GUIDELINE FOR
PLANNING AND MANAGING AN OPERATION

PURPOSE

- These Guidelines are to be used by Project Staff conducting invasive species management projects based on the PII Project Process.
- The Guidelines provide advice and help on planning for and conducting an operation.

1. THE OPERATIONAL PLAN

- The Operational Plan is a living document. As the project progresses, you will need to make changes to it. The important changes need to be recorded in the Operational Plan so that it always reflects up-to-date actions.
- Changes to the project can be for a number of reasons. For example:
    - consent to use a particular method is granted but the consent includes constraints on where (or when) the method can be used;
    - community consultation establishes that a planned technique will need to be adapted if it is to receive the support of the community;
    - trials during the Operational Planning Stage establish that more work than originally planned will be required to manage the risks to non-target species.
- As the Operational Plan changes you need to revisit the question of technical feasibility and sustainability (first assessed in the Feasibility Study Stage). It is important, after any significant change to the plan, to ask:
    - Is the project still technically feasible?
    - Are the outcomes sustainable?
    - Do the benefits still outweigh the costs?
- If a change means the project is no longer feasible, or the benefits no longer outweigh the costs, then you need to act: either stop the project or address the issues by changing the plan.
- The independent technical review of the Operational Plan is a key step in ensuring you are well prepared for the Implementation Stage. When significant changes do occur, have the independent technical advisor review the changes.

2. PLANNING THE OPERATIONAL TECHNIQUE

- When planning it is useful to break the operation down into 3 phases:
    - Pre-operational: Preparation for the operational phase.
    - Operational: Applying the treatment method (handpulling, chainsawing, applying herbicide, monitoring, …).
    - Post-operational: Cleaning up and leaving the site.
- Be realistic about target dates. For example: know how long it will take for supplies to arrive once they been ordered (bringing in a new herbicide and transporting it safely to your project).
- Operations do not always go according to the planned schedule, so consider contingencies. Factors such as weather, road conditions, staff illness, can cause hold-ups.
- Trials/tasks required to resolve any outstanding technical issues need to be commenced early in the Operational Planning Stage to give maximum time to complete the work and interpret the results.
- Consider the best timing to undertake operations (linked to weather patterns and conditions). Weather is a particular issue with many invasive species management operations and particularly if boats or helicopters are used. Get a local weather expert to assist you.
- If you do set-up work prior to the operation consider how long it will be until you return - will what you have done still be effective? A delay can cause tracks and plot markers to become overgrown.

- Consider practicalities and site conditions. For example: Is the site accessible after a storm? Does wet ground make it challenging for people carrying heavy or awkward loads? Is there any vegetation (vines) or wildlife (feral pigs, snakes?) that may pose risks or difficulties?
- How many people and what materials and equipment do you need for each technique?
- Small teams are easier to manage, organize logistically and can be cost effective.
- Training prior to the operation is essential to save time and effort. Trying to explain what they should be doing to team members on the day can cause issues.

3. MANAGING HEALTH AND SAFETY

- Make sure you are aware of relevant workplace Health and Safety and Labour legislation in your country and the responsibilities you and your agency have to employees.
- You MUST conduct a Health and Safety briefing with your team (and any visitors) before any field work – this includes preparing tools and materials for field work. An incident at work not only endangers staff or visitors, but can seriously disrupt the planned work.
- A Safety Plan must take into account relevant legislation, regulations, codes of practice and best practice. It is the Project managers' responsibility to produce and use and must be completed PRIOR to the commencement of a project, meaning planning is essential.
- Try to identify all possible dangers. Once hazards are identified, the following three steps (based on procedures used by the New Zealand Department of Conservation) can be taken. - each of the steps must be addressed before moving onto the next:

Elimination – all practicable steps must be taken to eliminate the hazard, i.e. get rid of it. If it can be eliminated show how, if not explain why not.

Isolation – if the hazard cannot be eliminated then all practicable steps must be taken to isolate it, i.e. separate it from people. If it can be isolated show how, if not explain why not.

