Chapter 5. SAFE Programs Using Managed *Ex Situ* Populations for Recovery Programs

Introduction and Background

One of the strategies of SAFE species programs is to follow the principles of the One Plan Approach and consider all populations of a species across a spectrum from intensively managed to least managed (usually wild-living), in an integrated, stakeholder-inclusive, science-based process. Application of these principles may identify strategies that utilize *ex situ* population management for species recovery.

Scientific advising from AZA's two scientific Centers, the AZA Population Management Center (PMC) at Lincoln Park Zoo and the AZA Reproductive Management Center (RMC) at St. Louis Zoo, helps AZA programs manage *ex situ* populations to maintain genetic and demographic health, while meeting program goals. Since their establishments, these Centers have advised AZA's Species Survival Plan (SSP) programs.

In July 2021, AZA's Board of Directors approved recommendations by the AZA Animal Population Management (APM) Committee that 1) externally managed programs[1] would no longer be eligible to be SSPs, and 2) AZA-branded programs, including SAFE species programs, could have access to AZA Center services.

Processes defining which SAFE species programs would be eligible for AZA Center services were developed through an iterative process by a Wildlife Conservation Committee (WCC) working group comprised of WCC members, an APM Committee liaison, and AZA staff, and were approved by AZA's Board of Directors in 2022. These processes affirm that:

- Externally managed programs with a recovery element have the option to become SAFE species programs.
- PMC/RMC services will be available free of charge to SAFE species programs in which *ex situ* breeding is a key recovery strategy.

[1] The AZA Board-approved (July 2021) definition for externally managed programs is: "Any cooperatively managed program where final authority of breeding, transfers, husbandry, or reintroductions of animals managed in AZA facilities falls to an external entity."

- These SAFE species programs can opt in for PMC/RMC services; they have the option to use other, non-PMC/RMC advisors as desired.
- These SAFE species programs use *ex situ* breeding as a recovery strategy; there is no additional nomenclature distinguishing them from other SAFE species programs.

Processes related to population management and administration for these SAFE species programs were developed, also through an iterative process, by a working group comprised of members of the WCC, APM Committee, the PMC, and AZA staff, and were approved by the Board in 2024. Guiding principles followed were to:

- Retain familiarity with processes previously used by these programs (i.e., as SSP programs)
- Embrace differences and flexibility, where appropriate
- Be mindful of communications of APM Committee to minimize confusion

Specific areas of flexibility were deemed necessary to meet recovery program goals including to: 1) release cooperatively managed AZA programs from requirements that do not fit well with non-AZA partners and external management authorities, and 2) adjust care and welfare practices to prepare animals for successful release into the wild, as necessary and in compliance with AZA's numerous policies that ensure the highest standards of care and welfare for animals, including the AZA Code of Professional Ethics, the AZA Policy on Responsible Population Management, and organizational policies. See the Summary Table of Key Differences Between SSP and SAFE Population Management for a comparative list of alternative approaches taken for these two AZA programs.

Program Eligibility for AZA Center Services

The focus of SAFE is saving animals and habitats in the wild, which is aligned with the goals of programs that use *ex situ* breeding for reintroduction into the wild as a recovery strategy. Scientific advising from AZA Centers is often critical to *ex situ* population management for *in situ* recovery. Any program interested in obtaining AZA Center services must meet the eligibility criteria for SAFE species (https://www.aza.org/propose-safe-species) including (briefly):

1. The species is threatened with extinction.
2. The species has established conservation plan(s) (e.g., recovery plan, biodiversity management plan, PHVA action plan) in place.
3. Appropriate stakeholders are identified/engaged.
4. Two or more AZA-accredited zoos and aquariums have an established commitment for active conservation work on the species for a minimum of two years.[2]

Additionally,

5. PMC/RMC services will be available to SAFE species programs where **population management of an *ex situ* population** is critical to *in situ* conservation and recovery and **where *ex situ* conservation is explicitly called for in the conservation plan or by the relevant government authority**.

Successful recovery programs take many different approaches, so a suite of program types was identified that would either automatically receive AZA Center services, if requested, (Group 1), or that would be evaluated before access to services was granted (Groups 2 and 3):

- **Group 1:** AZA and partner facilities are the direct source of the animals being released, either because AZA animals are being reintroduced, or are regularly or recently transferred to a partner facility for breeding and their descendants are reintroduced.

[2] *Ex situ* breeding in support of release meets the criteria of active conservation work with the species.

- **Group 2:** A partner facility holds the source population for releases and animals are not regularly transferred in/out of AZA facilities; however, AZA Center services is one way the SAFE species program supports *in situ* conservation.
- **Group 3:** Animals are an assurance population without any current releases but where future releases are being planned, or other special cases where scientifically rigorous population management of an *ex situ* population is arguably essential to *in situ* conservation.

For multi-species (taxonomic-based) SAFE species programs, only populations that fit the above definitions would have access to AZA Center services, not all species covered by the SAFE species program.

For populations in which only a portion of the population is a source for releases, AZA Center services would be applied to the entire population (i.e., planning would include all holding facilities), to ensure that the entire *ex situ* population is well managed in case it is needed for future recovery efforts.

Participation is required by all facilities that house animals included in the scope of the managed population. All AZA facilities housing animals of the relevant taxa must participate in population planning-related activities (i.e., provide studbook updates when requested, respond to wants/needs surveys, etc.). These facilities must also identify an institutional representative (IR) for population management purposes, and a SAFE program partner representative (PPR) to the SAFE species program (this may be the same, or a different, person). All AZA facilities housing animals of the relevant taxa are partners to the SAFE species program; it is the SAFE species program status (i.e., an AZA-branded program) that affords access to AZA Center services for these populations. All non-AZA facilities housing animals within the defined scope of the managed population should participate in all population planning-related activities and identify an IR to make sure their needs and wants are fully considered in the planning process.

