NSW GOVERNMENT

Department of Planning and Environment

Translocation proposal template

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Contents

1. Summary

1.1 Project title

Provide a descriptive name that includes key details of the project (e.g. target species, source/release location, etc.).

1.2 Project team

Names and affiliations of translocation team members. You should identify core team members and their relevant experience and qualifications.

1.3 Contact details

Name, email address and phone number of project lead.

1.4 Species name and conservation status

State the scientific name, common name (if applicable) and legal conservation status (threatened species listing). If there are multiple species, list the above information for each one.

1.5 Nature of translocation

State the type of translocation proposed (and whether or not it is experimental):

- **Introduction** (recipient site is outside the known range of the target species)
- **Reintroduction** (recipient site represents a former site within the known range of the target species)
- **Reinforcement** (species already exists at the recipient site). If the reinforcement is for genetic rescue, you should state it here
- **Establishment** of a captive breeding animal or ex situ plant population.

1.6 Background information

Provide relevant background information.

Include information on the species' current range (i.e. number of populations and population size, geographic area occupied, etc.), biological and ecological characteristics (e.g. lifecycle), key biotic (e.g. pollinators, mutualistic or dependent species dispersal agents, habitat requirements, vegetation types) and abiotic (e.g. soils, climate, aspect, and disturbance regimes, such as fire and floods) factors influencing persistence, and major pressures and threats.

Identify why the translocation is being proposed and whether it is identified as an action in a management or conservation plan.

You may wish to highlight key research that lends support (or otherwise) to the likelihood of success of the proposed translocation. You may also wish to identify research questions associated with the translocation.

1.7 Justification (benefits versus risks)

Describe the threats the species/population/organisms faces. Justify why the proposal represents the best conservation action for the target species, with attention to how the action will benefit the target species.

For proposals to translocate from a development site, justify why the actions to harm the species cannot be avoided.

For department proposals, proponents must show that the proposed action is a cost effective conservation option for the target species.

To address the above requirements, proponents should consider the species threat status and the factors driving the threat status (e.g. is the species critically endangered, and does translocation represent a last resort or a necessary back up of a single known population?), long- and short-term demographic trends (e.g. is the species/population experiencing rapid decline?), and manageability of threats in situ (e.g. are there any in situ management options?), as well as the risks associated with not translocating the organisms.

Where the proposal is to translocate a species that is likely to experience decline or extinction due to climate change, proponents should include multiple lines of evidence for the severity and rapidity of the impending threat. This may include a species vulnerability assessment (see Appendix F for references containing examples). Proponents should provide a statement on the urgency of the action to justify why it needs to be undertaken at this point in time.

1.8 Stakeholder consultation

Provide evidence that relevant stakeholders have been identified and engaged on the proposal. Include the names and contact details of those stakeholders. Identify and briefly explain any issues raised by stakeholders and if/how they were addressed (if applicable).

Consulted stakeholders must include landholders (at source, recipient and ex situ sites), experts and department staff (in particular, the Accountable Officer and Species Project Coordinator for threatened species, and the relevant Conservation and Regional Delivery/Communities and Greater Sydney Senior Team Leader for protected species). Proponents may also consult the broader community.

For establishment of captive breeding animal populations, proponents should consult the NSW Department of Primary Industries (DPI) to identify any obligations under the *Exhibited Animals Protection Act 1986* and the *Prevention of Cruelty to Animals Act 1979*.

1.9 Other approvals/authorities

Provide details of other approvals, licences or authorities relevant to the project. These may include licences or approvals under the *Biodiversity Conservation Act 2016*, *National Parks and Wildlife Act 1974*, *Animal Research Act 1985*, *Exhibited Animals Protection Act 1986*, *Biosecurity Act 2015*, etc., and may relate to specific components of the project.

1.10 Risk assessment

Identify the risks associated with the project and, where appropriate, outline strategies to mitigate those risks.

Risks to the source population could include reduction in population size and long term viability of the source population, effects on non target organisms, and break up of family/social groups.

For captive breeding animal populations or ex situ plant populations, proponents should consider risks to genetic diversity, escape from managed facilities, limitation of facilities for holding surplus organisms and resourcing limitations.

