SOP

Field Trials for Animal Pest Operations SOP

About this document

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Department of Conservation
Te Papa Atawhai

Policy
Standard Operating Procedure
Guideline

New Zealand Government

Contents

1. Background

1.1 Purpose and scope

This SOP helps you to plan, coordinate and share results from animal pests field trials in a more efficient and effective way. The objective is that field trials for animal pest operations:

- Have good design, analysis and interpretation of data;
- Match the scale and rigour of experimental design to the importance of the question; and
- Coordinate information with other field trials to best effect.

An animal pest field trial:

- Answers a specific management question.
- Is done in the field.
- Compares or tests a treatment(s) or monitoring method(s).

This SOP **applies** to all terrestrial and freshwater (including invertebrates) animal pest field trials run by DOC staff or required by a DOC Permission that meet the above definition, including:

- Where efficacy data is required to support an application under the Agricultural Compounds and Veterinary Medicines (ACVM) Act (1997) (note: To collect sufficient information to achieve full registration, these trials are also required to conform to minimum ACVM Research standards and Guidelines for Efficacy of Vertebrate Pesticides).
- **Collaborative** field trials with private organisations (e.g. pesticide/trap manufacturers).
- Animal pest or site-led biosecurity operations where tools or methods will be compared or tested.
- Where DOC Operational Permission for a pesticide use has been applied for that requires a field trial following this SOP to meet a **compulsory information need**. Where the permission applicant is external to DOC (and therefore specific roles and structures in this SOP are not relevant) it is expected that their application will include detail as to how they will reach equivalent standards of review and accountability for trial design.

It is anticipated that most field trials that follow this SOP will be carried out as part of animal pest operations that are planned to the standards of the Animal Pest Operation Planning SOP. Where consultation within the community and particularly with Treaty Partners is a requirement under that SOP, the intent to carry out a trial, as well as the purpose and relevant aspects of the design, should be included within that conversation.

This SOP includes reference to those parts of the Field Trial process where it is of particular importance to involve or consult with Treaty Partners, which should still be followed for any trials not carried out in the context above.

This SOP can also be used for field trials of other types of work in DOC, where there are not comparable standards in place.

This SOP may also be used to provide **project design guidelines** for field trials run **wholly** by private organisations (e.g. community groups, manufacturers). In this case DOC specific roles and structures mentioned in the SOP only need to apply if the trial is in response to a compulsory information need as above.

This SOP **does not apply** to:

- Studies funded by Biodiversity Group, external DOC-funded research contracts or DOC-supported government-funded research unless it is made a requirement of the work.
- Studies not funded or carried out by DOC where researchers are following their own quality processes.

The standards are designed to achieve trial results that are robust and communicated effectively. The trial results can be used to improve our management with greater confidence.

