Weed Control Reporting and Reviewing

Standard Operating Procedure

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I. Purpose

Who should use this SOP:

All staff undertaking reporting or reviewing of weed control programmes should use this SOP to guide them through the process.

The purpose of this SOP is to standardise the reporting on, and review of, weed control programmes (both weed-led and site-led) and assess their success. This Reporting and Reviewing SOP complements The Weed Planner SOP.

The Weed Planner SOP is used to plan and carry out the operational aspects of weed control programmes and contains the Technical Specifications (Tech Specs)—plans for recording information about the specifications for weed control projects. Tech specs are living documents supplying useful information for weed reports.

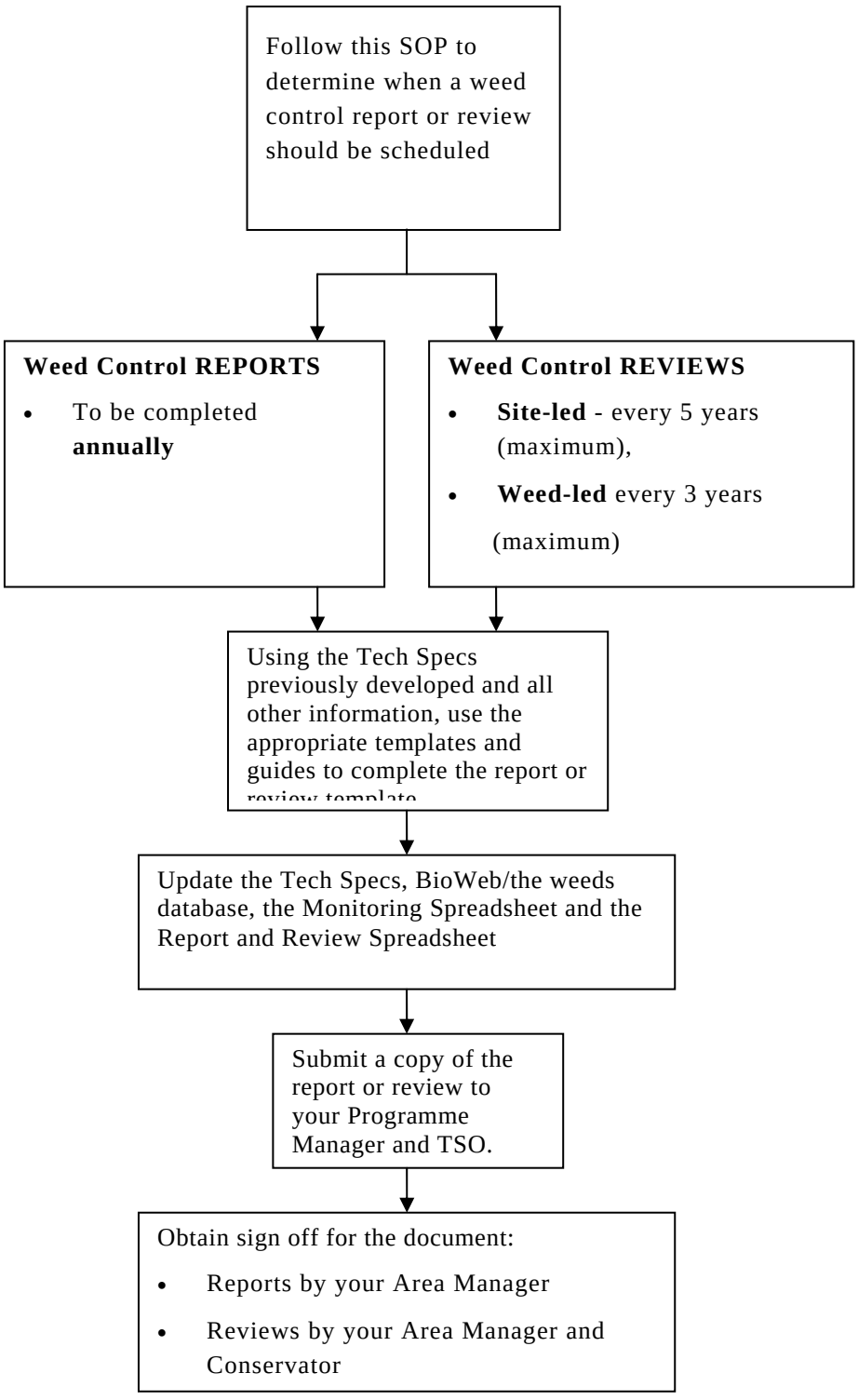
The weed reports then contribute to the information required for undertaking weed reviews.

Reporting and reviewing weed control programmes assists DOC to:

- Demonstrate wise use of funds and to argue for additional funds if required.
- Incorporate knowledge from the previous year of a control programme into planning for the upcoming year.
- Learn from other weed control programmes.
- Re-focus efforts on achieving control targets and conservation outcomes (rather than ‘controlling for control’s sake’).
- Achieve DOC’s Quality Control Management Objectives (see the Strategic Plan for Managing Invasive Weeds, pp.36–38).

II. Process

The aim of this SOP is to guide all staff reporting and reviewing on weed control programmes, and to aid their assessment of the progress of the weed control work.



III. Requirements table

Level II or higher managers are authorised to approve variation from SOP requirements and are accountable for those decisions. They are required to use their professional judgement and seek advice or escalate when in doubt. All decisions should be documented. It is expected that variations from requirements will be the exception rather than the norm, and that legal (i.e. legislation and judge-made laws), and health and safety requirements are effectively compulsory. Common sense should prevail in the case of exceptional or emergency field situations.

The consequences of not complying with this SOP include: 1) inefficient use of financial and operational resources; 2) ineffective protection of biodiversity; and 3) failure to adhere to the Weed Quality Management System.

Requirements	Who is accountable for carrying out the requirement	Why?/Consequence	Links	Completed / comments
ANNUAL REPORTS				
Complete an annual report for all weed-led projects and all site-led programmes. Refer to the Tech Specs for the programme specifications to report against.	The Programme Manager or delegate.	Information from weed control reports is used to ensure the efficient use of resources, and improve future weed control efforts.	Annual report template	
Use the report template and record as much information as appropriate.	The Programme Manager or delegate.	Accurate data is essential to report against the initial specifications, determine trends, and enable nationally consistency data for management and research.	Annual Report template	
Complete the checklist to ensure the report is completed to the highest standard.	The Programme Manager or delegate.	The checklist ensures the report process is completed, and that the data is available for research and for improving operations.	Complete Checklist requirements	

Add Results of monitoring, and Reports and Reviews to the respective spreadsheets and BioWeb/the weeds database.	The Programme Manager or delegate.	All data should be kept in the standardised nationwide systems, available for research and use.	Monitoring spreadsheet Reporting and Reviewing spreadsheet BioWeb/the weeds database	
Present your completed report to your Area manager to sign off and date.	The Area Manager.	Your Area Manager is accountable for the report, and needs to be confident that the weed control programme is sound.	Obtain sign off	
REVIEWS				
Complete a review at least every 5 years for site-led programmes. Complete a review at least every 3 years for weed-led projects. Complete respective review before business planning round.	The Conservator is accountable for ensuring that all programmes are reviewed every 3–5 years. The PM in conjunction with the TSO is responsible for planning and ensuring completion of reviews.	Reviewing programmes allows staff to demonstrate cause for additional resources, or for releasing funds to other weed work. Ensures any improvements can be incorporated into future plans.	Review Requirements	
The review team must comprise **at least three people**, including the Programme Manager and the TSO.	The Programme Manager in conjunction with the TSO.	The review requires a broader view to ensure the financial and operational rigor of the programme.	Review Team	
Write reviews with reference to the relevant	The Programme	Incomplete data reduces the ability to	Review templates	