For animal translocations, proponents should consider welfare risks relevant to each stage of the translocation (capture, handling, holding and release).

Include a risk assessment that identifies potential disease risks and mitigation strategies to address those risks.

Proponents should consult the NSW DPI Biosecurity and Food Safety Division for advice when undertaking a disease risk assessment. The NSW DPI Biosecurity Hotline number is 1800 680 244.

2. Source population

2.1 Source site

Describe where the plants, propagative material, or animals are being sourced from, and describe the sampling strategy. Sampling may be from one or multiple sites or from a captive bred animal or ex situ plant population. State if the collection was an emergency collection.

Where known, the following information about the source site should be included:

- geographic location
- land management
- vegetation community/habitat
- known interspecific interactions
- pest and disease status.

2.2 Source population

Provide details of the source population, including:

- robust estimates of population size and density
- population sex and age structure
- population demographics and trajectory
- presence of social groups (animals)
- for plants, type of material (seeds, cuttings, other)
- genetic variability and background (is this a representative sample?)
- disease assessment and profile.

With reference to the information provided for the above dot points, proponents should comment on the ability of the source population and ecosystem to withstand the proposed removal of individuals.

2.3 Composition of population for translocation

Provide proposed details of the collection of individuals to be moved, including:

- number of individuals (including why this number was selected)
- age structure
- sex ratio
- whether there are mating pairs or mothers with young
- genetic variability and background (particularly important where animals will be/are captive bred prior to translocation)
- disease assessment and profile.

Explain the rationale for this composition and how it will help achieve the objectives of the project.

Consideration should be given to social groups/structures, and number of individuals required to establish a viable population with normal social interactions and mating behaviours.

Note: Complete Section 3a if the proposal is to undertake a translocation. Complete Section 3b if the proposal is to establish a captive breeding animal or ex situ plant population. Complete both sections if the proposal is to undertake a translocation with a captive or ex situ component.

3a Recipient site

3a.1 Location

Describe the geographic location of the proposed release site, in comparison to the range of known sites (including source site) for the species. You should include the geographic name, GPS coordinates, and a statement on whether the site is within or outside the current distribution of the target species. If possible, provide a map or photograph of the site.

3a.2 Land management

Describe the details of current land tenure/zoning and current land management and use. Where applicable, provide written evidence that the land manager (or appropriate authority) agrees to the proposed action.

Where possible, identify proposed future land management strategies (e.g. establishment of a biodiversity stewardship site). The manager of the recipient site should demonstrate a long term commitment to conservation and the proposed translocation.

3a.3 Ecological suitability

Justify the selection of this site with reference to the target species' ecology.

Animals

Proponents should consider habitat suitability in terms of:

- climate (current and future)
- food and water availability (quality and quantity)

- habitat connectivity (in general, sites with low or medium connectivity with other suitable habitats lead to higher translocation success)[1]
- shelter (quality and quantity)
- carrying capacity of the site
- breeding requirements
- predators
- likelihood of implementing an appropriate disturbance regime (e.g. fire, flood), if required.

Plants

Proponents should consider:

- climate (current and future)
- presence/absence of pollinators
- dispersal agents
- soil/geology and hydrological characteristics
- symbionts, such as mycorrhizae or nitrogen-fixing bacteria (if relevant)
- presence of appropriate vegetation community and structure (competition and light availability)
- climate and rainfall
- topography and aspect
- likelihood of implementing an appropriate disturbance regime (e.g. fire, flood), if required.

Reintroductions

If the translocation is a reintroduction, provide evidence that the release site is a location formerly occupied by the target species within its native range.

Introductions

If the translocation is an introduction, provide justification for moving the species outside its native range (strong justification will be required). If the proposal is to translocate a species threatened by climate change, justify site selection based on current climate and climatic conditions projected under multiple scenarios.

Reinforcement

If the proposal is to reinforce an existing population, justify selection of individuals to translocate, with reference to:

- population genetics
- sex/age structure
- provenance (climate suitability).

[1] New Zealand Department of Conservation: https://www.doc.govt.nz/get-involved/run-a-project/translocation/translocation-success/basics/ (accessed 5 September 2018).

