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Chapter 1. Introduction

Purpose

The purpose of an Association of Zoos and Aquariums (AZA) Regional Studbook is to document the pedigree and history of each animal within a managed population among AZA-accredited facilities, Sustainability Partners, and Certified Related Facilities (CRFs). These data should be validated and further analyzed to summarize the current demographic and genetic status of the population by the AZA Population Management Center (PMC), a PMC Adjunct Advisor, or an Approved Small Population Management Advisory Group (SPMAG) Advisor, to create a Breeding and Transfer Plan.

Description

AZA Taxon Advisory Groups (TAGs) identify, manage, and support AZA's cooperative Animal Programs and develop Regional Collection Plans (RCPs) that recommend taxa for cooperative management among AZA-accredited facilities, Sustainability Partners, and Certified Related Facilities (CRFs). They identify Animal Program management designations, and define Animal Program roles, goals, and essential actions. All Animal Programs, along with the Animal Population Management Committee (APM Committee), must assure that the appropriate AZA Board approved policies are followed in all aspects of Animal Program management. All AZA member facilities and Animal Programs, regardless of management designation, must adhere to the AZA Policy on Responsible Population Management [formerly the Acquisition and Disposition (A&D)] Policy, as well as the AZA Code of Professional Ethics. All Board approved policies are found on the AZA website (https://www.aza.org/board-approved-policies-and-position-statements).

AZA Regional Studbooks document the pedigree and entire demographic history of each individual in a population. These collective histories, compiled and maintained by an AZA Regional Studbook Keeper, are known as the population's genetic and demographic identity and are valuable tools to track and manage each individual as part of a single, ex situ population. All AZA Regional Studbook Keepers work directly with the associated TAG, all AZA facilities, approved Sustainability Partners, the APM Committee, and the AZA Conservation, Management, and Welfare Sciences Department. The AZA Regional Studbook Keeper must also work closely with the associated SSP Coordinator (if the AZA Regional Studbook Keeper is not the SSP Coordinator), and the PMC, a PMC Adjunct, or an approved SPMAG Advisor to complete and distribute a timely and accurate AZA Regional Studbook for use in demographic and genetic analyses relevant for a Breeding and Transfer Plan.

All AZA Regional Studbooks track individuals for population management purposes; however population planning resources are prioritized according to Animal Program Sustainability Designations. All Animal Programs that are designated as a Green, Yellow, or Red SSP Program must have an associated AZA Regional Studbook (or an International Studbook if an AZA Regional Studbook does not exist). AZA Regional Studbooks for Species Survival Plan® (SSP) Programs are used for creating Breeding and Transfer Plans.
Chapter 2. Organization

Animal Program Overview

### AZA Board of Directors

### AZA

### AZA Conservation, Management, and Welfare Sciences

### Animal Population Management Committee (APM Committee)

#### Taxon Advisory Group (TAG)

#### TAG Officers
- Chair
- Vice Chair
- Secretary
- Treasurer (if appropriate)

#### TAG Steering Committee

#### Liaisons / Representatives
- APM Committee Liaison
- Institutional Representatives

#### Advisors
- Conservation Advisors
- Education Advisors
- Population Advisors
- Research Advisors
- Scientific Advisors
- Technical Advisors

### Species Survival Plan® (SSP) Programs

#### SSP Coordinator

#### SSP Vice –Coordinator (recommended)

#### SSP Management Group (if desired)

### Candidate Programs

#### Candidate Program Leader

### Studbooks

#### Studbook Keepers
AZA Regional Studbook Keeper

Position Overview
The AZA Regional Studbook Keeper is responsible for maintaining an accurate record of the histories of all individual animals in an ex situ population for the purpose of population management. This is an important responsibility because the global zoo and aquarium community depends on the maintenance of accurate Studbook records in order to manage populations and fulfill the goal of long-term sustainability. Ideally, the AZA Regional Studbook Keeper also serves as that Program’s SSP Coordinator or the SSP Vice Coordinator and the Regional Studbook data will be used to create the SSP Program’s Breeding and Transfer Plan. The AZA Regional Studbook Keeper works directly with the associated TAG and SSP Program, all participating AZA member facilities, the APM Committee, the PMC, a PMC Adjunct, or an approved SPMAG Advisor, and the AZA Conservation, Management, and Welfare Sciences Department to complete and distribute a timely and accurate AZA Regional Studbook to be used for demographic and genetic analyses relevant to the SSP Program’s population management.

The AZA Regional Studbook Keeper serves as a contact and AZA expert for the species and abides by the duties and responsibilities set forth by the AZA, APM Committee, SSP Program, and the TAG. If the Studbook is an International Studbook, and the International Studbook Keeper is employed in an AZA member facility, the Studbook Keeper is held to the same accountability requirements as an AZA Regional Studbook Keeper with regards to the AZA Regional Studbook data.

Eligibility Requirements
AZA Regional Studbook Keepers must:

- as of January 1, 2011, be a paid employee at an AZA member facility (AZA-accredited facility, Certified Related Facility, Society Partner, and Conservation Partner.) AZA Regional Studbook Keepers appointed prior to this date who were not employed at an AZA member facility are granted a personal variance as long as their existing circumstance remains in effect. When such individuals change circumstances, they must resign as AZA Regional Studbook Keeper or gain employment at an AZA member facility within 6 months.
  - The term “paid” refers to hourly or salaried. The intent of this requirement is to assure that each Program Leader is fully integrated with his/her facility, serves a vital and consistent role within the facility that is outside of their role as a Program Leader, and has the facility’s full support to serve as a Program Leader. Payment of a minimal amount to a Program Leader who is no longer integrated with their facility outside of their role as Program Leader does not fulfill this eligibility requirement.
- have an individual AZA membership.
- uphold Studbook and Animal Program business confidentiality.
- be well versed in the biology and behavior of the Studbook species.
- complete the AZA Professional Development Course “Population Management 1 (PM1): Data Acquisition and Processing” within 2 years of becoming the AZA Regional Studbook Keeper. (https://www.aza.org/professional-development). Studbook Keepers are also encouraged to take “Population Management 2 (PM2): Data Analysis and Breeding Recommendations.”
- have proficiency in word processing and spreadsheet programs, population management software, utilizing AZA web resources, and have email access.
- have strong skills in organization, communication, and in establishing and maintaining effective working relationships with diverse groups of individuals.
- provide a Statement of Commitment included in the application (Appendix A).

Essential Position Functions
- Create, update and submit a current AZA Regional Studbook report to the AZA Conservation, Management, and Welfare Sciences Department for publication on the AZA website, following the template and requirements outlined in this AZA Regional Studbook Keeper Handbook (Appendix D).
  - within 12 months of completing PM1.
  - within 12 months of becoming AZA Regional Studbook Keeper if the Studbook Keeper has already completed PM1 prior to becoming an AZA Regional Studbook Keeper.
- Submit a complete, current AZA Regional Studbook database (PopLink, SPARKS, or Excel).
o to the AZA Conservation, Management, and Welfare Sciences Department and the PMC at least once every 3 years in accordance with the current to date listed on the front cover of the previous Studbook publication; however, annual updates are preferred.

o to the SSP Program’s Population Advisor (PMC, PMC Adjunct, SPMAG Advisor) prior to each formal population planning meeting, or as needed for population management purposes.

o to the TAG Chair and SSP Coordinator after each publication.

o If the Studbook is maintained in ZIMS for Studbooks, the Studbook cannot be exported. Instead of submitting a database, the PMC, PMC Adjunct, or SPMAG Advisor must have access to the database in ZIMS for Studbooks.