Decisions that define or limit the scope of a studbook or managed population must be made in consultation with, and with approval by, the WCC, PMC advisor, SAFE program leader, population coordinator, and studbook keeper.

Termination and Reinstatement of Services

The WCC reserves the option to re-evaluate access to AZA Center services, in collaboration with the program, if:

- The program stops actively releasing animals or if plans for a future release become stalled indefinitely.
- A program's planning meeting with the PMC is rescheduled or cancelled twice or an ongoing lack of preparedness by the program affects the ability of the PMC or RMC to provide high quality services.

This evaluation could result in termination of service and the WCC vice chair of SAFE will help the WCC stay apprised of the reasons for services being discontinued.

In the case of rescheduled or cancelled planning meetings, the PMC will be asked to advise on which party was responsible (i.e., studbook keeper or population coordinator) and the WCC may determine that continued access to AZA Center services is contingent upon that party vacating the position. If not removed from the role, AZA services may be halted. Ultimately, and with understanding of the implications of their decision on the program's ability to access AZA Center services, the SAFE program leader and steering committee will determine whether a person should be removed from their role.

The WCC will consider reinstatement of services on a case-by-case basis, in collaboration with the PMC, focusing on whether the reasons why services were originally discontinued (e.g., deadline accountability, communications) have been addressed.

PMC and RMC Services

SAFE species programs that meet the eligibility described above can request PMC and/or RMC services.

PMC[3] core services provided

- Studbook support: Advice on data entry and conventions, studbook validation, administration within ZIMS, and software trouble-shooting.
- Analysis and creation of breeding and transfer plans: This analysis may include "full" plans or interim assistance designed to help plan breeding, transfers, or releases to the wild – the extent of the meeting and the level of documentation can be customized to meet the needs of the PMC and SAFE species program.
- Frequency of PMC services will be mutually agreed upon between the program and PMC based on biology and the requirements of the recovery program.

Analyses not part of core PMC services

PMC may be involved or provide additional support on a case-by-case basis, depending on their schedule, time constraints, and skillsets:

- Involvement in more in-depth population biology-related research.
- Development of Population Habitat Viability Analysis (PHVA) or Population Viability Analyses (PVAs).
- Provision of data to other's PVA/PHVA processes.
- Provision of data for recovery plans.

RMC services provided

The RMC manages a contraceptive database for data on contraceptive use, dosage, efficacy, reversibility, safety, and side-effects so that the RMC can provide data-driven contraceptive recommendations. Input of data into the contraceptive database is strongly encouraged in all cases and is required when certain contraceptives are obtained from the RMC. Data are entered by designated individuals at holding facilities and not the population coordinator/studbook keeper. The RMC also offers:

- Reproductive management consulting and recommendations publicly available to all.
- Contraceptives for any SAFE species programs that receive PMC breeding and transfer plans for animals maintained in human care.

Proposal Process

Interested programs or populations that do not already have a related SAFE species program should submit a *Request for AZA Center Services* form as an attachment to their SAFE species program proposal. SAFE proposals will be reviewed and approved before the program's request is reviewed for AZA Center service eligibility.

For existing SAFE or managed *ex situ* programs (e.g., historic SSP programs or AZA regional studbooks), the SAFE program leader or a designee (e.g., elected studbook keeper) submits a *Request for AZA Center Services* form to AZA. If the person that submits the request is not the program leader, the relevant SAFE program leader must be copied.

Populations already within the SAFE process (proposal submitted, proposal approved and program plan in progress, or program plan approved) should submit their request as soon as they determine that an *ex situ* managed population will be a priority recovery strategy and that they would like to receive AZA Center services. Once the request has been approved, the program should consult with their WCC liaison

[3] This includes the AZA Population Management Center (PMC) at Lincoln Park Zoo and the AZA PMC Adjunct advisors who work at various AZA facilities.

about whether to incorporate *ex situ* management objectives as an addendum or update to their current plan or into any program plan in development.

The WCC and APM Committee will review and approve the creation of new studbooks for *ex situ* populations for purposes of *in situ* recovery through review of a submitted SAFE proposal (if not yet a SAFE species program) and a *Request for AZA Center Services*.

Review of Requests for AZA Center Services

While the review of SAFE species program proposals and SAFE program administration is conducted by the WCC, *Requests for Center Services* are reviewed by members of both AZA committees whose programs benefit from the services provided by AZA's Population and Reproductive Management Centers.

Review group composition

- Three members from WCC: a WCC member with *ex situ* population management experience, who 1) serves as the primary contact person for any questions about the process, 2) receives *Requests for Center Services*, and 3) facilitates the review process; the vice chair of SAFE; and one at large WCC member. If the vice chair of SAFE is also the primary contact, an additional WCC member who has experience with recovery programs using *ex situ* population management and/or population management or planning will be added.
- Three members from APM Committee: the APM liaison to the WCC; the TAG liaison most closely associated with the species applying; the vice chair for SSP programs.
- Advisors, including: AZA staff liaisons for both WCC and APM Committee, the Director of the PMC, and the Director of the RMC.

Review process

1. The interested program submits a *Request for AZA Center Services* form to safe@aza.org, copying the relevant SAFE program leader if the population is already a SAFE program, to ensure all parties are aware of the request.
2. The WCC point person conducts a preliminary review and may ask clarifying questions or invite minor revisions to strengthen the request.
3. The WCC point person brings the request to the review group for discussion with a summary of its strengths and weaknesses and may make a draft recommendation, if desired.
    a. Group 1 species are forwarded for informational and awareness purposes.
    b. Groups 2/3 species require discussion by the review group, either via email or meeting.
4. The WCC point person communicates the final decision on the request to the program, copying the WCC vice chair of SAFE, AZA's CMWS department (safe@aza.org), the PMC, and the RMC.

Group 1 species will receive a response within two weeks; responses for groups 2 and 3 species should be received within one month of submission.

