IUCN

SSC
Species Survival Commission

CONSERVATION PLANNING SPECIALIST GROUP
Changing the Future for Wildlife

CPSG 2020 ANNUAL MEETING

BRIEFING MATERIALS

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Assessing to Plan (A2P) training session

Aim

To provide professionals involved in the IUCN Red List assessment process and/or species conservation planning with a sound understanding of the Assess to Plan (A2P) process and the various stages of the Assess-Plan-Act framework at which it can be brought in and applied to conservation planning for multiple species.

Background

The IUCN SSC advocates an Assess-Plan-Act framework for ensuring that threatened species receive adequate conservation attention and for helping prevent the decline of species not yet threatened.

Planning the recovery and conservation of individual species plays an important role in this, especially where those species can operate as "umbrellas" for other taxa. However, resources are scarce and the number of species requiring action is large. Therefore, planning approaches are also needed that simultaneously address the conservation needs of multiple species, by targeting for example, species that inhabit the same areas, and/or rely on the same, specific habitats and/or are impacted by common threats.

The Assess to Plan (A2P) process is designed to move multiple species rapidly to effective action, by identifying groups of species with characteristics that have overlapping conservation needs that can be planned for and acted on together.

The IUCN Red List database includes the required level of species-specific data for creating good multi-species groupings for planning and action. It covers geographic distribution, habitats and ecology, threats, and recommendations for conservation action needed. These data can be freely accessed, one species at a time, from the IUCN Red List website. Planning the conservation of multiple threatened taxa benefits from viewing these data across many species at once, to help identify those likely to benefit from the same kinds of conservation activity performed either in the same places or involving the same groups of stakeholders. The Assessing to Plan (A2P) process and associated A2P matrix have been developed to support this.

A2P uses analyses of IUCN Red List data and the input of local specialists, to identify next steps towards action for these groups, and the individuals or agencies best placed to take it. It is designed to work either as an integral part of the IUCN's Red Listing framework—combining Red List workshops with the A2P process, where possible—or as a stand-alone process for groups of species with existing Red List assessments. A2P may also be integrated with the Key Biodiversity Area assessment process and other conservation planning initiatives. A2P helps ensure key stakeholders, collaborators, and resources are targeted efficiently, and that otherwise poorly known or lower-profile species receive the attention they need.

Process

The training session will take 6 hours and will involve a mixture of presentations, case studies, interactive discussion and activities covering the following topics:

- **Introduction to the Assess to Plan Process** and the A2P planning pathways, A2P species bundles and next steps
- **The IUCN Red List assessment process**, the IUCN Classification schemes and the IUCN SIS database

- **The A2P matrix:** development process, automation using *R*, and how the matrix can be used for consistency checking Red List assessments, to create useful species groups for further planning and for identifying the kinds of expertise required for productive planning discussions.
- **Combining A2P with Red List assessment review workshops**, with case studies.
- **Using A2P in the 'Preparing to Plan' phase of multi-species conservation planning** – including defining scope of project, with case studies
- **Combining A2P with other conservation initiatives**, with case studies including Key Biodiversity Areas and Amphibian Ark
- **A2P outputs** – design, audience, and implementation

Learning outcomes

On completion of this A2P training, you will have developed a sound understanding of:

- What A2P is and why it is useful, including the concept of the A2P planning pathways and use of the A2P matrix
- The connection between Red Listing, A2P and multi-stakeholder conservation planning
- How to maximise the potential of Red Listing so assessments reach their full potential in terms of linking to and informing conservation planning; and for moving more species, more quickly, from assessing and into planning
- The various phases at which A2P can be brought into Assess-Plan-Act framework and recognise when and how A2P could be used in conservation planning
- The key elements that make A2P most successful
- The synergies between the A2P planning pathways and how they connect with other conservation planning groups and initiatives (e.g. Key Biodiversity Areas, Protected Areas networks, IUCN Red List of Threatened Ecosystems, disciplinary Specialist Groups and the *ex-situ* community)
- The future potential of A2P including conservation planning for multiple species across taxa within a defined geographic area
- Where to find examples of A2P and where to go for more information

Briefing Materials for the October 2020 Annual Meeting of

The IUCN SSC Conservation Planning Specialist Group:

Group Management Working Group

At present, particularly in *ex-situ* environments, population management for conservation purposes is typically conducted at the individual level: it relies on individual identifications, known pedigrees, mate-specific breeding recommendations, and individual manipulation to reach population goals. However, many species that live in schools, flocks, troops, colonies or similar groups cannot be managed effectively this way for behavioral, welfare, economic, or other reasons. For these species, the conservation community has yet to develop and implement a comprehensive system for group-based population management (or "group management" for short), which is population management (both *in-situ* and *ex-situ*) for taxa in which data may be collected and/or management actions conducted only on groups of organisms, rather than on specific individuals.