Tech Specs, annual reports, previous reviews and all other relevant documentation. All sections must be completed.	Manager in conjunction with the TSO.	target resources to work that is most likely to succeed.		
Consider all aspects of the control programme and recommend the necessary actions to ensure the continued feasibility of the programme.	The Programme Manager in conjunction with the TSO.	Appropriate recommendations are essential to maximise resource use and efficacy of DOC's weed control in managed areas.	Recommendations	
Complete the checklist to ensure that the review has been completed to the highest standard**.**	The Programme Manager in conjunction with the TSO.	The checklist ensures the review process is completed, and that the data is available for research and for improving operations.	Complete checklist requirements	
Add results of monitoring, reports and reviews to the respective spreadsheets and BioWeb/the weeds database.	The Programme Manager or delegate.	All data should be kept in the standardised nationwide systems, available for research and use.	Monitoring spreadsheet Reporting and Reviewing spreadsheet BioWeb/the weeds database	
Present the weed control review to your Area Manager and Conservator for signing and dating.	The Area Manager and Conservator are accountable for signing and dating the review.	The Area Manager and Conservator are accountable for the review, and need to be confident that the weed control programme is sound.	Obtain sign off	

IV. About this document

Coordinator

Senior Technical Support Officer

Threats Management Team

Research and Development

Owner

Manager

Threats Management

Research and Development

Approved for use

GM Operations Northern

20 November 2009

GM Operations Southern

23 November 2009

GM Research and Development

18 November 2009

Amendments

Amendment date	Amendment details	docDM version	Amended by
2002	SOP released	OLDDM 231164	H. Braithwaite
June 2003	minor wording changes to give consistency with Animal Pest SOPs	OLDDM 231164	H. Braithwaite
March 2004	Minor changes as a result of SOP training feedback	OLDDM 231164	H. Braithwaite
Nov 2009	Update into new SOP format with minor wording amendments and aligning with revised information	docDM 512284	A. Thompson

TERMINOLOGY AND DEFINITIONS

Area	(With a capital A) is used to mean the area administered by a DOC Area Office (including land of all tenure).
AUSM	Area Under Sustained Management—the total area within the Area Office within which the control will be carried out and sustained over time.
Benefit area	The area likely to be advantaged as a result of control work undertaken.
BSR	Biological Success Rating. See Appendix 8.1. How successful the species is in reproducing itself.
BVS	Biodiversity Value Score. See Appendix 8.1. The BVS is the higher of the "botanical value" or the "wildlife value" scores.
Conservation outcome	The desired end state as a result of conservation measures undertaken.
Containment	Controlling weeds to prevent them from expanding beyond a defined boundary.
docDM	DOC Document Management—the DOC internal electronic file system.
Eradication	The permanent removal of all individuals of a species from an area. Control has a definite end point (apart from ongoing surveillance) because there is little or no likelihood of reinvasion.
EOS	Effect on System. See Appendix 8.1. The EOS is an assessment of the behaviour of a weed species in the community and geography where the weed has the greatest conservation impact.
Formal monitoring	Either result or outcome monitoring
Informal monitoring	Monitoring that does not follow scientific process.
Invasive Weeds	Plants that can significantly and adversely affect the long-term survival of native species, the integrity or sustainability of natural communities, or genetic variation within indigenous species.
NZBS	New Zealand Biodiversity Strategy.
RPMS	Regional Pest Management Strategy. Required under the Biosecurity Act 1993, Regional Councils provide strategies that list the pests to be controlled by the regional councils.
Site-led programme	A weed control programme to protect the natural values of a priority area from the impacts of invasive weed species.
SOP	Standard Operating Procedure. SOPs are a national scope of tasks or standards that must be met and are based on best practice.
SPMIW	Department of Conservation Strategic Plan for Managing Invasive Weeds The foundation document that the Departments weed control work is based on.
STSO	Senior Technical Support Officer.
Sustained control	Ongoing weed control to achieve a conservation outcome.
Tech Specs	Technical Specification forms (see The Weed Planner SOP).
Weed-led Project	A weed control project to minimise the future impacts of an invasive weed species over a large area by eradicating or containing it before it becomes a major problem.
Weed Tech or TSO	The Conservancy Technical Support Officer who deals with weed issues.
WBS code	A Work Breakdown Structure is a breakdown of the pieces of work in an operational area. The code is the project number from the business plan.
Zero density	A sustained control operation where the desired density is nil adult plants.

1. When to report or review a weed control programme

1.1 REPORTS

Annual **reports** must be completed for **all weed control programmes**, including:

- **A**ll new projects (except those that require half a day or less to complete)
- **A**ll weed-led projects
- **A**ll site-led programmes

The need to plan and report on weed control programmes does not prevent you undertaking 'ad-hoc' work as undertake your planned work. For example, it is appropriate to spray a patch of weeds en route to a planned control programme**.**

1.2 REVIEWS

For weed control programmes:

- **Site-led programmes should be reviewed every 5 years**
- **Weed-led projects should be reviewed every 3 years**

2. Weed control reports

2.1 REPORTING REQUIREMENTS

All weed control programmes shall be reported on annually in the same financial year as the weed control was undertaken, or be completed and approved within 2 months of completion of the weed control work. Improvements can then be incorporated into annual business planning.

2.2 STANDARDS FOR REPORTS

Every weed control report must:

- Use the report template (Appendix 8.2)
- Be complete, specific and factual
- Align with definitions
- Use references that can be followed (not on a U Drive)
- Use plain English

- Refer to the relevant sections in the Tech Specs.

Weed control projects may be grouped together for a single report. This would normally be when the projects are small scale and where the work is similar.

If operational areas cross an Area boundary, then the lead Area Office should take the responsibility for producing the report.

2.3 INFORMATION SOURCES

Information for the Weed Control Report should be drawn from:

- The original Weed Planner Tech Specs forms for the weed control programme
- Monitoring results
- Field notes
- DOC files and reports
- Previous reports and reviews
- MOR (Monthly Operating Report) records
- Maps/GPS recordings/shape files
- Other staff.

3. Guide to the report template

See Appendix 8.2 for the blank reporting template, (both site and weed-led)

Appendix 8.3 for an example of a completed site-led annual report, and

Appendix 8.4 for an example of a completed weed-led annual report.

Requirements	Who is accountable for carrying out the requirement	Why?/Consequence
Complete an annual report for all weed-led projects and site-led programmes. Refer to the Tech Specs for the programme specifications to report against.	The Programme Manager or delegate.	Information from weed control reports is used to ensure the efficient use of resources, and improve future weed control efforts.
Use the report template and record as much information as appropriate.	The Programme Manager or delegate.	Accurate data is essential to report against the initial specifications, determine trends and enable nationally consistent data for management and research.

3.1 OPERATIONAL SUMMARY

If using a file number as well as the docDM reference, the file number refers to your office file reference.

The Programme or Project title must be accurate. For example:

- For weed-led projects include the aim and weed species (e.g. Eradication of Yellow Flag Iris, Lake Tarawera and Lake Okareka.
- For site-led programmes the Management Unit must be included (e.g. Denniston Plateau, gorse control). Also consider adding the Land Unit number from the relevant Conservation Management Strategy (e.g. Gunns Bush (J40003)).

The date refers to the date the form is completed, while the control year is the financial year (July–June).

3.2 REFERENCES

All docDM or file references for any related documents should be recorded.

Space is provided at various stages of the report for references to maps. Make sure to associate map references with a description of map contents (e.g. file no. 1000: inventory map, files 1002 & 1003: maps of areas treated, and file 1004: transect lines).

3.3 NATIONAL PERFORMANCE MEASURES FOR WEED CONTROL WORK

There are four national performance measures for weed control work. These relate to activities associated with the eradication, containment and management of invasive weeds that are capable of significantly affecting important natural areas, threatened species, or ecological processes. These national performance measures are used in business planning (for thirdly reporting), and should be entered when using the business planning software, while local performance measures are used in the Weed SOP templates. The national performance measures are:

1) Number of weed control work plans completed using weed-led approach

2) Hectares of land treated using site-led approach

3) Hectares of land under sustained weed control using a site-led approach

4) Number of weed-led weed control projects that meet their criteria for success set out in their project plan

3.4 PERFORMANCE MEASURES FOR WEED-LED CONTROL PROJECTS

For weed-led projects state the aim of the project (eradication or containment).

For the annual Operational Target(s) list all the operational target(s) that you set for this year, e.g. kill 90% of spartina.

Some weed-led projects are begun because of special circumstances of feasibility. For example, a new invasive weed may have been noticed and control must begin before its distribution in an area is fully known, using a new control method.