• Adhere to the “Guidelines for Data Entry and Maintenance of AZA Regional Studbooks” (https://assets.speakcdn.com/assets/2332/guidelines_for_data_entry_and_maintenance_1996.pdf).

• Work closely with the appropriate TAG and SSP Coordinators.

• Attend relevant meetings, when possible.

• Update new contact information, including facility, phone, fax, and email via the AZA website by logging into their account on “My AZA.”

• Review relevant AZA Online Training Modules (https://www.aza.org/online-training-modules/).

• Serve as a contact and AZA expert for the Studbook species. Understand that Studbook Keepers are not responsible for providing engineering advice or letters of endorsement to facilities designing new exhibits for the Animal Program species. Rather, it is the responsibility of those who are developing new exhibit designs to approach a range of AZA member facilities to learn about various specifications or sources regarding the species to be exhibited.

• Abide by the duties and responsibilities set forth by the AZA, the APM Committee, and the TAG.

• Adhere to the AZA Communications Policy (Appendix C).

• Maintain contact with counterparts in other regional associations to facilitate inter-regional cooperation, if applicable.

• Provide data to the International Studbook Keeper for the Studbook species, if applicable.

• If there is a separate International Studbook Keeper for the species or if data are combined in a single International Studbook, the AZA Regional Studbook Keeper is still responsible for current and accurate AZA regional data needed for AZA population analyses.

• If resigning from the position of the AZA Regional Studbook Keeper, provide a written notice of departure to the TAG Chair, and provide all relevant AZA Regional Studbook documents to the TAG Chair and to the replacement Studbook Keeper (if known). Relevant documents include most current version of the studbook database (PopLink, SPARKS, or Excel) or access to the database if maintained in ZIMS for Studbooks, taxon reports, contact lists, etc.

International Studbooks

Purpose
The World Association of Zoos and Aquariums’ (WAZA) Committee of Population Management (CPM) administers and provides oversight to International Studbooks. International Studbooks:

• provide a valuable service to the zoological community by offering the most complete and accurate global data on the ex situ population’s pedigree and demography, if possible including husbandry and veterinary guidance and

• enhance management of the ex situ population through analysis of the International Studbook data.

International Studbook Keepers employed at AZA Member Facilities

• International Studbook Keepers employed within AZA member facilities, whose population does not have an AZA Regional Studbook, must keep the AZA regional data current and ready for population management purposes, and must adhere to the same accountability requirements as AZA Regional Studbook Keepers for the AZA regional components of their International Studbook.

• International Studbook Keepers employed within AZA member facilities are expected to work closely with the AZA TAG Chair.

• International Studbook Keepers are responsible for updating the entire International Studbook database, however only regional accountability will be enforced by the APM Committee. See Chapter 4 for more information on accountability requirements.
Chapter 3. AZA Regional Studbook Management

Animal Program Management Designations

All **AZA Animal Programs** that have a *published* AZA Studbook, at least three defined goals, a minimum population size of 20 individuals, and are managed among three or more AZA member facilities are designated, in their TAG’s Regional Collection Plan (RCP), and on the AZA website, as an SSP Program. Animal Programs that have a published AZA Studbook, at least 3 defined goals and are designated as Extinct in the Wild, Critically Endangered, or Endangered (IUCN or other government agency) are not required to meet the minimum population size or number of participating facilities criteria in order to be designated by the TAG as an SSP Program.

Whether the SSP Program is designated as Green, Yellow, or Red is dependent on the Animal Program’s sustainability criteria (e.g., current population size, number of participating facilities, and projected gene diversity). The TAG may designate Animal Programs that do not qualify to be SSP Programs as **Candidate Programs** as long as the TAG has the goal of growing the Candidate Program to SSP status. Green, Yellow, and Red SSP Programs operate under distinct levels of management. The differences in Animal Program management are summarized in Table 1. The TAG and SSP Program Handbooks provide additional Animal Program management details.
Table 1. Animal Program Overview: Green SSP, Yellow SSP, Red SSP, and Candidate Program Management.

<table>
<thead>
<tr>
<th></th>
<th>Green SSP Program</th>
<th>Yellow SSP Program</th>
<th>Red SSP Program</th>
<th>Candidate Program</th>
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<tr>
<td><strong>AZA Policies</strong></td>
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<td>AZA Policy on Responsible Population Management</td>
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<td>AZA Code of Professional Ethics</td>
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<td>APM Committee Approval of Sustainability Partners</td>
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<td>Minimum population size (N)*</td>
<td>50</td>
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<td>Minimum number of participating AZA member facilities*</td>
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<td>Projected gene diversity (%GD) at 100 years or 10 generations</td>
<td>90.0% or above</td>
<td>Less than 90.0%</td>
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<td><strong>Cooperative Management</strong></td>
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<td>AZA Regional Studbook</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
<td>Not Required^</td>
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<td>Formal population planning by PMC, PMC Adjunct, or SPMAG Advisor</td>
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<td>Required</td>
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<td>Not Required</td>
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<td><strong>Accountability</strong></td>
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<td>Develop three Program goals</td>
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<td>Required</td>
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<td>AZA and APM Committee oversight</td>
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<td>Breeding and Transfer Plan published at least every 3 years</td>
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<td>Not Required</td>
</tr>
<tr>
<td>AZA Regional Studbook published at least every 3 years</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
<td>Not Required</td>
</tr>
<tr>
<td>AZA Regional Studbook Keeper must take Population Management 1</td>
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<td>Required</td>
<td>Required</td>
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<tr>
<td>Program Leader must take Population Management 2</td>
<td>Recommended</td>
<td>Recommended</td>
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</tbody>
</table>

*If a managed species is listed by the IUCN or other government agency as Extinct in the Wild, Critically Endangered, or Endangered, there will be no minimum number of participating facilities, nor minimum population size requirements, in order to qualify for management at the SSP level. In these cases, SSP status (Green, Yellow, Red) will be determined based upon population size and projected gene diversity at 100 years or 10 generations.

^For a Candidate Program to upgrade to management at the SSP level, an AZA Regional Studbook must be published. The Candidate Program Leader, therefore, must complete AZA’s Population Management I in order to publish an official AZA Regional Studbook.

**AZA Regional Studbooks for SSP Programs**

AZA Regional Studbooks for SSP Programs are integral to formal cooperative Animal Program population management and the production of a Breeding and Transfer Plan.

