GUIDELINE FOR NON-TARGET SPECIES

PURPOSE

- These Guidelines are to be used by Project Staff conducting invasive species projects based on the PII Project Process.
- The Guidelines provide information on what to consider when working on project sites that also have non-target species present

1. WHAT ARE NON-TARGET SPECIES?

- A non-target species is any species present on the project site that is not the target of the operation.
- Examples of non-target species on project sites include native species such as:
    - Endemic and native plants
    - Soil fauna and flora (decomposers)
    - Invertebrates (including land crabs)
    - Passerines
    - Burrowing seabirds
    - Lizards
    - Bats

(**Note:** People can be regarded as non-targets species)

2. WHY MUST WE CONSIDER NON-TARGET SPECIES?

- Non-target species need to be considered because they can be adversely affected by project activities.
- Some examples:
    - careless use of a machete may damage or kill native plants;
    - felling of large trees may cause damage to understory species;
    - careless use of herbicides could mean that non-target plant species may be affected by spray drift or leaching;
    - aquatic plant and animal species could be affected by herbicide run-off;
    - some non-target species (lizards, invertebrates) may be adversely affected by herbicides or by removal of habitat;
    - erosion may become a problem when plant cover is reduced or removed;
    - erosion can lead to sedimentation of waterways.

3. WHAT TO DO

3.1 FOLLOW BEST PRACTICE

- All tools, including machetes, should be handled with care by experienced operators
- Large trees may have to be taken down in sections to reduce damage to other plants
- Herbicides should only be applied by trained operators using well-maintained equipment

3.2 MANAGE NON-TARGET RISKS

- To manage the non-target risks:

    1. Identify the non-target species present on the project site. During the Feasibility Study create a list of all non-target species present on the project and record it in the Feasibility Study Report
    2. Assess whether the project poses any risks to the non-target species.
    3. Implement management plans to deal with (either avoid or mitigate) each of the risks you have identified.

3.3 MINIMISE THE RISKS

3.3.1 MINIMISING THE RISKS OF PHYSICAL AND MECHANICAL TREATMENTS

- When cutting trees down, or ring- barking, it is important to identify where the tree or branches are likely to fall, as they could damage native/endemic non-target species.
- When using hand (e.g. machete, pruning saw) or mechanical (e.g. weed eater, chainsaw), make sure that ONLY target plants are touched.
- A weedeater used too close to a tree can strip the bark from the tree causing death or disease. Protect the trunks of trees that are important with a physical barrier that a weedeater cannot cut through.

3.3.2 MINIMISING THE RISKS OF HERBICIDE TREATMENTS

- It is essential, and usually a legal requirement, to read and follow the instructions provided on the manufacturer's labels for herbicides or other materials. As well as a product description, the label will give information on -
    - Directions for use
    - Precautions (first aid; toxicological information; environmental hazards; physical or chemical hazards; storage; disposal and decontamination; etc)
- It is important that herbicide use is as effective as possible, to reduce the volume of herbicide used and the number of applications required.

- The following principles are designed to reduce the risks of herbicide use through minimising the amount applied, maximising the death of invasive plant populations, and careful timing of herbicide application.
    - Apply herbicide according to the recommended rate on the label.
    - If possible, try to spray when surface water levels are low
    - Ensure that invasive plants are sprayed at the correct time, usually when they are growing strongly, and before fruiting.
    - Mix in a coloured dye so that you can accurately see which areas have been sprayed, and whether areas have been missed.
    - Ensure adequate follow-up of treatment, so that repeat treatment is minimised.
    - Avoid spray drift by, where possible, wiping or injecting invasive plants with herbicide instead of spraying.
    - Do not spray if plants are under stress, such as on very hot days or in very dry or dusty conditions, as uptake of herbicide through leaves will be minimal.
    - Do not spray on windy days, or if it is likely to rain soon after application; before the herbicide has been adequately absorbed through the leaf surface.
    - Avoid using surfactants near wetlands, as many of these are more toxic to wetland fauna than the actual herbicide.
    - It is also extremely important for the safety of the operator that all proper precautions are followed when using herbicides, including the use of correct clothing and disposal procedures. These instructions are listed on labels.

4. MANAGEMENT OPTIONS

- Some of the actions to consider using to manage non-target species risks include:

4.1 TEMPORARY PROTECTION

- Used to prevent non-target species being affected by the treatment method.
- Individual plants can be covered to protect from herbicide damage or clearly identified to protect from accidental damage from tools or machinery

4.2 TIMING OF OPERATION

- Try and time application of treatments so that it is the most effective time for the target plant and the time of least damage to non-target plant and animal species (e.g. reproductive cycles of species)
- Ensure that invasive plants are sprayed at the correct time, usually when they are growing strongly, and before fruiting.
- Do not spray if plants are under stress, such as on very hot days or in very dry or dusty conditions, as uptake of herbicide through leaves will be minimal and run-off may occur.

5. POTENTIAL ADVERSE EFFECTS

5.1 WIND

- Do not spray herbicide on windy days to avoid spray drifting onto non-target species.
- Great care is required when felling trees on windy days as that can affect the direction in which they fall.
- If material removed by physical or mechanical means is to be burnt make sure to burn only on days with no wind.

5.2 WATER

- Do not apply herbicide if it is likely to rain soon after application; before the herbicide has been adequately absorbed through the leaf surface as herbicide could leach into the soil or runoff down slope to waterways (e.g streams, wetlands, lakes)
- Removal of vegetation may result in soil erosion and sedimentation of waterways (e.g streams, wetlands, lakes).
- Make sure that material removed by hand will not get washed into waterways.

5.3 SOIL

- Removal of vegetation may result in sedimentation of waterways (e.g. streams, wetlands, lakes).
- Some herbicide treatments may result in persistent compounds remaining in the soil, special care needs to be taken with residual herbicides.
- Removal of some invasive plant species may have effects on soil biodiversity and soil chemistry.