In this circumstance, have there been any changes to the feasibility of the programme? For example, more information may have come to light on:

- The impact of a weed on native species or communities
- The effectiveness of control methods
- The full extent of infestation/distribution of the weed species
- The risk of reinvasion

Record any changes and explain the effect of the change on planning for future control work.

3.5 PERFORMANCE MEASURES FOR SITE-LED CONTROL PROGRAMMES

For site-led programmes, state the Conservation Outcome (the desired end state of the site i.e. to maintain or restore).

Record the control objective of the site, such as eradication, containment, sustained control or control to zero density and list the control objectives for each species.

List all the operational target(s) that were set for this year (different species may have different control targets) e.g. 90% kill for spartina, 85% kill of gorse.

The Planned Area versus Actual Area Treated may differ. Refer to the Tech Specs form. Did you treat the area as you planned to? If not, what was the actual area you treated, and what was the reason for the difference? For example, bad weather may have resulted in only treating 60% of the area originally proposed. Add references to any inventory maps or maps of the area treated.

The Area Under Sustained Management and the Benefit Area are less likely to change than the Area Treated. However, if either of these have changed, e.g. the Benefit Area is realised to be greater, update the Tech Specs form.

3.6 REPORT ON OPERATIONS

The planned and actual work should be recorded, along with the reasons why and lessons learnt between the planned and actual work.

The treatment methods for each location in the control programme are evaluated here. For all operations, cross-reference to an original site map or plan if possible.

For a weed-led control operation, copy the location name from the Tech Specs form.

For a site-led control operation, copy the GPS location from the Tech Specs.

Was the planned work achieved? If not, then explain why and update the Tech Specs.

- Were their any differences between the planned and actual control methods? Record this and update the Tech Specs if necessary.
- Explain any differences from the plan in the Tech Specs and any lessons learned.
- Record the name(s) of those who undertook the weed control and whether their efforts were satisfactory.

3.7 OPERATIONAL COSTS

Reporting on expenditure is vital and helps staff to identify any potential problems (such as staff shortages) before future spending. **Don't include formal monitoring costs**—these costs are recorded in a separate table.

The WBS code should match the business planning category.

For the budget, copy the allocated spending and planned expenditure from the Tech Specs. Staff hours can be split into permanent, temporary, and technical/field staff hours. If in doubt as to the cost of hourly rates for these staff hours, ask your business services advisor.

The actual expenditure should be recorded, and any differences explained. Discrepancies between planned and actual expenditure can be due to a variety of factors, (including weather, labour shortages, or budget cuts) and the reasons for discrepancies should be recorded. **Do any adjustments need to be made to out-years funding levels?**

3.8 MONITORING

All monitoring results and costs (formal and informal) should be summarised and changes to the monitoring explained.

State what kind of monitoring was used, and whether the monitoring was undertaken by DOC staff or by a contractor. The Weed Control Monitoring Process should be used to help plan and assess monitoring work.

For example,

- **Informal** monitoring: such as thorough field notes, i.e. noting contractor performance or observing plant dieback.
- **Formal** monitoring: either **result monitoring** (i.e. measuring what percentage of weeds were killed, by marking and mapping target weeds or using transects to monitor a weed-led programme) or **outcome monitoring** (i.e. measuring the values on the site protected as a result of removing weeds).
- **Herbicide trial**:,for example, to determine the relative efficacy of three different rates of Grazon™ applied once to *Tradescantia flumenensis* in summer 2000 at Smith's Reserve, Whangarei by measuring the change in the percentage cover of live *T. flumenensis* foliage 6 weeks after control.

- **No monitoring**: if no monitoring was undertaken, then record this.

For weed control programmes that are being **formally monitored, a general guide is that 15–20%** of the operating budget (**time and/or money) should be used for monitoring**. Monitoring analyses and results can be appended to the annual weed control report, and docDM references should be included in the report.

Record any references, including docDM, where the data and results are held.

The monitoring objectives should explain the reason(s) behind the monitoring, e.g. result monitoring undertaken to assess progress towards annual control target.

When recording the monitoring methods, be specific, e.g. transect lines are checked by Programme Manager by foot, or Programme Manager assesses area treated via helicopter. Discuss any problems you may have encountered with this methodology, and record any changes you will make as a result.

Give a brief description of the monitoring results for that year, similar in content to the "summary of results" of the national monitoring spreadsheet (the main series of results must be added, in full, to the Monitoring Spreadsheet).

For example:

Result Monitoring (outcome monitoring not suitable on an island due to the need for control sites)

- Monitoring procedures include species presence/locations, census and age classes (mature, immature).
- Each treatment of a weed site is recorded in the weeds database immediately after every trip.
- A complete history for sites is kept in the database so that statistical information can be presented on weed trends over time.

Remember to record the frequency of the monitoring—if it is not annual, record this. If the monitoring is from photo-points then make a statement about observable changes.

If monitoring indicates that your operational targets are not likely to be met, then some changes will be required. Are your control objectives realistic? Or, do monitoring findings confirm suspicions about the poor performance of the weed controllers? State how you will address any concerns raised by your monitoring results.

The Monitoring Toolbox is available on the intranet, and is being developed as the authoritative source for monitoring methods and standards used by DOC. Until plant monitoring is available through the toolbox, refer to The Weed Control Monitoring Process to help plan and assess monitoring work.

3.9 MONITORING COSTS

Add any changes necessary to the original Tech Spec forms. This information will be required during subsequent reviews of the control programme.

3.10 OTHER ISSUES

Any new areas of target weed or incursions that were observed while carrying out control work should be referenced to depict their location/s and added to the Tech Specs and BioWeb/the weeds database**.**

Make sure that you calculate and list the weediness and practicality scores (Appendix 8.1)**,** priority grouping, control objective and monitoring type. (See your Weed Tech for advice on getting an accurate score.)

Record any additional non-target/unplanned impacts on any invertebrate, vertebrate or plant species other than the target weed, specifying the species, and adjust the Tech Specs form.

State whether the effect was positive (e.g. by-kill of a non-target weed species) or negative (e.g. damage to a native plant). Any additional non-target species must be added directly to the relevant section of the Tech Specs form along with any suggested actions **to** minimise risk. Any changes to existing non-target species information should also be updated.

Other unplanned impacts, e.g. unexpected public disapproval of control methods, should also be recorded.

Explain the community relations or public awareness work undertaken (such as Weedbusters) and comment on any changes you would recommend for future programmes. Is there potential to increase public awareness? List any changes or additions to the consultation list, such as a new contact or new matters arising? Again, add the changes to the Tech Specs form.

Health and safety issues must be considered in the report - List any changes/improvements that will be made to the health and safety plan.

Examples include discovering a site has very poor radio coverage or the fact that there is no fresh water available on-site, or that certain areas are inaccessible at certain times.

3.11 RECOMMENDATIONS

This section is a summary of all recommendations in the report. Refer to the report and draw upon it to complete this section.

Record your recommendations for future years of control. Include changes that you have made to the original Tech Specs and a brief explanation of what led to the change (i.e. the lesson learnt). It is important to update the Tech Specs with these changes.

3.12 CHECKLIST

Requirements	**Who is accountable for carrying out the requirement**	**Why?/Consequence**
Complete the checklist to ensure	The Programme Manager	The completed checklist

the report is completed to the highest standard.	or delegate.	ensures the report process is completed, and that the data is available for research and for improving operations.
Results should be entered into the Monitoring spreadsheet, and the Reporting and Reviewing spreadsheet and BioWeb/the weeds database.	The Programme Manager or delegate.	All data should be kept in the standardised nationwide systems, available for research and use.

For each task:

- Record in the checklist template if the task was not completed or not applicable.
- Make changes to tech specs
- Ensure that lessons learnt from the past operational year are incorporated into the Tech Specs
- Add new or improved information to BioWeb/the weeds database
- Provide your TSO with a copy of the report
- Release report to interested parties
- Update the Monitoring Spreadsheet
- Update the Report Spreadsheet

3.13 SIGN OFF

Requirements	**Who is accountable for carrying out the requirement**	**Why?/Consequence**
Present your completed report to your Area Manager to sign off and date.	The Area Manager is accountable for signing off the report.	Your Area Manager is accountable for the report, and needs to be confident that the weed control programme is sound.

