

## Activity 1

Pick a species and write below what you would do to help prevent it spreading

Species chosen: \_\_\_\_\_

What would you do to help prevent it spreading?

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Cut out your answer above and place it on a board with everyone else's.

Look at everyone's ideas and pick the 3 most popular species.

Divide into 3 groups with one species each, and work out an action plan.

Include in your action plan:

1. How many people are needed?
2. What equipment do you need?
3. How long will it take?
4. Where do you need to go?
5. What is the objective?
6. What is the follow up plan?

## Activity 2

Using the information from the pigeon sheets, conduct a survey within Lower Jamestown to determine the population size.

Use this information to input into the GIS system to plot a map of distribution of this species in Lower Jamestown.

Find areas within Lower Jamestown where pigeons are present in large numbers. Here are four areas to check; four or more other areas need to be identified to complete the survey.

Locations of pigeons	Number/Percentage Seen
Honeymoon Chair, Seaside	
Castle Gardens	
Duke of Edinburgh playground	
Harris Flats	

From your survey results:

Why do you think certain areas have higher numbers of pigeons than others?

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What do you think can be done about this to lower the numbers of pigeons?

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### **Activity 3**

The names *Whiteweed* and *Whitewood* sound similar. Do you think there is anything different about them? There is a major difference between them. Conduct some research to find out the difference.

Things to look for include:

Are they an invasive or endemic species?

Where did they come from?

What is their distribution on the island?

What is their habitat?

How are they surviving at present?

What are the positive and negative effects about them?

From your research, do you think that any of the 2 species need to be controlled/eradicated? If yes, state your reasons.

#### Activity 4

Around your school, conduct a nature walk and record what invasive species you find using the table below. In the ideas box, write what you think could be done to control or eradicate the species within your school.

Date.....

Name.....

Common Name	Species seen Y/N	Number seen/ Estimated %	Ideas
Asparagus fern			
Bilberry			
Bullgrass			
Centipede			
Common wasp			
Creeper			
Feral Cat			
Feral Goat			
Fuchsia			
Furze			
Jacaranda bug			
Maurandia			
Myna bird			
Nargy			

Nutgrass			
Pheasant tail fern			
Pigeon			
Rat			
Whiteweed			
Wild mango			

Combine all your ideas as a class and come up with 3 realistic ideas that can be followed through. For example, pull up any invasive species within your school grounds which can then be monitored on a regular basis.

Using the "number seen" column in the table above, plot a graph to show the percentage of each species around your school. Write below the most commonly seen 3 species:

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Conduct the same survey within your home garden/a relatives garden and list the 3 most commonly seen species:

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Compare the 3 species of your school grounds and your home garden and recommend some actions to control the species within each area.

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## Activity 5

Using the names below, label the picture to show the main parts of a plant

**axil** - the angle between the upper side of the stem and a leaf, branch, or petiole.

**axillary bud** - a bud that develops in the axil.

**flower** - the reproductive unit of [angiosperms](#).

**flower stalk** - the structure that supports the [flower](#).

**internode** - the area of the stem between any two adjacent nodes.

**lateral shoot (branch)** - an offshoot of the stem of a plant.

**leaf** - an outgrowth of a plant that grows from a node in the stem. Most leaves are flat and contain [chloroplasts](#); their main function is to convert energy from sunlight into chemical energy (food) through photosynthesis.

**node** - the part of the stem of a plant from which a leaf, branch, or aerial root grows; each plant has many nodes. Label the two lower nodes (the first and second nodes) on the plant diagram.

