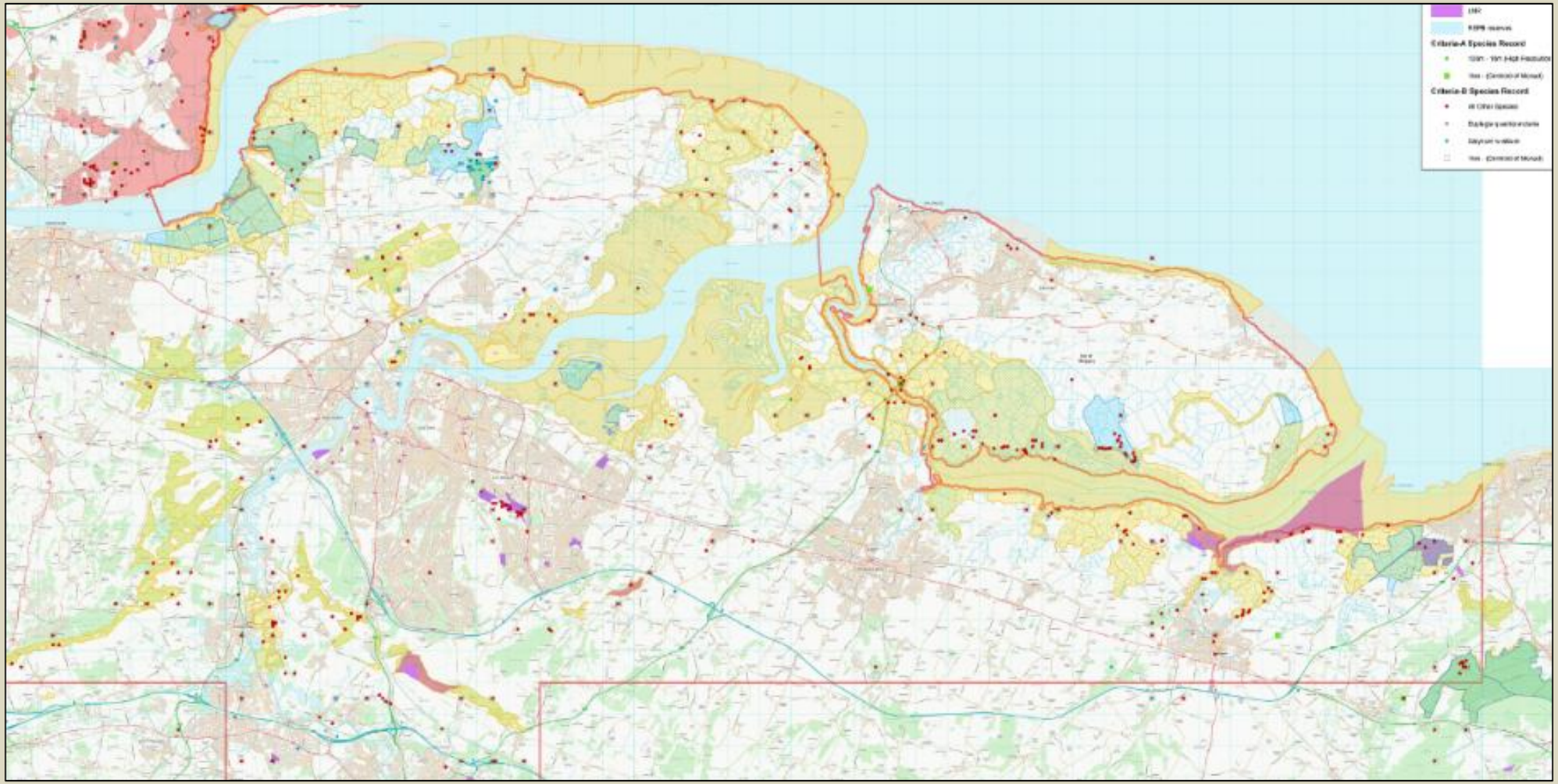
Fine-scale mapping workshops

- Ensure the integrity of IIAs- hectads too broad and include non-contributing habitat.
- Essential to focus on key areas.
- Build on entirely data led broad-scale mapping by using fine-scale data from local records centres and recorders.
- Bring expert and local knowledge into play.
- Create practical and realistic areas, incorporating all most important areas of supporting habitat.

- Map out all Criteria A and B records.
- Experts in attendance draw on maps and use accompanying GIS layers to identify the core IIA network.