4. Weed control reviews

4.1 REVIEWING REQUIREMENTS

Requirements	Who is accountable for carrying out the requirement	Why?/Consequence
Complete a review **at least every 5 years for site-led programmes** Complete a review **at least every 3 years for weed-led projects**. Complete respective review before business planning round.	The Conservator is accountable for ensuring that all programmes are reviewed every 3-5 years. The PM in conjunction with the TSO are responsible for planning and ensuring completion of reviews.	Reviewing programmes allows staff to demonstrate cause for additional resources, or for releasing funds to other weed work. Ensures any improvements can be incorporated into future plans.

The Programme Manager (in conjunction with the Conservancy Weed Tech**)** is responsible for planning all reviews and ensuring their completion, including preparing an annual schedule of work to be reviewed. However, the Area Manager, Conservator, or General Manager, Operations can initiate the review of any weed programme at any time.

The main questions to consider when undertaking reviews are:

- Is the control programme achieving what it set out to do?
- Has new information (including new infestations) altered the feasibility and practicality of a weed-led programme?
- What was monitored (results, non-targets)?
- What control work was done? What changes have been made and why?
- Have all issues been identified and dealt with, including any boundary or containment issues?
- What improvements can be made?
- Has funding been reduced making the project/programme longer be viable?

Site-led programmes

Site-led programmes that are **formally monitored** are the **highest priority** for site-led **reviews** because they are programmes that are representative, high risk, involve a large investment, or use a new control method.

Weed-led projects

It is important that all **weed-led projects** are reviewed to see whether they are "**on target**" with their aim of eradication or containment, and this is still **feasible**. Feasibility may change in light of new information gained over time, e.g. finding an effective control method, or knowing the full distribution of the weed.

4.2 STANDARDS FOR REVIEWS

Every review must:

- Use the correct template (See Appendix 8.5 for the site-led review template, and Appendix 8.6 for the weed-led review template)
- Be complete, specific and factual
- Align with definitions
- Use references that can be followed
- Use plain English
- Refer to relevant sections in the Tech Specs form (from The Weed Planner SOP)
- Be made available to DOC staff nationwide via the Weed Report and Review Spreadsheet

4.3 SCHEDULING REVIEWS

Reviews are scheduled by the TSO and must be completed **before** business planning so that any changes resulting from the review can be implemented. Similarly, Tech Spec forms should be updated before business planning each year.

Weed-led projects are reviewed more often than site-led programmes. Weed-led projects that are not achieving the aims and annual operational targets have the potential to waste considerable funds.

4.4 REVIEW STAFF

Requirements	Who is accountable for carrying out the requirement	Why?/Consequence
The review team must comprise at least three people, including the Programme Manager and the TSO.	The Programme Manager in conjunction with the TSO.	The review requires a broader view to ensure the financial and operational rigor of the programme.

The team should include people who have had experience running similar programmes, have had reviewing experience, are familiar with weed control work, systems, processes or have skills specific to the programme under review.

For weed-led projects, the review team will ideally include at least one suitably experienced person from outside of the Conservancy conducting the review, especially in the case of large-scale weed-led programmes.

For **site-led** programmes, the review team should be comprised of experts from within the Conservancy, but may include one or more experts from another conservancy or an external organisation.

4.5 INFORMATION SOURCES

Information for the Weed Control Review should be drawn from:

- The Tech Specs for the control programme (including records of any changes to the Tech Specs)
- Previous reports and reviews for the control programme
- Annual reports on monitoring
- Reviewers should also have access to all relevant docDM numbers, maps, and file references that relate to the control programme
- A visit to the site (recommended)

5. Guides to the review templates

5.1 REVIEW REQUIREMENTS

Note: There are **two templates** for use when reviewing weed control programmes, depending on whether the review is for a **site-led** or a **weed-led** control programme. See:

- Appendix 8.5 for the site-led review template
- Appendix 8.6 for the weed-led review template
- Appendix 8.7 for an example of a completed site-led review
- Appendix 8.8 for an example of a completed weed-led review.

Requirements	Who is accountable for carrying out the requirement	Why?/Consequence
Write reviews with reference to the relevant Tech Specs, annual reports, previous reviews and other relevant documentation. All sections must be completed.	The Programme Manager in conjunction with the TSO.	Incomplete data reduces the ability to target resources to work that is most likely to succeed.

6. Guide to the site-led review template

- See Appendix 8.5 for the site-led review template.
- See Appendix 8.7 for an example of a completed site-led review.

6.1 GENERAL INFORMATION

- The programme title should include the name of the site and the name of the target weed species. If there are a large number of weeds, split these into two groups: those that require 80% of the effort and the rest. Both lists should be recorded under the 'general information' category, but only the key target weeds (those requiring 80% of the effort) need to be reviewed in step 3.
- List the site(s)/area(s) where control is being carried out, using names and/or GPS references and the habitat types of the sites(s) under treatment (e.g. tussockland, forest, herbfield, shrubland etc.).
- The contact person for the control programme is the person who can be contacted about the control programme once the review has been placed on the Report and Review Spreadsheet.
- The target weeds of the control programme should be listed, giving both common and scientific names.
- State the programme start and completion dates (e.g. July 2005 – June 2009); and state the control year/s being reviewed (e.g. July 2005 – June 2008).
- State the date of the review and list the names of the reviewers and their location (e.g. Hokitika Area Office).
- Schedule a date for the next review of the programme.
- Include the file name and the docDM number.

6.2 STEP 1: REVIEW THE SITE RANKING

The site ranking is an important part of prioritising weed control operations. It includes the assessment of botanical**,** wildlife**,** and the urgency of control scores. See Appendix 8.1 for details on how to calculate these scores.

Botanical and wildlife scores

Botanical and wildlife scores may change over the course of a control programme, for example:

- A threatened plant species may be discovered in the site, increasing the botanical score
- A threatened animal species may no longer be present in the site, decreasing the wildlife score.

If the wildlife/botanical score is higher than was stated in the Tech Specs, then the operational targets, performance measures and funding of the programme may need to be reconsidered.

If the wildlife/botanical score is lower than originally stated, then the priority of the programme should be reconsidered.

Explain the implications if the scores have changed.

Urgency score

Less importance is now being placed on the urgency score. If it is an important site then controlling weeds early is important. Don't wait until the urgency score increases as weed control will be more expensive and restoring the site more difficult.

The urgency score is likely to change, particularly if control targets are being achieved. If you find that the urgency score has lowered, then recommendations of the future of the programme will need to be based on good sense. For instance, it is not appropriate to end a programme if weeds will quickly reinvade the site causing the urgency score to increase to its pre-control level.

Reporting budget changes

If there are significant changes to the urgency score this will have implications for funding.

Changes to funded Conservancy weed work need to be approved by the Conservator. The Business Services Manager should also be informed.

6.3 STEP 2: REVIEW THE PERFORMANCE MEASURES

The annual reports for the weed programme should be used to determine whether or not the annual planned work is being achieved and the annual operational targets met. The review process is an opportunity to take a longer term view and consider other factors that contribute to the success or otherwise of the work.

For the conservation outcomes, if the operational/control objective is not being achieved then the review document will need to determine why, and list the steps that are necessary to achieve the control target. This may require revision of the operational target itself, or revision of the site-led programme.

Compare the annual operational targets set to what was achieved. If targets were not being achieved, were changes made to the following year's work?

Compare the planned and actual area treated; if there is a difference, explain why.

6.4 STEP 3: REVIEW THE SPECIES BEING CONTROLLED

The Tech Specs form has a table for information recording the various weeds being controlled at the site. This information should be reviewed to make sure that the programme is being managed effectively.

For each weed species that falls in the 80 % of weed effort at the site, list the weeds abundance:

- Dominant = 76–99%
- Abundant = 51–75%
- Common = 26–50%
- Frequent = 6–25%
- Occasional= 2–5%
- Scarce = 1%

Record the operational phase of control for that weed species: knockdown, maintenance, or monitoring to ensure zero density. This information provides a picture of the operational history and current status of weed control at the site.