- The AZA Regional Studbook Keeper, if not also serving as the SSP Coordinator, must work closely with the associated SSP Coordinator, and the PMC, PMC Adjunct, or approved SPMAG Advisor.
• The AZA Regional Studbook Keeper must provide a complete, current AZA Regional Studbook database to the PMC Planning Coordinator prior to each population planning meeting, or as needed for population management purposes.

Creating/Maintaining Studbooks for Candidate Programs
The TAG may choose to designate certain populations that they hope to grow to meet the criteria to become an SSP Program as Candidate Programs. Candidate Programs are not SSP Programs, and are overseen by a Candidate Program Leader. In order for a Candidate Program to become an SSP Program, the Candidate Program Leader must take PM1 and publish an AZA Regional Studbook on the AZA website demonstrating that the population meets the minimum criteria to be an SSP (See Table 1 above or the SSP Handbook for more information), as well as identify at least three goals for the Animal Program.

Candidate Program Oversight
• Candidate Programs are managed only by the TAG, and therefore do not have additional oversight by the AZA Conservation, Management, and Welfare Sciences Department and the APM Committee.
• Candidate Programs do not have the same accountability requirements (i.e., AZA Regional Studbook publication, formal population planning) as SSP Programs.
• Candidate Programs are encouraged to work with their TAG on defining their goals and essential actions, as these may impact subsequent population management strategies if the Candidate Program becomes an SSP Program.
• Candidate Programs are not prioritized to receive formal population planning resources (assistance from the PMC or PMC Adjuncts).
• Candidate Programs may be designated as SSP Programs once the appropriate criteria are reached.
• An official AZA Regional Studbook published by a Candidate Program Leader who has taken PM1 must demonstrate that SSP criteria have been met before the Candidate Program will be designated as an SSP Program. This AZA Regional Studbook must be submitted to the AZA Conservation, Management, and Welfare Sciences Department (conservation@aza.org) for publication on the AZA website.
  o If the Candidate Program Leader has not taken PM1 prior to submitting an initial AZA Regional Studbook, the Candidate Program Leader must identify to the AZA Conservation, Management, and Welfare Sciences Department that they have a skilled mentor (one that has taken PM1) that guided them through the process, and present their Studbook for review by a PM1 instructor, a PMC staff member, a PMC Adjunct Population Biologist, or an AZA Conservation, Management, and Welfare Sciences staff member.
Chapter 4. AZA Regional Studbook Administration

Election Processes
AZA Regional Studbook Keepers are elected by their TAG’s Steering Committee if the TAG has an approved RCP, or by the APM Committee if the TAG does not have a current, approved RCP.

AZA Regional Studbook Keeper vacancies must be announced in the monthly Animal Programs Update (http://www.aza.org/animal-programs-monthly-update/), and listed on the Current Program Leader Vacancy webpage (http://www.aza.org/Program-Leader-Vacancies/) on the AZA website for a minimum of 30 days.

Applying to Become an AZA Regional Studbook Keeper
• Ideally, the SSP Coordinator or SSP Vice Coordinator is also the AZA Regional Studbook Keeper for the SSP Program.
• Applications for the AZA Regional Studbook Keeper position (Appendix A) should be submitted to the TAG Chair (or the AZA Conservation, Management, and Welfare Sciences Department if the TAG does not have a current, approved RCP or there is no TAG Chair).
• Animal Program designations (e.g., Green, Yellow, and Red SSP Programs), and the differences in their management strategies should be fully understood when individuals apply for an AZA Regional Studbook.
• The TAG will submit the applicants to the Steering Committee and call for a vote. If the TAG does not have a current, approved RCP or there is no TAG Chair, the applications will be sent by the AZA Conservation, Management, and Welfare Sciences Department to the APM Committee for a vote.
• A new AZA Regional Studbook Keeper will be elected from the applicant pool by majority vote of the Steering Committee and the TAG will communicate this new appointment to the applicant and the AZA Conservation, Management, and Welfare Sciences Department. If the TAG does not have a current, approved RCP or there is no TAG Chair, the AZA Conservation, Management, and Welfare Sciences Department will ask the TAG to endorse a candidate. The AZA Conservation, Management, and Welfare Sciences Department will then submit all applications and the TAG’s endorsement to the APM Committee for a vote.
• The TAG, or the AZA Conservation, Management, and Welfare Sciences Department, will then confirm the new appointment decision to the rest of the applicant pool.
• If there are no applicants during the 30 day period, the vacancy will remain posted.
• If a Candidate Program is upgraded to an SSP Program, and the TAG wants the current Candidate Program Leader for that Candidate Program to assume the position of Regional Studbook Keeper and/or SSP Coordinator, the vacancies do not need to be advertised.
• If an SSP Coordinator resigns, and the Studbook Keeper for that same SSP Program wants to assume the SSP Coordinator position, the vacancy must be advertised in the monthly Animal Programs Update and posted on the AZA website (http://www.aza.org/Program-Leader-Vacancies/) for a minimum of 30 days. The Studbook Keeper may then apply for the SSP Coordinator position.

AZA Regional Studbook Keeper Institutional Changes
Change in Facility
• AZA Regional Studbook Keepers who move to a new AZA member facility must, within 90 days of departure from their original facility, submit new Statements of Commitment to the TAG Chair (Appendix A).
• If the AZA Regional Studbook Keeper is leaving a facility and wishes to maintain the Studbook Keeper position and the facility does not wish to relinquish the AZA Regional Studbook, the Director (or IL) must contact the TAG Chair (or the APM Committee Vice Chair for TAGs if the TAG does not have a current, approved RCP or the TAG Chair position is vacant) within 30 days of the departure of the AZA Regional Studbook Keeper. The position must be advertised as a vacancy in the monthly
Animal Programs Update for a minimum of 30 days and a new AZA Regional Studbook Keeper candidate from the facility must submit an application (Appendix A).

- The TAG Steering Committee (or the APM Committee Vice Chair for SSPs & Studbooks if the TAG does not have a current, approved RCP or the TAG Chair position is vacant) will request an updated application from the current AZA Regional Studbook Keeper if s/he wishes to retain their position.
- Additional application will also be received from any interested candidates.
- The TAG Steering Committee will review and vote on the candidates to select the one most qualified.
- For purposes of continuity of AZA Regional Studbook management, applicants from the current supporting facility will be given serious consideration.
- Upon selection of an AZA Regional Studbook Keeper, the TAG Chair (or the APM Committee Vice Chair for SSPs & Studbooks if the TAG does not have a current, approved RCP or the TAG Chair position is vacant) will inform the applicants, the supporting facilities, and the AZA Conservation, Management, and Welfare Sciences Department of the final decision.

- All AZA Regional Studbook Keepers (and International Studbook Keepers employed by AZA member facilities) must update their new contact information, including facility, phone, fax, and email to the TAG Chair and via the AZA website by logging into their account on “My AZA.”