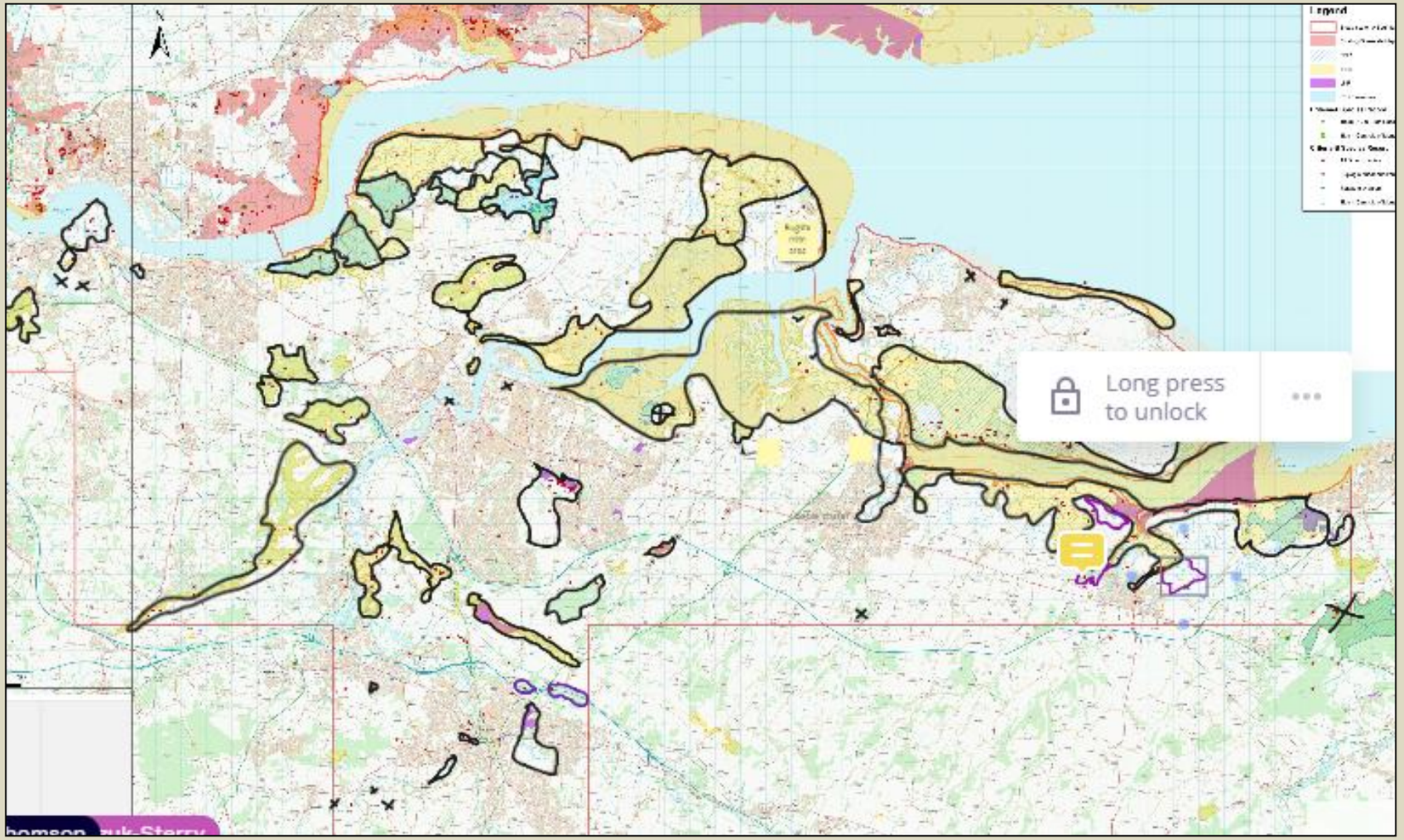
Important Invertebrate Areas

Fine-scale mapping process in the Thames Estuary South



Important Invertebrate Areas

Fine-scale mapping process in the Thames Estuary South



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Fine-scale mapping process in the Thames Estuary South



Important Invertebrate Areas

Fine-scale mapping- Ainsdale Sand Dunes

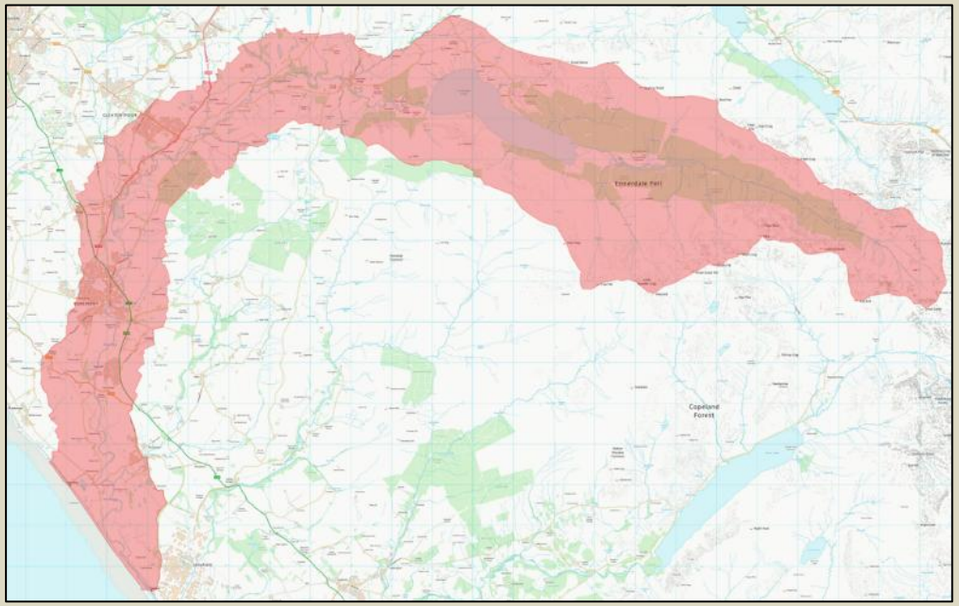
- Selected for the Critically Endangered dung beetle *Ammoecius brevis*.
- Mapped with help of the taxon group experts.
- All suitable areas of grazed dune area within or around records.
- Includes Ainsdale Sand Dune NNR and adjacent areas of Sefton Coast SSSI above mean high water mark.



