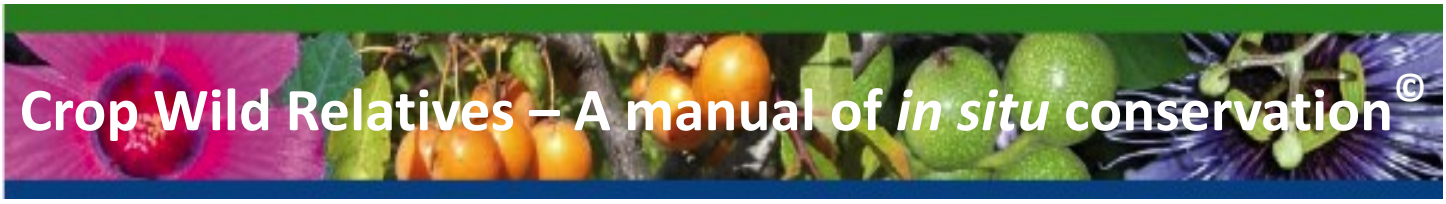

Species and population management/recovery plans

The aims and purpose of species management or recovery plans

Actions taken to ensure the maintenance of viable populations are referred to as species management, conservation or recovery plans. In situations where a species is not threatened or endangered, little or no management intervention may be necessary, given that the habitat is secure. However, it is likely that global changes will continue to put pressure on habitats and many species which are today regarded as safe will become threatened.

KEY DEFINITIONS

Species Conservation Statement:
A statement summarizing the situation of a given species which is currently not threatened or endangered and exists in a secure habitat.

Species Conservation Strategy (SCS):
A blueprint for saving a species or group of species, across all or part of the species' range.

Recovery Plan:
A document stating the research and management actions necessary to stop the decline, support the recovery and enhance the chances of long-term survival in the wild, of a stated species or community of protected wildlife.


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COMPONENTS OF A SPECIES CONSERVATION STRATEGY

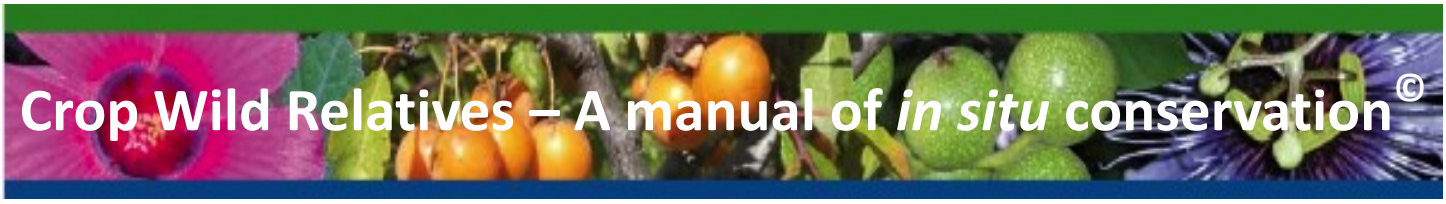
The Species Survival Commission of the International Union for Conservation of Nature (IUCN) has published a handbook for Strategic Planning for Species Conservation, primarily intended to provide guidance to IUCN/SSC Specialist Groups on when and how to prepare and promote Species Conservation Strategies (SCSs). A SCS should contain a status review, a vision and goals for saving the species, objectives that need to be met to achieve the goals, and actions that will accomplish those objectives'[1].

1 - IUCN/SSC (2008) *Strategic Planning for Species Conservation: A Handbook*, Version 1.0, International Union for Conservation of Nature (IUCN) Species Survival Commission, Gland, Switzerland.

The challenge for those involved in CWR conservation is to draw on accumulated experience and adapt it to the special requirements of genetic conservation.