**petiole** - a leaf stalk; it attaches the leaf to the plant.

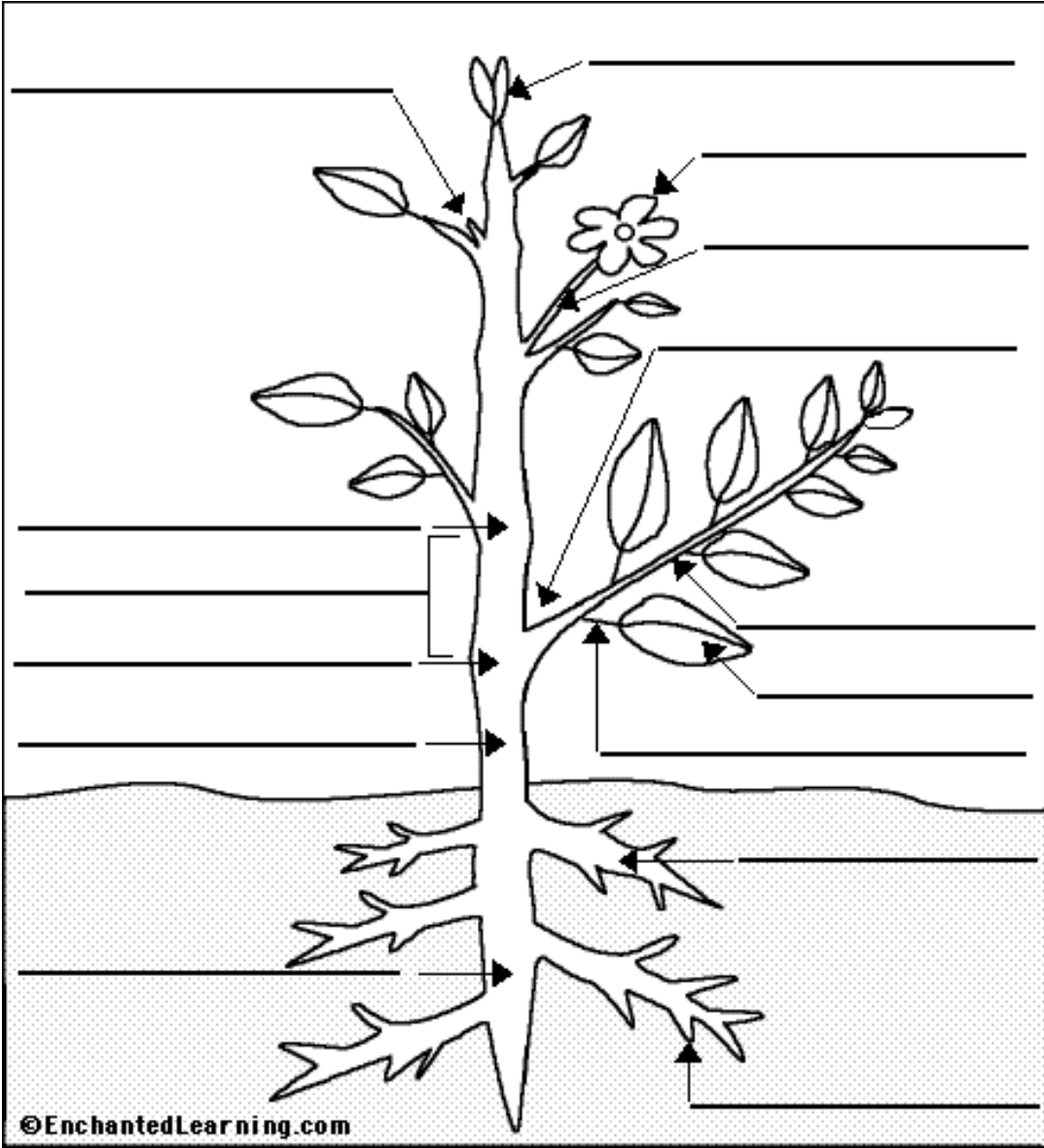
**root** - a root is a plant structure that obtains food and water from the soil, stores energy, and provides support for the plant. Most roots grow underground.

**root cap** - a structure at the ends (tips) of the roots. It covers and protects the apical [meristem](#) (the actively growing region) of the root.

**stem** - (also called the axis) is the main support of the plant.

**tap root** - the main root of some plants; the tap root extends straight down under the plant.

**terminal bud** - a bud located at the apex (tip) of the stem. Terminal buds have special tissue, called [apical meristem](#), consisting of cells that can divide indefinitely.