1.2 Compliance

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

2. Overview

2.1 Why is this SOP needed?

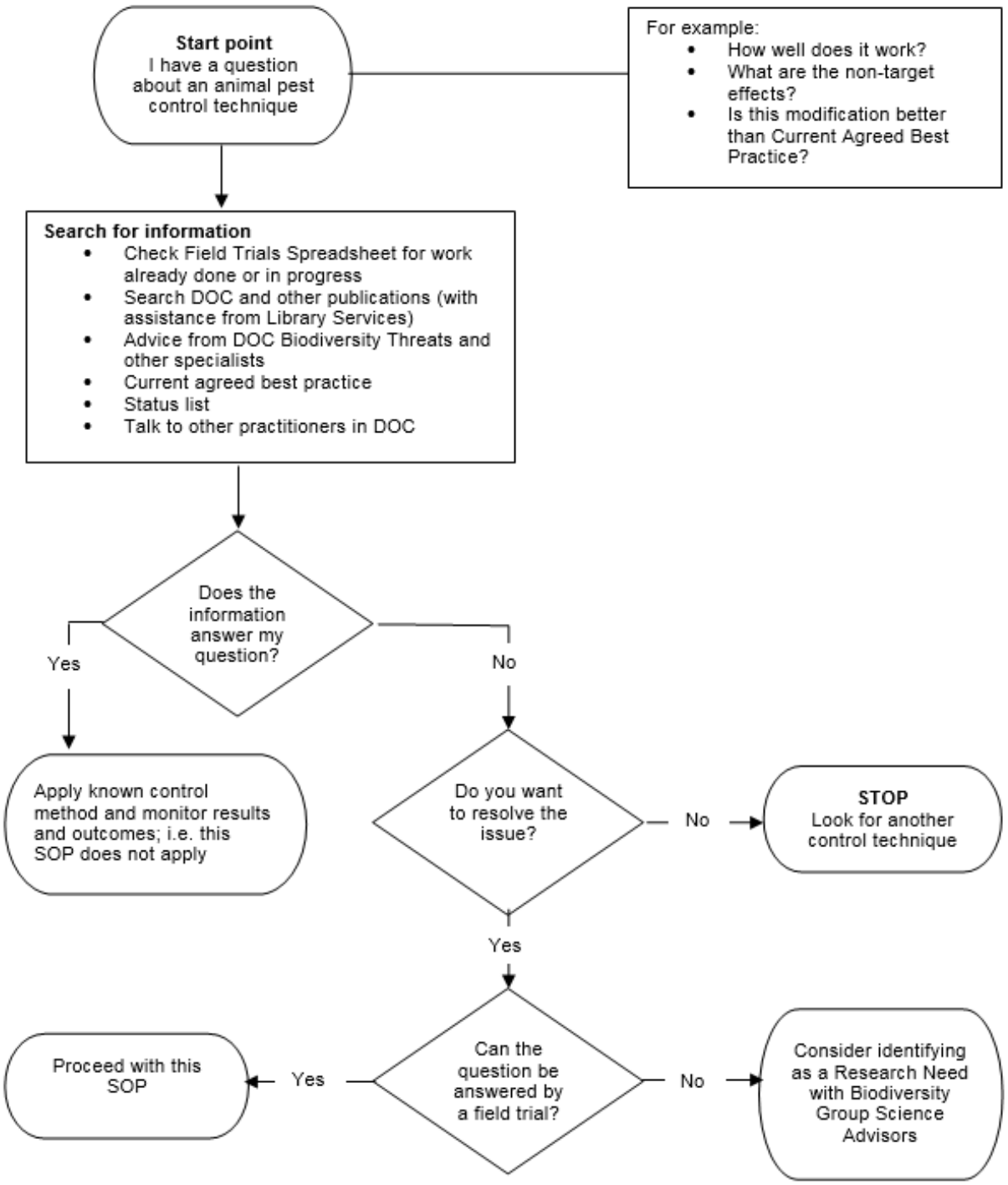
There are always questions in animal pest management; many of them need answers to help us make better management decisions and many of those decisions are made in the field. We not only need an answer, we often need to know how good that answer is in order to be able to decide what to do.

This SOP sets out a process that allows us to plan, coordinate, and share results from trial work in a more effective and efficient way. When this SOP is followed, our trial results are more likely to stand up to scientific scrutiny and the information can be used to improve our management with greater confidence. At a national level, a good trial is the first step toward changing Current Agreed Best Practice or adding or improving a method of monitoring animal pest populations in the Inventory and Monitoring Toolbox.