**Loss of Employment**

- If an AZA Regional Studbook Keeper loses their position from an AZA member facility they must communicate this to the TAG Chair.
- AZA Regional Studbook Keepers have 6 months to re-gain employment with another AZA member facility before they have to surrender their position.
- If an AZA Regional Studbook Keeper is no longer employed at an AZA member facility and fails to communicate with the TAG or the AZA Conservation, Management, and Welfare Sciences Department within 1 month, it will be assumed that the Studbook Keeper has abandoned the role in the Animal Program and the TAG may proceed with filling the vacancy before the 6 month grace period is over.
- Departing AZA Regional Studbook Keepers are required to uphold Studbook and Animal Program business confidentiality and provide all relevant AZA Regional Studbook documents to the TAG Chair and their replacement. Relevant documents include most current version of the studbook database (PopLink, SPARKS, or Excel) or access to the database if maintained in ZIMS for Studbooks, taxon reports, contact lists, etc.
- AZA Regional Studbook Keepers who do not resign under these conditions will be removed by the TAG Chair or, if the TAG does not have a current, approved RCP, the APM Committee.

**Member Facility Loss of Accreditation/Certification**

- If an AZA Regional Studbook Keeper’s facility loses accreditation or certification, they must communicate this to the TAG Chair.
- The AZA Regional Studbook Keeper has 6 months to resign or find employment with another AZA member facility.
- Departing AZA Regional Studbook Keepers are required to uphold Studbook and Animal Program business confidentiality and provide all relevant AZA Regional Studbook documents to the TAG Chair and their replacement. Relevant documents include most current version of the studbook database (PopLink, SPARKS, or Excel) or access to the database if maintained in ZIMS for Studbooks, taxon reports, contact lists, etc.
- AZA Regional Studbook Keepers who do not resign under these conditions will be removed by the TAG Chair or, if the TAG does not have a current TAG Chair, the APM Committee.

**Resignation**

- AZA Regional Studbook Keepers must provide a written notice of resignation to the TAG Chair (or the APM Committee Vice Chair for SSPs & Studbooks if the TAG does not have a current, approved RCP).
- Departing AZA Regional Studbook Keepers are required to uphold Studbook and Animal Program business confidentiality and provide all relevant AZA Regional Studbook documents to the TAG Chair
and their replacement. Relevant documents include most current version of the studbook database (PopLink, SPARKS, or Excel) or access to the database if maintained in ZIMS for Studbooks, taxon reports, contact lists, etc.

Changing a Regional Studbook to an International Studbook
AZA Regional Studbook Keepers may apply to make their AZA Regional Studbook international in scope.
- The AZA Regional Studbook should be published at least once before international status is considered.
- To request conversion of an AZA Regional Studbook to become an International Studbook, AZA Regional Studbook Keepers must complete a Regional to International Studbook Application (Appendix B) and submit it to the APM Committee Vice Chair for SSPs & Studbooks, with a copy sent to the TAG Chair, and the AZA Conservation, Management, and Welfare Sciences Department.
- Although the APM Committee does not approve International Studbooks, APM Committee Vice Chair for SSPs & Studbooks will present the application for International Studbooks from AZA Regional Studbook Keepers (Appendix B) to the APM Committee for review and endorsement.
- If endorsed by the APM Committee, the APM Committee Chair will send the endorsement to the AZA Regional Studbook Keeper.
- It is the AZA Regional Studbook Keeper responsibility to apply for an International Studbook through WAZA’s CPM, and communicate back to the TAG and the AZA Conservation, Management, and Welfare Sciences Department.
- The WAZA CPM accepts the overall responsibility for International Studbooks. International Studbook Keepers from AZA member facilities also usually serve as the AZA Regional Studbook Keeper for that species.
- International Studbook Keepers from AZA member facilities must meet the same accountability requirements as AZA Regional Studbook Keepers for the regional population.

AZA Regional Studbook Keeper Accountability

Population Management 1 Course
- All AZA Regional Studbook Keepers are required to take the AZA Professional Development Course “Population Management 1 (PM1): Data Acquisition and Processing” within 2 years of becoming the AZA Regional Studbook Keeper (https://www.aza.org/professional-development).
- PM1 teaches the critical skills needed to create and maintain a population database for a single zoo or aquarium population. AZA Regional Studbook Keepers learn how to use the necessary software, cope with unique data entry situations, summarize data in the Studbook database, and calculate basic life history parameters.
- PM1 is offered each November. For more information on how to register for Professional Development courses, contact the AZA Professional Development Department, azatraining@aza.org.
- AZA Regional Studbook Keepers are encouraged to take “Population Management 2 (PM2): Data Analysis and Breeding Recommendations,” which teaches the integration of demography, genetics, and husbandry to set population goals and make breeding and transfer recommendations for zoo and aquarium populations. PM2 also teaches the management skills needed for coordinating AZA Animal Programs. PM2 is offered each November.

AZA Regional Studbook Accountability Requirements
- An up to date AZA Regional Studbook database must be provided to the SSP Program’s Population Advisor (PMC, PMC Adjunct, or approved SPMAG Advisor) and to the AZA Conservation, Management, and Welfare Sciences Department prior to each formal population planning meeting, or as needed for AZA population management purposes.
- A complete, current AZA Regional Studbook report must be submitted to the AZA Conservation, Management, and Welfare Sciences Department for publication on the AZA website within 12 months of completing the PM1 course, in accordance with the requirements outlined in Chapter 5 of this AZA Regional Studbook Keeper Handbook.
  - If the Studbook Keeper has not taken PM1 prior to submitting an initial AZA Regional Studbook, the Studbook Keeper must identify to the AZA Conservation, Management, and Welfare Sciences Department.
Sciences Department that they have a skilled mentor (one that has taken PM1) that guided them through the process, and present their Studbook for review by a PM1 instructor, a PMC staff member, a PMC Adjunct Population Biologist, or an AZA Conservation, Management, and Welfare Sciences staff member.

- A complete, current AZA Regional Studbook report must be submitted to the AZA Conservation, Management, and Welfare Sciences Department for publication on the AZA website at least every 3 years in accordance with the current to date listed on the front cover of the previous Studbook publication.

- A complete, current AZA Regional Studbook database must be submitted to the AZA Conservation, Management, and Welfare Sciences Department and the PMC at least once every 3 years in accordance with the current to date listed on the front cover of the previous Studbook publication; however annual updates are preferred.

- **December 31st, 2020** – By this date, AZA studbooks must migrate to the Live version of ZIMS for Studbooks, except for those studbooks that:
  1. Have a Studbook Keeper who has not yet taken the PM1 course;
  2. Are vacant/do not currently have a Studbook Keeper;
  3. Are maintained in software other than SPARKS or PopLink (e.g. Excel, Access)

**International Studbook Keepers Employed by AZA Member Facilities**

International Studbook Keepers are overseen by the WAZA Committee for Population Management (CPM). However, AZA SSP Programs rely on data contained within these International Studbooks for AZA regional population planning. International Studbooks may not be sufficiently up to date for all regions and, therefore, may not be useful for regional population management. For this reason it is important and practical that, if the International Studbook Keeper is employed by an AZA member facility, h/she also acts as the AZA Regional Studbook Keeper and maintains a regional dataset for that population. International Studbook Keepers employed by AZA member facilities:

- must keep their AZA Regional Studbook, and are encouraged to keep their International Studbook, data current.
- whose populations do not have separate AZA Regional Studbooks must keep their AZA regional data current and ready for population management purposes and adhere to the same accountability requirements as AZA Regional Studbook Keepers for the AZA regional components of their International Studbook.
- must meet the AZA Regional Studbook Accountability Requirements defined in the section above, which will be enforced by the APM Committee, for the AZA Regional Studbook data.
- must meet the criteria for data collection and publication of International Studbook data as outlined by WAZA.

