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Hint:

You will need to print out these resources single sided so you can cut out the stakeholder, case study and support and against cards.

Organic farmer

“We have to consider the hidden costs to the environment when we increase the number of intensive salmon farms for commercial exploits. These farms can pollute and degrade the whole ecosystem”

Member of the public 1

“Salmon farms produce large quantities of salmon which enable people to purchase cheap and plentiful fish for food”

Member of the public 2

“Humans have been introducing species into new environments for thousands of years. Many of these species like farmed salmon are beneficial for food and resources. Why should we stop introducing them now?”

Geneticist

“Salmon farms impose a problem of genetic pollution. Farmed salmon will escape and reproduce with wild salmon. This will have a long term impact on the future survival of salmon in the wild by interfering with the wild salmon’s gene pool”

Government official

“Intensive salmon farms are one of the fastest growing industries in the UK. Salmon farming has seen many successes from the amount of salmon produced, to the £500 million injected into the economy each year”

Local biologist

“Salmon farms are responsible for the spread of parasitic sea lice from farmed Salmon to wild Salmon. The farms are located near migratory routes so wild Salmon have no choice but to pass near the farms. The sea lice lower the fitness of the wild Salmon and in some cases prove lethal”

Local fisherman

“Salmon farms have severe impacts on the environment. The native species are affected due to high levels of untreated excrement which pollutes the local ecosystem. This damages my livelihood”

Local business man

“Salmon farms provide employment locally and the expenditure on services to maintain the farms provide much needed income for other local industries”

Local restaurant manager

“Salmon farms provide cheap fish which is vital for the health of my business. I wouldn't be able to afford organically sourced food”

Environment advisor

“Ideally Salmon farms would not exist and we would catch wild Salmon in a traditional way with fewer impacts to the ecosystem. But we have to be realistic and intensive Salmon farming is the only way we can produce fish in the quantities we need to meet demand”

unnatural selection

Support and against cards – print out and cut out



Support

Against



Case study: Rhododendron

The rhododendron plant was introduced for aesthetics from Asia and Spain in 1793 to Kew Gardens. As an attractive plant it has spread across much of the UK. Rhododendron reduces biodiversity because it forms dense vegetation and shade which prevents new species from growing. The leaf litter of rhododendron is toxic for seven years after the plant has been removed.

Case study: Monterey Pine

The Monterey Pine is a fast growing tree species which makes it ideal for forestry. It has been introduced into Australia and New Zealand. Both Australia and New Zealand are concerned with the impact it has upon native biodiversity by displacing native forests. While Monterey Pine can displace some species other native Australian species thrive on Monterey Pine.

Case study: Norway Spruce

Norway spruce is a fast growing conifer ideal for timber. Around 7% of Britain is covered in conifer plantations. These plantations create significant employment opportunities in certain areas of the UK. The plantations can provide habitats and support certain species. Conifer plantations might support the only remaining long term habitat for the endangered red squirrel. Downside to conifer plantations is they are a monoculture which provides little variety other species.

Case study: Rhizophagus grandis Beetle

The rhizophagus grandis Beetle is a successful introduced species from continental Europe. It is used to hunt and eat insects that harm and kill commercial spruce forests in Britain. Spruce is Britain's most important commercial forestry species therefore it is vital pests are controlled.

Case study: Grey squirrel

The North American grey Squirrel was introduced into Britain between 1876 and 1930. The grey squirrel is responsible for the decline in the native red squirrel in England and Wales. One reason for decline is because the grey squirrel carries a virus which is fatal for the red squirrel.

Case study: American Mink

In 1929 the American mink was introduced into the UK for the fur trade. It then escaped into the wild. The American mink is an aggressive species and has threatened British wildlife such as colonial nesting birds, inland waterfowl and water mammals. The American mink population is thought to be responsible for the decline of many waterfowl.

Salmon farming provides the UK with large quantities of salmon. Salmon farms are intensive which increases salmon production and reduces the price for the consumer.

However escapes are inevitable and the farmed fish can pass on disease and interbreed with wild salmon. Interbreeding can impact on wild salmon and reducing the fitness of their offspring.

Economic advantages:

- UK salmon farming generates £500million a year
- £39 million paid in employee wages
- Salmon farming supports local UK industries
- The industry is predicted to continue to grow and generate more wealth for the economy

Ecological impact:

- The intensive salmon farms generate large quantities of pollution. Each cage on a single farm may have half a million fish
- Interbreeding between farmed and wild salmon impacts upon the fitness and survival of the wild salmon
- Untreated effluent can have severe impacts on biodiversity and the ecosystem as a whole
- Disease can be passed on from farmed salmon to wild salmon

The Highland Council Local Authority has received a planning application to build a salmon farm.

You must consider the view of different stakeholders and either approve or reject the planning application. Give your decision with reasons below.

Do you have any recommendations? (For example is there anything you can suggest which may reduce the environmental impact of the salmon farm? Or is there an alternative way of providing cheap salmon/stimulating the economy?)

What extra information would you have liked to receive in making your decision?