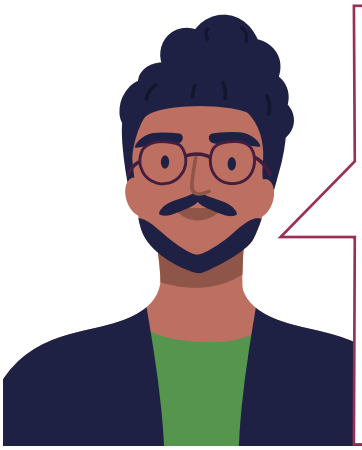


Great crested newts are widespread across the UK and are the UK's largest newt.

They are found in many different habitats, including woodlands, scrub, and grassland. As amphibians, they also need access to an aquatic habitat such as a pond, which they use for breeding.

As great crested newt populations are in decline, we must help to conserve their populations and create new habitats for them. Where habitats are affected by works related to HS2, we translocate thenewts to alternative or newly constructed habitats.

Will, Ecologist

Challenge 1: Lifecycle

Put each stage of a great crested newt's lifecycle in order, then match it to the description. You should use your research to find the answers.

1	**Juvenile**	Newly hatched, they swim using their tails, developing their front legs then back legs. They hunt tadpoles, insects and other newt larvae, in competition with fish.
2	**Larva**	On land they are active at night, hunting earthworms, slugs and other invertebrates. By day they shelter under rocks and logs. They return to the pond for breeding.
3	**Adult**	Each egg is laid on an underwater leaf, which is wrapped around it.
4	**Egg**	Almost at maturity, they leave the pond, losing their tail fins and gills.

Challenge 2: Adaptation and the Environment

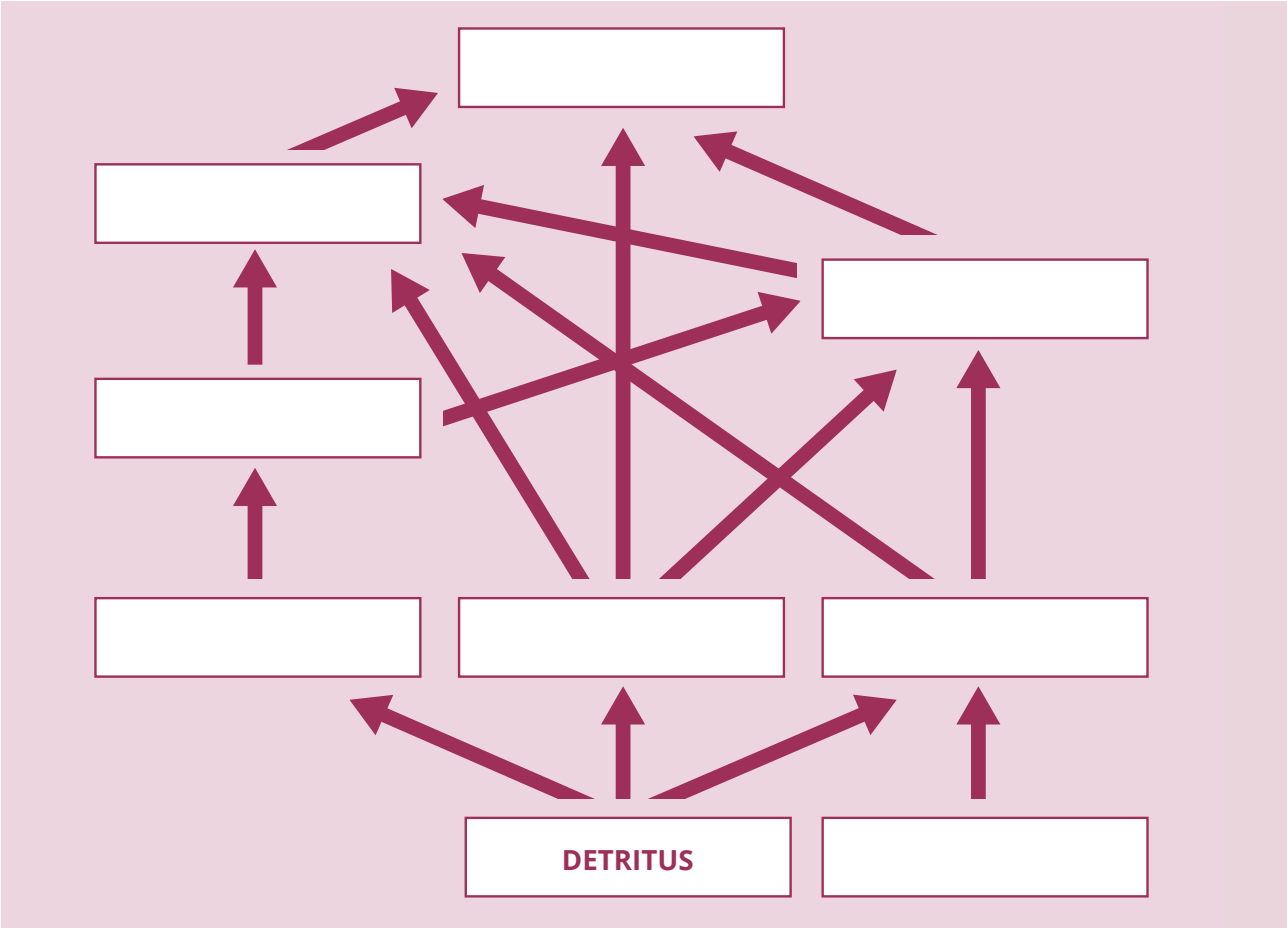
Adaptations enable a species to live successfully in their environment. Great crested newts have adaptations that help them live on land and in water. Using your research, complete the sentences below.