Contact the APM Committee Vice Chair for SSPs & Studbooks for any questions or further information about International Studbook Keeper responsibilities.

**Automated Accountability Emails**

Automated deadline reminders are emailed as a courtesy to remind the AZA Regional Studbook Keeper, and other associated parties, of an upcoming deadline. Each email includes the appropriate instructions, relevant contact information, and links to the Deadline Information pages on the AZA website (http://www.aza.org/animal-program-deadlines/). These automated emails are administered as follows:

- One year prior, and 6 months prior to the deadline - Sent to the AZA Regional Studbook Keeper, and copied to the TAG Chair and the AZA Conservation, Management, and Welfare Sciences Department.
- One month prior - Sent to the AZA Regional Studbook Keeper, and copied to the TAG Chair, **Institutional Liaison**, the APM Committee Chair, the **APM Committee Liaison**, and the AZA Conservation, Management, and Welfare Sciences Department.
- Deadline reached - Sent to the AZA Regional Studbook Keeper, and copied to the TAG Chair, Institutional Liaison (IL), the APM Committee Chair, the APM Committee Liaison, and the AZA Conservation, Management, and Welfare Sciences Department.
• Two weeks past - Sent to the AZA Regional Studbook Keeper, and copied to the TAG Chair, IL, the APM Committee Chair, the APM Committee Liaison, and the AZA Conservation, Management, and Welfare Sciences Department.

Extension requests

Prior to the accountability deadline date:

• The AZA Regional Studbook Keeper may request an extension to complete their AZA Regional Studbook prior to the due date by contacting their TAG Chair, if the TAG has a current, approved RCP.
  o If deemed appropriate, the TAG Chair must contact the AZA Conservation, Management, and Welfare Sciences Department with the approved new deadline.

• If the TAG does not have a current, approved RCP, the AZA Regional Studbook Keeper must also contact the APM Committee Vice Chair for SSPs & Studbooks to request an extension.
  o If deemed appropriate, the TAG Chair must contact the APM Committee Vice Chair for SSPs & Studbooks and the AZA Conservation, Management, and Welfare Sciences Department with the proposed new deadline.

• The APM Committee Vice Chair will work with the APM Committee to approve/not approve the extension request and communicate the decision to the TAG Chair and AZA Regional Studbook Keeper.

After the accountability deadline has passed:

• If the AZA Regional Studbook extension request was not made prior to the AZA Regional Studbook deadline but the AZA Regional Studbook Keeper wishes to maintain their position, the IL or Director of the AZA Regional Studbook Keeper’s facility must contact the APM Committee Vice Chair for SSPs & Studbooks within 2 weeks of the missed deadline to discuss the reason for the missed deadline, and request a new deadline.

• The APM Committee will vote to determine if the reason for the missed deadline for the completion of the AZA Regional Studbook is valid, and if so, a new deadline will be set.

• If the APM Committee determines that the reason for the missed deadline is non-valid, the AZA Regional Studbook Keeper will likely be removed from their position.

• If the AZA Regional Studbook Keeper is removed, the position vacancy will be advertised on the AZA website and in the monthly Animal Programs Update.
Chapter 5. AZA Regional Studbook Reports

Scope
Typically, the scope of an AZA Regional Studbook must include pedigree and demographic data about the entire living and historic managed population, including, but not limited to, all animals currently living in AZA member facilities, approved Sustainability Partners, and all of their ancestors back to the founder animals.

- AZA Regional Studbook Keepers who are responsible for species that have exceptionally large numbers of historical individuals unrelated to the living population, however, may be able to limit the scope of their AZA Regional Studbook.
- The decision to limit the scope of the AZA Regional Studbook to this level must only be made after consultation with, and approval by, the Population Advisor, SSP Coordinator (if not the AZA Regional Studbook Keeper), and TAG Chair.
- If the scope is limited, the limiting conditions (e.g., all animals living as of 1 January 2000, their ancestors back to founder animals, and all of their descendants) must be clearly indicated within the Studbook (i.e., in Species Notes in PopLink or SPARKS software).

Required Elements
The AZA Regional Studbook Report must be submitted to the AZA Conservation, Management, and Welfare Sciences Department for publication on the AZA website in a Word or PDF version. A Studbook template can be found on the AZA website (https://www.aza.org/templates-and-applications). See Appendix D for details on publishing with PopLink, SPARKS or ZIMS for Studbooks. The Studbook submitted to meet accountability requirements must include the items listed below; any alterations to these requirements must be discussed with the AZA Conservation, Management, and Welfare Sciences Department.

- A cover page that includes essential information such as the species common and scientific names, AZA Regional Studbook Keeper name and contact information, picture of the AZA Regional Studbook species, date through which the data are current, and the Population Advisor (if applicable).
- A Table of Contents that details all of the items below.
- Any necessary citations for photographs and data.
- Currently Living Population - sorted by facility.
- Historical Population - sorted by Studbook number.
- The geographic and chronological scope (regional or international, countries included, date through which data are current, publication date).
- Data field descriptions (e.g., descriptions of F.M.U for sex, WILD, UNK, MULT parent ID).
- Conventions (e.g., what does hatch date represent? What date estimates are used?). Many standard conventions have been developed by AZA population advisors and are outlined in the “Guidelines for Data Entry and Maintenance of North American Regional Studbooks,” located on the Lincoln Park Zoo website at: https://www.aza.org/assets/2332/standardsdataentry2.pdf
- A List of Historical Facilities - sorted by Species360 mnemonic.
- An AZA Regional Studbook Disclaimer (see below).

AZA Regional Studbook Disclaimer
Copyright (publication date) by (Studbook Keeper’s facility name). All rights reserved. No part of this publication may be reproduced in hard copy, machine-readable or other forms without advance written permission from the (Studbook Keeper’s facility name). Members of the Association of Zoos and Aquariums (AZA) may copy this information for their own use as needed.

The information contained in this studbook has been obtained from numerous sources believed to be reliable. AZA and the (Studbook Keeper’s facility name) make a diligent effort to provide a complete and accurate representation of the data in its reports, publications, and services. However, AZA and the (Studbook Keeper’s facility name) do not guarantee the accuracy, adequacy, or completeness of any information. AZA and the (Studbook Keeper’s facility name) make no warranties or representations of any kind, express or implied, including but not limited to warranties of merchantability of fitness for
particular purpose. AZA and the (Studbook Keeper's facility name) disclaim all liability for errors or omissions that may exist and shall not be liable for any incidental, consequential, or other damages (whether resulting from negligence or otherwise) including, without limitation, exemplary damages or lost profits arising out of or in connection with the use of this publication.