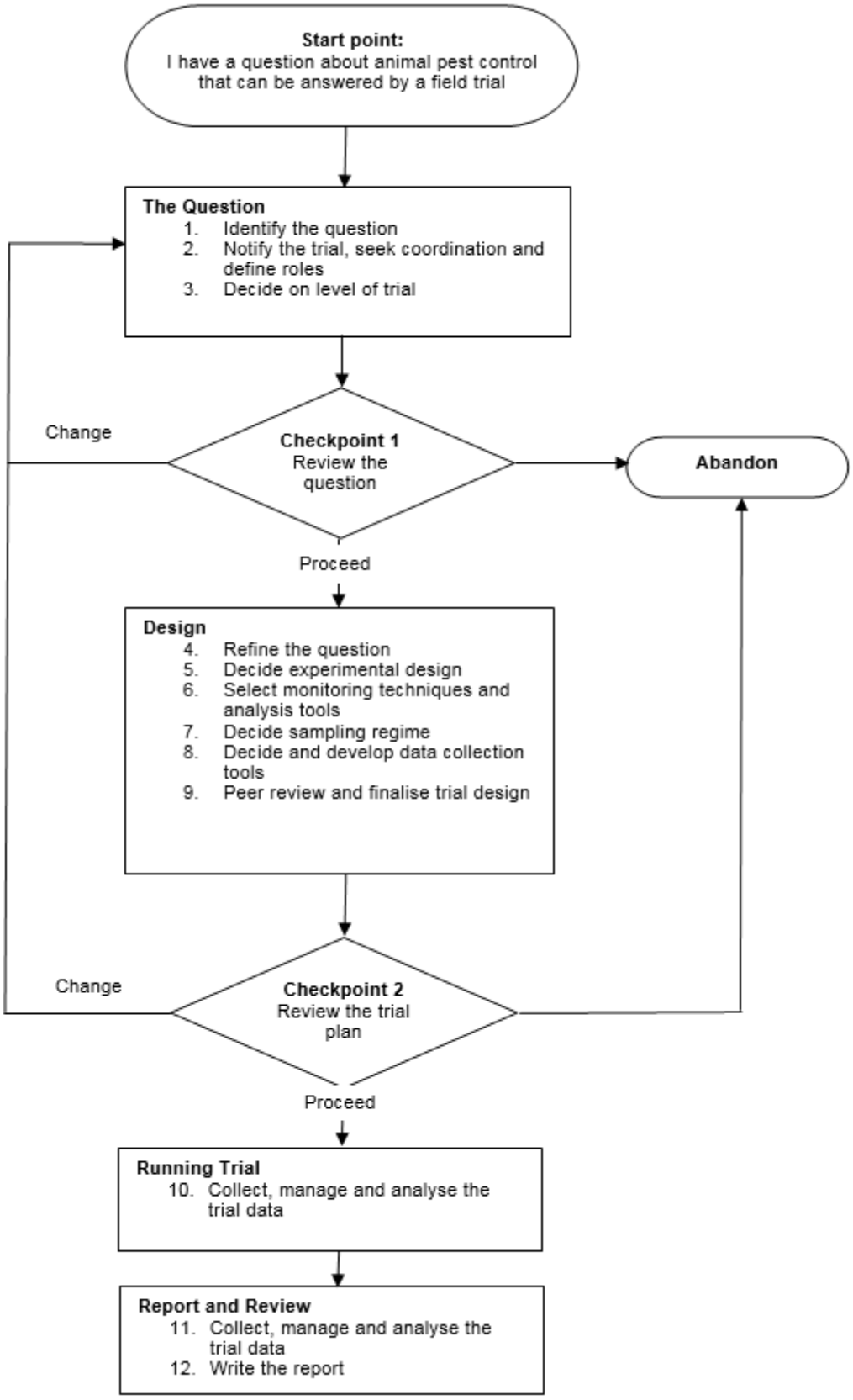
From this we can learn and move on to other management questions.

2.2 Does this SOP apply to my project?

Use the following flow chart to decide whether you need to use this SOP for your project.



2.3 Process


Start point:
I have a question about animal pest control that can be answered by a field trial
The Question
1. Identify the question
2. Notify the trial, seek coordination and define roles
3. Decide on level of trial
Change
Checkpoint 1
Review the question
Abandon
Proceed
Design
4. Refine the question
5. Decide experimental design
6. Select monitoring techniques and analysis tools
7. Decide sampling regime
8. Decide and develop data collection tools
9. Peer review and finalise trial design
Change
Checkpoint 2
Review the trial plan
Proceed
Running Trial
10. Collect, manage and analyse the trial data
Report and Review
11. Collect, manage and analyse the trial data
12. Write the report

3. Field trials standards and procedure

3.1 The Question

Step 1: Identify the question

Purpose: Identify what you need to know to resolve a conservation management problem you are faced with

Process:

1.1	Review the problem or issue at hand and the management decision you want to inform. It may help to identify who will use the answer, and how and when the answer is needed.
1.2	Work out what question you need to answer in order to solve the problem or have more confidence in your management decision. Proceed carefully, in case there is more than one question you need to answer in order to improve the situation.
1.3	Discuss with others and make a choice. You will constantly revise and review the question—particularly at Step 4 and at each checkpoint. "If I knew this answer, I could make the management decision to…"
1.4	Enter the question on the Animal pest field trial planning template (docDM-99324). Examples of trial questions: • Can technical grade alpha-chloralose control nesting colonies of black-backed gulls? • Are DOC 200 traps set in single-set wooden tunnels as effective at catching stoats as Mk 6 Fenn traps in single-set wooden tunnels? • What is the minimum level of predator control that will ensure kōkako nesting success exceeds 20% pa?

