Integrated Collection Assessment and Planning (ICAP) Process

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What is an ICAP?
ICAP, or Integrated Collection Assessment and Planning, is a multi-species, rapid *ex situ* conservation assessment based on the decision process of the *IUCN SSC Guidelines on the Use of Ex Situ Management for Species Conservation*, jointly conducted by *in situ* and *ex situ* experts and designed primarily to assist regional zoo associations with setting conservation priorities for regional collection planning.

The ICAP process is designed to address some of the challenges and fill the gaps that currently hamper the effective application of the One Plan Approach in a multi-species framework, and especially targets regional or global collection planning needs. This process is designed to be flexible and applicable to large or small groups of taxa at global or regional/local level, with the resulting analyses and recommendations being more general or detailed as appropriate and feasible. This same process can be used to identify not only direct *ex situ* conservation contributions (specifically addressed by the IUCN *ex situ* guidelines), but also indirect conservation activities, such as *in situ* conservation support, and important non-conservation roles, if desired. Such assessments are useful to TAGs and other members of the *ex situ* community, to SSC taxonomic specialist groups, and to others involved in multi-taxa conservation planning.

Why do we need ICAPs?
Over 30 years ago the zoo community turned its attention from institutional exhibition needs to increasing focus on species conservation. Emphasis was placed on the 'zoo ark' paradigm targeting long-term, sustainable captive breeding programs to maintain insurance populations against potential extinction in the wild. This spurred the development of cooperative management at the regional population level. Regional zoo associations now develop Regional Collection Plans (RCPs) to prioritize species for *ex situ* management given finite resources and growing conservation needs.

While insurance populations are valuable, they often are a broad generalization of the *ex situ* conservation needs of a species. The potential spectrum of *ex situ* management for conservation includes, but is also much wider than, providing insurance populations. Rather than solely providing an ark, the zoo (and broader *ex situ* community) has the potential to provide a wide range of *ex situ* activities to meet specific *in situ* conservation needs of species. In order to develop effective conservation initiatives, zoos and aquaria need to be able to select species for management that can benefit most from *ex situ* conservation and to design their *ex situ* efforts to effectively serve the conservation needs of those species. In addition, there are numerous opportunities for organizations outside of the traditional zoo and aquarium community, such as rescue and rehabilitation centers, universities, research facilities and government breeding centers, to engage in *ex situ* conservation activities, and these need effective guidance. Finally, wildlife managers and field biologists may have limited awareness of *ex situ* options outside of long-term breeding programs and little experience matching *in situ* conservation needs with *ex situ* support.

The process of evaluating when it is appropriate to include *ex situ* management in the conservation plan for a threatened species, and the precise form this should take, is challenging, but there are tools to help. The *IUCN SSC Guidelines on the Use of Ex Situ Management for Species Conservation* (IUCN SSC, 2014) outlines a structured, informed, and transparent decision-making

process on whether or not *ex situ* activities are a beneficial and appropriate component of an overall species conservation strategy (Traylor-Holzer *et al*., 2013; McGowan, Traylor-Holzer, and Leus, 2017). This reduces bias for or against *ex situ* management, and promotes *ex situ* activities that are tailored in form and function to the conservation needs of the species. These guidelines can be applied during a broader conservation planning process such as a PHVA workshop or as a separate species-focused assessment linked to other conservation planning efforts. Regardless of the process, it is vital that the *in situ* and *ex situ* communities jointly evaluate the potential benefits of *ex situ* management activities, along with other conservation solutions, and together develop one integrated species conservation plan, which may or may not end up including *ex situ* components – in essence, the One Plan Approach.

Ideally zoos would find clear direction for *ex situ* conservation needs in integrated species conservation plans developed using the One Plan Approach and the IUCN *ex situ* guidelines. However, given the high degree of threat to wildlife populations and great demand for conservation planning it will take significant time before most threatened species are covered by integrated conservation action plans. Managing living *ex situ* collections on the other hand cannot wait. The ICAP process was developed to help address this need and lend guidance more quickly to the *ex situ* community, and to regional zoo associations in particular, in setting conservation priorities and programs.