Because the technical information provided in the studbook can easily be misread or misinterpreted unless properly analyzed, AZA and (Studbook Keeper's facility name) strongly recommend that users of this information consult with the Studbook Keeper in all matters related to data analysis and interpretation.

• If publishing an AZA Regional Studbook using ZIMS for Studbook, include both the AZA Regional Studbook Disclaimer and the ZIMS for Studbooks Disclaimer (see below).

ZIMS for Studbooks Disclaimer
These studbook data are being maintained in ZIMS for Studbooks, which does not currently have a Studbook Report export function; therefore, the historic events (e.g., births, transfers) for each individual are not included in this studbook publication document. This current altered format without the historic events is temporarily acceptable for the AZA Studbook Publication. If you have questions about the historic events of an individual in this studbook, please contact the Studbook Keeper.

Publication
• The publication of an AZA Studbook report is a required element to meet accountability deadlines as well as to disseminate information regarding the population. The electronic publication of an AZA Studbook Report allows updates to be produced quickly and with minimal resources.

• The APM Committee requires that AZA Regional Studbook reports be published electronically (in Word or PDF) on the AZA Regional Studbooks Program page in the Animal Programs Database section of the AZA website: https://ams.aza.org/eweb/DynamicPage.aspx?Site=AZA&WebKey=8f652949-31be-4387-876f-f49a2d7263b2. Please email the report to the AZA Conservation, Management, and Welfare Sciences Department (conservation@aza.org) for posting on the AZA website. Publishing the completed AZA Regional Studbook report prior to or on the due date will fulfill the AZA Regional Studbook Keeper’s accountability requirements. Please be sure to include all required elements as found in this chapter.

• If the document is too large to send by email, please use a zip file or a file sharing website. Check with the PMC Planning Coordinator and/or AZA Conservation, Management, and Welfare Sciences Department for file sharing options.

• Check with your IT department regarding restrictions on sending files with .zip or .bin extensions. The PMC cannot receive zip files. It is recommended that any sent files be accompanied by a separate follow up email to assure file delivery.

• When any AZA Regional Studbook (or International Studbook) is published on the AZA website, an automated email is sent to the AZA Regional Studbook Keeper and the TAG Chair notifying them of its publication, and its publication will be announced in the Animal Programs Update.

• See Appendix D for details on publishing AZA Regional Studbooks using PopLink, SPARKS, or ZIMS for Studbooks or visit http://www.lpzoo.org/population-management-center.

• An electronic version of the AZA Regional Studbook database (in PopLink, SPARKS, or Excel format) must be sent to the following:
  • The AZA Conservation, Management, and Welfare Sciences Department, conservation@aza.org.
  • The PMC Planning Coordinator, PMC@lpzoo.org.
  • The WAZA International Studbook Keeper, if applicable.
  • The WAZA Director of Conservation, if applicable.
  • SSP Coordinator
  • TAG Chair
  • If the Studbook is maintained in ZIMS for Studbooks, the Studbook cannot be exported. Instead of submitting a database, the PMC, PMC Adjunct, or SPMAG Advisor must have access to the database in ZIMS for Studbooks.
The AZA Regional Studbook Keeper should assure that the following individuals are notified of the AZA Regional Studbook Report publication:
- All facilities holding the AZA Regional Studbook species and participating in the AZA Regional Studbook Program.
- The SSP Coordinator, if applicable.
- The IUCN Specialist Group Chair, if applicable.
- United States Fish and Wildlife Service, if relevant.
- Other Regional Species Coordinators, if applicable.
- The International Studbook Keeper, if applicable.
- Other relevant individuals, as deemed necessary

Exporting PopLink to SPARKS
AZA Regional Studbook Keepers can easily create a SPARKS version of their AZA Regional Studbook from PopLink without having SPARKS installed on your computer. To export to SPARKS:
- Refer to the ‘SPARKS Export’ section in the PopLink User’s Manual
- Open the AZA Regional Studbook in PopLink
- Under the ‘Export’ Menu, select ‘To SPARKS’
- Follow the prompts on the screen to save in SPARKS format
Chapter 6. Population Sustainability

AZA Animal Programs

In the late 1970’s, the recognition that wildlife populations were declining in the wild and access to collection animals was becoming increasingly more difficult, inspired a group of visionary zoologists to create the SSP concept as a cooperative animal management program administered by the AZA. AZA’s first SSPs were created in 1981.

These SSPs functioned by managing each animal of a species held by all AZA member zoos and aquariums as a member of a single population for breeding purposes. The breeding plan for each species made breeding (or “do-not-breed”) recommendations to maintain demographically stable populations with the greatest possible genetic diversity for the long-term future of a healthy and sustainable population. Sustainability of the population is related to many factors including its gene diversity, demographic stability, husbandry expertise, etc.

In 1994, AZA published Species Survival Plans – Strategies for Wildlife Conservation, which stated: “The SSP program was originally conceived to provide a blueprint for cooperative captive breeding programs in North America, but more recently the concept has also evolved to include field conservation efforts.”

The AZA Conservation Staff and the APM Committee, which oversee 43 TAGs and more than 500 Animal Programs, initiated a variety of processes to sustain zoo and aquarium collections and wild species. The TAGs became responsible for creating and maintaining RCPs which recommend species to be managed within AZA-accredited facilities given available space and resources. The AZA Population Management Center (PMC) at the Lincoln Park Zoo, created in 2000, became responsible for incorporating the data derived from Studbooks and RCPs to identify science-based breeding and transfer recommendations along with each SSP Program. The AZA Reproductive Management Center (RMC) at the St. Louis Zoo was also created in 2000 to assess contraception efficacy, reversibility, and safety for animals not recommended for breeding.

The 2009 publication titled Sustaining the Ark: the challenges faced by zoos in maintaining viable populations (International Zoo Yearbook. 43:6-18) highlighted a fact that many have increasingly recognized over the past several years: “Over the last decade . . . Ark-related activity” (i.e., maintaining sustainable populations) “has declined as zoos have diversified their conservation activities, re-directing efforts into other areas, such as conservation education, fund-raising and other support for in situ projects...Zoo populations are not achieving the conditions for sustainability.”

The declining sustainability of zoo and aquarium populations likely results from a variety of factors including insufficient animal holding and breeding space, low breeding success, need for more advanced husbandry techniques, or, occasionally, lack of success in completing breeding recommendations. In 2008, Lincoln Park Zoo developed PMCTrack to evaluate the outcomes of breeding and transfer recommendations issued by AZA Program Leaders with the assistance of the PMC. AZA Program Leaders will be able to view their program’s historical outcomes, monitor outcomes going forward, and use simple survey tools to solicit reasons why recommendations didn’t occur from Institutional Representatives, so we can begin to understand how to improve recommendation outcomes. Institutional Liaisons will also have access to the system, so directors and their ILs can evaluate the participation of their staff in the cooperative management system and how their facility is doing at completing recommendations in comparison to the AZA average. Ultimately, the AZA community will be able to use the tools and data in PMCTrack to understand, monitor, and improve AZA’s cooperative management system and the long-term viability of animal populations. The AZA Conservation, Management, and Welfare Sciences Department conducted an intensive qualitative and quantitative assessment of the Animal Programs to understand where simplification of processes may assist Program Leaders, how the involvement of non-AZA entities could make crucial founders available, and other aspects that could facilitate Animal Program success, in building sustainable populations.