Review criteria

Review of group 2 and 3 species includes consideration of the:

1. Evidence that the AZA population is directly tied to future *in situ* recovery (i.e., assurance populations with defined and specific reintroduction plans); evidence that the reintroduction plans are likely to be implemented; evidence that progress is being made towards plan for releases.
2. Evidence that field or government partners with the authority to release animals are supportive of the *ex situ* management and release strategies.
3. Whether transfers/releases are frequent/repeated and recent rather than an occasional or historic transfer of animals or genes.

4. Whether an AZA population serves other *ex situ* roles besides direct release/recovery, and whether rigorous scientific population management is needed for the AZA population to serve those roles (i.e., AZA services may not be authorized if a SAFE species may benefit recovery through research on an *ex situ* population, but population management isn't required to serve that role, such as to test treatment efficacy, field equipment such as tracking/monitoring technology, etc.), or whether a more informally managed program would be sufficient.
5. The expected conservation value and impact of the *ex situ* population on *in situ* recovery.

Program and Committee Roles

For SAFE species programs using this conservation strategy and AZA Center services, the studbooks are overseen by the SAFE species program, AZA, and WCC, in consultation with any external (i.e., non-AZA) management authorities. SAFE programs are encouraged to have studbook keepers and population coordinators serve on the program's steering committee.

Wildlife Conservation Committee

- Committee membership should include one or more people with explicit experience with *ex situ* populations used in recovery programs.
- One committee member with *ex situ* population experience will be designated as the point person to receive *Requests for Center Services* and facilitate the migration of externally managed, recovery focused SSPs or studbooks into SAFE. This role was fulfilled by a transition coordinator from 2022-2024 and the responsibilities will fall to the WCC vice chair of SAFE, if another member is not designated.
- The PMC director or a delegated proxy will be added to the WCC as an advisor.

Taxon Advisory Groups (TAGs)

All SAFE species programs are encouraged to collaborate as appropriate or desired with other management structures related to their species (e.g., SSPs, TAGs, Advisors).

Programs that formerly were an SSP or include significant *ex situ* populations may already have strong connections and are encouraged to maintain those through one or more of the following:

- Include a TAG member on the SAFE steering committee, and vice versa
- Discuss the SAFE proposal process and program plan with the TAG
- Include a SAFE report during TAG conference sessions or other meetings
- Share the SAFE species program's annual report submitted to AZA with the TAG chair

TAGs are required to list SAFE species programs within their Regional Collection Plans (RCPs) in the Animal Programs Summary Table. They may include SAFE species programs in the Species Capacity & Commitment Assessment Survey and include in the RCP Table and may list SAFE species program goals/objectives related to the *ex situ* population in the SSP Roles and SMAART Goals Table or simply hyperlink to the species' SAFE program plan using the specific link to the species' program plan or a general link to https://www.aza.org/safe-species, where all program plans are posted. SAFE program leaders may want to encourage TAG chairs to list *ex situ* management objectives that relate to requests to the AZA community, such as "increase capacity by X spaces to assist with population growth to accommodate recovery goals".

General Responsibilities for Population Coordinators and Studbook Keepers

SAFE species programs are overseen by a SAFE program leader, and for management of the *ex situ* population, the program may designate two roles: a population coordinator and studbook keeper. The roles may be filled with different people or by the same individual, who must:

- Maintain an individual AZA membership, affirming agreement with the AZA Code of Professional Ethics and granting them access to AZA's online services.
    - AZA encourages facilities to sponsor studbook keepers' memberships as part of their organization's support.
- Maintain current contact information in "My AZA" so it is available to AZA and colleagues.
- Adhere to "AZA Communications Guidelines", which cover professionalism and appropriate communication structure for everyone working on AZA initiatives.
- Reflect active release of animals *in situ*, or plans for future release in each studbook and breeding and transfer plan.
- Include objectives related to the role of the *ex situ* population toward *in situ* recovery in the relevant SAFE program plan (see example "Guidance for Incorporating *Ex Situ* Population Management into SAFE Program Plans").
- Meet their respective obligations to prepare for a population planning meeting with the PMC; a dual responsibility of both roles.

They also should:

- Attend relevant SAFE program meetings (virtually and in-person), when possible.
    - SAFE species programs are expected to hold, electronically or in person, working meetings and/or workshops, and are encouraged to hold their in-person meetings in conjunction with the AZA Annual Conference and/or Mid-Year Meeting.
- Communicate concerns and potential conflicts to SAFE program leaders and their WCC liaison.
    - WCC liaisons should communicate those conflicts to the WCC vice chair of SAFE to help the committee stay apprised of larger patterns or issues and to advise on resolving those conflicts on a case-by-case basis.

Studbook Keeper Eligibility, Selection, Departure, and Responsibilities

Studbook keepers must:

- Complete AZA professional development course "Population Management 1 (PM1): Data Management and Processing" within two years of becoming a studbook keeper.
    - PM1 describes the expectations of a studbook keeper and provides them with the tools needed to prepare a studbook of the quality and in the formats necessary for PMC to develop high-quality population management plans. Non-AZA facilities hosting studbook keepers must commit to having the studbook keeper take this course to hold this role and receive access to AZA Center services.
- Submit an application and Statement of Commitment and Support to serve in the role.
- Provide a written notice of departure to resign from the role to the SAFE program leader, SAFE population coordinator, WCC liaison, and AZA; provide all relevant studbook documents (including backup documents if not in ZIMS for Studbooks) to the SAFE program leader, SAFE population coordinator, and to the replacement studbook keeper (if known).
- Communicate with the relevant TAG, so that TAG can meet its requirement of listing all studbooks in their Regional Collection Plan (RCP). This includes informing the relevant TAG(s) when a new studbook is created for *ex situ* populations for purposes of *in situ* recovery.
- Follow all AZA and WAZA criteria for international studbooks approved by WAZA's Committee on Population Management.
- Follow all guidelines for master planning and reporting as outlined in the Resource Manual for Global Species Management Plans if the program is part of a Global Species Management Plan (GSMP).