An overview of *in situ* conservation management

Until recently, the majority of experience in *in situ* species conservation has been obtained from recovery plans for threatened or endangered wild species undertaken by a number of European countries, Australia, New Zealand and the United States. For the most part, these recovery plans do not refer to species of agrobioversity interest and focus on the survival and recovery of viable populations rather than genetic conservation. The genetic resources sector has focused its attention mainly on *ex situ* conservation and its involvement in *in situ* conservation has been largely in the area of 'on-farm' conservation of landraces. In addition, the experience of the forestry sector in *in situ* conservation has not been fully acknowledged.



SPECIES MANAGEMENT VS. AREA MANAGEMENT

Effective *in situ* conservation of a target species is dependent on the secure and effective management of the area(s) in which it occurs, yet management interventions at the population/species level differ from (and sometimes in conflict with) those needed to maintain the area(s) themselves are required.

If the protected area in which a species occurs is extensive with many populations occurring in it, management of the area may require different actions than that of the species. If the area is small with limited populations, the species and area management requirements are likely to coincide. It is important to remember that if the target species is threatened, its presence in a protected area will not, in itself, ensure its protection unless the factors causing it to be threatened are addressed.

SINGLE-SPECIES VS. MULTI-SPECIES PLANS

Genetic reserve conservation has tended to focus more on groups of species occurring together in selected areas rather than on single target species. The scientific rationale behind the use of multi-species plans is based on the assumption that target species share the same or similar threats.

However, the effectiveness of multi-species recovery conservation programmes for CWR has yet to be sufficiently assessed. Some evidence suggests that their effectiveness is limited as insufficient attention is given to individual species, yet there is too little experience in the case of CWR conservation to judge the relative effectiveness of single- versus multi- species approaches.

Strengths and weaknesses of multi-species approaches

Strengths [2]

- Addresses common threats in concisely;
- Streamline the public consultation process;
- Reduces duplication of efforts;
- Provides a good format for environmental impact statements;
- Promotes thinking on a broader scale;
- Reduces conflicts between listed species that occur in the same area;
- Provides an approach that can restore, reconstruct or rehabilitate the structure, distribution, connectivity and function upon which a group of species depends.

Weaknesses[3]

- Less likely than single-species plans to include species-specific biological and ecological information and adaptive management criteria;
- Grouping of species may not be based on any biologically logical criteria;
- Species included in multi-species plans have been found to be four times less likely to exhibit positive status trends.

2 - Canadian Wildlife Service (2002) Special report: *Custom-designing recovery. Recovery: An endangered species newsletter*, Canadian Wildlife Service, http://www.speciesatrisk.gc.ca/publications/newsletter/june02/rec21e.pdf.

3 - Kooyman, R. and Rossetto, M. (2008) 'Definition of plant functional groups for informing implementation scenarios in resource-limited multi-species recovery planning', *Biodiversity and Conservation*, vol 17, pp 2917-2937.

CASE STUDY: Preparation of a species management plan in Armenia

A fully detailed management plan for the Erebuni Reserve has been prepared and its action plan includes both habitat and species management actions. A management plan for the selected priority cereals (*Triticum boeoticum, T. araraticum, T. urartu, Aegilops tauschii*) was also developed with participation from the following state agencies: Ministry of Nature Protection, Ministry of Agriculture, Institute of Botany, Yerevan State University and Armenian Agrarian University. The main institutions involved in conservation activities in Armenia were asked to nominate experts to be engaged in the plan's development process. A number of meetings were held before and during the preparation process and a draft was sent for comment to the aforementioned institutions for feedback. Comments were received and discussed before amending the draft. The draft plan has been presented through the Aarhus Convention Centres[4] in Armenia to local communities for further consideration and feedback.

4 - Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matter

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RECOVERY PLANS

Recovery is the process by which the decline of an endangered or threatened species is arrested or reversed, and threats removed or reduced so that the species' long-term survival in the wild can be ensured. Recovery plans are used to stabilise existing populations, rejuvenate populations and reintroduce endangered species to locations similar to where they previously existed.