Check through the following categories:

- Practicality score (Appendix 8.1): note that although this is mainly used for weed-led programmes, it is a useful tool for prioritising species control within a site)
- Exacerbation of other weeds: can the control or lack of control of this species increase the effects from other problem weeds?
- Priority ranking: determine this using the previous factors and your knowledge of the site to determine a priority ranking based on the ecological site values:
  - **Extreme** = urgent to protect site values
  - **High** = important to protect site values
  - **Medium** = medium priority to protect site values.
- Has each weed species been controlled to the level set in the control objective (such as eradication, containment, sustained control or control to zero density)?
- Monitoring type (formal, informal).
- Monitoring of contractor performance.

If the review team disagrees with anything recorded on the Tech Specs, including monitoring results, then this should be stated in the review document, and recommendations made.

6.5 STEP 4: REVIEW THE MONITORING INFORMATION SOURCES

Monitoring information should be considered as part of the review.

Information on monitoring will be found from a number of sources, including:

- Annual reports, which should contain brief descriptions of monitoring results, and changes to the monitoring plans
- Formal monitoring reports, which should have been entered on the Monitoring Spreadsheet

The following questions should be considered:

- Has monitoring been carried out?
- If not, is monitoring necessary?
- If yes, have monitoring methods been appropriate for achieving the monitoring objectives? Is monitoring still necessary?
- Have the results from monitoring been successfully incorporated into the weed control operations?
- Do monitoring results indicate that the control programme is **achieving** what it set out to do?

Refer to the Weed Control Monitoring Process to help plan and assess monitoring work.

6.6 STEP 5: REVIEW THE CONTROL METHODS

Reviewers need to examine the proposed control methods for each species (from the Tech Specs) as well as the annual reports on control work to decide whether the work is achieving its objectives.

Three questions should be considered:

- Has planned work been achieved?
- Have treatment methods been effective (has the weed population been reduced)?
- Are there alternative control methods to consider?

If planned work is not being achieved on a regular basis, then an explanation and proposed solution will be needed.

Alternatively, planned work may be consistently carried out but treatment methods appear ineffective. Again, an explanation (e.g. poor herbicide application procedures) and a proposed solution is required.

In assessing whether alternative methods are available, reviewers should check that control methods are consistent with BioWeb/the weeds database. If the method being followed is better, update the database.

6.7 STEP 6: REVIEW ANY NON-TARGET EFFECTS

Ensure that any impact on non-target species is being adequately monitored. If the risk is not being minimised, recommendations on changes to the management of non-target effects must be made. Non-target species that may be adversely affected by control methods should be listed in the Tech Specs, as well as the action that is planned to minimise this risk.

The review team should review the weed control annual reports and consider:

- Has the non-target species impact been as expected?
- Have the appropriate steps been taken to minimise risk?
- What changes should be made?

6.8 STEP 7: REVIEW OF COSTING

Operational costs should be reviewed to determine whether the programme has been running to budget, and whether the funding provides for the most efficient and effective work programme.

Refer to the budget and staff hours calculated on the Tech Specs, and the annual planned and actual expenditure, which is recorded as part of the reporting process. Expenditure concerns should be picked up in the annual reports, but the review can decide whether the level of funding is adequate for an effective and efficient work programme. Answer the question: Are funds adequate, insufficient or excessive to meet operational costs?

6.9 STEP 8: REVIEW OTHER ISSUES

All “Other issues” (including health and safety) recorded in annual reports and other documents should be examined to determine whether all issues are being considered and managed appropriately.

“Other issues” may include:

- Health and Safety: list any changes/improvements that will be made to the health and safety plan
- Matters arising with other Regions and Area Offices involved in the programme
- Map information
- Resource Consent applications
- Consultation outside of DOC

6.10 STEP 9: PROVIDE RECOMMENDATIONS

Requirements	Who is accountable for	Why?/Consequence

	carrying out the requirement	
Consider all aspects of the control programme and recommend the necessary actions to ensure the continued feasibility of the programme.	The Programme Manager in conjunction with the TSO.	Appropriate recommendations are essential to maximise resource use and efficacy of DOC's weed control in managed areas.

Reviewers must make an overall recommendation for further action based on the findings of the review.

Examples of possible outcomes include:

- Abandon the weed control programme
- Continue the programme
- Increase the level of control/intensity of the programme
- Alter the approach (e.g. pursue Unwanted Organism status; conduct herbicide trials; increase public awareness; organise volunteer work)
- Apply for more funding, or release funds to other projects
- Modify the control target
- Modify monitoring

6.11 CHECKLIST

Requirements	Who is accountable for carrying out the requirement	Why?/Consequence
Complete the checklist to ensure that the review has been completed to the highest standard.	The Programme Manager in conjunction with the TSO.	The checklist ensures the review process is completed, and that the data is available for research and for improving operations.
Add the results of Monitoring, and Reports and Reviews to the respective spreadsheets and BioWeb/the weeds database.	The Programme Manager or delegate.	All data should be kept in the standardised nationwide systems, available for research and use.

For each task:

- Record in the template if the task was completed or not applicable
- Make changes to Tech Specs

- Ensure that lessons learned from the review are incorporated into the Tech Specs
- Add new/improved information to BioWeb/the weeds database (e.g. weed interaction, control methods, results)
- Address the “Other Issues”
- Provide the TSO with the review
- Release the review to interested parties. (This may be a version suitably worded for the audience).

Update the Monitoring Spreadsheet and Reporting and Review Spreadsheet**.**

6.12 SIGN OFF

Requirements	**Who is accountable for carrying out the requirement**	**Why?/Consequence**
Present the weed control review to your Area Manager and Conservator for signing and dating.	The Area Manager and Conservator are accountable for signing and dating the review.	The Area Manager and Conservator are accountable for the review, and need to be confident that the weed control programme is sound.

7. Guide to the weed-led review template

- See Appendix 8.6 for the weed-led review template.
- See Appendix 8.8 for an example of a completed weed-led review.

7.1 GENERAL INFORMATION

Requirements	Who is accountable for carrying out the requirement	Why?/Consequence
Write reviews with reference to the relevant Tech Specs**,** annual reports, previous reviews and all other relevant documentation. All sections must be completed.	The Programme Manager in conjunction with the TSO.	Incomplete data reduces the ability to target resources to work that is most likely to succeed.

- The programme title should include the name of the target weed species as well as the objective of the project (e.g. Eradication of False Tamarisk).
- List the site(s)/area(s) where control is being carried out, using names and/or grid references and the habitat types of the sites(s) under treatment (e.g. tussockland, forest, herbfield, shrubland etc.).
- The contact person for the control programme is the person who can be contacted about the control programme once the review has been placed on the Review Spreadsheet .
- The target weed of the control programme should be listed, giving both common and scientific names.
- State the programme start and completion dates (e.g. July 2005 – June 2009); and state the control year/s being reviewed (e.g. July 2005 – June 2008).
- State the date of the review and list the names of the reviewers and their location (e.g. Hokitika Area Office).

- Schedule a date for the next review of the programme.
- Include the file name and the docDM number.

7.2 STEPS 1 AND 2: REVIEW FEASIBILITY AND PRACTICALITY

For weed-led reviews, consider the feasibility questions below and using Appendix 8.1, reassess the practicality of control**.**

Feasibility

For the project to be feasible, the answer to each of the questions below should be **YES.**

The feasibility questions are:

- Is the weed species likely to have significant impacts on native species and communities?
- Are acceptable and effective control methods available (even at low densities)?
- Is there a low possibility of re-invasion?
- Do you know the full extent of the weed infestation(s)?
- Is distribution of the species limited enough for the programme to be feasible?
- Are all affected landowners expected to agree to the control?

In some cases information may not have been available at the outset of the project and some of the questions may not have been answered. Reviewers should ensure that efforts to obtain this information are adequate, and that any new information is considered in terms of the continued feasibility of the project.

Reporting budget changes

A decision that a **weed-led project is no longer feasible** should be **reported to the Conservator** for core-funded programmes.