Studbook keepers should:

- Be employed by an AZA facility.
    - There are benefits for filling the role of the studbook keeper with an applicant employed by an AZA member facility. Familiarity with AZA practices, tools, and communications is helpful; as is accountability to AZA standards. It is understood that there may be times when a SAFE steering committee deems a person employed at a non-AZA facility to be in the best interest of the program. In that case, a secondary point of contact at that organization, ideally the person's supervisor, should be identified.
- Complete AZA professional development course "Population Management 2 (PM2): Data Analysis and Breeding Recommendations".
    - PM2 teaches the integration of demography, genetics, and husbandry to set population goals and make breeding and transfer recommendations, along with management skills to help coordinate programs.

Studbook keepers are elected by their SAFE steering committee. Studbook vacancies must be announced in AZA's monthly Animal Programs Update and listed on the Current Program Leader Vacancy webpage on the AZA website for a minimum of 30 days, unless prohibited by an external management authority. AZA requires SAFE studbook keeper vacancies to be submitted to AZA's Conservation, Management, and Welfare Science (CMWS) department for posting on AZA's website to maximize awareness and transparency. Program leaders should also notify all program partners of the vacancy, including non-AZA facilities, involved in the specific SAFE species program. SAFE program leaders must submit communications to WCC and AZA's CMWS department showing that posting the vacancy is prohibited by an external (i.e., non-AZA) management authority to avoid the required public posting.

For current programs (e.g., historic SSP programs or AZA regional studbooks), SAFE species programs may choose to affirm a historic studbook keeper, rather than advertise a vacancy or hold an election. In those cases, the studbook keeper is still required to submit a Statement of Commitment and Support.

Studbook keeper applications and Statements of Commitment and Support must be submitted to the SAFE program leader, or to the WCC vice chair for SAFE if the SAFE species program does not have a current, approved program plan or there is no program leader. The SAFE program leader will submit all applications to the steering committee; winner is elected by a majority vote and the program secretary, or AZA, will report the outcome to the applicant pool. The SAFE program leader or a member of the steering committee may choose to conduct a reference check for the applicant with the relevant TAG chair, as appropriate. The secretary or AZA should communicate the outcome to the relevant TAG chair for awareness and transparency.

A studbook keeper who leaves their current place of employment but wants to maintain their role as studbook keeper must confirm that their new facility (if employed) endorses their continued role as studbook keeper by submitting a new Statement of Commitment and Support to the SAFE program leader within 90 days of departure from their original facility. Due to the knowledge required for fulfilling this role, the assumption is that, with the support of the new employer, the studbook will move with the person to their new facility.

If the studbook keeper is not employed (retired, private consultant, etc.) and/or leaves the field but wants to maintain their role, the SAFE program leader must submit a letter to AZA's CMWS department indicating their support for the person to continue serving this role within 90 days of departure of the studbook keeper from their original facility. To retain their position, they must remain engaged and responsive to the SAFE program leader, AZA, and the PMC.

If the studbook keeper does not wish to maintain the role or the new facility does not endorse the person to maintain it, they should communicate this decision as soon as possible to the SAFE program leader

and population coordinator. The position will be assumed to have been vacated if a new statement of commitment has not been received within 90-days or there is a lack of communication within 30 days of a change in employment. At that time, the SAFE species program may proceed with filling the vacancy, in consultation with the relevant external management authority, if any, and the WCC.

SAFE steering committees are oversight bodies and may choose to remove a studbook keeper and end their access to ZIMS for Studbooks if the studbook keeper is not communicative with the SAFE program leader and colleagues, in consultation with any external management authorities.

Population Coordinator Eligibility, Selection, Departure, and Responsibilities

Population coordinators must:

- Submit an application and Statement of Commitment and Support to serve in the role.
- Review the program's institutional representative (IR)[4] list on a regular basis, annually at minimum. This list should be used for all communications about population management for the program. IR lists can be downloaded on the SAFE program's page of AZA's online Animal Programs Database.
    - Population coordinators will contact institutional liaisons (ILs) for AZA facilities that do not have a designated IR or have incorrect IRs listed and will ask them to send IR information to AZA's CMWS department.
    - For non-AZA facilities, population coordinators are responsible for communicating changes to IRs to AZA's CMWS department.
- Assess and address the wants and needs of program partners, including the *in situ* recovery targets. Assure that all program participants have an opportunity to communicate their wants and needs in the planning process.
- Ensure that the relevant government authority is aware of possible side effects or other outcomes (e.g., behavioral or physiological changes) of contraceptives or other reproductive management approaches to be implemented in the population.
    - The population coordinator is strongly advised to consult with the RMC on these matters, and the RMC can be involved in discussions with the relevant government authority, as needed.
- Schedule a planning meeting with the PMC at least 12 months in advance.
    - Initial PMC scheduling identifies the target month for planning. The PMC will contact the SAFE population coordinator at least eight weeks before the targeted month to confirm the final planning meeting date and meeting format.
- Publish an updated breeding and transfer plan, at minimum, every three years, in accordance with the date listed on the front cover of the previous publication. Adjustments to frequency must be mutually agreed upon between the program and the PMC to reflect the needs of the reintroduction program; for example, annual updates may be preferred.
- Provide a written notice of departure to resign from the role to the SAFE program leader, WCC liaison, and AZA; ensure SAFE program leader and studbook keeper have all relevant population management documents (e.g., previous wants and needs surveys, previous breeding and transfer plans, interim documents).

Population coordinators should:

- Be employed by an AZA facility.

[4] In addition to identifying an IR for population management purposes, facilities will also designate a SAFE program partner representative (PPR) to the SAFE species program (this may be the same, or a different, person).