To help address this issue, a joint effort between CPSG and regional zoo and aquarium associations has resulted in a new process called ICAP, or Integrated Collection Assessment and Planning. The ICAP process is designed to address some of the challenges and fill the gaps that currently hamper the effective application of the One Plan Approach in a multi-species framework, and especially targets regional or global collection planning needs.

The ICAP Process

The ICAP process is structured around the five evaluative steps in the IUCN *ex situ* guidelines, making them more practical and streamlined when applied on a multi-species level by extracting their essential components to rapidly assess and prioritize *ex situ* resources and effort across multiple taxa. The process involves extensive pre-workshop data compilation and analysis followed by a multi-stakeholder workshop.

All taxa within the taxonomic group should be included, both threatened and non-threatened, regardless of whether or not they are currently under *ex situ* management. The process should be a joint collaboration between those coordinating regional *ex situ* activities (e.g., Taxon Advisory Group) and the appropriate IUCN taxonomic specialist group or equivalent authority linking field conservation efforts and planning.

Below is a description of the five steps of the IUCN *ex situ* guidelines and how each step is approached within the ICAP process – please consult the IUCN *ex situ* guidelines for more details.

Pre-Workshop Data Compilation

Pre-workshop preparation focuses especially on Step 1 of the IUCN *ex situ* guidelines, with extensive data compilation on *in situ* status and threat assessment, and on *ex situ* status and expertise. Step 2 is also initiated to identify potential *ex situ* conservation roles either previously identified in prior conservation plans or by *in situ* (or other critical) experts who cannot attend the ICAP workshop.

STEP 1: Conduct a thorough status assessment (of both* in situ *and any known* ex situ *populations) and threat analysis.

In situ status and threats

What is needed: *In situ* status of global and regional populations (Red List category of threat; population trend; primary threats and conservation challenges)

The details: It is not enough to know if a species is threatened; it is important to understand the nature of those threats to understand how *ex situ* management may help. The IUCN SSC Red List is a valuable resource for assessing *in situ* status and threats. The Red List gathers a plethora of information that is used to categorize the degree of threat for each species based upon specific objective criteria based on trends in population size, extent of occurrence/ occupancy, and other factors related to its risk of extinction *in situ*. To identify *ex situ* conservation roles that best address the threats and challenges faced by the species, it is important not just at the Red List category of threat but to investigate more deeply to understand factors affecting the viability of the *in situ* population. This includes consulting the detailed descriptions of threats in the Red List assessment and in additional literature as well as potentially consulting *in situ* stakeholders directly. It may also be important to consult regional or national assessments for a regional or national ICAP, as the *in situ* status of some taxa may vary widely across its range. Regional *ex situ* programs may be able to offer conservation support for regionally threatened populations or endemic subspecies that are not needed or feasible at a global level. Other potential information sources include assessments such as the Convention on Migratory Species for migrating taxa, the Convention on International Trade in Endangered Species for taxa vulnerable to international trade, and the European Bird and Habitat Directives or equivalent national threatened species legislation. PHVA reports and other conservation plans or strategies are another information source.

Where to find it:

- IUCN SSC Red List assessment (global): https://newredlist.iucnredlist.org/
- Regional or National Red List assessments
- CPSG PHVA, CAMP and other conservation planning reports: http://www.cpsg.org/document-repository
- IUCN SSC taxon-based Specialist Group action plans: https://www.iucn.org/commissions/ssc-groups
- Governmental/national action plans for threatened species
- Other past or current conservation action plans or strategies for the species
- Threat-based or regional conservation assessments relevant to the species
- Scientific publications
- *In situ* species experts

Ex situ status

What is needed: Demographic and genetic status of any *ex situ* population and its management, both globally and by region

The details: Assessment of existing *ex situ* populations and activities includes compiling information on the current and historical holdings of the taxon in captivity (as living individuals and/or as cryopreserved cells or gametes in genome resource banks (GRBs)), estimation of the genetic and demographic status of any current populations, historical evidence of breeding success, and any identified challenges to *ex situ* management such as husbandry, nutrition or health issues.