The goal of a recovery plan is to return target species to levels where protection is no longer necessary

Recovery actions are often challenging and costly and involve management actions that may need to be carried out over a number of years. Methods used to recover threatened target species include:

- protective measures to prevent extinction or further decline;
- consultation to avoid adverse impacts of existing activities;
- habitat acquisition and restoration; and
- on-the-ground activities for managing and monitoring species' populations.

A species recovery plan should include:

- A description of the species' current situation, including any relevant scientific data;
- A recovery objective (for example, a target population number), and a list of criteria for indicating when the objective has been achieved;
- The detailed actions required to secure the species;
- Implementation procedures using scientific techniques;
- Organisations that will play a part in the recovery process;
- An implementation schedule, including priorities of tasks and cost estimates.

Examples of recovery plans:

- U.S. Fish & Wildlife Service Threatened & Endangered Species System website: http://endangered.fws.gov/recovery/index.html#plans
- New Zealand: Conservation and recovery profile for Haloragodendron lucasii; http://www.environment.nsw.gov.au/resources/nature/

Conservation management/action plans

Conservation management plans should be prepared for those species requiring some form of management intervention to ensure the continued maintenance of viable populations. The plans are similar to species recovery plans, but the degree or intensity of management intervention is not as high, reflecting the lower degree of threat to the population(s).


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STAKEHOLDERS

The successful preparation and implementation of a management plan will involve a wide range of stakeholders. The local population must be fully consulted and involved to ensure their interests and concerns are considered.

An increasing focus on community-based conservation initiatives reinforces the emphasis that the broad participation of those most affected by such conservation and management interventions is required for success.

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It is critically important to agree on, and include in the management plan, a statement on what its objectives are and how these will be achieved. This will reflect the key decisions made on which populations and how many will be included in the management plan, as well as how many individuals are needed to ensure a minimum viable population. A management plan may be short and concise or extensive and quite lengthy. Ideally, it should contain photographs or other illustrations of the plant species and its habitat, maps and other graphic material.

Management and planning challenges may arise if a species occurs in more than one jurisdiction. Various laws and of the different jurisdictions and different planning cycles, must be considered to achieve co-ordinated conservation action (Rogers 2004). The successful implementation of a management plan may take many years to achieve, and it is useful to include both short-term (3–5 years) and long-term (25–30 years) objectives.

5 - Rogers, D.L. (2004) '*In situ* genetic conservation of a naturally restricted and commercially widespread species, *Pinus radiata*', *Forest Ecology and Management*, vol 197, pp 311–322.

COMMON FEATURES OF A SPECIES MANAGEMENT PLAN

- A description of the species, including its scientific name, essential synonyms, common names, its reproductive biology, phenology and its current conservation status;
- Ecogeographical information;
- The nature of the threats affecting the conservation status of the species;
- A summary of existing conservation actions;
- Detailed actions required to contain, reduce or eliminate the threats;
- Actions needed to safeguard and manage the site;
- Management objective(s) and targets (short-term/long-term);
- Statement on how it will be implemented and scientific techniques to be adopted;
- Identification of any policy or legislative actions that need to be undertaken;
- Identification of the lead agency or party and a list of the organisations that will play a part in the management actions;
- Arrangements for negotiation with site authorities and stakeholders regarding management interventions;
- An implementation schedule, including priorities of tasks;
- A detailed budget with annual cost estimates for the various actions involved;
- Monitoring programme and schedule;
- Arrangements for external reviews;
- Plans for communication and publicity.

FURTHER INFORMATION

In situ Conservation of Wild Plant Species
- a Critical Global Review of Good Practices

A useful overview of the concept and methodologies of *in situ* conservation for target plant species.

Download the publication:
http://www.cropwildrelatives.org/resources/publications/books

Source - Heywood, V.H. and Dulloo, M.E. [2006 (2005)]. *In situ Conservation of Wild Plant Species – a Critical Global Review of Good Practices*, IPGRI Technical Bulletin No. 11, FAO and IPGRI, IPGRI, Rome, Italy.