Important Invertebrate Areas

Fine-scale mapping- Ehen Valley

- Selected for the best English population of Freshwater Pearl Mussel (*Margaritifera margaritifera*).
- Includes buffered SAC boundary and source at Ennerdale Water and surrounding Fells.





Freshwater Pearl Mussel (*Margaritifera margaritifera*) © Sue Scott / NatureScot

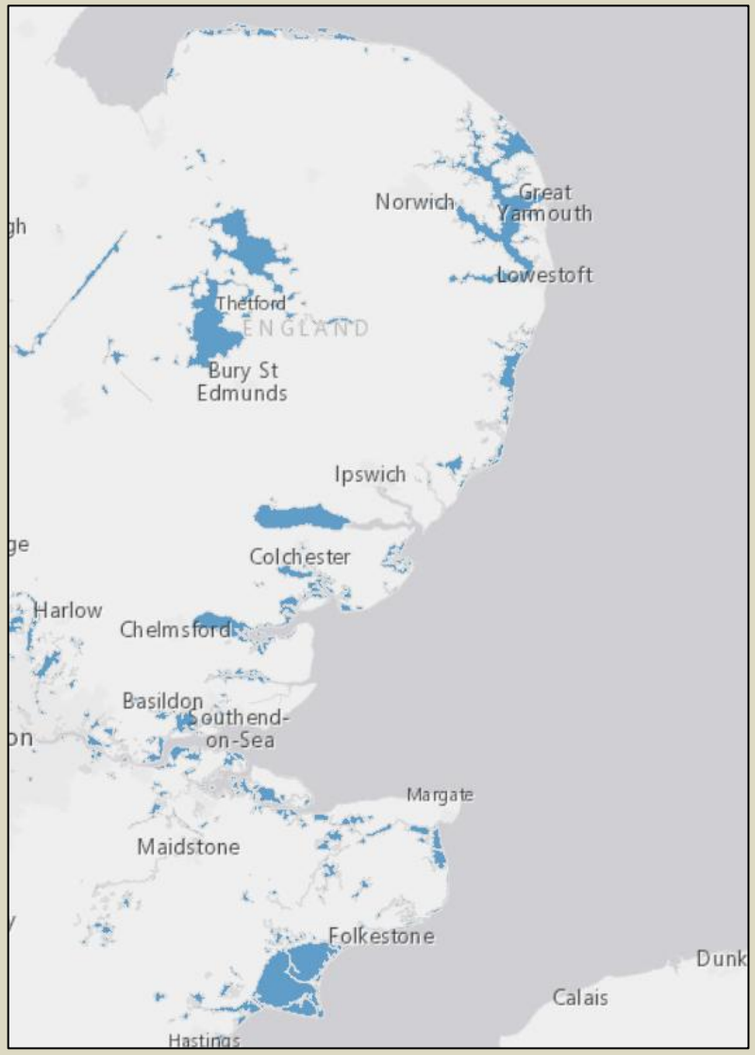
Important Invertebrate Areas

Where are we now?

- 103 IIAs have been identified for GB. Ranging from single hectad IIAs such as Lundy Island to the South Downs (31 hectads).
- 77 have been fine-scaled mapped with more in progress.
- Broad and fine-scale on **IIA webmap**.

- All fine-scale maps available as WFS/GIS on the **Buglife GIS Data Hub.**

- Now being used for four UK Overseas Territories and the Isle of Man.



Important Invertebrate Areas

4. Supporting better outcomes for invertebrates

Important Invertebrate Areas

Why do we need IIAs?

- A national framework to direct and focus invertebrate conservation.
- Influence the development of future protected area networks.
- Raise the profile of invertebrates with key stakeholders, including decision makers and the conservation sector.
- Improve management and protection of sites within IIAs.
- Inform planning tools to influence planning outcomes for invertebrates.
- Attract and direct funding to invertebrates where it is most needed and effective.

Important Invertebrate Areas

IIA profile documents

A profile document will be created for each IIA that will outline:

- IIA character
- Reasons for selection
- Key species
- Major invertebrate assemblages of the fine-scale area
- Local threats and opportunities