Information should be gathered, if possible, for *ex situ* status in all regions, even for a regional or national ICAP, as this information is relevant to discussions of feasibility (see STEP 4) and division of responsibilities between regions and potential for collaboration (see STEP 5).

In most cases the best resource on *ex situ* population status is a current international studbook database, as this single dataset contains information on the status of the species in all regions. Regional or national studbooks (databases or reports), breeding and transfer plans, and regional collection plans are also valuable. A valuable resource for global holding is to consult the species holdings reports and population overview reports in the Species360 Zoological Information Management System (ZIMS) global animal records database (Species360 2018), if access to that database is available. Another option is a zoo and aquarium association survey, which may be conducted specifically for an ICAP. Non-zoo or aquarium databases may be relevant for some species, such as governmental registers of zoo inventories or *ex situ* programs, registers of rescue or confiscation centers, and GRB inventories.

These sources can provide a useful summary of the genetic and demographic status of *ex situ* populations. Relevant parameters to be compiled include: current population size (by sex and/or life stage); number of living wild-born individuals, including those with living descendants (founders) and with no living descendants (potential founders); anticipated availability of new founders; current gene diversity retained; percentage of the pedigree that is known; historical and recent population trend or annual growth rate (lambda); number of holding institutions; evidence of past breeding success with the species; degree of intensive regional management; and any *ex situ* management issues. In many cases not all of this information will be available, or may be available for only some regions, but all available information should be documented.

Where to find it:

- International studbook database
- Regional or national studbook databases
- Published studbook reports
- Regional zoo and aquarium association breeding and transfer plans (BTPs)
- Global Species Management Plans (GSMPs)
- Regional Collection Plans (RCPs)
- Zoo and aquarium association surveys
- ZIMS species holdings reports: https://zims.species360.org
- ZIMS population overview reports
- Other non-zoo or aquarium databases, such as rescue center holdings

STEP 2: Identify potential roles that* ex situ *management can play in the overall conservation of the species.

What is needed: Past recommendations and expert opinion regarding potential *ex situ* conservation roles for the taxa, specifically from individuals not attending the ICAP workshop

The details: *Ex situ* activities can address the threats or challenges that a species is experiencing in four different ways (IUCN SSC, 2014; McGowan et al., 2017; Traylor-Holzer et al., 2018b):

- *By addressing the causes of primary threats* (e.g. through specifically designed research, training or conservation education activities that directly impact the causes of these threats, such as research targeting disease);

- *By offsetting the impact of primary and/or stochastic threats* on the population (e.g. through activities that help to improve survival of particular life stages, reproductive success, and/or gene diversity retention or gene flow, such as head-start programs);
- *By buying time* if the wild population is in severe decline and the chance of rapid reduction of primary threats is slim or uncertain (e.g. through rescue or insurance populations, such as Amphibian Ark populations); and/or
- *By restoring wild populations* once primary threats have been sufficiently addressed (e.g. by reintroduction, such as the Arabian oryx (*Oryx leucoryx*) recovery efforts).

The status assessment and threat analysis in STEP 1 provide the necessary background so that wildlife and population managers can consider the primary threats facing each taxon (e.g., habitat loss, poaching) and well as secondary impacts (e.g., genetic isolation, skewed sex ratio) to determine the potential roles that *ex situ* management can play in its conservation. The IUCN *ex situ* guidelines target the identification of direct conservation roles (i.e., those that act as identified in the four bullets above). To enable ICAPs to inform regional collection planning and existing species management programs, it is valuable to also identify indirect conservation roles for *ex situ* populations or the *ex situ* community, such as conservation education messaging outside of the taxon's range or support of *in situ* conservation activities through expertise or funding.