    - There are benefits for filling the role of the population coordinator with an applicant employed by an AZA member facility. Familiarity with AZA practices, tools, and communications is helpful; as is accountability to AZA standards. It is understood that there may be times when an external (i.e., non-AZA) management authority or SAFE steering committee deems a person employed at a non-AZA facility to be in the best interest of the program. In that case, a secondary point of contact at that organization, ideally the person's supervisor, should be identified.
- Complete AZA professional development course "Population Management 1 (PM1): Data Management and Processing".
    - PM1 describes the expectations and provides people with the tools needed to help the PMC develop high-quality population management plans for their program's population.
- Complete AZA professional development course ""Population Management 2 (PM2): Data Analysis and Breeding Recommendations".
    - PM2 teaches the integration of demography, genetics, and husbandry to set population goals and make breeding and transfer recommendations, along with management skills to help coordinate programs.

Population coordinators are elected by their SAFE steering committee. Population coordinator vacancies must be announced in AZA's monthly Animal Programs Update and listed on the Current Program Leader Vacancy webpage on the AZA website for a minimum of 30 days, unless prohibited by an external management authority. AZA requires SAFE population coordinator vacancies to be submitted to AZA's CMWS department for posting on AZA's website to maximize awareness and transparency. Program leaders should also notify all program partners of the vacancy, including non-AZA facilities, involved in the specific SAFE species program. SAFE program leaders must submit communications to WCC and AZA's CMWS department showing that posting the vacancy is prohibited by an external (i.e., non-AZA) management authority to avoid the required public posting.

For historic or inactive AZA programs (e.g., historic SSP programs or AZA regional studbooks), SAFE species programs may choose to affirm an historic population coordinator, rather than advertise a vacancy or hold an election. In those cases, the population coordinator is still required to submit a Statement of Commitment and Support.

Population coordinator applications and Statements of Commitment and Support must be submitted to the SAFE program leader, or the WCC vice chair of SAFE if the SAFE program does not have a current, approved program plan or there is no program leader. The SAFE program leader will submit all applications to the steering committee; winner is elected by a majority vote and the program secretary, or AZA, reports the outcome to applicant pool. The SAFE program leader or a member of the steering committee may choose to conduct a reference check for the applicant with the relevant TAG chair, as appropriate. The secretary or AZA should communicate the outcome to the relevant TAG chair, for awareness and transparency.

A population coordinator who leaves their current place of employment but wants to maintain their role as population coordinator must confirm that their new facility (if employed) endorses their continued role as population coordinator by submitting a new Statement of Commitment and Support to the SAFE program leader within 90 days of departure from their original facility. Due to the knowledge required for fulfilling this role, the assumption is that, with the support of the new employer, the population coordinator role will move with the person to their new facility.

If the population coordinator is not employed (retired, private consultant, etc.), and/or leaves the field but wants to maintain their role, the SAFE program leader must submit a letter to AZA's CMWS department indicating their support for the person to continue serving this role within 90 days of departure of the population coordinator from their original facility. To retain their position, they must remain engaged and responsive to the SAFE program leader and AZA.

If the population coordinator does not wish to maintain the role or the new facility does not endorse the person to maintain it, they should communicate this decision as soon as possible to the SAFE program leader. The position will be assumed to have been vacated if a new statement of commitment has not been received within 90-days or there is a lack of communication within 30 days of a change in employment. A lack of communication within one month of a change in employment. At that time, the SAFE species program may proceed with filling the vacancy, in consultation with the relevant external management authority, if any, and the WCC.

SAFE steering committees are oversight bodies and may choose to remove a population coordinator and end their access to ZIMS for Studbooks, if the population coordinator is not communicative with the SAFE program leader and colleagues, in consultation with any external management authorities.

Studbook Management

Studbooks represent best practice for effective population management. A studbook is required for programs that use *ex situ* population management for species conservation and recovery and access services from AZA's Population and Reproductive Management Centers.

Studbooks should be managed in ZIMS for Studbooks and adhere to "Guidelines for Data Entry and Maintenance of AZA Regional Studbooks", although other formats may be considered under advisement of the PMC. AZA will grant a studbook keeper access to ZIMS for Studbooks, if the person is not employed by a member of Species360 and would like to manage their studbook in ZIMS for Studbooks.

The studbook keeper must coordinate with their program's population coordinator and PMC population biologist regarding the timeline to update their program's studbook in time for use in the next regularly scheduled planning meeting. The frequency of PMC services will be mutually agreed upon between the program and PMC, based on biology and the requirements of the recovery program.

To prepare properly for the meeting, the population coordinator and studbook keeper have a shared obligation to update the studbook and notify the PMC that the updates are complete six weeks prior to planning with PMC[5]. Any issues identified by the PMC must be addressed in a timely manner so that the planning may occur as scheduled. Both the population coordinator and the studbook keeper should prioritize their program's planning meeting with the PMC. If circumstances require changing the meeting, the population coordinator or studbook keeper should communicate directly with the PMC, as well as with each other, the SAFE program leader, and AZA.

The studbook database must be updated at least every three years, in accordance with the planning meeting date recorded in the previous breeding and transfer plan. If the studbook is maintained outside of ZIMS for Studbooks, a copy of the updated studbook database will be submitted to the PMC at least every three years. This frequency is the minimum expectation, and adjustments may be made to reflect the needs of the reintroduction program; annual updates may be preferred.

For programs using ZIMS for Studbooks, the studbook keeper may grant access of the studbook to related parties depending on need and individual role as outlined in "AZA Guidelines for I. Roles and Access to ZIMS for Studbooks, and II. Sharing Studbook Data." When ZIMS for Studbooks is used, the studbook keeper may grant viewing access to related parties (e.g., population coordinator, advisors). Approval from the studbook keeper and WCC is required for additional access permissions (e.g., for research). Research requests are to be sent to the WCC liaison for the relevant SAFE species program(s), who will share it with the full WCC, including a PMC advisor. Each committee member will

[5] Note that the creation, updating, and submission of a studbook *publication* to AZA for publication on the AZA website is **optional** for SAFE species programs that utilize PMC/RMC services. If the program chooses to create a studbook publication, it must include all elements of the publications developed for AZA regional studbooks in order to be published on AZA's website. This optional publication is separate from the updated database that is needed by the PMC for planning purposes.

send their comments to the WCC liaison who will share the compiled comments at a WCC meeting before the committee votes to approve/not approve a request.