### **Activity 7**

Visit the Endemic Section at ANRD to look at how and why they plant endemics. Decide on some questions to ask before you leave.

Here are a few examples you could include:

- What endemics are planted?
- How many are planted?
- How are endemics threatened by invasive species?

Using the information gathered, try to practice some of it at home.

### **Activity 8**

Soil is a very important factor in the growth of a plant. Research, using various media, such as the internet, as to what the optimum soil composition for an invasive species of your choice would be. Also choose an endemic plant of a similar nature and research the same information. Compare whether there would be any competition between the two and what the impacts would be.

### **Activity 9**

Below are some facts about the growth and reproduction of rats. Use this to come up with an estimation of the total number of rats that could be in your school, if nothing was done to control/eradicate them.

Frightening facts.....

Rats can start to breed at 3-6 months old

Gestation period is 24 days

Weaning 28 days

This means that a rat can breed every two months

6 to 12 per litter but an average of 7

There is enough food and warmth to allow them to breed all year long

Estimations for this exercise:

10 female rats are in your school grounds

From each litter half are female

## Activity 10

St Helena is a UK Overseas Territory. There are other Overseas Territories that also experience problems with invasive species. Search the internet to find out if any of the invasive species on St Helena are an invasive in another Overseas Territory.

Record:

What are the impacts of the species in that Territory?

What actions are being done to control/eradicate the species?

Compare the similarities and differences between the territories and determine whether St Helena can learn/gain any information from them.

Websites to start your search can include:

Global Invasive Species Database (GISD): <http://www.issg.org/database>

Ascension Conservation Department: [www.ascensionconservation.org.ac](http://www.ascensionconservation.org.ac)

RSPB website: [www.rspb.org.uk/ourwork/projects](http://www.rspb.org.uk/ourwork/projects)

**Activity 11**

The information sheets provide basic information about invasive species on St Helena and what their impacts and actions are. Find out some more information on what is being done locally to help control and eradicate invasive species. How can you as an individual help towards invasive species control? What would be the impact on the island if everyone took some kind of responsibility?

**Activity 12**

Study local newspapers for the past year and take note of any information that has been made available about invasive species. Make a spider diagram of all information you have found and make suggestions of further information that could be used for future public awareness.

### **Activity 13**

Invite a person from an environment section on the island. i.e. Invasive Species Officer; Conservation Section, ANRD; Environmental Co-ordinator; Environmental Health Section; National Trust; to talk about what their job entails and how invasive species are affecting their line of work. Beforehand think of questions that you would like to ask them, and what you would like to get out of their visit.

**Activity 14**

Compare all the distribution maps to find out which invasive plant has the highest cover on the island. Using this information, discuss what the impacts to the island are from an environmental, economic and social point of view.



### **Activity 15**

Based on the *Common Wasp* sheets, design some questions to ask local bee keepers about the impacts of the *Common Wasp* on honey production.

Things to think about include:

What would happen if Wasp numbers increased dramatically?

Do bees and wasps compete for food?

**Activity 16**

Changing words - change 1 letter at a time, and only change that letter once, each time it must be a real word

Example:

HEAT (word given)

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COLD (word given)

You have to change the letters:

HEAT

HEAD

HELD

HOLD

COLD

See if you can create some for the invasive species. Two examples are below for rat.

RAT

HAT

HIT

HIP

RAT

RAW

ROW

SOW

Some more for you to fill in are:

SAND

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FERN

TREE

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GOAT

SEED

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BIRD



### **Activity 18**

Imagine that a new species has just been brought into St Helena. It has managed to get through the system in place, and someone has planted it in their home garden. So, using your imagination

- a. Choose the plant that arrived
- b. Choose the location where it was planted in a garden
- c. Research into the impacts of this species elsewhere in the world and the methods by which it spreads
- d. Consider the impacts of the plant on St Helena, looking at biosecurity and the ecological, social and economical impacts.
- e. Collate an action plan as to how early eradication can take place to stop the spread before it gets out of control.