In 2009, the AZA Board approved a simplified procedure to approve non-member participants in the SSP Programs, a new Full Participation Policy, and a new Animal Management Reconciliation Policy to articulate the roles and responsibilities needed to enhance program success. The Board also formed a
Task Force on the Sustainability of Zoo-based Populations and a Task Force on the Sustainability of Aquatic Populations.

The Task Forces on the Sustainability of Zoo-Based Populations, comprised of AZA Board members, the APM Committee Chair, and AZA staff, obtained input from a diversity of individuals from the conservation community including: AZA Conservation and Government Affairs staff, the PMC and RMC, the APM Committee and Small Population Management Advisory Group (SPMAG), U.S. Fish & Wildlife Service, Program Leaders, researchers, and other selected conservation professionals as needed to accomplish the following tasks:

- Review the mission, goals, and limits of the cooperative management of AZA’s Animal Programs.
- Set minimum achievable goals for long-term sustainability of AZA’s Animal Programs.
- Determine which factors have the greatest impact on the sustainability of zoo populations.
- Assess resources needed to sustain the cooperative management of AZA’s Animal Programs.
- Plan for Program Leader succession.
- Assess the ability of the current program administration system to allow programs to meet sustainability requirements.
- Assess current relationships with U.S. government agencies and assess permitting regulations and practices that impede zoos and aquariums in maintaining sustainable populations. Provide recommendations to increase respect for the cooperative management of AZA’s Animal Programs and facilitate legislative and regulatory changes that will maximize collection sustainability.
- Recommend modifications to the cooperative management system structure and the administration of AZA’s Animal Programs to assure programs are positioned to achieve sustainability goals.

Variables Affecting Sustainability

The 2010 AZA Sustainability Task Force’s assessment identified a combination of variables that have contributed to the reduced long-term sustainability of many of AZA’s managed Animal Program populations. As there are a variety of causes, there is no single answer, direction, or solution. These variables include insufficient:

- Knowledge of current Animal Program population sustainability duration and genetic diversity.
- Number of holding and breeding spaces needed to increase the sustainability of the Animal Programs.
- Animal Program planning capacity.
- Institutional awareness surrounding the topic of sustainability.
- Institutional commitment to provide additional holding or breeding spaces.
- Permitting and/or regulatory availability to move animals.
- Advanced breeding expertise.

Improving Population Sustainability

In 2010, the Task Force identified, and the AZA Board approved, a variety of new Animal Program management strategies to address these variables and improve the sustainability of AZA’s Animal Programs. These included:

- Assessing and providing each Animal Program with its population’s projected retained gene diversity (%GD) at 100 years or 10 generations.
- Designating each Animal Program as a Green SSP Program, a Yellow SSP Program, or a Red Program.
- Increasing educational opportunities for Institutional Directors and staff to gain a detailed understanding of the new Animal Program management strategies including:
  - The critical need for an increased number of holding and breeding spaces.
  - The need for strong institutional support for all Program Leaders and their training.
  - The importance of following Breeding and Transfer Plan recommendations.
- Increasing training opportunities for zoo and aquarium staff to become more skilled at understanding permit application processes and permit writing techniques.
- Enhancing legislative and regulatory efforts to increase recognition of the vital roles of zoos and aquariums serve and better facilitate importation processes to help them build self-sustaining Animal Program populations.
In 2014, the APM Committee assessed and evaluated the effects that the new Animal Program
designations had on AZA’s cooperatively managed Animal Programs. After a thorough review, the APM
Committee made a recommendation to the AZA Board that all AZA cooperatively managed Animal
Programs (e.g., Green, Yellow, and Red Programs) be designated as SSP Programs, and that minimum
SSP criteria be established for those Animal Programs that were not managing species classified as
Extinct in the Wild, Critically Endangered, or Endangered. The Board approved establishing criteria that
all other SSP Program populations include at least 3 AZA member facilities and be comprised of at least
20 individuals. At this time, the APM Committee established a new category of TAG managed Candidate
Animal Programs that may include those populations that did not meet the minimum SSP Criteria, but
where the TAG wishes to grow the Program to become an SSP Program in time.

Over the years, the AZA community has engaged in several initiatives including working with the
Alexander Center for Applied Population Biology and the AZA PMC at Lincoln Park Zoo to develop new
tools for sustainability. Funded by grants from the Institute for Museum and Library Services (IMLS),
Lincoln Park Zoo has worked with Program Leaders at AZA facilities to conduct Population Viability
Analyses (PVAs) for AZA Animal Programs. A PVA is a computer model that projects a population’s
likely future status and helps identify key factors that may be impacting the sustainability of the
population. From 2011-2016, PVA reports were completed for 135 programs on a TAG-by-TAG basis.
TAG summary reports, comparing and contrasting PVA results among different populations, have been
completed for 16 AZA TAGs. As of the conclusion of IMLS funding in late 2016, PVAs are continuing to
be conducted for additional SSPs to answer specific questions about long-term population viability. PVA
reports are made available on the individual SSP or TAG pages within the Animal Programs Database.

An IMLS grant has also used IMLS funding to create a database that compiles extensive quantitative and
qualitative information. Informed by this wealth of data, the AZA Conservation, Management, and Welfare
Sciences Department can work with TAGs, SAGs, the PMC, and other working groups to identify patterns
in population challenges and to strategically address population needs.

The online tools emerging from the SSP Sustainability Database include the SSP Sustainability Reports
and Search Portal. The Database automatically generates SSP Sustainability Reports which summarize
SSP species’ basic care, exhibit design, and population management considerations and priorities. This
information, which was originally provided by SSP Coordinators, TAG Chairs, and other Animal Program
participants, is compiled in a searchable format, allowing collection planning users to perform searches
that identify appropriate species for their collection planning criteria, while also directing resources and
attention to managed species.

The SSP Sustainability Reports and Search Portal were designed as a member service for collection
planners, Program Leaders, research scientists, and other zoo and aquarium staff. Access is available for
staff at AZA-accredited facilities and Certified Related Facilities.

Animal Program Goals and Objectives
Each Animal Program must work closely with its TAG to identify and prioritize the top three goals, and
objectives associated with each, that will increase the sustainability score of the population. Each Animal
Program’s goals and their objectives must be identified in the TAG RCP’s Animal Program Summary
Table (see TAG Handbook for more information). Example goals and objectives include:

- Working with the Animal Program, the TAG identifies the goal of having an Animal Program
  composed of less than 50 individuals move from a Red SSP Program to a Yellow SSP Program. The
  TAG then identifies the objectives needed (such as increased number of breeding spaces, new
  importation permits, etc.) to meet this goal.