For programs not using ZIMS for Studbooks, the studbook keeper will assess and provide similar levels of access, and follow similar guidelines in assessing need and WCC review of research requests, to data stored in other databases.

If there is a separate international studbook keeper for the species or if data are combined in a single international studbook, the AZA studbook keeper is responsible for current and accurate AZA data needed for AZA population analyses and is to provide data to the International Studbook Keeper for the studbook species, if applicable.

Breeding and Transfer Plans

The PMC will develop the breeding and transfer plan in collaboration with the population coordinator and studbook keeper. The frequency of these plans will be at a minimum of every three years or as often as annually, as appropriate to support recovery and as identified in the SAFE program plan.

To prepare for planning, programs may use PMCTrack, including for Studbook/IR comparison, interim recommendations, wants and needs surveys, and outcomes surveys. Use of PMCTrack functionality may be helpful for populations that are largely AZA-based, were previously operating as SSPs that had used PMCTrack, and that find its surveys well suited to their management. PMCTrack may or may not be an appropriate tool for other SAFE programs.

The PMC will share the draft breeding and transfer plans with all IRs at all program partners and participating organizations (including external management authorities), the program's population coordinator, studbook keeper, WCC liaison, and AZA for a 30-day review as soon as possible after a planning session with PMC. External management authorities (i.e., non-AZA entities) must also identify any concerns with the content, including recommendations, in the breeding and transfer plan during this 30-day review period. All comments should be sent to the population coordinator who will compile them and discuss with the program's population biologist. Direct confirmation or no response affirms their support for the organizations included (AZA and non-AZA) and agreement with the recommendations, and all agreed upon recommendations must be followed. Circulating a draft plan may be bypassed if in regular planning there is typically no change between Draft and Final because most animals are held at the facilities designing the plan.

Upon completion of the 30-day review period, the population coordinator, studbook keeper, and population biologist will discuss any needed changes to the recommendations and report. Then the final breeding and transfer plans will be sent by the PMC to AZA's CMWS department and published on the Animal Programs portal on AZA's website and announced in AZA's monthly Animal Programs update. Even if there is minimal involvement from AZA facilities (with the majority of program involvement being non-AZA), posting the breeding and transfer plan provides access to and awareness of facility involvement and program progress toward breeding and recovery efforts. Exceptions may be made by WCC to the posting of the breeding and transfer plan for specific SAFE species programs if information is deemed sensitive, in consultation with an external management authority.

A population coordinator may request an extension to publish their breeding and transfer plan by contacting their SAFE program leader, if there is a current, approved SAFE program plan. If deemed appropriate, the SAFE program leader and population coordinator must work with AZA's PMC to identify and select a new date and then contact AZA's CMWS department and WCC liaison with the approved new date and deadline. If the SAFE species program does not have a current, approved program plan, the population coordinator must contact their SAFE program leader, WCC vice chair for SAFE, and AZA's CMWS department to request an extension and propose a new deadline. The WCC vice chair will work with the WCC to approve/not approve the extension request and communicate the decision to the SAFE program leader and population coordinator.

The PMC tracks the dates for the planning meeting and for when the breeding and transfer plan is completed. AZA's CMWS department tracks accountability deadlines based on the date recorded on the front of the posted breeding and transfer plan. If the population coordinator did not request an extension prior to the breeding and transfer plan accountability deadline, the coordinator has two weeks to describe to the SAFE program leader and the WCC vice chair of SAFE the reason for missing the date and to request a new deadline. The WCC vice chair of SAFE will determine if the reason for the missed deadline for the completion of the breeding and transfer plan is valid, and if so, will work with the SAFE program leader, population coordinator, and PMC to set a new deadline. They may discuss the situation with the WCC Executive Committee, WCC liaison, or others, as needed. They may also consider previous extension requests, ongoing issues with the program, population coordinator, or other concerns in considering extensions. In some cases, the population coordinator may be asked to resign their role.

Breeding and transfer plans developed for SAFE species programs that can confirm they meet the eligibility criteria for receiving PMC services but have opted to use population biologists outside the PMC will also be posted on AZA's website. These publications must identify the author and include a disclaimer that the plan is not a product of AZA's PMC. Population planners outside AZA's PMC are encouraged to use a similar template and include similar content as is found in breeding and transfer plans developed by AZA's PMC; however, no references to the PMC may be included (e.g., logos). AZA members are accustomed to using this format, facilitating their engagement and cooperation and representing best practices in data management and transparency in decision making.

Breeding and transfer plans developed for SAFE species programs that do not meet the criteria to receive PMC services (e.g., *ex situ* population management is not required for *in situ* recovery) will not be posted on AZA's website.

Incorporating *Ex Situ* Population Management into SAFE Program Plans

Some suggestions are provided that might help with the development of a SAFE program plan for programs that use *ex situ* population management as conservation strategy.