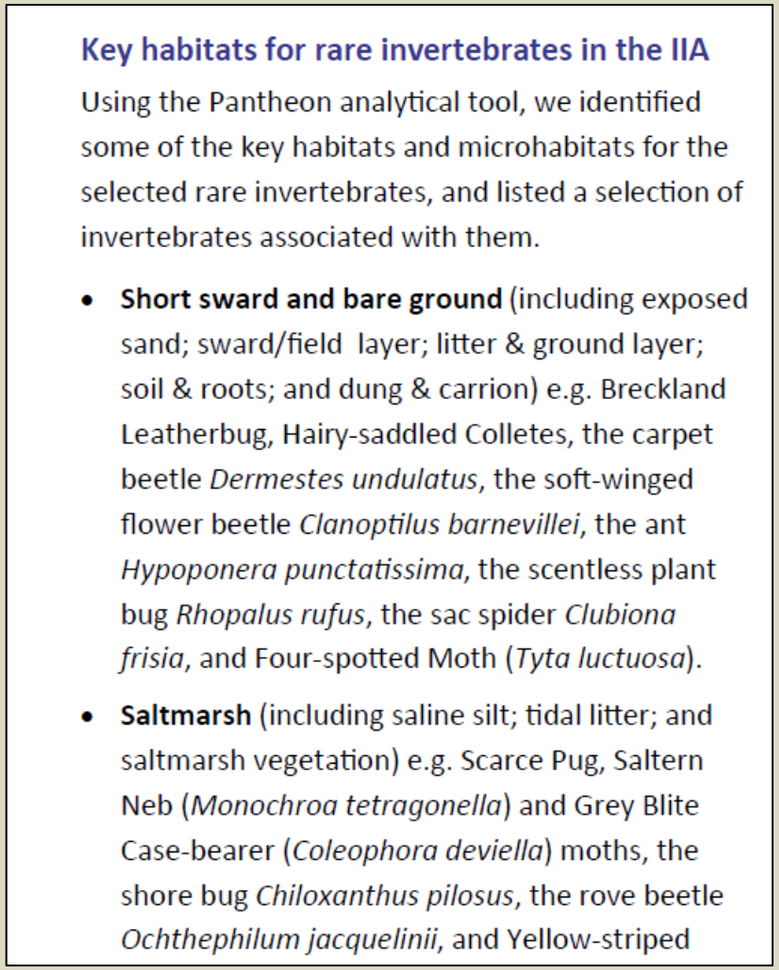
55 profiles now completed – with more underway



Important Invertebrate Areas

IIA profile documents

- Not intended to replace vital LERC data searches.
- Highlight species with post 1990 records that meet IIA qualifying criteria, but do not include records.
- Intended to identify the species associated with Specific Assemblage Types (informed by Pantheon).
- Users will have an indication of key features within habitats for invertebrates.



Key habitats for rare invertebrates in the IIA

Using the Pantheon analytical tool, we identified some of the key habitats and microhabitats for the selected rare invertebrates, and listed a selection of invertebrates associated with them.

- **Short sward and bare ground** (including exposed sand; sward/field layer; litter & ground layer; soil & roots; and dung & carrion) e.g. Breckland Leatherbug, Hairy-saddled Colletes, the carpet beetle *Dermestes undulatus*, the soft-winged flower beetle *Clanoptilus barnevillei*, the ant *Hypoponera punctatissima*, the scentless plant bug *Rhopalus rufus*, the sac spider *Clubiona frisia*, and Four-spotted Moth (*Tyta luctuosa*).
- **Saltmarsh** (including saline silt; tidal litter; and saltmarsh vegetation) e.g. Scarce Pug, Saltern Neb (*Monochroa tetragonella*) and Grey Blite Case-bearer (*Coleophora deviella*) moths, the shore bug *Chiloxanthus pilosus*, the rove beetle *Ochthephilum jacquelinii*, and Yellow-striped

Extract from Norfolk Coast IIA

Important Invertebrate Areas

IIA profile documents

- Key threats to invertebrates associated with individual habitats within an IIA.
- Helps non-experts know how to manage habitats for an IIA's invertebrate interest.
- To improve overall consideration of invertebrates.



Habitat Threats and Opportunities

Dunes

Threats

- Conversion of fixed dunes to agricultural land or direct development for housing or golf courses, causes fragmentation of dune habitats and severely modifies the vegetation by re-seeding, fertilising and mowing of the vegetated areas.
- A cessation of grazing (including rabbit grazing) on previously grazed dunes risks an invasion of coarse grasses and scrub, which outcompete the fixed dune vegetation communities and ultimately remove the bare sand and early successional habitats important for thermophilic invertebrates.
- Conversely, overgrazing can lead to a loss of structural variation, and a short uniform sward lacking the flowers and shelter needed by many invertebrates.
- Water abstraction and drainage of adjacent land for agriculture or housing leads to a long-term lowering of the water table and may lead to the loss of specialist dune-slack invertebrate communities as the slacks dry out.

