

1 Let grass and wild flowers grow in public areas

How does it work?

The council do not cut the edges along roadsides, or the grass in parks or on roundabouts. This allows the grass to grow higher and wild flowers to flourish.



Arguments for this method:

- Wildflowers containing nectar are able to grow which feed many insects like bees and butterflies.
- The plants provide shelter and places to lay eggs for many insects.
- Grasses will be able to produce seed as they can grow for longer. Birds can feed on the seed.
- Overall, long grass and wildflowers increase the biodiversity in an area.
- The council will not have to cut the grass as often so will spend less money on fuel and salaries.
- Some people think the wild flowers look pretty.

Arguments against this method:

- Some people may complain the town is starting to look messy as they are used to seeing the grass cut.
- The council will need to run an education campaign to explain the grass has been left to grow.
- At road junctions the long grass may block the view of drivers which could be dangerous.
- There will be more pollen so people with hayfever may suffer.
- Some council employees may lose their jobs as they are not needed to cut the grass so often.

How much will they cost?

£5,000 per year for the education campaign, but £20,000 per year will be saved in fuel and staff salaries.



2 Remove invasive species of plants

How does it work?

Some plants can dominate a habitat, preventing other plants from growing which reduces the food available for insects and animals. These plants are known as invasive species and they need to be removed because they reduce biodiversity. The council would employ workers to do this. Problem plants for Stemville include:

- Himalayan balsam, which needs to be cut down.
- Pennywort, which needs to be removed from rivers and streams as it blocks them and reduces the amount of oxygen in the water so fish find it a struggle to survive.
- Japanese knotweed, which needs to be dug out and burned.



Himalayan Balsam



Japanese knotweed

Arguments for this method:

- Removing the invasive species allows a variety of plants to grow which in turn feeds more species of insects and animals.
- Removing pennywort improves a stream habitat which leads to greater biodiversity.

Arguments against this method:

- The invasive species need to be removed by hand so many workers are needed.
- The invasive species will keep coming back so they will need to be removed every year for 5 years.
- The workers need to be trained to recognise the correct species of plants so they don't remove the native plants.

How much will they cost?

£250,000 over 5 years.



3 Add green roofs to all council buildings

How does it work?

The roofs of council buildings are covered in grass and plants where possible. The plants on the roof attract insects, which pollinate flowers and provide food for birds, so increasing the biodiversity.



Arguments for this method:

- The plants on the roof provide food and a habitat for insects.
- The plants absorb water so reduces the amount of water running off the roof in heavy rain which can reduce surface water flooding.
- The green roof is a good insulator so less energy will be needed to heat the buildings.
- The plants on the roof absorb CO₂ from the air which is a greenhouse gas and contributes to global warming.

Arguments against this method:

- Some council buildings will not be suitable for green roofs as the building might not be strong enough to hold the weight or the gradient of the roof might be too steep.
- Some people may not like the look of green roofs.
- The roofs need to be maintained and replanted from time to time.

How much will they cost?

£100,000 per building over 5 years.
There are 10 council buildings in Stemville suitable for a green roof.



4 Provide bird boxes and bug hotels to all local businesses

How does it work?

The council pays for bird boxes and bug hotels for all local businesses to install.



A bug hotel and mural in Twickenham - London
By Jim Linwood CC BY- 2.0

Arguments for this method:

- The bird boxes provide a place for birds to nest.
- The bug hotels provide shelter for insects.
- An increase in the insect population provides more food for other animals and helps to pollinate more plants.
- The bird boxes and bug hotels are easy to install.

Arguments against this method:

- Some businesses may not want to install them on their buildings as they may think they do not look nice.
- Nesting birds create droppings and make noise which some people may not like.

How much will they cost?

£30 per building over 5 years, there are 300 business buildings in Stemville.



5 Check the quality of waste water from industrial businesses

How does it work?

Monitors are installed to continually test the quality of waste water released from industrial buildings into rivers and streams to detect any pollution. If water is polluted it reduces the number of organisms that can survive in the river or stream.



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Arguments for this method:

- The council can work with local businesses to help them improve the quality of their waste water. If there is less pollution in the water more organisms can thrive in rivers and streams.
- In serious cases of pollution the factory may be fined or shut down to stop them polluting the rivers further.
- If businesses know their waste water is being monitored they are less likely to pollute rivers and streams.

Arguments against this method:

- The technology is expensive.
- Staff would be needed to install and maintain the monitors.
- Staff would be needed to police the system and talk to businesses that are causing pollution.

How much will they cost?

£5000 per business to install a monitor and £1000 per year to maintain monitors and keep an eye on the water quality. There are 30 businesses in Stemville that discharge waste water into local rivers and streams.



6 Install fish ladders in rivers

How does it work?

A fish ladder is a stepped structure that is placed in rivers near barriers, such as water falls and dams, to help fish move up a river.



Arguments for this method:

- Fish can swim upstream in rivers and streams to get to the places where they reproduce, known as spawning grounds. If more fish can make this journey they can breed to produce more fish, so the species will not die out.
- More fish means greater variety of organisms in a habitat.
- If there are plenty of fish in the river it will attract more anglers (fishermen) to the area increasing tourism.

Arguments against this method:

- Space is needed to put in the fish ladder.
- During installation there is disruption to the river bank which damages the existing plants and animals.
- Fish ladders need to be maintained.
- Different fish species prefer different styles of fish ladder so one fish ladder may not help all fish species.

How much will they cost?

