

Resource Manual for Global Species Management Plans



World Association of Zoos
and Aquariums | **WAZA**
United for Conservation[®]

Adopted at the 67th WAZA Annual Conference
on 3 October 2012 in Melbourne (Australia)

Modifications approved on 10 September 2015

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Vision

The global community of professional zoos and aquariums acts as increasingly important portals to nature as humans have dwindling access to wildlife experiences. Human impacts on wildlife and habitats continue to increase and it is imperative that the crucial work of professional zoos and aquariums adopts a global perspective. As regional association and institution members of the World Association of Zoos and Aquariums (WAZA) work to protect the future of their vital zoological populations, the professional zoo and aquarium community seeks also to maximise the collective impact of these efforts, across multiple regions, in building the long-term sustainability of wildlife populations. Maximising the collective conservation support these populations provide for the taxon in the wild is important as well. Thus, we are working together in a manner that builds upon, respects and optimises existing regional processes and furthers science-based, inter-regional collaboration among WAZA member zoos and aquariums in advancing the protection of humankind's wildlife heritage.

Scope

A Global Species Management Plan (GSMP) articulates an agreed plan for building the long-term sustainability of a zoological population. A GSMP is intended to provide a "Master Plan" that captures and documents the intent of all partners in the GSMP for a defined timeframe or until agreed milestones are reached. Typically (but not exclusively), the existence of an International Studbook dataset forms the basis of a GSMP; however, this does not preclude the existence or utilisation of regionally based studbooks in supporting a GSMP.

Optimally, a GSMP should be described in a concise and uncomplicated document that formalises a series of clear goals and agreements to which the partners of that GSMP agree or aspire to achieve within the lifespan of the GSMP, with an underlying goal of increasing the long-term sustainability of zoological populations. The implementation of the GSMP typically utilises the current regional personnel and processes (regional coordinators and advisors as well as regional reporting templates).

The partners of the GSMP may elect, at their discretion, to manage the population at the appropriate level, where the overriding benefit to all partners is demonstrated (e.g. providing guidance at either the individual animal or regional population level). The reporting should include all relevant data that satisfy the requirements of all regions involved and such requirements should be established as part of the GSMP.

Cooperation in the GSMP can range from a series of aspirations to a formal Memorandum of Understanding on specific goals and commitments. The scope and flexibility of such agreements is up to the partners of the GSMP to establish. Essentially, the GSMP relies on the goodwill of the partners to follow through on agreements; however, more formal arrangements where finances or significant staff resources are being committed would constitute sound business practice. GSMPs are held under the auspices of WAZA.

Role of Associations and Institutions

WAZA (Committee for Population Management)

- Promotes the strategic value of GSMPs to the regional associations
- Identifies potential species for GSMP development and provides feedback to the regional associations

- Receives applications for GSMPs and endorses as appropriate
- Maintains a database of GSMPs, monitors targets and reports progress to the WAZA membership

Regional Associations (Taxon Advisory Groups)

- Promote the strategic value of GSMPs to the membership of the respective regional association
- Assist wherever possible the hosting role (Master Planning workshop and Convenor position) for GSMPs where the host region is the principal holder of the target species or current International Studbook holder
- Develop and submit applications for GSMPs where the outcomes of a strategic alliance between multiple regions can demonstrate greater sustainability or conservation deliverables than a single-region approach

Institutions

- Promote the strategic value of GSMPs to the staff of the respective institution
- Support wherever possible the hosting role for GSMPs where the institution has a significant interest in the target species or is the current International (or regional) Studbook holder
- Contribute to the development of applications for GSMPs where the outcomes of a strategic alliance between multiple regions can demonstrate greater sustainability or conservation deliverables than a single-region approach

Procedures: Application, Master Plan and Reporting

Application

To develop a GSMP, there is an application process by which species where the outcomes of a strategic alliance between multiple regions can demonstrate greater sustainability or conservation deliverables than a single-region approach are considered for endorsement by WAZA through its Committee for Population Management (see Appendix, page 5). The proposed partners of the GSMP nominate a Convenor among them who agrees to follow the procedures outlined here, and who is responsible for collating the various achievements against the goals of the GSMP throughout its lifespan and providing feedback to the partners of the GSMP via the regional associations under the WAZA umbrella.

The nominated Convenor works with the regional coordinators to develop the GSMP application. Once the application is complete, the nominated Convenor submits the application to the regional representative on the WAZA Committee for Population Management. This representative seeks endorsement for the application from the proposed partners of the GSMP and, once endorsed, submits the application to the WAZA Committee for Population Management for review and approval (by majority vote). The WAZA Committee for Population Management endorses the Convenor at the time of GSMP approval (subject to the host institution agreeing to support the Convenor in the position).