1. *Ex situ* management is one of the strategies being used for species recovery. SAFE species programs may be focused on just that element, in which case the program plan may be very tightly focused on providing animals for release. Alternately, AZA partners may already be working more broadly on additional elements of recovery (e.g., monitoring at field sites, engagement with affected communities), in which case the SAFE program plan may be broader and have multiple objectives.
2. Regardless of whether a narrow or broad approach is taken, objectives focused on management of the *ex situ* population to support species recovery must be included when the program plan is developed. For example, the information could be nested as follows:

    a. The relevant recovery plan cites *ex situ* breeding:

Example – Red Wolves

1990 Recovery Plan (updated recovery plan is in progress)

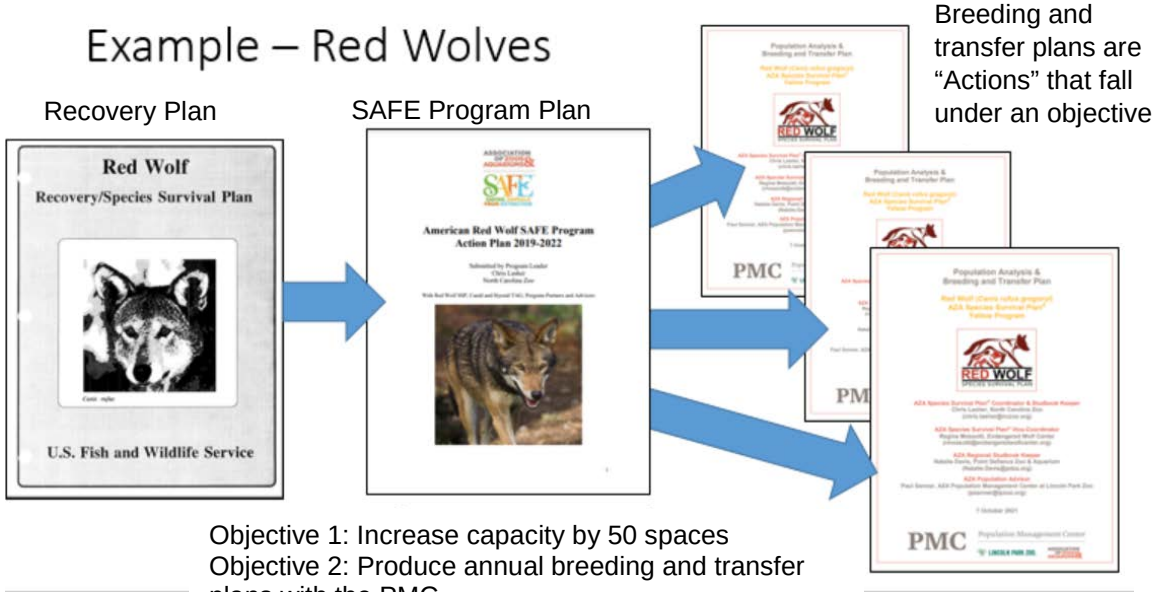
Recovery Objective: The establishment of 220 red wolves in wild situations and the maintenance of 330 in captivity would provide for genetic stability and maintain the species. For the foreseeable future it is not considered feasible to either delist or downlist this species.

Recovery Criteria: Establish and maintain at least three reintroduction projects within the historic range of the red wolf. This must be paralleled by the cooperation and assistance of at least 30 captive-breeding facilities in the United States. Human attitudes regarding red wolves must be addressed through education processes.

Actions Needed:

1. Maintain and evaluate existing wild populations.
2. Establish new populations in the wild.
3. Expand captive-breeding capabilities.
4. Expand cryopreservation capabilities.

b. The SAFE program plan would be written with objectives related to goals for the *ex situ* population, such as:
    i. Objective 1: Increase capacity by 50 spaces[6]
    ii. Objective 2: Produce annual breeding and transfer plans with the PMC that support recovery targets
    iii. Objective 3: Cross-foster and release X animals/year for each year of the program plan, adjusted as needed based on the capacity of USFWS for releases
c. Implementation of the breeding and transfer plans becomes the "Actions" that fall under the objectives:



Breeding and transfer plans are "Actions" that fall under an objective

Objective 1: Increase capacity by 50 spaces
Objective 2: Produce annual breeding and transfer plans with the PMC
Objective 3: Cross-foster and release X animals/year

3. It may be helpful to look at program plans of species that previously had both SSP and SAFE species programs: red wolf, black-footed ferret, eastern indigo snake, and whooping crane have all already navigated some of the challenges of priorities for their *ex situ* populations and *in situ* activities. While the program plan format and template has been updated, their plans may still

[6] These are a combination of actual and imagined objectives from the SAFE American Red Wolf program plan

have some helpful context and elements for building new plans. In addition, the SAFE shark and ray program has incorporated an *ex situ* management element to its most recent plan.

4. Objectives for the first SAFE program plan may focus on making sure that breeding and release needs are being met, or may also explore what other elements, beyond *ex situ* population management, the AZA community may offer that could enhance the program's conservation impact. Perhaps during the first program plan, strategic planning with partners is a priority to explore new opportunities for AZA facilities to get involved or prioritize grant ideas; or the first program plan may focus on identifying advisors or additional people who are excited and have the skillset to lead other conservation strategies the program has previously considered. It is appropriate to set goals and objectives to get additional elements organized, rather than thinking all need to be executed during the first SAFE program plan.

Summary Table of Key Differences Between SSP and SAFE *Ex Situ* Population Management

This table summarizes key differences in processes between SSP and SAFE programs that utilize *ex situ* population management for *in situ* recovery.

Action	SSP	SAFE	Explanation
Work and communicate with taxa-adjacent TAG and SSP Coordinators	Required	Recommended	SAFE species programs are encouraged to collaborate as appropriate or desired with other management structures related to their species (SSPs, TAGs, Advisors). TAGs are required to list SAFE species programs within their Regional Collection Plans (RCPs) in the Animal Programs Summary Table.
Resolve conflicts	Process developed	Process to be developed that reflects needs brought to WCC	Studbook keepers and population coordinators should communicate concerns and potential conflicts to SAFE program leaders and their WCC liaison. WCC liaisons should communicate those conflicts to the WCC vice chair of SAFE to help the committee stay apprised of larger patterns or issues and to advise on resolving those conflicts on a case-by-case basis.
Reflect active release of animals *in situ*, or plans for future release	Not applicable	Required	If the SAFE species program stops actively releasing animals, or if plans for a future release become stalled indefinitely, WCC reserves the option to re-evaluate access to PMC/RMC services, in collaboration with the program. Releases should be reflected in each studbook and breeding and transfer plan. Objectives related to the role of the *ex situ* population toward *in situ* recovery must be included in the relevant SAFE program plan.
Employment of studbook keeper by AZA facility	Required	Recommended	There are benefits for filling the role of the studbook keeper with an applicant employed by an AZA member facility. Familiarity with AZA practices, tools, and communications is helpful; as is accountability to AZA standards.