Compulsory standards:

1	The field trial plan for a proposed trial: • Uses the current version of the Animal pest field trial planning template (docdm-99324). • Provides specific and quantifiable details. • Covers all information required by the prompts. • Is peer reviewed and signed-off by the accountable manager when completed.
2	The question: • Addresses the information need. • Informs a management decision. • Is short, specific and singular.

Step 2: Notify the trial, seek coordination and define roles**.**

Purpose: This step avoids duplication with projects that are already underway but also identifies possible opportunities for collaboration.

Process:

2.1 Scan the Animal pest field trial spreadsheet (docDM-99462) for similar trial questions. If a similar question is not identified, complete columns A-I of the spreadsheet with the details of your proposed field trial. Expect to revise these as you work through the planning process.

If a similar trial question already exists identify yourself as a potential collaborator in the relevant column.

If outcomes of the trial are likely to be of national significance you should also consider using the L\Animal Pests or similar email lists to publicise the trial.

2.2 Contact other parties with similar trial questions from the Animal pest field trial spreadsheet and explore the possibility of coordination.

2.3 If there are gains to be made continue with coordination planning. Consider such things as potential efficiencies of undertaking one trial design, writing one report and an answer with much wider applicability.

2.4 Identify how to involve Treaty Partner. Will outcomes of the trial have relevance to the management of taonga species or sites? Are there opportunities to learn from or contribute to mātauranga Māori? Is this work likely to not involve but still be of interest to tangata whenua, have relevance and the opportunity for involvement, or is it work that would best be led by the Treaty Partner. Note that some field trials will take place in the context of pest control operations that require consultation with Treaty Partners (such as aerial 1080 operations) – the purpose and intent of the field trial should be included within this conversation. If relationships don't already exist or you're unsure who to approach in the context of your project, talk to your manager.

2.5 The roles and tasks of people involved in your trial team should now be delegated and entered on your field trial planning template. While some contributors will only be involved at later stages of the process it is important to identify now who and when.

These should include:

Role	Person
Overall management of the trial (Steps 1-12)	Work Plan Manager (can be Operations Ranger, Technical or Science Advisor, or other)
Coordinator/liaison with other trials	Work Plan Manager (can be Operations Ranger, Technical or Science Advisor, or other)
Approves: trial to planning stage (Step 3), trial design (Step 9) and final report (Step 11)	Accountable Manager
Expert input into design and analysis (Steps 4-9)	Technical or Science Advisor and/or Statistician
Peer review of trial design and report (Steps 9 & 11)	Technical or Science Advisor, or other with suitable skills and experience
Conducting the field work (Step 10)	Field staff or contractors
Report writing (Steps 11 & 12)	Work Plan Manager or delegate

Compulsory standards

1	The following measures are taken once the question has been identified: • The Animal pest field trial spreadsheet (docDM-99462) is updated. • An agreed plan is developed for coordination of trials. • Roles of the trial team have been determined.

Step 3: Decide on level of trial

Purpose: This step defines the scale at which the trial needs to be carried out to usefully answer the question.

Process

3.1	The level of the trial will be dictated by the amount of coordination (from Step 2) and by considering the following points: • How important are the management decisions that could benefit from this information? • What will be done differently once the answer is known? • Is it a case of 'need to know' or 'nice to know'? • What are the consequences of continuing with present management if its basis is questionable? • Can it be done in time to affect the management decision? • What resources and effort are realistic for supporting these decisions? • Are there constraints imposed by the site or sites where you intend to carry out the trial? (Block size, presence of Wāhi Tapu or other sites of significance, etc.) • Is an animal pest field trial the best way to provide the information? • How confident do I need to be in my conclusions from the trial?
3.2	After considering the above points, a simple way of starting this process is to think about how the results of your trial will be used. You have to determine which level of trial fits with your information need. The options are: • Informal—often used as a preliminary investigation before a formal trial. May be used to inform management decisions but with limited confidence. • Formal local—used to inform management decisions at a local level and revise local practices • Formal national—used to inform management decisions at a national level or revise national practices
3.3	When initiating formal national or local trials you need to think about the 3 key elements of experimental design: 1) Treatments/non-treatments 2) Randomisation 3) Replication. Remember trade-offs will always occur between trial design and resources available, therefore it may not be possible to have all 3 elements of experimental design. This is acceptable so long as you can justify your decision and don't 'over-sell' the results.