Practicality

The review needs to ensure that the practicality of controlling the species is unchanged. To do so, the practicality score (previously estimated in the Tech Specs) should be reassessed using Appendix 8.1 (Figure 1) Evaluating the Practicality score of a weed-led programme. Reviewers can then answer the following questions:

- Is the aim of eradication or containment still suitable, or have new infestations changed the practicality of the aim?
- Is the timescale still appropriate, or has new information meant that this needs to be altered?
- Is the level of eradication or containment still appropriate (i.e. National, Conservancy, Area, or other)?

If the review team comes up with different answers to those recorded on the Tech Specs, then these differences must be explained and recommendations about the future of the programme must be made.

7.3 REVIEW MONITORING RESULTS

The review team should obtain an understanding of how monitoring methods and results have evolved and been used over the course of the programme. The results from the monitoring should then be considered to see if the aim of the programme is being achieved. The monitoring process itself should also be considered.

Information on monitoring will be found from a number of sources, including:

- Annual reports: these should contain brief descriptions of monitoring results, and changes to the monitoring plans
- Formal monitoring reports recorded on the Monitoring Spreadsheet

Reviewers should consider the following questions:

- Has monitoring been carried out? If not, is monitoring necessary?
- If yes, have monitoring methods been appropriate for achieving the monitoring objectives? And is monitoring still necessary?
- Have the results from monitoring been successfully incorporated into weed control operations?
- Do monitoring results indicate that the control programme is achieving what it set out to do?

If the monitoring results indicate that the control is ineffective**,** the review team will need to recommend if, and how, the control programme should continue.

If the monitoring results are inconclusive, then the type of monitoring may need to be changed.

Refer to the Weed Control Monitoring Process to help plan and assess monitoring work.

7.4 STEP 4: REVIEW CONTROL METHODS

Reviewers need to examine the control methods (from the Tech Specs) as well as the annual reports to decide whether the work is achieving its objectives.

Three questions should be considered:

- Has the planned work been achieved?
- Has the weed population been reduced?
- Are there alternative methods to consider?

If the planned work is not being achieved on a regular basis, then an explanation and a proposed solution will be needed. Any changes that have been made to proposed control work will also need to be explained.

Alternatively, planned work may be consistently carried out but the weed population has not been reduced to the level planned. Again, an explanation (e.g. poor herbicide application procedures) and proposed solution is required.

In assessing whether alternative methods are available, reviewers should check that the control methods are consistent with BioWeb/the weeds database. Update BioWeb/the weeds database if necessary.

7.5 STEP 5: REVIEW NON-TARGET EFFECTS

Ensure that any impact on non-target species is being adequately monitored. If risk is not being minimised, recommendations on changes to the management of non-target effects must be made.

The task of the reviewers is to revisit the information on non-target effects

(Tech Specs and annual reports) and ask:

- Have the non-target species impacts been as expected?
- Have the appropriate steps been taken to minimise risk?
- What changes should be made?

The review team needs to ensure that any impact on non-target species is being adequately monitored and whether the appropriate steps have been taken to minimise risk.

Remember that the long-term benefits to native ecosystems of containing/eradicating a target weed species will usually outweigh the cost of non-target impacts.

7.6 STEP 6: REVIEW COSTING

Operational costs should be reviewed to determine **whether the project is running to budget, and whether the funding provides for the most efficient and effective weed programme.**

As part of the review of costs for a weed control programme, the review team should consider whether the level of funding provides for the most efficient and effective work programme. (For example, budget restrictions may have prevented more effective control methods from being employed.)

Answer the question: are funds adequate, insufficient or excessive to meet operational costs?

7.7 STEP 7: REVIEW OTHER ISSUES

All “Other Issues” recorded in annual reports and other documents should be examined to determine whether all issues are being considered and managed appropriately.

“Other issues” may include:

- Health and safety**:** list any changes/improvements that will be made to the health and safety plan

- Matters arising with other Regions and Area Offices involved in the programme.
- Map information and shape files.
- Resource Consent applications.
- Consultation outside of DOC. This may include Regional Council, tangata whenua, neighbours, community groups such as Weedbusters and other environmental organisations.

7.8 STEP 8: PROVIDE RECOMMENDATIONS

Requirements	Who is accountable for carrying out the requirement	Why?/Consequence
Consider all aspects of the control programme and recommend the necessary actions to ensure the continued feasibility of the programme.	The Programme Manager in conjunction with the TSO.	Appropriate recommendations are essential to maximise resource use and efficacy of DOC's weed control in managed areas.

This section of the review should summarise any improvements that need to be made to the control programme to maximise its effectiveness.

Reviewers must make an overall recommendation for further action. The overall recommendation must be based on the findings of the review. Examples of possible outcomes are listed below:

- Abandon the programme
- Continue programme as before
- Increase the level of control/intensity of the programme
- Alter the approach (e.g. pursue Unwanted Organism status; conduct herbicide trials; increase public awareness; organise volunteer work)
- Apply for more funding, or release funds to other projects
- Change programme to be a site-led programme with buffer zones
- Enter any new information into BioWeb/the weeds database, or clear up any inconsistencies
- Project successfully completed.

7.9 CHECKLIST

Requirements	Who is accountable for carrying out the requirement	Why?/Consequence
Complete the checklist to ensure that the review has been completed to the highest standard.	The Programme Manager in conjunction with the TSO.	The checklist ensures the review process is completed, and that the data is available for research and for improving operations.
Add the results of Monitoring and Reports and Reviews to the respective spreadsheets and BioWeb/the weeds database.	The Programme Manager or delegate.	All data should be kept in standardised nationwide systems, available for research and use.

For each task:

- Record in the template if the task was completed or not applicable
- Make changes to Tech Specs
- Ensure that lessons learnt from the review are incorporated into the Tech Specs
- Add new/improved information to BioWeb/the weeds database (e.g. weed population changes, control methods results)
- Address “Other Issues”
- Provide the TSO with the review
- Release the review to interested parties (this may be a version suitably worded for the audience).
- update the Monitoring Spreadsheet and the Reporting and Review Spreadsheet.

7.10 SIGN OFF

Requirements	Who is accountable for carrying out the requirement	Why?/Consequence
Present the weed control review to Area Manager and Conservator for signing and dating.	The Area Manager and Conservator are accountable for signing and dating the review.	The Area Manager and Conservator are accountable for the review, and need to be confident that the weed control programme is sound.

8. Appendices

8.1 CRITERIA FOR EVALUATING WEED-LED AND SITE-LED CONTROL PROGRAMMES

Based on the Department of Conservation's Strategic Plan for Managing Invasive Weeds (Owen 1998), weed threats are evaluated for the degree of risk they pose and the potential to contain, control or eradicate the weed(s) from an area.

The following information and scoring systems are designed to help staff prioritise weed control programmes and to pursue the weed control programmes that are most likely to be achievable. They should be used when planning, reporting, and reviewing weed control work.

A crucial management decision in the planning phase for weed control is the decision whether the weed should be controlled under a 'weed-led' or 'site-led' control programme.

A weed-led control project by definition targets a single species, and aims to achieve either eradication or containment of the weed species.

Weed-led control priorities are based on:

- The species' potential impacts on natural systems
- The rate and success with which it establishes and spreads
- The practicality of eradicating or containing it on the scale proposed

A site-led control programme is undertaken to protect natural areas administered by the Department to protect the long-term survival of New Zealand's native species and communities. One or more weeds are controlled at a site to protect the biodiversity values of the site. The objective can be eradication (where re-invasion can be managed) but is more typically ongoing control of a suite of weeds to very low levels.

Site-led control priorities are based on:

- The botanical or wildlife values of the area, and the degree of risk posed to an area's values by invasive weeds
- Preventing invasions, or stopping them at an early stage whenever possible
- Ensuring programmes reflect the diversity of natural community types being affected by weeds
- Integrating weed control with the management of other threats where this is possible

ASSESSING A WEED-LED CONTROL PROJECT

A. The feasibility of a weed-led control project is the first step in determining whether the project is worth pursuing.

Several criteria determine the feasibility:

- Whether the species is capable of having major negative impacts on important indigenous communities or threatened species
- Whether there is an effective and acceptable control method
- Whether the species is present in limited numbers and/or distribution
- Whether the level of benefit is justifiable in terms of the effort expended
- Whether all necessary legal requirements can be met (e.g. land access, resource consents)
- Whether all individuals can be identified
- The need to evaluate the risk of undertaking control or not undertaking control in the absence of some of the above information

Note that eradication should only be attempted if all of the criteria are met.