			There may be times when a SAFE steering committee deems a person employed at a non-AZA facility to be in the best interest of the program. In that case, a secondary point of contact at that organization, ideally the person's supervisor, should be identified.
Studbook to be managed in ZIMS for Studbooks and adhere to "Guidelines for Data Entry and Maintenance of AZA Regional Studbooks".	Required, with limited exceptions	Recommended in ZIMS for Studbooks; other formats may be considered under advisement of PMC	
Create and submit a studbook publication to AZA for publication on the AZA website	Required	Optional	Based on responses to an April-May 2024 survey of the 10 programs that were accessing PMC services for recovery programs, the creation and submission of a PDF studbook publication will be optional for these programs. The WCC may revisit this topic periodically. If the program chooses to create a studbook publication, it must include all elements of the publications developed for regional studbooks in order to be published on AZA's website.
Update studbook database and notify (if in ZIMS for Studbooks) or submit to (if not in ZIMS for Studbooks) the PMC at least every three years.	Required; for SSPs, the date tracked is based on the studbook publication	Required; for SAFE species programs, the date tracked is based on the planning meeting date recorded in the previous breeding and transfer plan	This frequency is the minimum expectation, and adjustments may be made to reflect the needs of the reintroduction program; annual updates may be preferred.
Studbook keeper is not employed (retired, private consultant, etc.) and/or leaves the field but wants to maintain their role.	Not allowed; there is a 6-month grace period to find another position at an AZA-accredited facility when a studbook keeper leaves their position at an AZA-accredited facility	Required to have SAFE program leader support and for studbook keeper to be engaged and responsive	The SAFE program leader must submit a letter to AZA's CMWS department indicating their support for the person to continue serving this role within 90 days of departure of the studbook keeper from their original facility. To retain their position, the studbook keeper must remain engaged and responsive to the SAFE program leader and AZA.
The WCC and APM Committee will review and approve the creation of new studbooks for *ex situ* populations for purposes of *in situ* recovery through review of a submitted SAFE proposal (if not yet a SAFE species program) and a *Request for Center Services*.	Not applicable	Required	APMC becomes aware of new studbooks through participation in the review of *Requests for Center Services*. The studbook keeper informs the relevant TAG(s), once approved.
Programs use PMCTrack in the planning process.	Required, with occasional exemptions allowed	Optional, based on discussion between PMC advisor and	Use of PMCTrack functionality may be helpful for populations that are largely AZA based, were previously operating as

		SAFE species program	SSPs that had used PMCTrack, and that find its surveys well-suited to their management. PMCTrack may or may not be an appropriate tool for other SAFE species programs.
30-day review period of draft breeding and transfer plan.	Required	Required, with exceptions allowed based on discussions among the PMC advisor, studbook keeper, population coordinator, SAFE program leader, and relevant external management authority, if any	The PMC will share the draft breeding and transfer plans with all Institutional Representatives (IRs) at all program partners (including external management authorities) and participating organizations, the program's population biologist and studbook keeper, WCC liaison, and AZA for a 30-day review as soon as possible after a planning session with PMC.
The PMC develops the final breeding and transfer plan in collaboration with the population coordinator and studbook keeper.	Required at least every 3 years	Required at an appropriate frequency to support recovery, as identified in the SAFE program plan	
Final breeding and transfer plan will be published on the Animal Programs portal on AZA's website and announced in AZA's monthly Animal Programs update.	Required	Required, with limited exceptions	Even if there is minimal involvement from AZA facilities (with majority of program involvement being non-AZA), posting the breeding and transfer plan provides access to and awareness of facility involvement and program progress toward breeding and recovery efforts. Exceptions may be made by WCC to the posting of the breeding and transfer plan for specific SAFE species programs if information is deemed sensitive, in consultation with external management authority.
Breeding and transfer plans developed for SAFE species programs that can confirm they meet the eligibility criteria for receiving PMC services but have opted to use population biologists outside the PMC will also be posted on AZA's website.	Not applicable	Required to identify the author and to include a disclaimer that the plan is not a product of AZA's PMC	Population planners outside AZA's PMC are encouraged to use a similar template and include similar content as is found in breeding and transfer plans developed by AZA's PMC. Breeding and transfer plans developed for SAFE species programs that do not meet the criteria to receive PMC services (e.g., *ex situ* population management is not required for *in situ* recovery) will not be posted on AZA's website.
Employment of population coordinator by AZA facility.	Required	Recommended	There are benefits for filling the role of the population coordinator with an applicant employed by an AZA member facility. Familiarity with AZA practices, tools, and communications is helpful; as is accountability to AZA standards. There may be times when an external (i.e., non-AZA) management authority or SAFE steering committee deems a person employed at a non-AZA facility to be in the best interest of the program. In that case, a secondary point of contact at

			that organization, ideally the person's supervisor, should be identified.
Population coordinator is not employed (retired, private consultant, etc.) and/or leaves the field but wants to maintain their role.	Not allowed; there is a 6-month grace period to find another position at an AZA-accredited facility when a population coordinator leaves their position at an AZA-accredited facility	Required to have SAFE program leader support and for population coordinator to be engaged and responsive	The SAFE program leader must submit a letter to AZA's CMWS department indicating their support for the person to continue serving this role within 90 days of departure of the population coordinator from their original facility. To retain their position, the population coordinator keeper must remain engaged and responsive to the SAFE program leader and AZA.