Whenever there is a change in the Convenor position, preference is given to a candidate from the host institution or a current GSMP committee member. The vacancy is also advertised to the regional associations participating in the GSMP. The new Convenor is endorsed by the WAZA Committee for Population Management.

Master Plan

Within one year of GSMP approval, the partners of the GSMP hold a Master Planning workshop (face-to-face or virtual) organised by the Convenor. Within six months of this workshop, a Master Plan is produced by the Convenor and the partners of the GSMP. The Master Plan formalises and documents a set of globally agreed strategies to deliver sustainable species management outcomes, utilising existing regionally based processes (see Appendix, page 7). To participate in a GSMP, an institution must be a member of (or partner with) a regional association that is represented on the WAZA Committee for Population Management and which is participating in the GSMP. The Master Plan is submitted to the WAZA Committee for Population Management for review and approval (by majority vote). Once approved, the partners of the GSMP implement the Master Plan.

Each Master Plan is tailored for individual species and purposes, but should consider the following sections (noting that each section must identify the deliverables as well as a timeframe and person or entity responsible for each). In addition, each deliverable should be labelled as an “agreement” (mandatory) or an “aspiration” (non-mandatory):

- Convenor; other officers as needed
- Participating partners (including ability for new partners to enter)
- Primary role and benefits of the GSMP, including any conservation roles
- Taxonomic unit
- Single or multiple datasets (International or regional studbooks)
- Management unit (single or multiple)
- Genetic strategy (including key founder movements)
- Demographic strategy (where possible establish target population size)
- Individual animal ownership (within the ongoing practices of the regions involved)
- Minimum standards of communication and reporting between the regions involved
- Research, education and conservation potential
- Exit strategy (i.e. discontinuation procedure for GSMP and individual partners)

Reporting

Once the Master Plan has been produced, reporting on GSMP progress is in the form of a simple “Annual Executive Summary” style report. The Convenor is responsible for this output, which is submitted to the partners of the GSMP for review and approval. Once approved, the Convenor submits the report to the WAZA Committee for Population Management at the end of March each year for dissemination to the WAZA membership.

The Annual Executive Summary is a report of progress against Master Plan goals (based on calendar year). As standard features, it includes the demographic and genetic status of the regional and global populations over time; a summary of progress over the past calendar year (animal transfers, other actions such as training, collaborations, *in situ* project support, etc.); and recommendations for the current calendar year (same as above).

Step-by-Step Process

1. Proposed GSMP partners nominate Convenor
2. Nominated Convenor and regional coordinators develop application
3. Nominated Convenor submits application to regional representative on WAZA Committee for Population Management

4. Regional representative on WAZA Committee for Population Management seeks endorsement from proposed GSMP partners
5. Regional representative on WAZA Committee for Population Management submits application to WAZA Committee for Population Management for review and approval (including Convenor position)
6. Convenor organises Master Planning workshop with GSMP partners (within one year of GSMP approval)
7. Convenor and GSMP partners produce Master Plan (within six months of Master Planning workshop)
8. Convenor submits Master Plan to WAZA Committee for Population Management for review and approval
9. GSMP partners implement Master Plan
10. Convenor produces and submits Annual Executive Summary to GSMP partners for review and approval
11. Convenor submits final Annual Executive Summary to WAZA Committee for Population Management (until end of March each year)
12. WAZA Committee for Population Managements disseminates Annual Executive Summary to WAZA membership

Application Form

Overview

For which species is the GSMP proposed?	<i>State scientific and common name</i>
Why is the GSMP proposed?	<i>Describe anticipated key benefits and advantages to the species and proposed partners</i>
What is the species' conservation status (globally and regionally) and range?	<i>State and provide website link(s) (refer to IUCN Red List of Threatened Species)</i>
Are there any current <i>in situ</i> conservation activities for the species?	<i>Describe briefly and provide website link(s) where possible</i>
Will any of the proposed partners in the GSMP be range state partners?	<i>List range state partners; if none, explain how range state involvement is considered</i>
Who are the proposed partners in the GSMP and what are their current goals?	<i>For each region involved, provide current management level, year established and goals</i>
Are there any active studbook datasets for the species and what is their status?	<i>Provide studbook keeper(s), breeding programme coordinator(s) and currentness of International and/or regional studbook dataset(s)</i>
What is the proposed taxonomic unit and why?	<i>State species, subspecies or provenance (where subspecies or provenance is selected, a thorough rationale and the proportion of the overall population that would be part of the GSMP must be provided)</i>
What is the current genetic and demographic status of the species in human care?	<p><i>Provide the following data from the International and/or regional studbook(s) if existing:</i></p> <ul style="list-style-type: none"> • <i>Current management unit and population size (males.females.unknown)</i> • <i>Current age structure</i> • <i>Current and potential founders</i> • <i>Current and potential gene diversity</i> • <i>Current mean inbreeding coefficient</i> • <i>Current average mean kinship</i> • <i>Percentage of pedigree known</i> • <i>Current genetic and demographic statistics for all regional populations (where not managed, include current population size and identify if any are of wild-caught origin)</i> • <i>Regional target population sizes if established</i>
Is the species approved for import and export between the proposed partners in the GSMP (at a legislative level)?	<i>State appropriate legislation and/or provide website link(s)</i>