Prior* ex situ *recommendations/mandates

Prior planning efforts may already have identified *ex situ* management roles for some species, which should be taken into consideration during the ICAP process. Existing strategies and action plans (e.g. regional, national or local governmental action plans, IUCN SSC Specialist Group action plans, CPSG PHVAs and CAMPs, plans by international or local NGOs or conservation alliances) should be gathered and consulted to extract any such existing *ex situ* recommendations or mandates.

Where to find it:

- *Ex situ* management plans (BTPs; GSMPs; RCPs)
- IUCN SSC Red List assessment (global): https://newredlist.iucnredlist.org/
- Regional or National Red List assessments
- CPSG PHVA, CAMP and other conservation planning reports: http://www.cpsg.org/document-repository
- IUCN SSC taxon-based Specialist Group action plans: https://www.iucn.org/commissions/ssc-groups
- Governmental/national action plans for threatened species
- Other past or current conservation action plans or strategies for the species
- Threat-based or regional conservation assessments relevant to the species
- Scientific publications

Surveying* in situ *specialists for potential* ex situ *conservation roles

Under the One Plan Approach philosophy, *in situ* and *ex situ* specialists should work jointly to evaluate potential direct or indirect roles for *ex situ* conservation of a species. However, it may be not possible or effective for all specialists for all taxa to attend an ICAP workshop evaluating a large number of taxa. This is especially true for the field-based *in situ* specialists, who often are based in remote locations and have restrictive schedules. It is very important, however, to receive input from the larger community working with each taxon. A recommended method to achieve wider representation of the *in situ* community is to identify and electronically survey relevant *in situ* specialists prior to the ICAP workshop, especially if they will not attend the workshop.

It is important that experts are not simply asked if there should be a captive breeding (or other *ex situ* program) for a species without explaining such programs or acknowledging existing opportunities (e.g., non-releasable confiscated or rescued animals as potential founders).

An ICAP *ex situ* role survey should include descriptions of different direct and indirect conservation roles; summary data gathered in STEP 1; and a carefully-worded questionnaire guiding survey recipients through the process of identifying potential direct and indirect *ex situ* conservation roles for the taxa in which they have expertise. The survey should include both threatened and non-threatened taxa, as there may have been recent changes in status and threats (especially regionally) and also because non-threatened species potentially can play a conservation role as a surrogate species. Information accompanying the survey should acknowledge the wide range of potential *ex situ* activities, many which may not occur to *in situ* specialists (e.g. banking gametes for genetic supplementation, using *ex situ* populations for research targeting *in situ* needs such as disease epidemiology or testing field methodologies).

Who to contact: A good starting point is the IUCN SSC taxonomic specialist group(s) relevant to the ICAP. They themselves are often species experts and are aware of the most appropriate contacts for understanding the species biology, status and conservation needs. Regional contacts are important, as the situation for the species often varies from region to region.

Where to find it:
- *In situ* specialists for the species
- IUCN SSC specialist groups

All of the information collected on status, threats and potential ex situ roles is compiled into taxon-specific data sheets. These sheets can be circulated as briefing material prior to the ICAP workshop, and serve as important reference material during workshop discussions. Assessments and recommendations resulting from the workshop discussions can be added to these sheets for the final ICAP report.

ICAP Multi-Stakeholder Workshop

Both *ex situ* and *in situ* experts gather to review the status and threats information, identify potential *ex situ* conservation roles and program structure needed to achieve those roles, assess the relative benefits, costs/risks, and feasibility of achieving each role, and make recommendations regarding *ex situ* activities – all for each species or taxon. Depending upon the number of taxa addressed and time available, this process can be very rapid and general, or more lengthy and detailed.

Who should attend? It is very important that representatives from all major stakeholder groups attend the ICAP workshop. In most cases this includes TAG Chairs, IUCN SSC specialist group representatives, and i*n situ* experts. For some species, important participants may include representatives from rescue and rehabilitation centers, universities, NGOs and government agencies.