a) They are proficient swimmers…	…which enables them to hunt on land and in water.
b) They wrap their eggs in leaves…	…which helps them to attract females during the mating season.
c) They have dark bumpy skin…	….which helps them to breathe underwater.
d) They can absorb oxygen through their skin…	…to help protect them.
e) The males grow a jagged, spikey crest…	…to help them to camouflage amongst rocks and logs.

Challenge 3: Food Web

A great crested newt's diet will change across its lifecycle. Adult great crested newts feed on land and in the water.

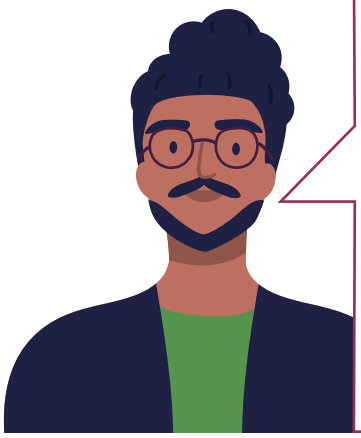
a) The food web below represents a grassland habitat that includes great crested newts. Using your own research, decide where each organism below fits.



FOX **HEDGEHOG** **GREAT CRESTED NEWT** **SLUGS**

PLANTS **EARTHWORM** **FLIES** **SPIDERS**

b) How could a great crested newt population be impacted if there was an increase in the population of hedgehogs?