A concentrated effort to effectively tackle group management issues began in late 2019 and has continued throughout 2020. This Group Management Initiative (GMI) is using a collaborative process involving ~ 50 international population experts across diverse taxa to understand and organize existing tools and processes for group management, with the intent to eventually develop and implement new ones. Our vision is that we will effectively conserve all species requiring group-based population management, using the best available scientific information and tools. Over the coming year, we will be conducting a series of events and tasks to move us closer to realizing this vision, and we expect to incorporate new participants and to consult widely with the conservation community during this time.

Work on GMI began in earnest in early 2020, with small teams of experts collaborating virtually to develop a written synthesis for each of five thematic areas essential to group management: Data/Standards; Theory/Simulations; Process; Software Tools; and Molecular Tools. The scope of each synthesis is presented below. Each synthesis contained a summary of the current state of the art in that area, as well as the present challenges in that area preventing the conservation community from realizing our vision. An additional team of species experts developed taxon summary data sheets and presentations outlining the life history, management strategies, and challenges for eight diverse group-managed species. Focal species were selected to cover the taxonomic range likely to benefit from improved group management, including a representative mammal, bird, amphibian, fish, insect,

mollusk, coral, and plant species. These species will be used as test cases for future tools and processes developed by GMI.

On 26 and 27 August 2020, 54 GMI participants in the synthesis teams met virtually for our first plenary sessions as a group, in order to finalize our shared vision, to present findings in these five thematic areas, and to begin the process of understanding how challenges and gaps in these areas may interrelate. Focal species experts attended in order to consider how the practical problems presented by their species might be aided by recent advances in these areas. These workshop discussions, along with the more detailed written syntheses, will support GMI experts in the next steps of identifying challenges and connections across areas, and developing concrete goals to address those challenges, during September and beyond.

During the 2020 CPSG Annual meeting, an overview of GMI work to date will be presented and discussed in a working group session, when we will also continue work building a conceptual diagram of the interactions and drivers of the challenges and gaps in the thematic areas. Useful contributors to the October workshop session may include practitioners who have a need for group management in their conservation work, as well as experts in any of the thematic areas, or other areas relevant to group management. Our aim with this workshop session is to consult with stakeholders worldwide; obtain feedback to validate, expand, and improve work completed to date; and identify additional allies committed to helping move our vision forward.

Introduction to the thematic areas

The only existing proposed system for diagnosing and classifying a population's potential group management needs, developed following 1998 and 2002 workshops at the Zoological Society of London and Woodland Park Zoo, respectively, is based on the individual-level data available in five areas for the taxon of interest. Our introductory work consisted of using this system to classify 17 cases in which group management was applied to different taxa, and examining how classification results related to the type of management recommended or implemented. We found that that this system did not clearly identify clusters of cases with similar management. These findings may reflect limited or biased sampling, incomplete information from gray-literature sources, or inappropriate application of management strategies – but they also suggest that additional salient factors may influence the type of population management that should or could be applied. Future work will include expanding classification to additional cases, but because developing an improved system for diagnosing and meeting group management needs presents a set of complex interacting challenges, we suggest that

standard scientific approaches to solving these challenges may be less successful than a collaborative and multi-stakeholder approach. Below are the five thematic areas in which we organized ourselves therefore to commence this collaborative work.

Data/Standards

The Data/Standards theme focused on developing best practice recommendations for data collection and record-keeping that can accommodate all commonly used group events such as merges, splits, and incorporation of new individuals. We reviewed previous standards and recent advances in group data management, and explored the open questions and problems that persist in this area. We used data from the Focal Species team as test cases in developing guidelines and data standards. Creating global data input standards will support the Software Tools thematic area as they collaborate on tools, techniques and procedures that rely on standardized data.

Software Tools

The Software thematic area investigated how software tools can better meet group management record-keeping, analysis and planning needs. The group explored efficacy gaps in existing tools, potential adoption of software from related fields, and how new technologies may improve group management outcomes. Information gathered will be used to describe ideal software solutions to allow studbook keepers and biologists to accomplish their group management goals. Although this area is intimately related with the Data/Standards theme, we restricted ourselves to considering the software itself, and not data inputs for it. Further specifying where the delimitation between these areas should fall precisely was the focus of initial work in these two thematic areas, and was shared quickly between them, to minimize duplicated effort.