	It may be useful to provide a provisional estimate of costs ($/hours) and timeframe to get a feel of what resources may be required to support the trial.
3.4	Enter your decision on your field trial planning template. Be mindful that you will review this decision several times during the process.

Checkpoint 1:

This is an appropriate point to review the issue and decide whether it is worth proceeding further. You could decide to proceed, change the trial, or abandon the trial.

The accountable manager approves the trial to proceed to planning stage by signing the field trial planning template.

Compulsory standards

1	The level determined will: • Reflect the local and national importance of the issue. • Be decided by the trial team. • Include a revision of the question. • Be approved by the accountable manager on the field trial planning template.

3.2 Design

Steps 4 through to 9 are where your trial progresses from thinking about the question you want to answer to how you will set about answering them. Note that you won't necessarily proceed through these steps in a strict linear fashion, decisions you make in one step may give you cause to revisit prior decisions. At each step consider the implications in terms of the advantages or limitations of your study site, resource availability, collaboration with others, and matters of significance to treaty partners.

If you are likely to regularly incorporate trials into your work, the Designing Studies: Statistical Sample Design for Observational Studies and Monitoring course run by the Design and Evaluation Team (Planning and Support Unit, Biodiversity Group) and available through DOCLearn is highly recommended. This course emphasises the importance of understanding the question you are asking, and how this can help guide you to a very effective design despite the constraints imposed when working within existing conservation programmes.

Step 4: Refine the question

Purpose Identify the key underlying question in the problem you are looking to solve, to give you something to build the trial design around.

Process

4.1	Take the question identified in Step 1 and sort out: • What you want to know. • How you are going to measure it. Sometimes you will need to change your question, this is acceptable. Think of this step as brainstorming with the trial team to extract the essential "need to know" from the question.
4.2	Review and adjust what you want to know and how you are going to measure it until you are happy that what you are measuring answers the question.
4.3	Enter the question definition into the Animal pest field trial design checklist (docDM-99333).

Compulsory standards

1	The field trial design checklist: • Uses the current version of the Animal pest field trial design checklist template (docdm-99333). • Covers all information required by the prompts. • Provides specific and quantifiable details. • Is peer reviewed and signed-off by the accountable manager when completed.
2	The definition identifies what you want to know and how you are going to measure it.

3	The measures are specific and measurable and answer the question.

Step 5: Decide experimental design

Purpose Decide how the treatment(s) to be tested will be applied to best answer your question, within the resources available.

Process

5.1

Look at the level of trial you decided in step 3. Think about how you will be able to apply each of the 3 key elements of experimental design—treatments, replication and randomisation. The order in which you decide the experimental design is not important as each element influences the other, the key is to think about each one.

The table below sets out the general classification we use for trials.

	Formal		Informal
Trial design	National scale	Local scale	Any scale
Use of treatment/ non-treatment or Comparisons between treatments	Yes	Yes	No
Randomisation	Yes	Yes	No
Replication	Yes	Yes if there is more than one site involved. Otherwise no.	No

To get the maximum benefit from a trial a statistician should be involved in the design of the trial from the start, especially for any formal scale trials. This will safeguard against getting results that do not answer the question. DOC has a small team of statisticians in the Design and Evaluation Team, while external sources of advice could include universities or Crown Research Institutes.

5.2

Define the treatments

Consider:

- What are the treatments? e.g., control methods
- When will they be done? e.g., start/end date
- Rate of application, e.g., 5 kg/ha
- Optimum time of year, e.g., cold for possums
- Ideally includes a 'non-treatment' for comparison – this could be existing treatment or best practice without the change that is being trialled.

Independence of treatments; Distances between treatments, i.e., will treatments affect adjacent blocks?

Apply treatments independently in order for there to be replication.

5.3

Define the replication

Consider:

- The number and size of treatment areas.

	• Number and size of treatment blocks within treatment area. • Replication over space and time, i.e., treatments undertaken over subsequent seasons or years, and at two or more independent sites.
5.4	**Decide how you will randomise** Consider: • Where are the replicates are on the ground? i.e., how to randomly assign treatment(s) to fixed treatment blocks, or randomly locate treatment blocks then do the above. • A check for practicality on the ground and cost effectiveness can be done at this point. • Randomisation ensures the areas that receive treatments are selected without bias. Note however that when a trial is tied in with a normal control operation, treatment blocks or areas are often already decided and are therefore a constraint on randomisation.
5.5	Enter the experimental design on your field trial design checklist.