How to structure the workshop: An ICAP workshop benefits greatly from facilitation by experienced facilitators who have an in-depth understanding of the One Plan Approach, IUCN *ex situ* guidelines, *ex situ* population management, zoo association operations, population biology, and group decision making. The facilitator should be familiar with the ICAP process and with the information on the pre-workshop taxon sheets.

The workshop set-up is similar to other multi-stakeholder workshops, with an appropriate size meeting space and table set-up to facilitate discussion (i.e., small tables, U-shape table, etc.; not theater seating). Wall space to display potentially many flip chart sheets is a must for an ICAP. Projector and screen, flip charts (easel, paper, markers, tape if not self-adhesive) are all essential.

The workshop agenda begins with participant introductions followed by an overview of the IUCN *ex situ* guidelines, ICAP process and compiled taxon sheets. It is helpful to provide a list of the most common roles and definition of each, to reach a common understanding among participants regarding what is meant by each term, including "direct" and "indirect" conservation. The facilitator then leads the group discussion to complete tasks for Steps 2-5 for each taxon (see below). This can be done on flip charts and captured in notes; alternatively, group decisions can be captured on a projected template. If using a template, it is advised to summarize the recommendations for each taxon on flip charts to provide a visual summary of the workshop decisions as the group proceeds through the list of taxa. Regardless of the specific process and tools used, it is essential that all pertinent discussion, assessments and recommendations are captured and included in the workshop report. A sample ICAP workshop report, complete with sample agenda, pre-workshop survey, definition of roles, taxon sheets, and final recommendations, can be found at: http://www.cpsg.org/content/global-icap-workshop-canids-and-hyaenids

Generating potential* ex situ *conservation roles during the ICAP workshop (completion of Step 2)
All information compiled before the workshop (*in situ* status and threats, *ex situ* status, potential and recommended *ex situ* roles) is considered and discussed by workshop participants to identify potential direct and indirect *ex situ* conservation roles for each taxon.

STEP 3: Define the characteristics and dimensions of the program needed to fulfill each identified potential conservation role(s).

The details: Ideally, ICAP workshop participants should outline program specifications of each potential role for each taxon. This may include, but is not limited to, geographic scope (e.g., national, regional, global), animal needs (e.g., founders, target population size), management type and goals (e.g., breeding to minimize gene diversity loss, source population for annual releases), type of facilities needed, and length of program (see IUCN SSC, 2014). However, such detailed descriptions are impractical if a large number of taxa are being evaluated with limited time. It is important that some discussion of scale, scope and management requirements is held and documented. In some cases, these discussions may occur at a general level and only discussed in more detail when deemed important for decision making. For example, general requirements for establishing a demographically and genetically viable insurance population are well understood, while program characteristics for in-range source populations for reintroduction or populations designed to address specific research questions might need more elaboration. Such discussions are accomplished more quickly and effectively if there is a relatively high degree of knowledge regarding *ex situ* management among both workshop participants and facilitators. Discussions involving less knowledgeable participants may require more structured elaboration, perhaps with an overall *of ex situ* population concepts at the beginning of the workshop. If relatively few species are being discussed and time is available, quantitative tools such as PMx software program (Species Conservation Toolkit Initiative) may be used to help define program requirements.

STEP 4: Define the resources and expertise needed for the* ex situ *management program to meet its role(s), and appraise the feasibility and risks.

The details: This discussion examines each role identified in Step 2 along with its required program structure described in Step 3, and assesses the relative benefit, costs/risks, and feasibility (likelihood of success) of achieving that program and role successful. Considerations include biological feasibility (e.g., founder availability, husbandry expertise), social feasibility (e.g., regulatory issues, interest in species), resource availability (e.g., staff, space), and risk assessment (e.g., risk to the wild population, disease risks).

One way to organize this discussion is to create a matrix for each taxon, listing each identified potential role (e.g., insurance, research, population restoration) and then rating each role as High, Moderate or Low with respect to each of the following three categories: Conservation Benefit, Feasibility, and Costs/Risks. This provides a graphical depiction that is convenient for comparison across options within and across taxa, and can be added to the taxon information sheets for the final report.