Molecular tools

The Molecular Tools theme considered the generation and application of molecular data to inform and improve group-based population management. Work included a review of existing guidance on how to effectively use molecular tools for group management, from sampling design, through analytical options to data analysis and interpretation, and the identification of open challenges and questions in these areas. We emphasized practical applications, with approaches ranging from the empirical validation of theoretical models, through to comprehensive molecular genetic analysis within breeding populations, and the use of molecular data as a post-hoc monitoring and evaluation tool. An

overarching objective was to maximise the management value of molecular genetic data while minimizing the resources required for its routine delivery and implementation. We found the need for particularly close cooperation between the Molecular Tools and Theory/Simulations thematic areas.

Theory/Simulations

In spite of advances in recent decades, preserving genetically and demographically healthy populations remains challenging when it is difficult or impossible to keep records on individuals. The Theory/Simulations thematic area reviewed the state of the art in the theory underlying current methods and breeding schemes, and the methods and applications of testing this theory, focusing on population viability assessed as a function of alternative population structures and sizes, exchange rates, and decision rules (random or informed) for guiding exchanges. We identified areas where theory remains lacking, and fundamental theoretical problems remain to be solved, for example, program viability may be assessed as a cost-benefit analysis of population viability and the welfare, financial, logistical, and other impacts of different management strategies. Throughout this work, we focused on those life history patterns, social needs, standing genetic diversity levels, time-frames, and available resources for management that are relevant to current conservation breeding or translocation programs, and particularly to the Focal Species selected by that thematic area. Because stochastic processes are key drivers affecting the outcome of different theoretical approaches, once problem-solving begins, we plan to use simulations as an evaluation tool for predefined and theory-based management schemes with high potential. Integrating different genetic sampling strategies, this thematic area has close links to the Molecular Tools theme, but also depends on inputs from other teams, including information bridging the gap between theory and practice (e.g., presence and accuracy of data on biological parameters or institutional decision making).

Process

The Process thematic area focused on the professional (i.e., individual practitioner-level) and institutional decision-making structures and work systems for applying group management (such as the BTP process in AZA and the EEP/LTMP process in EAZA, among others). This included the procedures for classifying group management types and problems, via decision trees and other tools, as well as the actors and their various roles. Parts of this process were elicited by reaching out to practitioners who have executed group-based population management, examining what their thought processes were, and what different factors they consider relative to more ‘standard’ planning processes. Our aim is to

develop a clear set of factors to consider, different values of which might lead to different population management 'bins', building off of earlier work. Outcomes for this thematic group might include a list of important factors, a decision tree, a set of frameworks for population management, and/or a manual for conducting management.

Focal Species

The Focal Species theme focused on learning from, and building off of previous and contemporary examples of group-based population management. We explored previous cases in which group management has been attempted or implemented, reviewing examples from across the spectrum of group management types, and including as wide a range of taxa as possible. We focused on successes, difficulties and "lessons learned," and identified unanswered questions, consistent challenges, and future directions. Using our collective experience, we collaborated with the Data/Standards theme in also gathering and organizing relevant data needed in order to apply group-based management to a set of focal taxa during the course of GMI activities. These focal taxa included: elkhorn coral (*Acropora palmata*), Hawaiian vulcan palm (*Brighamia insignis*), partulid snail (*Partula hebe & tohiveana*), Lord Howe Island stick insect (*Dryococelus australis*), Montseny brook newt (*Calotriton arnoldi*), Mexican pupfish (*Cyprinodon longidorsalis & veronicae*), red siskin (*Spinus cucullatus*), and addax (*Addax nasomaculatus*). We ensured the participation of at least one expert per focal species, to provide taxon-level expertise in biology, conservation status and threats, husbandry, and institutional context, to guide the future development of population management strategies.