Threats

Include information on the threats at the recipient site and how they have been managed (e.g. pest eradication, predator-proof fencing). Detail what impacts the translocation will have on other species at the recipient site, including other threatened species that may be impacted. Detail how any disturbance impacts are to be mitigated while the new population establishes.

3a.4 Ecological impacts

Interactions at recipient site

Comment on any likely significant interactions of translocated organisms with other native species at the recipient site (e.g. predation, competition). If the area for release/planting is to be fenced, include the interactions occurring due to installation of the fence.

For animals, comment on the risk of overabundance on (a) local vegetation and (b) population sustainability where appropriate.

Outline your strategies to monitor and manage these impacts (including triggers for intervention). State how you will decide when impacts are unacceptable and if/how the translocated organisms can be removed from the recipient site if required.

Impacts on ecosystem function

Comment on any significant impacts that the addition of the translocated species might have on the functioning of the ecosystem of the recipient site.

Outline your strategies to monitor and manage these impacts.

This is particularly important for translocation of organisms to a site outside of their known range.

Biosecurity risks

With reference to the disease risk assessment, comment on the potential for inadvertent introduction of pests, pathogens and parasites with/to the target species and transmission to/from other individuals or species.

Movement of other non target species

Comment on the potential for other non-pathogenic species to be inadvertently moved during the translocation (e.g. through seeds or fungi in birds or mammals' guts, soil on shoes or boxes, seeds in bedding/food). If there is significant potential to introduce other novel organisms, you will need to outline your strategy for managing this risk.

Other ecological impacts

Comment on the potential for other impacts not referenced above (e.g. impact of fences on movement of non-target species).

3b Captive breeding animal or ex situ plant population

3b.1 Existing captive or ex situ populations

Provide details of existing captive breeding animal or ex situ plant populations, if any.

3b.2 Long-term objective

Justify the need to establish the captive breeding animal or ex situ plant population and identify the long term goals of the proposal, including indicative timeframes and the scale of the program (i.e. target number of individuals).

Proponents should detail how the captive breeding animal or ex situ plant population will contribute to this goal and to broader conservation of the species.

3b.3 Strategy

If an Animal Supplier's Licence has been obtained from DPI for this project, include that licence as an attachment with your proposal. If there is no Animal Supplier's Licence for the project, justify why that licence is not required.

In addition, provide the following information:

- rearing conditions (e.g. size of holding facility, provision of food and water)
- breeding strategy (how will reproduction be facilitated?). For animals and non-clonal/selfing plants, include information on genetic provenance.
- monitoring (e.g. what factors will be monitored to ensure the health of the population is kept optimal?)
- quarantine/biosecurity measures that will be enforced in the event of disease or pest outbreak
- genetic typing and management strategy (how will genetic diversity be estimated and maintained/increased?)
- for animals, will the population be exhibited, and, if so, have appropriate licences been granted by NSW DPI?

4 Objectives and targets

4.1 Objectives

Define the overarching objectives of the translocation (e.g. increase number of populations, increase population size, etc.). Proponents must specifically address how the translocation will reduce extinction risk.

If the translocation is experimental, proponents should include the research questions in this section.

4.2 Targets and criteria for success and failure

Identify the specific targets that will be met to help achieve the objectives.

Targets should consider the species' biology and ecology, the purpose of the translocation (e.g. conservation, research) and social acceptance of the actions.

These should be broken down into short term and long term targets. (Definitions of timeframes will be species and project-dependent.)

Targets should be specific, measurable, attainable, relevant (to the objectives) and timely. They should also include measurement techniques for survival, growth and reproduction of their offspring.

If the translocation is experimental, the targets may relate to the experimental process, rather than conservation outcomes.

With respect to the targets, identify clear criteria for success of the project. Those criteria may be broken down into short- and long term success.

Proponents should also identify clear criteria for failure. It may be useful to specify triggers for intervention to improve the trajectory of the project (i.e. away from failure and towards success).

5 Methods

5.1 Timeline

State the intended date and time of major activities relevant to this project (e.g. collection from source site, movement from captive breeding facility, release at recipient site, monitoring, etc.).

Provide justification for the timeline with reference to seasonality, weather conditions, availability of resources, risk of fire and flood, population dynamics, etc.