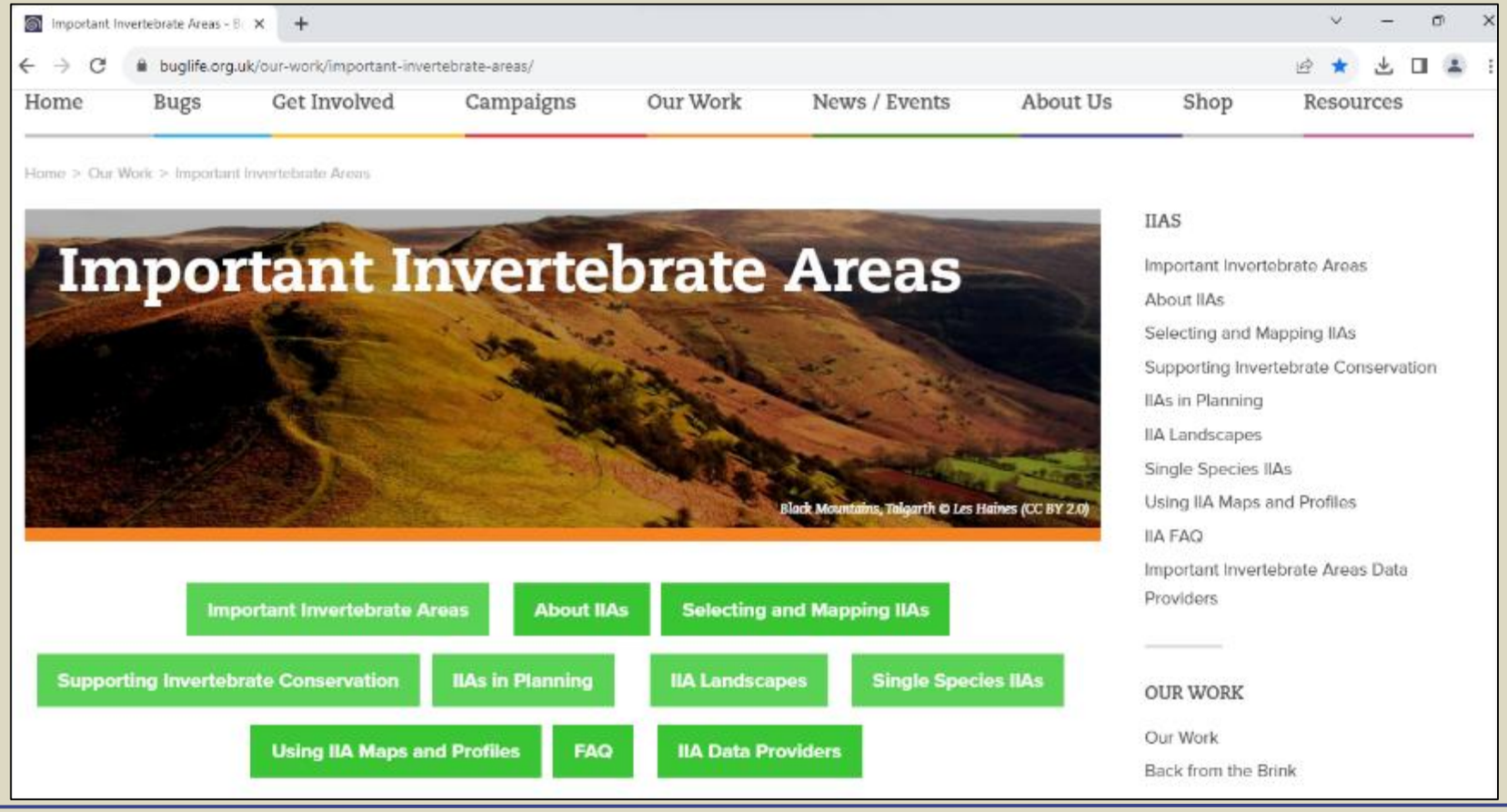
Opportunities

- Maintain a full range of successional stages of sand stabilisation across the dune system, from mobile sparsely vegetated foredunes, young dunes with dense Marram Grass clumps, to more established dunes with varied vegetation, stable sandy grassland or heath, open sandy areas and dune slacks. This will provide nesting, sheltering and feeding resources for a wide variety of invertebrates.
- Retain and protect any transitions with adjacent habitats such as saltmarsh, fen, woodland or rivers and any other features of interest including seepages, creeks, or areas of wet mud.
- Prevent damage by excessive disturbance or overuse, especially on vulnerable young sparsely vegetated foredunes – these can be periodically fenced off to aid recovery.