Compulsory standards

1	The experimental design is: • Developed by the trial team. • Defined in terms of treatment and non-treatment sites, degree of replication and randomisation of treatments (where possible).

Step 6: Select monitoring techniques and analysis tools

Purpose: Decide what variable or variables will be measured to assess the effectiveness of the treatment

Process

6.1	Look at the question from step 4, specifically; what you want to quantify and how you want to measure it—note options for measurement. Depending on the question you are asking, your trial may require Result Monitoring (e.g. are the desired predator targets met?), Outcome Monitoring (are the desired conservation outcomes achieved?), or both.
6.2	Choose the best option for measurement. The DOC Biodiversity Inventory and Monitoring Toolbox is a useful starting point for considering strengths and weaknesses of the various options.
6.3	Is there a need to collect physical samples of any kind? Or to handle wildlife? This is unlikely in the majority of cases but where there are requirements to do so, check whether you will need authorisation under the Wildlife Act or other legislation, approval from Treaty Partners, Animal Ethics Committee approval, or for any other implications.
6.4	Enter the monitoring techniques into your field trial design checklist.

6.5	Look at the monitoring techniques you have chosen and note options for analysing the data. They can be sourced from existing standard techniques, e.g., RTC or tracking tunnels, call counts, vegetation plots, or foliar browse index, or can be designed for the situation. Discuss your proposed analyses with a statistician to ensure they are appropriate and robust. If you make any alterations to a standard method, make sure they are documented. Others need to know about your changes when they are interpreting the results.
6.6	Enter the data analysis tools into your field trial design checklist.

Compulsory standards

1	Monitoring techniques are: • Best suited to the question and experimental design. • Selected from existing standard techniques (if possible).
2	Data analysis tools: • Use an accepted method of analysis. • Assist interpretation of results. • Relate to the type of data.

Step 7: Decide sampling regime

Purpose: Laying out the sampling design is similar to the experimental design in Step 5. Here you decide where and how often you will collect data from the treatments to measure their effect. The extent of the sampling will be dictated to a large degree by the layout of the treatment, the requirements of the data analysis tool you have chosen and the level of the trial. Your sampling should match these closely.

Process

7.1	Look at your experimental design, monitoring techniques and data analysis tools and decide on sample units and sample design.

7.2	Select the sample units by deciding the following:
	• What is the sample unit, e.g., plot, trap, trap night, one line of 10 traps (NPCA protocol), a nest, 20 x 20 m plot, and seedling plot?
	• How many sample units will there be for the area, e.g., 10 lines of 10 traps for a block of 500 ha RTC?
	• Spacing—distance between sample units.
	• Timing:
	  ○ When sampling is done
	  ○ Interval between sampling
	  ○ How long is it going to take?

7.3	Discuss with Treaty Partners any sampling protocols to be followed, particularly if taking of physical samples of native wildlife, soil or water will be required.
7.4	Select the sample design by deciding such things as: Sample area, i.e., will the samples be taken from the whole treatment area or only part? Is the treatment area highly variable? If so you may need to stratify (divide the area and randomly allocate sample units within each stratum). Randomly allocate sample units via: • Simple random sampling, or • Systematic sampling (with random start point), i.e., regular spacing for even coverage, or • Stratification of sampling or other. Many standard monitoring techniques provide sampling design advice as part of the package, e.g., residual trap catch and foliar browse index. In all other cases, consult a statistician for advice.
7.5	Enter the details on your field trial design checklist.

Compulsory standards

1	The sampling regime: • Includes specific descriptions of scale, timing, sample methods and sample units. • Follows existing standard techniques • Sampling protocols take into account views of Treaty Partners
2	Your sampling regime conforms to the assumptions of the statistical analysis you plan to use.

Step 8: Decide and develop data collection tools

Purpose: Decide how data will be collected, collated and stored.

Process

8.1	Data collection tools will normally involve three things: data recording, data storage and sample processing. Recording tools can include such items as record sheets, data loggers and field notebooks. Storage tools can include summary sheets, spreadsheets and filing systems. Sample processing can include such things as chemicals, containers and refrigeration.