Are founders or their offspring available from legitimate sources in their range state?	<i>State specifically, noting that wild-caught animals listed in CITES Appendix I are generally not available for export in all but the most exceptional of circumstances</i>
Are there any issues specific to the species that have implications for management (e.g. disease, transport or husbandry expertise)?	<i>Describe if any</i>

Commitments

Which region involved is prepared to support a Convenor position and at which institution will the Convenor be based?	<i>Add summary of comments</i>
Who did the proposed partners of the GSMP nominate as Convenor?	<i>Add name, postal address, e-mail, phone and fax of nominated Convenor</i>
Which region involved is prepared to host the GSMP Master Planning workshop (face-to-face or virtual)?	<i>Add summary of comments</i>

Consultation and endorsement

This endorsement is undertaken on the basis that each regional representative in the GSMP is responsible for liaising with their respective Taxon Advisory Groups. The regional association's representative on the WAZA Committee for Population Management confirms that regional population management procedures were consulted and that the nominated Convenor and/or regional representative in the GSMP have an appropriate level of institutional support.

Region involved	Regional representative on WAZA CPM	Comments (e.g. support for nominated Convenor)	Endorsement date
Etc.			

Furthermore, the support of those stakeholders that are not represented on the WAZA Committee for Population Management but are relevant to the GSMP should be obtained if possible (including support from other relevant organisations).

Region or country	Contact person	Reason for inclusion in GSMP	Letter of support?
Etc.			

Master Plan Template

Title page

Add logo of WAZA GSMP (and authors' institutions, optional)

WAZA (add name of taxon) Global Species Management Plan (add year)

Add photo of taxon

Add logos of regional associations and/or partners participating in the GSMP

Overleaf

WAZA (add name of taxon) Global Species Management Plan (add year)

Report of the (add year) GSMP meeting (add date and location of meeting)

Prepared by (add authors and authors' institutions)

Citation (add citation)

Vision of GSMP

Add a vision statement for the GSMP, outlining its purpose or justification – see example text below:

The (add name of taxon) Global Species Management Plan (GSMP) brings together all *ex situ* partners managing (add name of taxon) to promote international collaboration for ensuring the long-term survival of the (add name of taxon). To achieve this vision, the (add name of taxon) GSMP supports activities that... (add activities).

Purpose of the *ex situ* programme

Add a description of what roles the *ex situ* population can or will play, including any direct or indirect contributions to conservation, such as serving as an assurance population, a source population for supplementation, research population, etc.

GSMP committee members and advisors

GSMP Convenor	Add name and institution
Regional (add acronym) coordinator	Add name and institution
Population management advisor	Add name and institution
International studbook keeper	Add name and institution
(Add regional acronym) studbook keeper	Add name and institution
Field conservation advisor (if required)	Add name and institution
Other advisors as needed (e.g. veterinary)	Add name and institution

Executive summary

Add executive summary (not more than one page)

Scope and administration of GSMP

Taxon	Add scientific and common name
GSMP Convenor	Add name and institution of Convenor
Region	Add region of Convenor
Contact details	Add postal address, e-mail, phone and fax of Convenor
Scope of programme	Add scope of programme