Important Invertebrate Areas

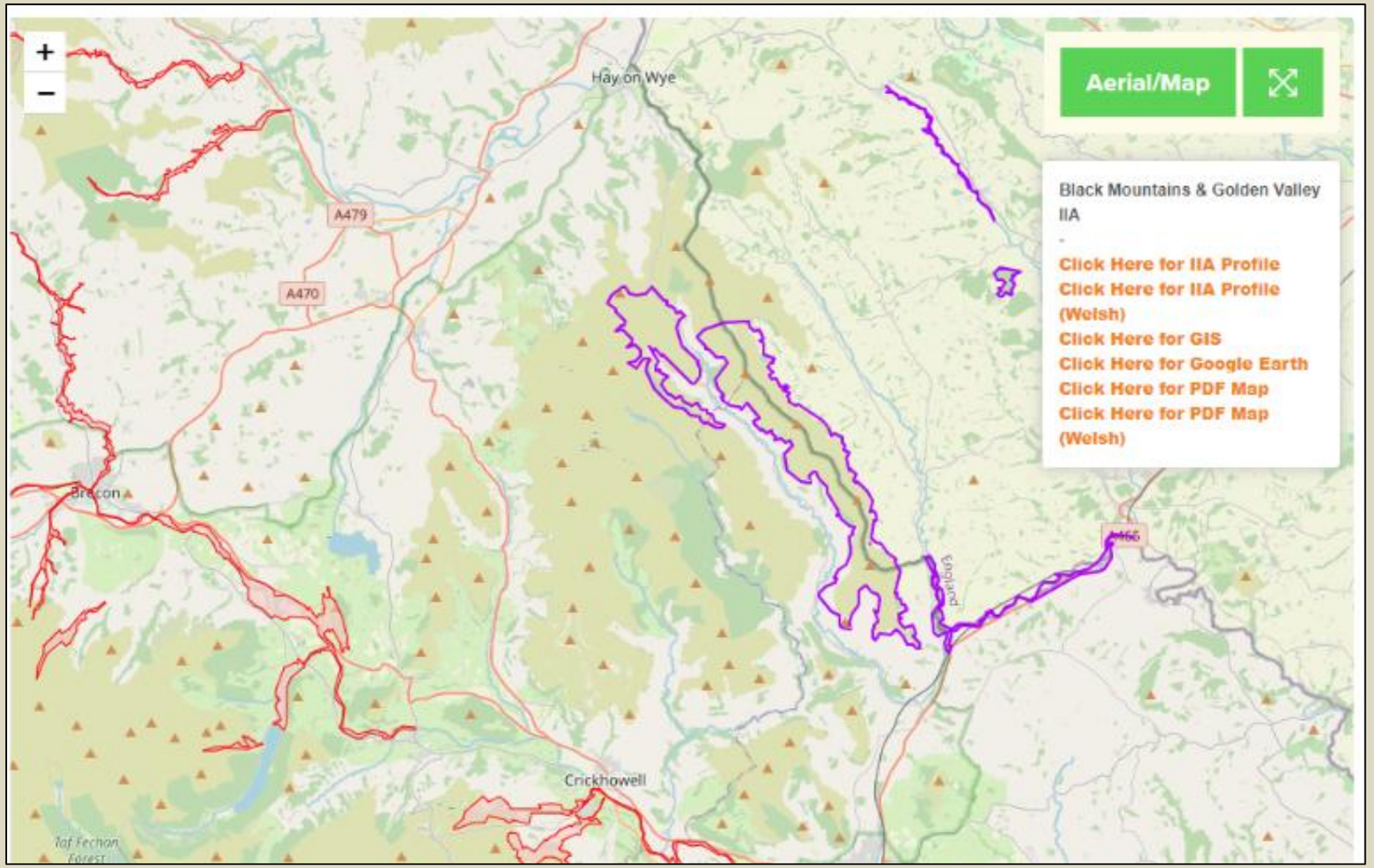
Making IIAs accessible

IIA web hub includes interactive map with profiles and supporting docs



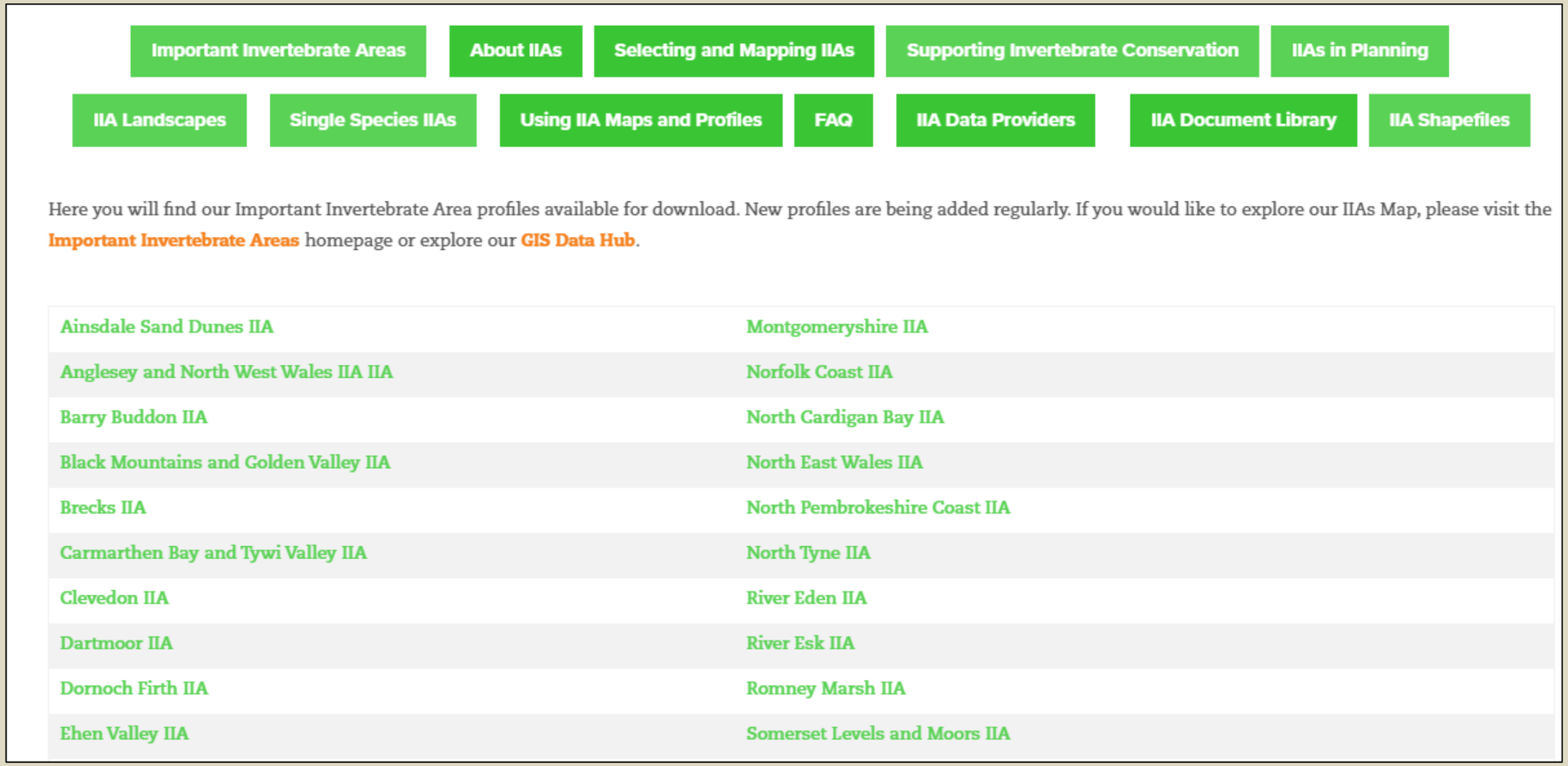