If a weed-led project is deemed feasible, the priority of the project must be determined through the following scoring mechanisms.

B. Calculate **the Weediness score**

Weediness score = (2x EoS) + the BSR

Where EoS (Table 1) = Effect on System (maximum score = 9)

BSR (Table 2) = Biological Success Rating (maximum score = 18)

There are other criteria not included in these scores (See Table 3) as these are considerations managed within the other scores.

C. From the weediness scores, the **priority group** can be assigned:

Priority Group A => weediness score = 29 – 36

Priority Group B => weediness score = 26 – 28

Priority Group C => weediness score = 21 – 25

Priority Group D => weediness score = 20 and below

D. The **Practicality of control** score is determined through the flowchart in Figure 1, where 6 = the practicality score.

> **The ranking score for a weed-led project** is the species'
>
> **"priority group"** *combined with the* **"practicality of control score"**
>
> For example: B8 or C6. The highest possible rank is A10.

TABLE 1. CRITERIA FOR ESTABLISHING "EFFECT ON SYSTEM" (EOS) SCORES

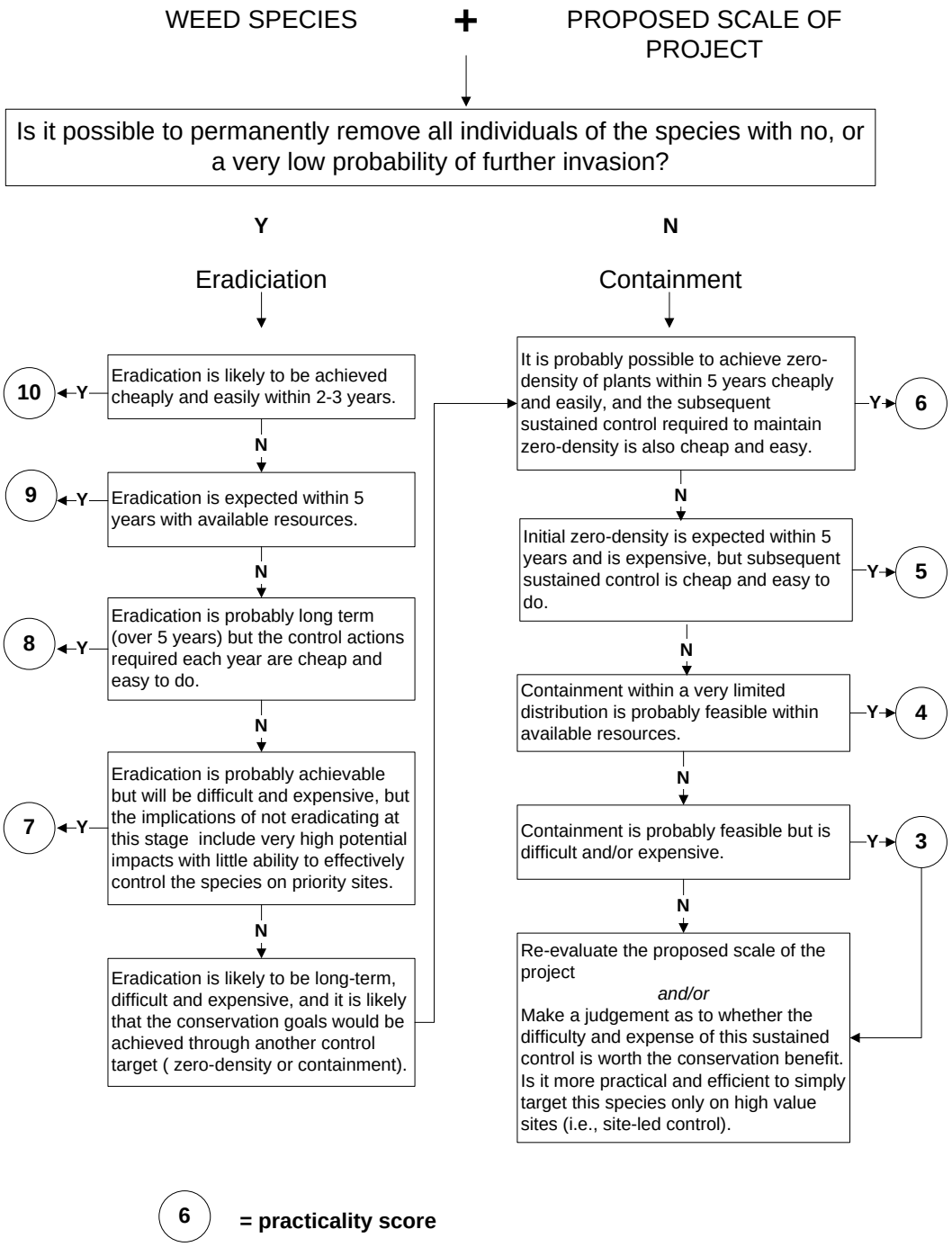
Criterion	Score			
	0	1	2	3
Capable of significantly changing the composition or structure of habitat	Does not affect structurally dominant species*	Minor change in composition of dominant species*. Little change to basic structure*	Medium effect on composition of dominant veg. Some impact on structure*	Major change to composition of dominant species* (e.g. sycamore replacing podocarp forest); OR major or complete change to structure* of habitat e.g.: tussockland changes to shrubland.
Significant change (aquatic species)	No significant effect on native species or water quality or movement.	Lesser degrees of (3)		One or more of: water courses covered; restricts free flow of water; major increase in sedimentation; completely suppresses native vegetation
Suppresses regeneration	No significant effect	Some effect on limited component of system.	Major effect on limited component of system; OR some effect on composition of dominant species*	Major effect on many native species or on the composition or density of dominant species*
Plant's persistence over time		A plant's lifespan is less than 5 years	A plant's lifespan 5–50 years	Individual plant's lifespan of over 50 years; OR species forms self-sustaining monoculture

"Structure" refers to the dominant growth form; for example, forest, woodland, shrubland, tussocklands, reedbed, cushionfield, bare etc.
Dominant spp refers to the dominant canopy species (>25% of canopy) e.g. kauri or podocarp-hardwood or beech in a forest, red tussock in a tussockland, etc.

TABLE 2. CRITERIA FOR ESTABLISHING BIOLOGICAL SUCCESS RATING (BSR) SCORES

Criterion	Score			
	0	1	2	3
Maturation rate		Sets seed only after 3 or more years; OR very slow vegetative growth	Sets seed within 2–3 years; OR moderate vegetative growth	Sets seed within first year OR has very rapid vegetative growth
Seeding ability	No seed	Low seed set	100–1000 seeds per plant	More than 1000 seeds per plant
Persistence of seedbank	No seed	Seed is viable for less than one year.	Seed has an estimated viability of 1–5 years	Seed has an estimated viability of over 5 years
Effectiveness of dispersal		Propagules spread by gravity or human introduction (e.g. garden waste dumping, vegetative escape from planted hedge, etc.)	Propagules spread by wind or water	Propagules spread by birds, feral animals, or very light wind dispersed seeds
Establishment / growth rate		Poor establishment and slow growth	Poor establishment and fast growth; OR good establishment, slow growth	Good establishment and fast growth
Vegetative reproduction	No asexual spread	Minor importance	Moderate importance, e.g. stem layering, suckering	Plant spread freely by stolons, rhizomes, bulbuls or other asexual means

FIGURE 1. EVALUATING THE PRACTICALITY SCORE OF A WEED-LED PROJECT



ASSESSING A SITE-LED CONTROL PROGRAMME

The ranking score for a site-led programme is the ranking score of the management unit that is the focus of the programme. Sites outside the management unit that are seed sources, buffers etc. are not scored—they are instead 'carried' by the ranking score of the management unit.

A. Identify the **core management unit** for the programme. This includes the place that is ecologically important, and is of a manageable size relative to the type of weed problem.

B. Score the core priority management unit for its **botanical values** (Table 3) and **wildlife values** using the six-point scoring system (Table 4).