## **Activity 19**

### Food chains

Everything is interlinked. See how invasive species are disrupting natural food chains on the island. For example, humans get meat from a cow; the cow gets fed from grass in the pasture; if the pasture land is overgrown with furze, then the food chain has been broken as the cow will not be able to feed. Create some food chains of this and other impacts of invasive species.

### Activity 20

Go on a fieldtrip to the Peaks. Record the number of invasive species that you see. Also record the impacts of the invasive species on the endemic plants that you can see. Talk to the guide about what is being done to help control/eradicate the invasive species. An example is given below.

Invasive Species Seen	Endemic species affected	Type of Impact
Pheasant Tail Fern	Endemic Fern	Competes and is successful against endemic ferns

### Activity 21

The definition of a habitat is a place where a species lives. Form 4 groups, with each group finding 5 invasive species that live in different habitats. If something is limited within their habitat, then they will not grow to their optimal potential.

Make a list of factors affecting each habitat and decide how these factors can be eliminated to help control/eradicate that species.

For example, rats thrive on garbage, food and water within their habitat. If any of these are eliminated, then rat numbers will be reduced.

Invasive Species	Habitat	Factors affecting habitat	How can the factors be eliminated

## Activity 22

As a class, use the questionnaire below to ask your parents and one other relative/friend about the impacts, and their knowledge of, Myna birds on the island. Gather all the answers and produce pie charts for each question.

### Questionnaire on Myna birds

1. Have Myna birds affected you personally?

Yes  No

2. Have Myna birds done any damage to your property?

Yes  No

3. If yes, have they damaged:

	Yes	No
Your house	<input type="checkbox"/>	<input type="checkbox"/>
Your car	<input type="checkbox"/>	<input type="checkbox"/>
Your garden	<input type="checkbox"/>	<input type="checkbox"/>

4. How much of a problem do you think Myna birds are on the island?

Extremely Serious	<input type="checkbox"/>
Serious	<input type="checkbox"/>
Slightly Serious	<input type="checkbox"/>
Not a problem	<input type="checkbox"/>
Don't know	<input type="checkbox"/>

5. Do you know that Myna birds impact:

	Yes	No
a. Wirebirds	<input type="checkbox"/>	<input type="checkbox"/>
b. Invertebrates	<input type="checkbox"/>	<input type="checkbox"/>
c. Fruit production	<input type="checkbox"/>	<input type="checkbox"/>

6. Any other comments





### **Activity 23**

Using the Jacaranda Bug sheets for information, design a cartoon strip. The story should explain the success of the Ladybird versus the Jacaranda Bug in relation to the Gumwood trees.

### **Activity 24**

Design a poster to inform people how early detection and eradication of an invasive species can be achieved.

Things to think about include:

- Bringing in seeds for gardens and then it is spread into the wild
- Importation via various means, ie. Ship, Yacht, Post
- If you see anything strange, then report it (giving details)
- Examples of species elsewhere in the world where early detection and eradication has been achieved

### **Activity 25**

To help distribute more of the endemic plants of St Helena, rather than invasive species, plant an endemic tree either in your school, at home, or at the Millennium Forest. This could be done for some special occasion of the school, or the Environment, for example, World Environment Day on the 5<sup>th</sup> June, or personal such as your birthday.

### **Activity 26**

Press a flower of an invasive species to make a bookmark. Label the other side with the following quote:

DO NOT GROW ME, PULL ME UP NOW!

### **Activity 27**

Design a leaflet, describing one of the invasive species, and explain its impact on the island. Include what can be done to prevent and control/eradicate this species. Include lots of pictures!

### **Activity 28**

Collect some invasive species around your school and press them into a formation of your choice to dry. Display.

**Activity 29**

Make up a poem, song or rap about invasive species and their impact on St Helena.

**Activity 30**

Focus specifically on the Centipede and design a poster to make people more aware of the impacts of this species on St Helena.