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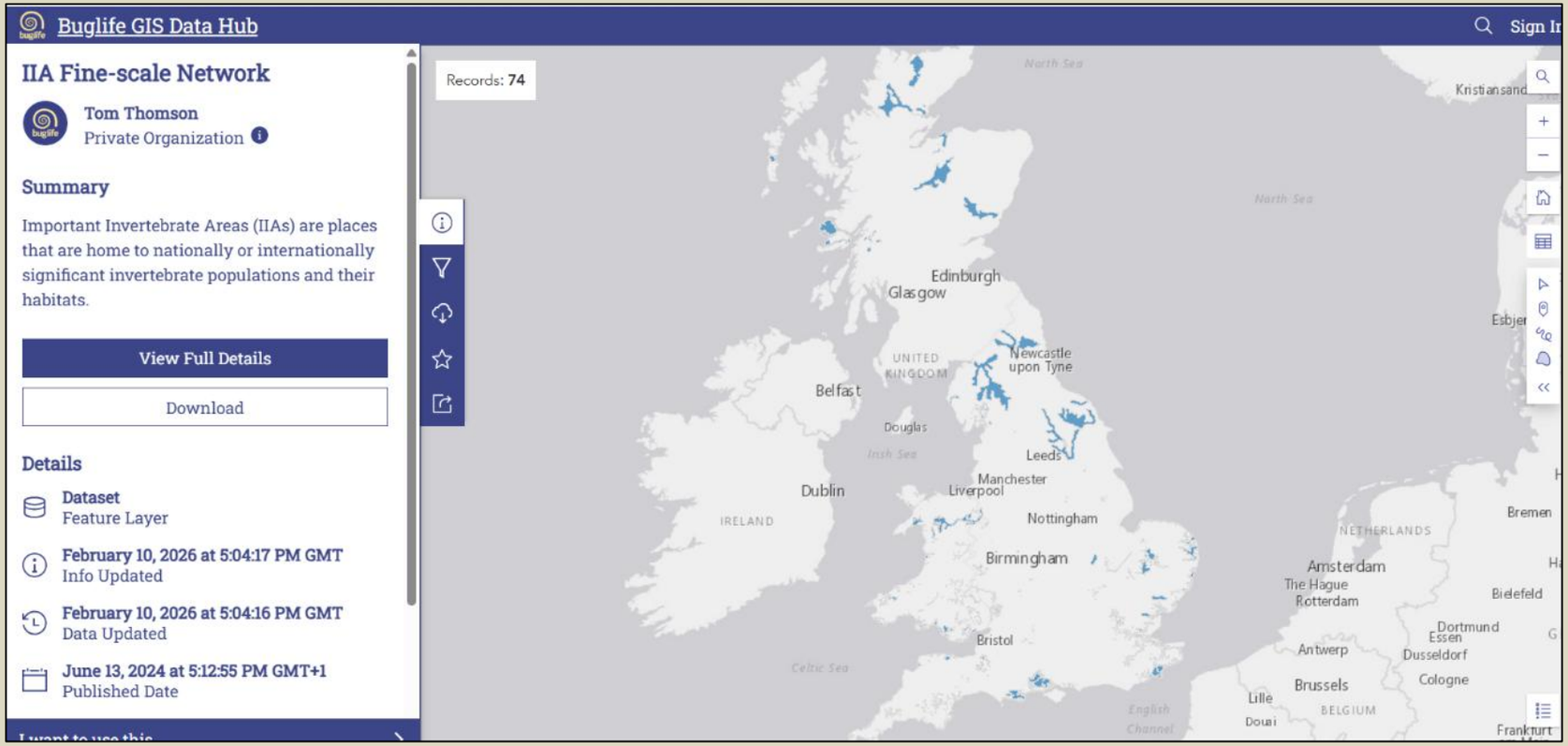
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Important Invertebrate Areas