8.2	Once you have decided on data collection tools that you require, you will need to develop them: Think about what tools you will need to record and store data, as well as processing and storing any samples you take. Document exactly how each is to be done and how to access the tools. Consider piloting recording forms and instruction sheets to ensure layout and instructions will be understood and work for all situations.
8.3	Enter the data collection tools chosen in your field trial design checklist. A good test is to try out your data sheets with others or test-run to see if they will work in the field or successfully capture all likely outcomes/scenarios.

Compulsory standards

1	Data recording and storage tools: • Facilitate the correct recording and storage of data. • Allow easy consolidation of data and samples.

Step 9: Peer review and finalise trial design

Purpose Peer review is a quality check to ensure the design developed in the previous steps is fit for purpose of addressing the trial question.

Process

9.1	Once you have completed steps 1–8: • Identify at least two DOC staff with relevant expertise to critically review the trial design, one of whom is a science advisor. These staff should be notified ahead of time with clear expectations on when their input is required, what is expected and when it is due to be completed. Where the Treaty Partner has expressed an interest in the trial but is not directly involved within the trial team, it may be of value that they are also invited to review the trial design, remembering that any time or effort to do so should be recognised.
9.2	Once peer review comments are received, the trial team should get together and consider incorporating relevant changes. Tip: You may want to run a pilot or field check (i.e., try out how you intend to collect the data) of part or all of your design to make sure your sampling is sufficient to give you the inference you want. A Technical or Science Advisor can help with this.
9.3	Work through the process for determining whether your trial requires the approval of the Animal Ethics Committee. If required, add the details to your field trial design checklist when approval is given.
9.4	Ensure the accountable manager has approved (by signing) the field trial design checklist for the trial to proceed. By signing off the trial to proceed, accountable managers must ensure the trial runs for the duration in the design.
9.5	Enter the document management system number of your field trial design checklist into the Animal pest field trials spreadsheet (docDM-99462).

Checkpoint 2:

Once the trial design has been completed and the work planned and budgeted, it is time to re-check that the plan is practical and workable. It is also a good time to re-check what question you will be able to answer once the data has been collected and analysed. Have we got it right?

The checkpoint might include:

- A risk assessment (see Business Planning Procedures for this).
- A cost/benefit analysis.
- A decision to proceed, change or abandon.

Compulsory standards

1	The trial design is: • In compliance with the overall standards of this SOP. • Peer reviewed. • Capable of answering the question. • Approved by the accountable manager on the field trial design checklist.
2	Animal Ethics Committee approval process is completed.

3.3 Run the trial

Step 10: Run the trial—collect, manage and analyse data

Purpose: With a robust design resulting from the previous steps the trial can now be carried out.

Process

10.1	With signoff to proceed from step 9, apply all other relevant Animal Pest SOPs to plan the field trial.
10.2	Run the trial according to the design plan.
10.3	Collect, record and store the data as stated in the design.
10.4	Ensure any amendments to or deviations from the trial design are justified and approved by the accountable manager after consultation with the trial team. Problems almost certainly crop up when running the trial e.g., the weather deteriorates, the supplier is late. The best way of dealing with these is to get back together with your trial team and recheck the trial design and adjust if necessary. Data quality can be maintained through good supervision, audits, calibration and faithful execution of the methods according to the design.

10.5	Data analysis involves exploring and presenting your data, applying your chosen test(s) and interpreting the results to answer the question posed.
10.6	The first step in any analysis is to complete tables and graphs to display the data and explore it with others. The chosen statistical tools can then be applied and conclusions drawn.

Compulsory standards

1	The design plan is followed consistently.
2	Any deviations from the design specifications are justified and approved before starting the trial

3.4 Report and Review

Step 11: Write the report

Purpose Reporting on all field trials is essential to ensure information is captured, so that others can learn from the experience and results.

Process

11.1	The Animal pest field trial reporting template (docDM-99348) follows a basic scientific report format. Complete all sections of the field trial report using N/A for those not needed. Cover all the information by the prompts. Field trials may be grouped into a single report provided they were formally coordinated from Step 2. For useful guides and information on writing and publishing DOC reports see the publishing guides on the intranet.
11.2	Once the field trial report is completed it must be peer-reviewed by: • Members of the trial team. • External (of the trial team) DOC staff with relevant expertise to (i) ensure the scientific content is of an appropriate standard and (ii) make recommendations regarding the structure and presentation of the report.
11.3	Make adjustments to the report according to the feedback of the peer review.
11.4	The accountable manager reviews and approves the field trial report.

Compulsory standards

1	The field trial report: • Is written using the current version of the Animal pest field trial reporting template (docDM-99348).

