

Guideline for Field Trials

PII Resource Kit for Invasive Plant Management



GUIDELINE FOR FIELD TRIALS

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PURPOSE

- These Guidelines are to be used by Project Staff when preparing for and conducting invasive plant management work at Project Sites.
- The Guidelines provide advice on field trials.
- **'Plan your field work and then work to that plan'.**

1. FIELD TRIALS

- If a treatment method does not exist for the target plant(s), or materials for the best practice method are not available, a field trial may be necessary to find a solution.
- A literature search may provide several different treatment methods and you may have to find out which one is the best for your project by comparing them in a field trial.
- The reasons for doing a field trial must be clear and the objectives must be SMART.
- Undertaking a robust trial that will provide useful results requires considerable planning. To provide information that can be published in a scientific journal, get planning assistance from a statistician. If you do not consult a statistician, two key words to remember are **Randomise** and **Replicate**.
- To produce meaningful information that can be used in your work, results from a trial cannot be seen to have occurred by chance and the trial methodology must be rigorous. A trial must have treatments applied **randomly**, each treatment must be **replicated** several times and a 'nil treatment' (sometimes called a 'control' treatment) must be included.
- Experimental design and analysis is a specialist field – ask for assistance if you are not sure about how to plan your trial.
- Data management for trials is as important as data management for your project.
- These 7 Steps can help you with field trials -
 - 1. Identify whether a trial is really needed for the management of your target invasive plant(s): Contact others working in invasive plant management to find out what they do.
 - 2. Complete specifications for the trial prior to beginning fieldwork: Clearly define treatments; Set specific, measurable, achievable, result-oriented and time-bound objectives for the trial; Design methods (fieldwork and analysis) and allocate time and resources needed; Assign responsibilities for the steps, e.g. for fieldwork, analysis and reporting.
 - 3. Finalise the specifications for your trial: Get the trial document(s) reviewed to ensure the design is rigorous and will stand up to criticism.
 - 4. Set up the trial: Establish pre- and post-treatment monitoring measurements; Prepare data sheets for the information to be collected; Layout the trial so that treatments and non-treatments are independent and adequately replicated; Randomly assign treatments and non-treatments; Measure data precisely and record accurately; Record notes on the trial, especially any difficulties encountered and deviations from the specifications, e.g. changes to treatments, timing, measurements or layout; Seek and record feedback from the people involved in the trial.
 - 5. Analyse the data: Enter data into computer spreadsheet without mistakes and keep field data sheets in a safe place; Use graphs to show trends; Use analytical statistics to show significance of results (ask for assistance if necessary).

- 6. Write up results: Summarise the objective(s), treatments, design and results and make recommendations for future invasive plant management work or for further trials; Get the report reviewed.
- 7. Disseminate the results: Make the results widely available by publishing in scientific and/or popular (e.g. The PII News) literature.

2. HEALTH AND SAFETY

- The project team must not put themselves, or anyone else, at risk during field trials.
- Particular care should be taken on uneven terrain and near, or on, water.
- The project team must have the equipment (including a First Aid Kit and a reliable communication source) and the necessary training to work safely in the field.