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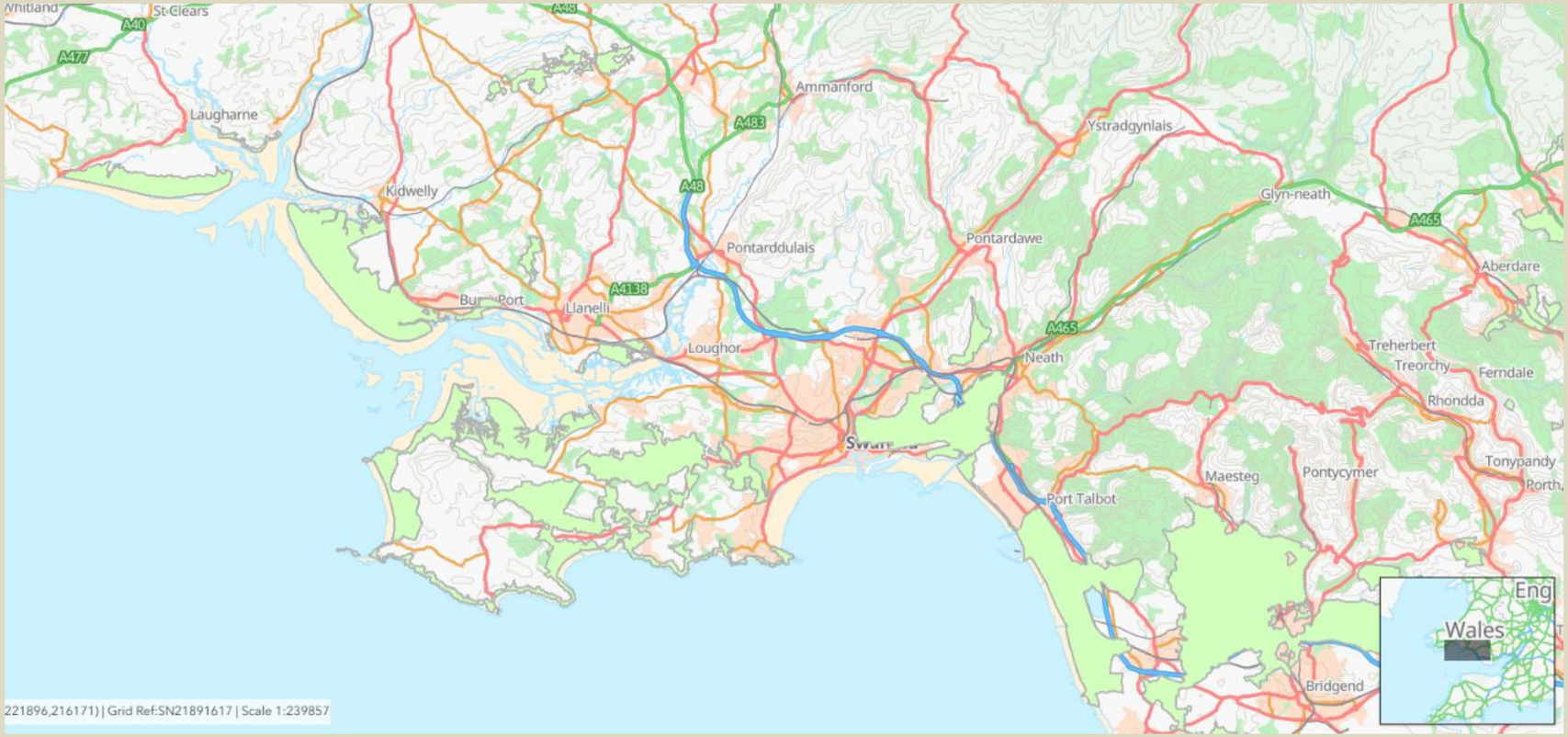
Buglife GIS Data Hub -up-to-date fine-scale maps available as WFS/GIS- https://gis-data-hub-buglife.opendata.arcgis.com/.



Important Invertebrate Areas

Making IIAs accessible

Buglife GIS Data Hub -up-to-date fine-scale maps viewable on MAGIC (www.magic.gov.uk)



Important Invertebrate Areas

How could IIAs help decision makers?

- Focus resources where they are needed most.
- Include in LERC data searches to better inform ecological appraisals and ensure surveys are undertaken when needed.
- Support planners to ensure appropriate surveys are received and in a timely manner.
- Help non-experts to understand core areas for invertebrates and local assemblages of importance.
- Identify gaps in Protected Area Networks- invertebrates are poorly represented in SSSI citations.
- Inform Local Wildlife Site selection.
- Developing landscape strategies for key species or assemblages.
- Identify gaps in green space and ecological networks.
- Raise awareness of overlooked species.

Important Invertebrate Areas

Cross-sector management for invertebrates

- Help to identify areas where agri-environment schemes should prioritise delivery for invertebrate habitat and features.
- Inform farm clusters of key landscapes for invertebrates.
- Help Local Wildlife Trusts, National Trust and other land managers understand where their important invertebrate populations are and how to manage for them.
- Ensure the best sites for invertebrates don’t enter the planning system to begin with.
- Helping to identify where Biodiversity Net Gain can best deliver.
- Could IIA landscapes be improved or enhancements focus on buffering IIAs?

Important Invertebrate Areas

Informing LNRS and Nature Networks

- Generic guidance for inclusion of invertebrates in LNRSs.
- IIA habitat pressures and measures to improve invertebrate outcomes in LNRS.
- Plans for Scottish Nature Networks materials.



Thank you

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