STEP 5: Make an informed and transparent decision as to which* ex situ *roles and activities (if any) to retain within the overall conservation strategy of the species.

The details: All information and analyses from Steps 1-4 are considered to make recommendations for each taxon regarding *ex situ* activities, which may include that no *ex situ* population or activities are recommended, or that such activities should be limited to a particular region. The IUCN *ex situ* guidelines are intentionally vague so as not to be too prescriptive, recognizing that priorities and criteria will differ among different groups or taxa. Resulting recommendations are documented and can serve as reference for subsequent *ex situ* or *in situ* conservation planning. These include zoo and aquarium-based programs such as TAG Regional Collection Plans and species-specific *ex situ* management plans or WAZA's Global Species Management Plans (GSMPs) for inter-regional species management, as well as *in situ*-focused plans such as IUCN specialist group action plans and government recovery plans. All compiled status and threat data, evaluations, information on relevant issues, and final ICAP recommendations are added to each taxon sheet as part of the final ICAP report.

Prioritization of taxa for discussion during the workshop: Ideally there will be sufficient time to discuss and assess all taxa during the ICAP workshop in the way described above, including both threatened and non-threatened taxa. This may not be realistic if too many taxa fall within the scope of the ICAP. Some suggestions for prioritizing discussions given limited time:

- Species can be allotted to one of four categories: threatened vs non-threated; and those with moderate to large current holdings in captivity, vs those with very small holdings or not held in captivity. One strategy is to ensure discussion of threatened taxa with *ex situ* populations, as these are more likely to have the combination of relatively higher conservation need and feasibility, lower risk, and existing program structure and support. These taxa may benefit from more detailed discussions to ensure that existing *ex situ* populations are managed for optimal conservation contribution.
- Second priority may be for threatened species with no *ex situ* holdings or expertise, which may be able to be reviewed relatively quickly if necessary to identify any opportunities for *ex situ* management or activities (e.g., non-releasable confiscations or rescues that can provide conservation value and/or opportunities for developing *ex situ* expertise). These often may be species with conservation need but also lower feasibility and/or higher risk, depending upon the *ex situ* role and program.
- Non-threatened species held in captivity may be able to be reviewed relatively quickly to identify any conservation value as surrogates for threatened species; therefore, it may be

beneficial to evaluate similar threatened taxa first to evaluate need, or pair the discussion of such taxa with potential surrogates. These may be species with higher feasibility. If no need is identified, and/or risks are identified (e.g., competition for space or other resources with taxa of higher conservation need), then some taxa in this category may be recommended to be phased out of captivity linked with the development or expansion of programs for other taxa.

- In most cases, taxa with no *ex situ* conservation needs and not currently held in captivity may not be recommended for *ex situ* management for conservation. Exceptions might include locally threatened or culturally important subspecies recommended for local *ex situ* activities.
- When evaluating large groups of taxa, it may be feasible and prudent to group related taxa with similar characteristics (biology, threats, *ex situ* status) and discuss them as one group (e.g., 9 taxa of laughingthrush). This may facilitate discussions of expertise, feasibility and potential surrogates.

These are meant to be generalizations only and to help prioritize discussions when faced with limited time. There are exceptions to these categories, and a thorough assessment of each taxa is recommended when feasible. Also, the interaction of conservation benefit to risks and feasibility (including space and husbandry constraints) may differ on a regional level. For example, range countries are better placed to provide animals for release (population restoration) and conduct targeted education programs to effect specific behavior change. The size and composition of existing populations may dictate their value and feasibility for specific research roles or as a long-term insurance population.

Post-Workshop Tasks

Compilation and wide dissemination of the workshop results is important for their incorporation into both *ex situ* and *in situ* conservation planning and to forge important collaborations for species conservation under the One Plan Approach.