C. Identify the "**biodiversity value score**". This is the higher of the "botanical value" or the "wildlife value" scores.

D. Identify the suite of **significant invasive weeds** that threaten the natural values of that management unit.

E. Determine the overall **urgency of controlling the weeds** (Table 5) in the management unit or in buffers or nearby seed sources that have affected, or have the potential to, affect the values of the management unit.

The **"Total ranking score" for a site-led programme**

(for the core priority management unit) =

(Biodiversity value score) x (urgency of control score)

The maximum total ranking score = 21

References

Elliot, G.P., Ogle, C.C. 1985: Wildlife and wildlife habitat values of Waitutu Forest, Western Southland. Fauna Survey Unit Report no 39. 108 p.

Owen, S.J. 1998: Department of Conservation Strategic Plan for Managing Invasive Weeds. Department of Conservation, Wellington.

Shaw, W.B. 1994: Botanical rankings for nature conservation. Science and Research Series No.72. Department of Conservation, Wellington. 17 p.

TABLE 3. BOTANICAL VALUE SCORING CRITERIA (BASED ON SHAW (1994))

Score	Criterion
6: Nationally Important	(a) Contains a nationally threatened vegetation type, or plant species, which is endemic to the ecological district. (b) The best representative site in the country of a nationally uncommon vegetation type.
5: Exceptional	(a) Contains good examples of nationally uncommon vegetation types, successional sequences or mosaics. (b) Contains vegetation types of great conservation value. For example, vegetation largely unmodified by introduced plants, browsing animals or other human influences. (c) Sites where a vegetation type, or more than one plant species reaches a geographic limit. (d) Contains threatened plants that are not endemic to the local district. (e) Contains a vegetation type that is endemic to the local district. (f) Contains communities that are (to a significant degree) representative of the natural character of the ecological district.
4: Very High	(a) The last, or one of a few remaining examples, of a vegetation type once more widespread in the ecological district. The example must retain most of its natural character. (b) Contains regionally uncommon vegetation types in good condition and forming part of a larger tract of native vegetation, for example, subalpine and alpine areas surrounded by a large tract of forest. (c) An example of the vegetation of an ecological district that forms a continuous ecological or altitudinal sequence across a district, and that is not better represented elsewhere in the ecological district. (d) The last, or one of the few remaining examples, of secondary succession that has developed following disturbance to the vegetation in pre-European or early European times. (e) Good quality examples, or the only example, of a secondary succession that has developed following a large disturbance such as mass ground movement, storm damage or fire. (f) Nationally uncommon ecosystems or vegetation types that have been degraded by, for example, fragmentation, weeds, burning, browsing animals. (g) Large (over 300 ha) example of secondary vegetation where there is relatively little (e.g. less than 5%) of an ecological district remaining in native vegetation.
3: High	(a) Good quality, moderately large (300–000 ha) example of native vegetation typical of an ecological district where there are other better quality or larger (over 1000 ha) examples present in the ecological district. (b) The last, or one of the few remaining examples of a vegetation type within an ecological district which, although in a modified condition, still retains the main elements of composition and structure. (c) An example of the native vegetation of an ecological district that now forms part of a culturally interrupted

	ecological and/or altitudinal sequence. (d) Areas where individual species or vegetation types reach the limits of their geographical distribution. (e) Regionally uncommon vegetation types, either intact or relatively unmodified, but completely or largely surrounded by a highly modified landscape, for example, small urban reserves. (f) Contains a rare species or two or more threatened species in a 'local' category. (g) Nationally uncommon ecosystems or vegetation types, with a conspicuous element of exotic plant species that will eventually be replaced by native plant species. (h) Early successional vegetation not presently representative of the natural cover of the ecological district but with the potential to develop so, and where there are very few or very small remaining other examples of natural vegetation in the ecological district.
Moderate	(a) Substantially modified native vegetation types that retain their main elements of composition and structure (for example, selectively logged, lightly burnt, grazed, weeds present), but are better represented at other sites in the ecological district. (b) Small example of native vegetation type where there are larger or better examples elsewhere in the ecological district.
Potential	(a) Mosaic(s) of native and exotic vegetation where the former are small and of no particular interest. (b) Small areas of exotic vegetation surrounded by large area of native vegetation. (c) Early successional vegetation where there are better examples in the ecological district. (d) Early successional vegetation dominated by exotic plants. (e) Contains native vegetation but essentially recently human-made.

TABLE 4. WILDLIFE VALUE SCORING CRITERIA (BASED ON ELLIOT AND OGLE (1985))

Score	Criterion
6: Nationally Important	Contains animal species endemic to, or best represented in, this ecological district.
5: Exceptional	(a) An endangered, rare or restricted endemic species breeds in the unit. (b) The management unit is essential to endangered, rare or restricted species for purposes other than breeding. (c) The management unit is vital to internationally uncommon species (breeding and/or migratory). (d) The management unit is vital to internally migratory species with very limited distribution or abundance. (e) Largely unmodified ecosystems or examples of original habitat not represented elsewhere; of large size and containing viable populations of all or most animal species typical of such ecosystems.
4: Very High	(a) Site containing a native animal species that has declined significantly as a result of human influence. (b) One of a few, or the only breeding area, for a non-endemic native species of limited abundance. (c) Habitat of an uncommon, discontinuously distributed species not adequately represented in a particular ecological district. (d) Example of a largely unmodified site that is not represented to the same extent elsewhere in the ecological district and is used by most native animal species typical of that habitat in that ecological district. (e) Supports a species of an endemic family which is of limited abundance nationally although adequately represented in one ecological district but whose habitat is at risk.
3: High	(a) Supports a species that is still widely distributed but whose habitat has been reduced. (b) Contains large numbers of breeding or moulting birds or where breeding or moulting areas are of inter-regional significance. (c) Large and fairly unmodified site that is represented elsewhere in the ecological district and contains all or most native animal species typical of that habitat for that ecological district. (d) Contains a widespread native animal species that is noteworthy at this site for its abundance or behaviour.
2: Moderate	Not heavily modified and supports good numbers of native animal species typical of the habitat in the ecological district.
1: Potential Value	Small, heavily modified site that could be more valuable to native animals if left to regenerate, or managed and developed for their benefit.

TABLE 5. THE CRITERIA FOR ASSESSING THE URGENCY OF CONTROL

Where information is not available as to the exact impacts and rate of change being caused by the weed species present on the site, the weediness scores of the individual species will give an indication of the overall urgency. (The higher the average weediness scores, the greater the overall impact will probably be on that site).

Score	Criterion
3.5	The plant community or some plant or animal species within it is known to be, or is likely to be, at risk of national extinction because of the impacts of invasive weeds.
3.0	The plant community or some plant or animal species within it is known to be, or is likely to be, at risk of local extinction because of the impacts of invasive weeds.
2.5	The important conservation values that give the management unit its biodiversity score are at risk of major damage in the near future, but the management unit is so far unaffected or little affected by invasive weeds (e.g. an undegraded high value tussockland at risk from *Pinus contorta*)
2.0	Significant changes to the important conservation values that give the management unit its biodiversity score are known or are very likely to have already occurred due to the invasive weed species present, with further damage to these values expected.
1.5	The current suite of invasive weeds in the management unit are unlikely to affect the important conservation values that give the management unit its biodiversity score, but are likely to affect, or be affecting, other important values within the unit.
1.0	The important conservation values that give the management unit its biodiversity score are likely to remain intact with the current suite of invasive weed species in the unit.

APPENDIX 8.2 ANNUAL REPORT TEMPLATE (SITE-LED AND WEED-LED)

APPENDIX 8.3 EXAMPLE OF A COMPLETED SITE-LED ANNUAL REPORT

APPENDIX 8.4 EXAMPLE OF A COMPLETED WEED-LED ANNUAL REPORT

APPENDIX 8.5 SITE-LED REVIEW TEMPLATE

APPENDIX 8.6 WEED-LED REVIEW TEMPLATE

APPENDIX 8.7 EXAMPLE OF A COMPLETED SITE-LED REVIEW

APPENDIX 8.8 EXAMPLE OF A COMPLETED WEED-LED REVIEW