



Alien Detectives

An introduction to **Invasive Non-Native (Alien) Species**



Help!

**Our local wildlife is under threat from
Alien invaders!**



We need you to become Alien Detectives.....

Could you learn about alien species, what they are, where they come from and what they are doing here?

Great! Then you can help us tackle the aliens, spread the word and help protect our environment.



More activities at: www.invasivespecies.scot/alien-detectives



What is an “Alien” or “Non-native” Species?

Alien, **non-native** and **introduced** can all mean the same thing...

- A **non-native** or **alien** species is a plant or animal that has been transported outside of its natural home range by humans - either accidentally or intentionally.
- A **native** species is one that has always grown or lived in a place (since the last Ice Age).
- Over 2,000 non-native (alien) species have been introduced into Britain from all over the world.



Examples of non-native, alien species

Can you name any **alien species** present in Scotland?



Grey squirrel



Giant hogweed



American mink



Himalayan balsam



Sika deer

These are just a few – there are lots more!

Invasive species

What do you think an **invasive species** is?

The term **invasive** is reserved for the most aggressive species capable of damaging the environment when and where they establish.

Invasive species cause severe problems - they may cause harm or damage to;

- our wildlife and our environment
- our health or the way we live
- our economy (they cost us lots of money)



Invasive species can be either **native** or **non-native**, most of the ones that cause serious problems are non-native.

Invasive non-native species (INNS)

Invasive, non-native (alien) species are the most successful species in their new locations and those that cause the most severe problems.

They are often bigger, faster growing or more aggressive than our native species and may have no natural predators to control their numbers or limit their spread.

As a result, native species are often unable to compete with these alien invaders and so decline.



How do the aliens get here?

All invasive non-native species were introduced into Britain by **people** - either accidentally or on purpose. How do you think this happens?

Travel and Trade



Hitchhikers that get a lift on a boat hull, in or on cargo, in deliveries or tourist luggage.

Ornamental Plants



Plants brought back by Victorian plant hunters for gardens - which later spread into the wild.

Ornamental Animals and Pets



Animals brought back to keep in estate parks and zoos or as pets - which later escape or are deliberately released.

Commercial use; Food and Fur



Animals or plants brought here because they were useful.

How are the aliens taking over?

Some plants produce huge numbers of seeds



These can float, fly and stick



How do you think they get spread?



Some plants have rhizomes (roots)



A tiny bit of rhizome can grow into a new plant!



How are the aliens taking over?



Seeds



Plant fragments



Rhizome fragments



Drop into water and float downstream, or blow in the wind.



Attach to fishing gear, boats, waders and wellies.



Get caught in animal fur or on their paws.



Attach to shoe treads and bike tyres or to cars and trains.

What impacts are the aliens having?

Can you think of any problems that invasive non-native plants can cause for our **wildlife** and to the **environment**?



Invasive plants out-compete native flowers. They grow fast and take over, shading out native plants.



Invasive plants have big, showy, flowers which attract pollinators away from native flowers.



Invasive plants have weak root systems which leads to bank erosion and a risk of flooding.



Invasive plants change the habitat of the riverbank which affects the insects and animals that live there.

What impacts are the aliens having?

Can you think of any problems that invasive non-native animals can cause for our **wildlife** and to the **environment**?



Predation.

American mink prey on water voles and ground nesting birds, devastating their populations.



Competition.

Ring-necked parakeets compete with native birds for nest sites and for food.



Carry disease.

Grey squirrels carry a virus which though it doesn't affect them is deadly to our native red squirrels.



Hybridisation.

Sika deer interbreed with native Red deer, causing a hybrid deer.

What impacts are the aliens having?

Invasive non-native species can also cause problems to our well-being and our way of life. Can you think of any ways they impact on us?



The sap of Giant hogweed causes severe skin burns and blisters.



Japanese knotweed can grow through cracks and damage property - costing a lot of money to remove.



Invasive plants can grow very large and can block footpaths for walking and access to rivers for fishing.



Invasive water plants block rivers and canals and prevent boats sailing on them.



Rabbits and deer cause damage to trees and agricultural crops.

Can we stop the aliens?

Yes! And as an **alien detective** you can help. What do you think we can do to rid Scotland of these alien invaders?



We can remove invasive plants.
Some can be pulled up, dug out or cut down.



Some invasive plants need to be sprayed with pesticide.



We can monitor for and trap invasive animals e.g. American mink and Grey squirrel.



We can practise good **Biosecurity** by cleaning our boots and gear when we've been out.



We can spread the word and tell other people about the problem and how they can help too.

What next?



Find out more!

Over on our website you'll find lots of activities, worksheets and games to help you discover more about some of the things mentioned in this introduction.

www.invasivespecies.scot/alien-detectives



Discover more about aliens and the alien invasion.



Worksheets and activities to do in the classroom.



Games to play both indoors and outside.



Practical activities about aliens and exploring the river.



More activities at: www.invasivespecies.scot/alien-detectives