Workshop representatives should bring the ICAP recommendations to their respective organization for discussion and incorporation into their conservation planning – for example, for consideration in regional collection planning or species-specific *ex situ* planning for TAGs, and for species conservation planning for specialist groups, NGOs and wildlife authorities. ICAP workshop reports should be posted on the CPSG website and are encouraged to be posted on relevant specialist group websites and other groups involved in conservation of the species or taxa. Announcements will be made in the SSC Bulletin and other relevant venues.

ICAPs and RCPs: EAZA now uses the ICAP process for each TAG's Regional Collection Planning workshop based on its new population management structure (de Man et al., 2016). The EAZA Canid and Hyaenid TAG inaugurated this process, and several EAZA RCP-ICAP workshops were/will be conducted in 2018 for prosimians, cattle and camelids, Asian songbirds, rhinos and select terrestrial invertebrates. Because zoos also need to balance conservation needs with other important roles potentially filled by species, such as exhibit value or non-conservation related research and education, EAZA is using the same work format to evaluate potential non-conservation roles of species. For each species in the RCP requiring proactive management, an EAZA Ex situ Programme (EEP) will be developed specifically to meet the identified direct, indirect, and/or non-conservation roles. Each EEP will be guided by a comprehensive Long Term Management Plan that outlines strategies and activities to reach these goals. Several AZA and ZAA TAGs have expressed interest in the ICAP process.

The ICAP process may be particularly useful to zoo and aquarium associations that do not have an established RCP process. Many such regions coincide with biodiversity hotspots holding species with the greatest conservation need. The ICAP process may be a good option for these regions to quickly establish *ex situ* priorities with strong potential for direct species conservation benefit.

Joint TAG Chair conferences and other zoo and aquarium association meetings provide a practical forum for ICAP workshops. Such meetings provide opportunities for multi-regional or global ICAPs, which provide valuable integration of regional efforts for more effective and targeted use of resources and more effective conservation.

ICAPs and Specialist Groups: While the ICAP process was designed with particular focus to the collection planning needs of the *ex situ* community, the same five-step process can be applied to an *ex situ* conservation assessment for a group of taxa of interest to an IUCN SSC specialist group, or other organizations (governmental or non-governmental) dealing with species conservation, whether or not *ex situ* programs are widespread in the zoo and aquarium community. Organizations or groups seeking a multi-species, *ex situ* conservation assessment can also adopt and adapt an ICAP-like approach. No matter which organization or group leads the process, the involvement of both the *in situ* and *ex situ* communities in the *ex situ* conservation assessment is vital.

Final Points Regarding ICAPs

As a resource: ICAP reports provide a plethora of information in one place, particularly with regard to *ex situ* status, which is available for future additional discussion and more detailed conservation planning activities.

The structure and transparency of the ICAP process provides clear reasoning behind the decision. This means that the discussion may not need to be revisited if the situation has not changed, and also means that decisions can be re-assessed if new information or opportunities become available.

As a tool for collaboration: The ICAP process leads to a better understanding of potential *ex situ* contributions to conservation by all stakeholder groups. ICAP workshops to date have resulted in recommended *ex situ* roles and activities that were more varied and better tailored to meet specific conservation needs of the species than has typically occurred in traditional RCPs. This helps to integrate *ex situ* activities and *in situ* conservation.

ICAPs lead to improved communication and collaboration among regional zoo associations, field-based conservationists, and IUCN SSC Specialist Groups. This in turn fosters continued and expanded integration of all conservation efforts for a species. This helps zoos and aquariums to become more effective conservation partners, and it also help other members of the conservation community, such as specialist groups, NGOs and wildlife authorities, to recognize the zoo and aquarium community as effective conservation partners (CBSG, 2011).

ICAPs provide one way in which the evaluative process of the IUCN *ex situ* guidelines can be applied in a more rapid, multi-species method to guide decisions on *ex situ* management for conservation. This can contribute to a more One Plan Approach to *ex situ* species conservation planning.

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