Role of programme	<i>Add role of programme</i>
Representatives (GSMP committee)	<i>Add name of representatives, with institution in parentheses, and terms of replacement</i>
Additional advisors	<i>Add name of advisors, with institution in parentheses</i>
New regions joining process	<i>Add requirements for new joining regions</i>
GSMP decision making process	<i>Add requirements for decision making process</i>
GSMP Convenor and advisor positions	<i>Add schedule for review of these positions</i>
Global dataset responsibility	<i>Add name of ISB keeper or other individual responsible for maintaining a current dataset, and process for keeping it up to date</i>
Implications for regional management processes	Regions have several points of reference for decisions regarding breeding, transfer, contraception, etc., including not only the needs of their region but also the needs of other regions and of the global population. The GSMP will provide tools and information to allow consideration of these needs (regional needs, current global mean kinship list, etc.)
Animal ownership (non range state)	<i>Add ownership requirements</i>
Animal ownership (range state)	<i>Add ownership requirements</i>
Terms of transfer (non range state)	<i>Add specific terms</i>
Terms of transfer (range state)	<i>Add specific terms</i>
Institutions leaving a regional association	To be dealt with in the respective region
Lifespan of GSMP	<i>Add lifespan</i>
Date report prepared	<i>Add day/month/year</i>
Reporting schedule	<i>Provide Master Plan to WAZA CPM for endorsement, global dataset annually to GSMP partners, full report after each meeting and Annual Executive Summary to GSMP partners and WAZA CPM</i>

Promoting viable *ex situ* and *in situ* populations

Describe threats to the wild population

*Describe how the *ex situ* population can potentially contribute to the viability of the wild population (see IUCN Guidelines on the Use of Ex Situ Management for Species Conservation)*

*Describe past and ongoing activities, programmes, etc. that involve the *ex situ* community in the conservation of the taxon*

Regional and global population goals

Add population goals

Add graph of gene diversity for regional populations (taken from PMx)

Add graph of gene diversity for global metapopulation (taken from PMx)

Add population management strategy for helping to achieve these goals

Regional and global programme needs

The following programme needs were identified by each regional representative at the GSMP Master Planning workshop that will assist in meeting regional and GSMP goals:

Needs (<i>list as appropriate</i>)	<i>Add region</i>	<i>Add region</i>	<i>Add region</i>	<i>Add region</i>
Population				
Husbandry/veterinary				
Research/data sharing				
Training				
Educational materials				
<i>In situ</i> support/fundraising				

Identify what each region can provide in terms of helping to meet these needs, including potential collaborations

Demographic and genetic status of *ex situ* populations

	<i>Add region</i>	<i>Add region</i>	<i>Add region</i>	GSMP
Number of holding institutions				
Total population size <i>N</i> (males.females.unknown)				
Number excluded from genetic analysis*				
Genetically managed <i>N</i>				
Number of current founders				
Number of potential founders				
Founder genome equivalents				
Gene diversity (%)				
Potential gene diversity				
Mean inbreeding coefficient				
Population mean kinship				
Ratio N_e to <i>N</i>				
Pedigree known (%)				
30-day mortality (males and females)				
Population growth rate (specify relevant timeframe)				
Generation time				

*permanent non-breeders due to age, sterilisation, hybridisation, unknown pedigree, etc.

Add demographic status information for each region and for the total GSMP population

Add age pyramid for living population

Add graph of population growth rate

Add graph of survivorship

Add graph of fecundity

Add genetic status information for each region and for the total GSMP population
 Add graph of founder contribution by region
 Add matrix of mean kinships between populations (taken from PMx)

Potential additional source populations

Add additional ex situ populations not currently part of the GSMP if appropriate; these could be in zoos, aquariums or other ex situ facilities
 Add status of cryopreserved biomaterials if appropriate; especially important to include gametes in a genome resource bank as potential genetic sources
 Add information about projected availability of new founders from the wild

Recommended select breedings and transfers (optional, as appropriate)

Add information about priority animals for breeding to increase gene diversity
 Add potential exports from country of origin to other regions
 Add suggested transfers outside country of origin

Add table with completed transfers (or those in progress) from previous GSMP meetings

Sex	Studbook number	From	To	Date of transfer

Add table with recommended future transfers

Sex	Studbook number	From	To	Change in gene diversity (donor population)	Change in gene diversity (recipient population)

Add table with cumulative impact of recommended transfers on population size and gene diversity

Region	Population size: before and after	Gene diversity (%): before and after

Add additional needs of regions or other recommendations if needed

Global ranked mean kinship list

Solid line indicates population mean kinship (add number); breeding animals above this line increase global gene diversity, breeding below the line decreases global gene diversity
 Add table of global ranked mean kinship list (including date when calculated)

Research/husbandry/veterinary (add others or delete as appropriate) needs and potential collaborations

Add general information
 Add objectives of study

In situ conservation support (optional, as appropriate)

Add general information
 Add map with regional zoo and aquarium support for taxon (if available)
 Add suggestions and recommendations for future support

Approval

This GSMP Master Plan has been reviewed and endorsed by the representatives of the following regions involved:

Region involved	Regional representative	Endorsement date
Etc.		