Minimisation – if the hazard cannot be eliminated or isolated, then all practicable steps must be taken to minimise the risk of harm occurring. This involves:

- Providing safety equipment and/or personal protective clothing and equipment (that is maintained and renewed as necessary) to protect employees from any harm the hazard could cause; and
- Obtaining specialist advice from specialist agencies; and
- Providing adequate training and/or supervision to employees who are exposed to the hazard; and
- Monitoring to what extent the employees are exposed to the hazard; and
- Take all practicable steps to monitor the health of employees who agree.

Elimination

Remove the hazard

Do not undertake the hazardous activity, or discontinue if already in use	Substitute with: ▪ Alternative work methods ▪ Safer plant or equipment ▪ Non-hazardous (or less hazardous) chemicals or materials)

if can't be eliminated then…..

Isolation

Separate employees from the hazard

Time	*Distance*	*Shielding*
Limit duration of exposure to safe limit	Keep staff far enough away from hazard to be safe	Physical barriers between hazard and staff

if can't be eliminated or isolated then…..

Minimisation

Minimise the likelihood the hazard will cause harm

Provide PPE and ensure it is used	Monitor staff exposure to the hazard	Monitor employee health	Information, training and supervision

Hazard assessment involves assessing the hazard for its risk, or potential of risk, and determining whether or not it is a significant hazard. This is a combination of the likelihood of the hazard occurring and the potential consequence of the hazard, shown below. The total hazard "score" is calculated by adding the 'Likelihood' score to the 'Potential Consequence' score. As a general rule all hazards that have a 'major' potential consequence (serious harm) will be a significant hazard, as will many of moderate potential consequence.

Likelihood		Potential Consequence				
		Insignificant ***(first aid)*** ***1***	**Minor** ***(medical treatment)*** ***2***	**Moderate** ***(lost time injury)*** ***3***	**Major** ***(serious harm)*** ***4***	**Catastrophic** ***(fatality)*** ***10***
	Very Rare ***(may occur only in exceptional circumstances)*** ***1***	***2***	***3***	***4***	***5***	***11***
	Unlikely ***(event could occur at some time)*** ***2***	***3***	***4***	***5***	***6***	***12***
	Possible ***(event will probably occur at some time)*** ***3***	***4***	***5***	***6***	***7***	***13***
	Likely ***(event will probably occur reasonably frequently)*** ***4***	***5***	***6***	***7***	***8***	***14***
	Almost Certain ***(event expected to occur frequently)*** ***5***	***6***	***7***	***8***	***9***	***15***

Red = high risk: urgent attention needed, including robust hazard management planning
Yellow = moderate risk: attention required, including robust hazard management planning (particularly where serious harm is a possibility)
Green = low risk: manage by routine procedures

(NOTE: NZDOC has a Health & Safety Management Systems Manual which addresses many different hazards and situations – the above is a very small part of that document).

3.1 COMMON HEALTH AND SAFETY ISSUES

Task	Dangers	Examples of safety measures
Vehicles	Road travel can be dangerous and off-road travel is often dangerous	• Use only experienced drivers with appropriate licences • Only use vehicles that are well-maintained • Loading to be supervised by experienced person • Do not overload vehicles
Boats	Loading and unloading boats and using boats can be hazardous especially if weather changes, or in locations where there are reefs, difficult access	• Use only experienced boat handlers (must have experience with local conditions) • Loading to be supervised by experienced person • Do not overload boats • Evenly distribute loads as requested by boat handler • Life jackets must be worn