Participants to date

First name	Last name	Department, Organization	Location (City, country)
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Karen	Bauman	Saint Louis Zoo	St Louis MO, USA
James	Biggs	Zoo and Aquarium Association Australasia (ZAA)	Mosman, Australia
Mark	Bushell	Bristol Zoological Society	Bristol, UK
Taylor	Callicrate	Species Conservation Toolkit Initiative/ Chicago Zoological Society	Columbia MD, USA
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Valentina	Cedeño	Direction of Conservation Actions, Provita, Venezuela	Caracas, Venezuela
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Brian	Chouinard	Fish Department, SeaWorld San Diego	San Diego CA, USA
Brian	Coyle	NZP/Conservation Commons, Smithsonian Institution	Washington DC, USA
Nicole	Errante	Species360	Minneapolis MN, USA
Jeremie	Fant	Negaunee Institute for Plant Conservation Science and Action at the Chicago Botanic Garden	Chicago IL, USA
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Gerardo	Garcia	Chester Zoo	Chester, UK
Catherine	Grueber	School of Life and Environmental Sciences, The University of Sydney	Sydney, Australia
Mary	Hagedorn	Center for Species Survival, Smithsonian Conservation Biology and Hawaii Institute of Marine Biology	Kaneohe HI, USA
Kay	Havens	Plant Science and Conservation, Chicago Botanic Garden	Chicago IL, USA
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Paige	Howorth	Entomology Department, San Diego Zoo Global	San Diego CA, USA
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Bob	Lacy	Species Conservation Toolkit Initiative/ Chicago Zoological Society	Jonesboro ME, USA

Caroline	Lees	IUCN SSC Conservation Planning Specialist Group	Auckland, New Zealand
Kristin	Leus	EAZA / CPSG Europe / Copenhagen Zoo	Merksem, Belgium
Sonja	Luz	Life Sciences Department Wildlife Reserves Singapore/Asian Species Action Partnership/SEAZA/CPSG SEA RC	Singapore
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Tony	Niemann	Tracks Software	Salida CO, USA
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Paul	Pearce-Kelly	Zoological Society of London	London, UK
Linda	Penfold	South-East Zoo Alliance for Reproduction & Conservation	Yulee FL, USA
Zjef	Pereboom	Antwerp ZOO Centre for Research & Conservation, Royal Zoological Society of Antwerp	Antwerp, Belgium
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Erin	Sullivan	Woodland Park Zoo	Seattle WA, USA
Jinliang	Wang	Zoological Society of London	London, UK
Nate	Wilke	Fish and Aquatic Conservation, US Fish and Wildlife Service	Fairfax VA, USA
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Andrea	Worley	Life Sciences, San Diego Zoo Global/San Diego Zoo Safari Park	San Diego CA, USA
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Species Planning in a Virtual Environment: Think Tank

CONVENORS: Jamie Copsey and Fabiana Lopes Rocha

AIM: To share, learn and generate new ideas to inform the design and facilitation of virtual species conservation planning processes. Results of the working group will be used to improve draft guidelines on *Virtual Species Conservation Planning.*

BACKGROUND: In 2020 CPSG produced, for the first time, a set of seven 'Species Conservation Planning Principles'. These principles reflect what is most important to keep in mind when designing effective species conservation planning processes, i.e. those that are most likely to lead to effective implementation of the plan. These principles have been honed over the last four decades of running largely in-person, collaborative planning workshops. With many countries still grappling with the impacts of Covid-19, opportunities for bringing people together physically for a period of days to develop plans have been reduced. Whilst we will hopefully recover from the current status quo, there remain valuable reasons for developing more virtual planning processes, including the reduced environmental impacts they incur. Such a shift from the in-person to a hybrid, or fully online space brings with it a new set of challenges and opportunities. What remains constant is the need for us to remain true to the seven planning principles.

CPSG has had the opportunity, in particular over the last year, to begin developing virtual planning processes involving the selection of the most appropriate virtual tools, software and platforms to support the planning work. We recognize we are still in the early stages of understanding how best to operate within this online environment. However, we feel that it is important to provide some initial guidance to other planners who are embarking on a similar journey. Whilst there is no shortage of online advice as to how to master this environment, there is believed to be limited guidance specifically for species conservation planners. Through the guidelines we are developing, we hope to change this situation, drawing in particular on our most recent experiences.

In this working group we would like to take the opportunity to encourage peer-to-peer sharing of tips, tools and experiences relevant to online planning and facilitation. We will also introduce you to some of the draft material we are producing and solicit your input into the final guidance to demonstrate how we endeavor to abide by the seven planning principles.

PROCESS: We will begin with a scene-setting presentation followed by an open discussion to gather your experiences of planning in the virtual environment; what works and what doesn't. We will then move into break out groups, each of which will take one of the seven principles and consider how you would suggest we turn the principle into practice within the virtual environment. The session will culminate in a review of the advice provided and your critical reflections on the draft guidelines content already created.

OUTCOMES: As a consequence of the workshop we will have:

- Provided an opportunity for collective sharing and learning about virtual planning tips and tools
- Developed an understanding of how we can best satisfy the seven CPSG planning principles within the virtual environment
- Provided critical input into the development of the CPSG Virtual Species Conservation Planning Guidelines