5.2 Capture, holding, transport and release

Describe the methods of capture, holding, transport and release. Identify which team members will be undertaking each task and highlight their relevant experience (a veterinarian should be involved, especially if drugs are to be administered). Include provisions made to minimise stress, maximise welfare, prevent transmission of pathogens, and increase overall survivorship, as well as what welfare indicators will be monitored. If animals are to be held in cages or on substrate, describe those here.

Identify potential triggers for quarantine to reduce the likelihood of pests/diseases spreading between the organisms to be translocated and throughout the recipient site.

Proponents should consider whether there are post-release support needs to promote self-sufficiency in the translocated animals (e.g. nest boxes, supplementary feeding).

For captive bred animals, describe any pre-release strategies to increase survivorship, such as acclimation and behavioural training.

Plants

Describe how materials will be collected/propagated (including simulated climate conditions, where appropriate), proposed watering regime (if any), and the planting design. Detail phytosanitary measures that will be taken to avoid pathogen (e.g. *Phytopthora*) impacts.

Release/planting site

If the area is to be fenced, explain what alternative options have been considered, and why fencing was determined to be appropriate. Explain how the fence design considers the conservation objectives of the project. Describe the structure of the fence, the area to be fenced, non-target impacts and who will be responsible for ongoing maintenance. For plants, describe any tree guards (or similar) to be used.

5.3 Monitoring

Describe the monitoring strategy. Include:

- objectives
- methodology (including who will undertake monitoring)
- frequency and duration of surveys
- what you will be monitoring and why (if there is no intention of undertaking genetic monitoring, justify why it does not need to be undertaken)
- any other relevant information.

To thoroughly and accurately assess the outcomes, benefits and impacts of the translocation action, proponents should consider implementing a Before–After, Control–Impact (BACI) monitoring/sampling regime.

5.4 Pest and disease management

Identify relevant quarantine/biosecurity/hygiene procedures that will be undertaken to reduce the introduction or spread of associated pests and pathogens (these can be taken from the disease risk assessment at 1.10). State who will implement those procedures and describe their relevant experience and/or qualifications, where appropriate. This should include post-capture/collection screening procedures, measures to prevent transmission from and to translocated individuals, and treatments to be applied at any stage of the project.

5.5 Genetic management

For animal translocations, describe how population genetic data will be captured in your monitoring strategy. Identify potential actions to address pervasive inbreeding and loss of genetic variation. This is particularly important for translocations into predator-proof exclosures.

5.6 Research questions or opportunities

Outline identified or potential research questions to be addressed by the project.

As in 5.3, consider if a BACI approach is appropriate.

5.7 Assumptions and limitations

Describe the assumptions and limitations of the translocation.

6 Project management

6.1 Roles and responsibilities

Outline the roles and responsibilities of project team members listed at 1.2.

6.2 Volunteer, contractor or community engagement

Provide details of any external parties engaged in the translocation. Any individuals directly involved in translocation actions will need to be listed as an associate on relevant biodiversity conservation licence applications.

6.3 Evaluation

Detail when/how project evaluation will take place. Evaluation should consider the methods used to meet proposed targets, how they were implemented, whether they were successful in meeting targets, and lessons learned. Evaluation results should be included in relevant reports provided to the department.

6.4 Reporting

Define the frequency of reporting to the department. State whether there is an intention to publish the outcomes in a scientific journal. If there is no intention to publish outcomes, a final report will be submitted to the department.

6.5 Contingency plan and exit strategy

Describe what will be done if the project fails to meet the targets at Section 4.2.

Identify when and how project success/failure will be declared (acknowledging that success may take 10+ years to determine for some species), and any management strategies to be applied thereafter (if applicable).

Identify any triggers for review of the project, as well as the process for determining whether to initiate the exit strategy.

Proponents should identify what they intend to do with animals under the exit strategy (including how they intend to maintain the welfare of the animals). Those actions should be agreed by an animal ethics committee.

6.6 Budget

Attach a budget that includes:

- item description
- budgeted cost
- funding source.

Proponents must demonstrate they have considered all likely costs, including (as relevant) community engagement, transport, materials, expert advice, staffing, etc.

6.7 Funding

Identify all current sources of funding (cash and in kind).

Describe the strategy to be used to source funds in the future (e.g. potential funding sources, outreach). Proponents should include a costed action plan.