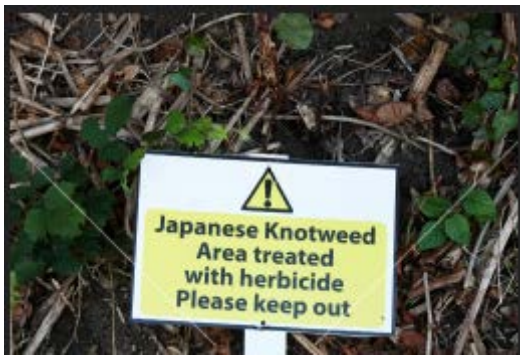
Task	Dangers	Examples of safety measures
		• Only use well maintained boats in good weather and sea conditions.
Terrain/working in the field	Many sites are heavily vegetated, may have large areas that are untracked and can contain hazards such as steep cliffs, sharp rocks, ravines, gullies etc	• Local knowledge essential – ensure your team is familiar with the territory • Work in groups of at least two people wherever possible • Wear suitable clothing and footwear • Carry radios or have some form of emergency contact system • Always know where your team members are e.g. – Field personnel are expected to work in pairs and to notify the Operation Manager of their departure times, destination, purpose and expected time to return to base.
Heavy lifting	Often a lot of equipment needs to be moved quickly, especially where access is hard or restricted by time or weather	• Do not expect/or pressure people to take loads heavier than they can handle • Identify/mark with a waterproof pen all loads that are especially heavy or need to be moved a certain way, e.g. hazardous materials • Wherever possible pack loads to easily movable weights • Make sure sharp objects are well padded
Equipment	Technical equipment can be poorly maintained, e.g. blocked nozzles on spraying equipment, flat batteries in GPS units	• Check ALL equipment before it goes into the field • Carry spare batteries that have a full charge • One person should be put in charge of maintaining equipment
Use of hand tools e.g. machetes	Manual handling. Heavy objects. Flying objects. Extended use (loss of control). Sharp blades/objects. Impacts, entanglement. Public access	• Training of users • Maintain tools in optimum working condition. • A minimum working distance of 5m between staff. Wear appropriate leg protection when using grubber. Take regular breaks • Place covers on sharp edged tools. Carry tools with cutting edge turned down and out, or covered -not over shoulder. • Ensure physically fit and sufficient quantities of water are available and taken
Use of chemicals	Risk of poisoning for some people from carelessly handling materials	• Follow all manufacturer's instructions • Train the team in safe handling and use • DO NOT SMOKE when handling materials • Safety gear – gloves essential • When powder/dust is an issue; dust masks, overalls (e.g. mixing herbicides, loading helicopter bucket) • Wash hands after use/before eating • Do not use empty containers to store food or drink • Have an environmentally safe system for collection and disposal of empty containers • Know the symptoms and the treatment for poisoning from the material in use • Make sure the First Aid Kit has appropriate material to treat poisoning

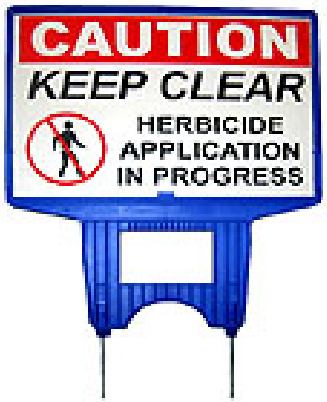
3.2 FIRST AID AND EMERGENCIES

- If using herbicides or other chemicals, make sure you know the symptoms of poisoning, the necessary treatment and carry materials for treatment in the First Aid Kit.
- At least one member of your team should be trained in First Aid. Ideally you should provide first aid training or refresher training for ALL your project team. First Aid Kits are essential – consider all of the likely risks you will encounter on the island and ensure contents of first aid kits will allow you to deal with most accidents that may occur.
- Identify any health issues within the team of people helping you, e.g. allergies, asthma that could become issues when you are at the site. Have procedures to deal with them, e.g. ensuring the individual brings and uses their medication, having back-up supplies in the first aid kit.
- Have a procedure for dealing with serious (life-threatening) accidents before you leave. This may be a radio or phone link with the mainland that will set in train an evacuation system or a link to a doctor to provide you with advice. Ensure everyone on the team knows what this procedure is.

3.3WARNING SIGNS

Examples of warning signs





- When the operation requires hazardous materials (e.g. herbicides), or dangerous actions (e.g. tree felling), warning signs must be erected to alert visitors to the site to the danger.
- Warning signs must include:
    - Information on the hazardous material or dangerous activity.
    - How to recognise it (if applicable)
    - What visitors should do and NOT do.
    - Instructions in the local language(s)
    - Contact details so that the public can contact the project team
    - Place warning signs where most people will see them: parking areas or track entrances are excellent locations.