£100,000 per fish ladder over 5 years. There are 2 locations in Stemville where fish ladders could be used effectively. One on the Leawell and one on the Moor (see plan of Stemville).



7 Introduce a licence fee to own a cat or dog

How does it work?

Pet owners would be forced to register their cats and dogs and pay a yearly licence to own them.



Arguments for this method:

- Asking owners to pay fee to own a cat or dog may reduce the number of cats and dogs. Cats and dogs cause damage to the local ecosystem and are not good for biodiversity.
- Cats are carnivores and if they are allowed to roam will hunt small animals and birds.
- Dogs if let off their lead can disturb wildlife and harm animals such as birds and deer.

Arguments against this method:

- Licence fees would be very unpopular.
- There is no guarantee that the introduction of the licence fee would reduce the numbers of cats and dogs.
- It may lead to more stray cats and dogs as people who cannot afford the licence abandon their pets.
- It could possibly create a 2 tier society where only rich people can own cats and dogs.
- There may need to be exceptions such as assistance dogs.

How much will they cost?

Although money will be collected for the licence fee the council will need to police the system to ensure all dogs and cats are licensed so the overall cost would be £25,000 per year.



8 Introduce beehives to local primary schools

How does it work?

Beehives are introduced to local schools with the help of local beekeepers. School staff and pupils are trained to look after the bees and resources are produced to teach pupils about the importance of bees to society.



Arguments for this method:

- Bees will be able to pollinate plants in the local area. This is important for farmers because many crops need to be pollinated. It is also vital for other plants as they need to be pollinated to produce seeds which grow into more plants.
- Pupils will learn the importance of bees to society and about the bee life cycle.
- Bees make honey which the pupils can eat or the school can sell.

Arguments against this method:

- Some schools may not want to keep bees as some staff and pupils may be allergic to bee stings.
- School staff may not have the time to look after the bees.

How much will they cost?

£1000 for 5 years for each primary school in the town. There are 10 primary schools in Stemville.



9 Reduce council tax for families who have less than 3 children

How does it work?

All households in the town have to pay a council tax. Families with 2 children or less are given a council tax reduction. This may encourage people to have less children which stops the population of the town growing and eventually leads to a reduction in the population.



Arguments for this method:

- As a population grows people need more housing and space. To build houses habitats are destroyed. So if the population stops growing less new houses will need to be built.
- People use natural resources. If there are fewer people less resources need to be used.
- People create waste which needs to be disposed of. If there are fewer people less waste is created.
- People who have no children may be in favour of the idea as their council tax pays for services they do not use such as schools.

Arguments against this method:

- It may be unpopular as it is unfair on families who already have more than 2 children.
- It will lead to an ageing population which in the long term means the town will not have enough people who are working.

How much will they cost?

£100,000 per year.



10 Introduce beavers

How does it work?

A family of beavers is introduced to the local river, in a fenced off area. Beavers create dams which slow the flow of water and create wetland areas.



Arguments for this method:

- The wetlands created by the beavers are an ideal habitat for a variety of other wildlife such as birds.
- The risk of flooding is reduced downstream in the town.
- An eco-tourist attraction is created which may bring money into the local economy through tourism.
- Improves water quality as the dams remove sediment.
- This is a sustainable solution because once the beavers are in place few resources are needed for maintenance.

Arguments against this method:

- A warden will need to be provided to ensure their safety.
- A lot of open space is needed around the beavers.
- The beavers can only be introduced away from the town.
- Many months of planning and preparation needs to take place before beavers can be introduced to an area.

How much will they cost?

£200,000 over 5 years. Only one stream that feeds into the river Crane is a suitable location for beavers.



11 Plant trees on the steep slopes on the west side of the town

How does it work?

Plant native species of tree on the hills on the west side of town which will provide shelter and food for a rich diversity of wildlife. Native species are those that originated in and are adapted to a certain area.



Arguments for this method:

- A new habitat for woodland species and wildlife to flourish is created.
- Local people and visitors can enjoy the space.
- Once the trees are grown flooding will be reduced in the town.
- Once the trees are planted not much maintenance is needed.

Arguments against this method:

- Trees take a long time to grow so the benefit of the scheme will not be immediate.
- Young trees are protected by plastic covers which are unattractive and not environmentally friendly.

How much will they cost?

£1000 over 5 years per hectare (a measure of land), the hill by the town is 2000 hectares in size.



12 Remove invasive species of animals

How does it work?

Some animals were introduced by people to the area many years ago, but have begun to dominate so are causing other animals native to Britain to die out. These animals are known as invasive species and they need to be tracked, caught and removed. The council would employ workers to do this.



American mink

Problem animals for Stemville include:

- Grey squirrel which is causing the native red squirrel to die out as it competes for the same food and habitat. Also grey squirrels carry a disease which does not harm them but kills red squirrels.
- American mink which eat water voles, so the water vole population is reducing rapidly.
- Signal crayfish which compete with native white-clawed crayfish for food and resources. They also carry a fungus which kills the white-clawed crayfish.

Arguments for this method:

- Removing these invasive species from the area will allow animals native to Britain such as the red squirrel, water vole and white-clawed crayfish to flourish and stop them becoming extinct.
- Removing these species would mean they no longer dominate an eco-system so many other species of plant and animals can thrive.

Arguments against this method:

- Staff need to be trained to track the animals and remove them.
- People may not like the idea of animals being killed.
- The invasive animals would need to be removed every year as they will keep coming back.

How much will they cost?

£500,000 over 5 years.