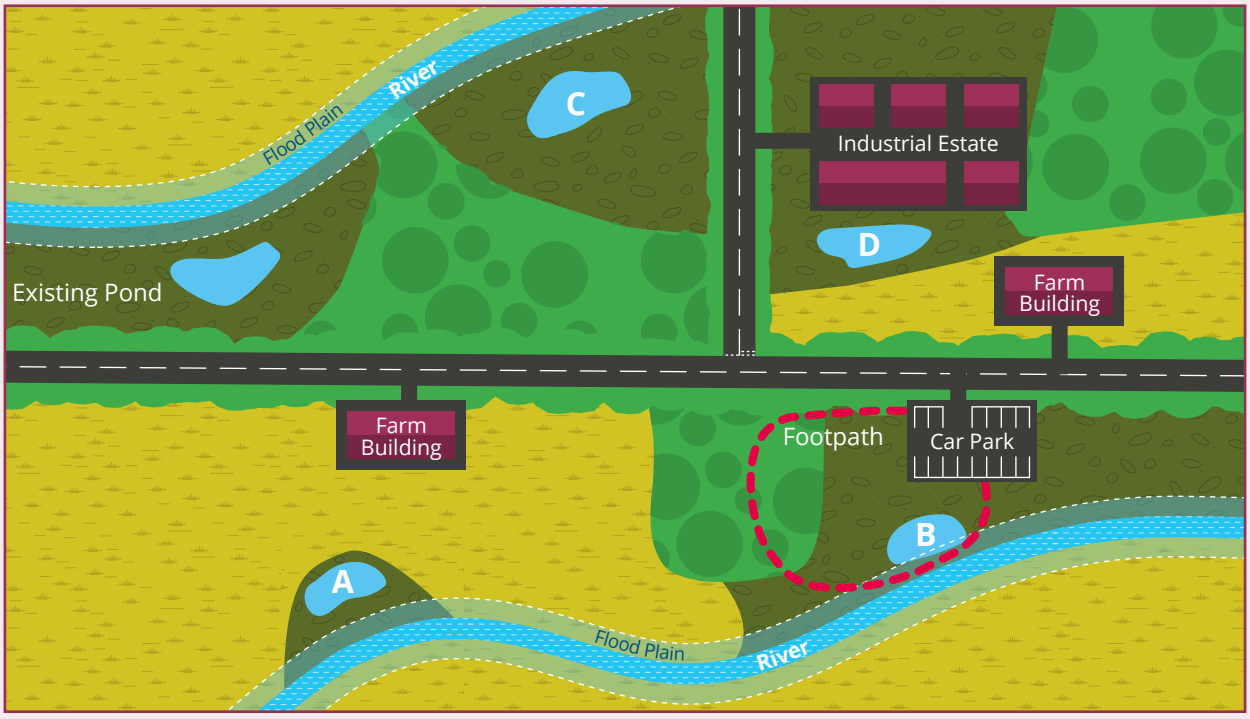


Challenge 4: Translocation

Translocation is where a population of plants or animals is moved from one site to another. Translocation is sometimes necessary as part of the building works of HS2, where habitats are on or near the route of the railway. Ecologists carry out surveys to find out which animals could be affected, and new habitats are then created to support their populations. We aim to create bigger and better habitats than there were before.

Will, Ecologist

In this activity, a population of great crested newts needs to be translocated to a specially built new pond. The pond will be constructed at one of the sites shown on the map below, labelled A-D. There is also an existing pond in the area that contains great crested newts.




Farm land


Woodland


Rough Grassland


Hedgerow

a) Using the information below, complete the table to assess the suitability of each site. You should answer 'yes' or 'no' for each of the criteria.

A suitable site must:

- Have connectivity to existing ponds, which will enable the newts to mix with other populations, promoting genetic diversity;
- Have access to suitable terrestrial habitats for foraging and shelter such as rough grassland and woodland;
- Have access to the different habitats needed during their lifecycle such as a breeding pond, without having to cross a road or farmland;
- Have access to hibernacula, or places to hibernate in, such as piles of logs or stones;
- Be at low risk of disturbance from livestock, dogs or people feeding ducks;
- Be away from any potential sources of pollution such as industrial waste runoff, or fertiliser or pesticide runoff from farms;
- Not be on a floodplain where fish could invade during floods.

	A	B	C	D
Does it connect to another pond?				
Does it offer access to grassland?				
Does it offer access to woodland?				
Does it connect to other habitats?				
Is it safe from fish invasion?				
Is it at low risk of disturbance from dog walkers or farm animals?				
Is it safe from the risk of pollution from runoff?				

b) Using the assessment table, explain which site is the most suitable for the building of the new pond. Explain why.

c) Suggest why it might not be a good idea to translocate the great crested newts into an existing pond?

d) What is the advantage for a great crested newt population of having access to more than one pond?

e) Suggest why a pond that contains fish would not be suitable for great crested newts?