4. THE OPERATIONAL BRIEFING

4.1 GENERAL

- The operational briefing is held just before starting the eradication operation and is led by the project manager.
- It is important to gather the whole team at the meeting to ensure everyone is clear about the job ahead and who is responsible for each task. This is the time to remind everyone of your health and safety rules and explain how to manage any emergency situations.
- Each operation will have different requirements depending on the location, topography, number of islands, invasive species being targeted and what techniques you are using. This checklist is intended as a guide, you may need to adapt it to your own situation.
- If your eradication operation extends over more than 1 day it's useful to have a debrief at the end of the each day. Often issues arise as a result of doing work on the ground that may require some changes to improve effectiveness, reduce safety concerns etc. Use this checklist as a guide when you undertake a debrief.

4.2 INTRODUCE THE TEAM

- Make sure everyone knows each other. Introduce each team member by name to the group yourself, or have them introduce themselves to the group.
- Name and introduce the project manager

- Name and introduce the team leaders

4.3 IDENTIFY HEALTH AND SAFETY ISSUES

- Identify key hazards (uneven or steep terrain, cliffs, toxic baits)
- If this is an aerial operation, ask the pilot to give a specific safety briefing
- Ask team leaders to briefly summarise health and safety issues related to any specialist tasks e.g. safe handling of toxic bait)
- Summarise how any hazards will be managed and who is responsible
- Be clear what safety gear needs to be worn (gloves, boots, dust mask)
- Explain how the team will communicate with each other (radios, cell phone, meeting at a chosen location and time)
- Consider any other safety precautions required for the job, such as the need to work in pairs or only place bait stations under houses.
- Explain where first aid kits are located
- Explain what should be done in the case of a serious medical emergency and identify who will take charge.

4.4 OPERATIONAL TASKS

- Review each task that is to be undertaken – what needs to be done, what gear is needed, who is responsible for which task
- Ensure team members are familiar with any recording systems (e.g. bait use and take, trap catch)
- Ensure any monitoring required is undertaken (e.g. random bait grids for aerial baiting)
- Are there any biosecurity tasks that need to be undertaken – if so when, how and by whom?

4.5 COMMUNITY LIAISON

- Have the local community and any other stakeholders been informed of the commencement of the operation?
- Are there any protocols that need to be followed? If so when and what and where?
- If there are people in the community involved in the operation ensure they are clear about what they need to do.

5. THE POST-OPERATION DEBRIEFING

- The Operational Review records the outcomes from the post-operation debriefing.
- Organise the review as soon as possible after the eradication operation, while knowledge, ideas and experiences are still fresh in people's minds.
- Include everyone who was involved, including:
    - Project manager
    - Key stakeholders/members of the local community
    - Project team
    - Subject Matter experts
    - Contractors (e.g. helicopter pilot and crew, skipper of transport boat, external advisers)
- The review is an important part of implementing agency capacity building. Those involved with the project can see you are genuinely interested in learning from the experience. Gaining feedback is an important part of this process. It allows you to review your project planning and implementation systems, identifying improvements for the future.

- Let everyone know in advance. Alert everyone to the date of the review meeting in advance, so they can consider points they may want to raise. It may be useful to provide a list of questions or subject areas you wish to cover.
- Involve all the project team. Ensure everyone who was involved has an opportunity to contribute opinions and ideas. People need to feel comfortable identifying problems or issues of concern as well as giving positive feedback.
- Get advice on the best way to undertake the review. Consider how best to get information out of people. People in a local village may be reluctant to talk openly in front of government officials or other people they do not know or who are not from their island. You may need to have more than one debrief meeting and tailor each meeting to get the best out of all the people who were involved.
- The debriefings should consider any problems the project encountered and discuss how they could be avoided in later projects. When considering anything that went wrong with the project, ensure that the focus is on what to better next time rather than people blaming others for the problems.
- To get the most from the debriefing meetings the project manager needs to plan them well and decide on an agenda beforehand.