	• Covers all information required by the prompts. • Provides specific and quantifiable details. • Is peer-reviewed both within and outside the trial team. • Is approved by the accountable manager.

Step 12: Communicate results

Purpose It is important that results from trials are communicated effectively and are readily accessible so that other interested people can review, learn from and give you feedback on them

Process

12.1	Once the trial report is signed off, enter the document management system number for the report in Column M of the Animal pest field trial spreadsheet (docDM-99462), and update Trial Status (Column L) to "Complete". This is the first step of communicating the results of the trial. A trial is not complete until the report is available! If you wish to show in the field trial spreadsheet that fieldwork is complete but results are not yet published, use the "Report Pending" option.
12.2	The results should be communicated to the intended audiences, Treaty Partner and other key stakeholders and interested parties. There is a range of ways to communicate the results of the trial including briefings, seminars, L:/animal pests email list, press releases, fact sheets, newsletter articles, intranet front page and formal scientific publishing. If trial results are published externally, also add a reference or link to your entry in the Animal pest field trial spreadsheet.
12.3	If the results, recommendations and/or conclusions of your trial require actions, feed these back to the intended users of the information.
12.4	Contact the coordinator for the relevant Current Agreed Best Practice network group (or the Inventory and Monitoring Toolbox if your trial was of monitoring methods that estimate populations) to inform them of your results.

Compulsory standards

1	The Animal pest field trial spreadsheet (docDM-99462) is updated.
2	The results are presented and communicated to the intended audiences.
3	Conclusions and recommendations from the trial are identified.
4	The coordinator for the relevant network group for Current Agreed Best Practice is informed of your results.
5	If you trialed monitoring methods that estimate populations, the Inventory and Monitoring Toolbox coordinator is informed of your results.

4. Related documents

The internal DOC material listed below is available on request from DOC.

4.1 Supporting documents and reporting templates

1. Animal pest field trial spreadsheet (docDM-99462).
2. Animal pest field trial planning template (docDM-99324).
3. Example of a field trial planning template for formal local level trial (docDM-99374).
4. Animal pest field trial design checklist (docDM-99333).
5. Animal pest field trial reporting template (with instructions) (docDM-99348).

4.2 Other related resources

- ACVM Research Standards
- Animal Ethics Committee
- Animal Pests SOP Definitions and FAQs (docDM-51708).
- Current Agreed Best Practice
- Guidelines for Efficacy of Vertebrate Pesticides
- Inventory and Monitoring Toolbox
- Operational Planning for Animal Pest Operations SOP (docDM-1488532).

5. Document history

Date	Details	Document ID and version	Amended by
26/06/2003	Version 1 of SOP	1.0 Archived as Docdm-728498	P Whaley
31/05/2011	Version 2 of SOP	2.0 Archived as DOC-6464744	M Crowell
04/11/2020	New templated and reviewed version	docDM-51573	N Gorman

6. Appendix I

6.1 Glossary

Refer to Animal Pests SOP Definitions and FAQs (docdm-51708) for a complete list of terminology and definitions.

Compare/comparison: The ability to compare the same measure/parameter at different times or between different sites or populations.

Data analysis: The interpretation of data to draw conclusions and to see if the question has been answered.

Data analysis tools: The methods used to interpret and draw conclusions from the data.

Data collection: The observing, collecting and recording of data in the field.

Graph: Displaying your data in a visual presentation so you can see obvious patterns and trends.

Inference: Making a statement or conclusion about what you expect to see in general, even where/when you haven't measured. Your level of confidence in your inference depends on your design and analysis and how hard the question is.

Monitoring: The measurement of change over time.

Peer review: Objective and unbiased critical scientific assessment.

Randomisation: A chance process intended to remove any potential bias.

Replicate: Replicate is synonymous with 'sample unit', i.e., the smallest independent data unit.

Replication: Where the same treatment is duplicated at one or more sites and results compared to make inference for a wider whole.

Sample: A selection of units from a population.

Sample area: The portion of the treatment area that is available to sample. Often sample area = treatment area.

Sample unit: The smallest unit of data that you have randomly placed within the sample area, e.g., line of traps for a residual trap catch (RTC) survey.

Sampling: The sustainable collection of samples including how much and how it is organised.

Treatment/non-treatment: Where similar sites or populations are being monitored but no management occurs in some.