- Working with the Animal Program, the TAG identifies the goal of having an Animal Program with a
  current projected % GD of 87.2% increase their projected % GD to 95.0%. The TAG then identifies
  the objectives needed (such as importing founders, increasing the number of breeding pairs, finding
  additional space for offspring, etc.) to meet this goal.

Cooperating with Other Zoo and Aquarium Regional Associations
- It is important to cooperate with WAZA and other regional zoo and aquarium associations (e.g., the
  European Association of Zoos and Aquaria (EAZA), the Canadian Association of Zoos and
Aquariums (CAZA), the Zoo and Aquarium Association (ZAA in Australasia), etc.) as Animal Programs strive toward sustainability.

- Animal Programs must work closely with their TAG as they pursue international relationships with these other regional zoo and aquarium associations.
- For some Animal Program populations, management at the regional level (solely within one regional association, e.g., AZA) may be sufficient to achieve the Animal Program’s goals.
- However, the desired population size for maintaining optimal %GD for other Animal Programs may be greater than the current carrying capacity (maximum available space) within one regional association and cooperation with multiple regional associations may be necessary.
- The desired population size for maintaining optimal %GD for other Animal Programs may be greater than the current carrying capacity (maximum available space) within one regional association and cooperation with multiple regional associations may be necessary. Global management provides an opportunity to combine several small and potentially unsustainable managed populations into a meta-population, thus improving the genetic and demographic management potential by increasing the population’s size, genetic diversity, and carrying capacity. For certain managed populations, these additional resources may markedly increase long-term management success and long-term sustainability.
- Program Leaders are encouraged to consistently communicate with their regional counterparts, as needed, and assure that their TAG, APM Committee Liaisons, and the AZA Conservation, Management, and Welfare Sciences Department are kept informed about such discussions.
- For some Animal Programs forming an official WAZA Global Species Management Plan (GSMP) may be appropriate. Guidelines and applications for GSMPs are available from the AZA Conservation, Management, and Welfare Sciences Department.
- The AZA Conservation, Management, and Welfare Sciences Department and the TAG’s APM Committee Liaison are available to assist Program Leaders in developing these relationships if necessary.

Sustainable Populations through Responsible Partnerships
AZA Animal Programs focus on select species through cooperative management of small populations at AZA-accredited zoos and aquariums and Certified Related Facilities (CRFs). These facilities undergo a thorough accreditation review process that includes the submission of an extensive application as well as an intensive, on-site inspection by a team of experts to assure the highest standards of animal care and management are met. Additionally, the facilities have access to members-only resources through the AZA Population Management Center, AZA Reproductive Management Center and the AZA office.
AZA Animal Programs can benefit from responsible partnerships with individuals, facilities, or organizations outside of AZA in the form of expertise, space, and other various resources. With a goal of creating genetically and demographically sustainable populations of animals that experience excellent welfare, AZA Animal Programs may explore such partnerships when they:
- Benefit individual animal(s) and/or the population as a whole through the goals of an AZA Animal Program
- Support AZA’s mission of high quality animal care and welfare
- Recognize the contributions of like-minded entities in assuring a future for animals in expert care
See the Species Survival Plan® Program Handbook for more details and the Sustainability Partner Policy and application processes.

AZA SAFE: Saving Animals From Extinction
The mission of AZA’s SAFE: Saving Animals From Extinction is to combine the power of zoo and aquarium visitors with the resources and collective expertise of AZA members and partners to save animals from extinction. The vision of SAFE is that together, we are saving the most vulnerable wildlife species from extinction and protecting them for future generations.
SAFE Species programs protect threatened animals; build on established recovery plans and track records of commitment; prioritize collaboration among AZA member facilities; implement both strategic conservation and public engagement activities; and measure and report conservation progress.
In 2015, ten inaugural SAFE Species were identified including the African penguin, Asian elephant, black rhinoceros, cheetah, gorillas, sea turtles, sharks and rays, vaquita, western pond turtle, and whooping crane, and SAFE continues to grow. SAFE is a framework that encourages teams to use a collaborative process, incorporate a wide-range of species-specific expertise from AZA members and non-government and government partners, and identify the conservation actions needed to protect those species based on published recovery plans. Three-year SAFE Program Plans, include objectives and actions for conservation, stakeholder and public engagement, public awareness and communications, and fundraising that will make a positive impact on species’ populations in the wild. Employees at AZA-accredited aquariums and zoos lead and implement these projects.

The Wildlife Conservation Committee (WCC) administers SAFE, with support from AZA staff. Explore current SAFE Species programs or consider whether a species of interest to you may be eligible to become a SAFE Species at: https://www.aza.org/aza-safe.

The AZA Population Management Center
The AZA PMC, hosted by the Lincoln Park Zoo in Chicago, Illinois, and San Diego Zoo Global in San Diego, California, was established in June 2000 to provide assistance to zoo professionals across the country by conducting demographic and genetic analyses and preparing Breeding and Transfer Plan for SSP Programs.

PMC Functions
PMC Population Biologists provide many services for AZA Animal Programs including:
- Producing Breeding and Transfer Plans (BTPs) with SSP Programs
- Assisting AZA Regional Studbook Keepers with AZA Regional Studbook publication
- Archiving studbook databases to assure preservation of data, assist with continuity in Program Leader transitions, provide back-up sources of data, etc.
- Researching unknown or partially-known pedigrees
- Creating analytical AZA Regional Studbooks
- Conducting research and helping develop software to improve methods of population management
- Advising on data conventions and entering abnormal data
- Troubleshooting problems with population management software (e.g., SPARKS, PopLink, PMx, ZIMS for Studbooks, PMCTrack).

The Reproductive Management Center
The AZA RMC (https://www.stlzoo.org/animals/scienceresearch/reproductivemanagementcenter/), hosted by the St. Louis Zoo, provides information on safety, efficacy and reversibility of contraceptive products to the AZA community to help zoo professionals make informed decisions on how to manage their animal collections. Contraception is an essential, proven, and humane tool for reproductive management while still allowing individuals to live in natural social and family groups.

RMC Functions
- The RMC is an integral part of AZA Animal Program management practices and is fundamental to managed breeding and population sustainability for individuals that are, or have ever been, contracepted.
- To assist AZA’s Animal Programs the RMC maintains a database which monitors contraceptive records in one centralized location in order to facilitate meta-analyses and disseminate up-to-date recommendations.
- The Program Leader should communicate with the RMC regarding the animals in their population prior to each formal planning meeting to review and update their status, as necessary.
- The RMC may provide written recommendations to be included in the Breeding and Transfer Plan as an appendix, if needed.
- An Advisor from the RMC may attend or conference into the Animal Program’s planning meeting if relevant for the population.
- Communication between the Program Leader and the RMC need not be limited to planning meetings, but can occur throughout the year as questions arise or new data become available.
Contacts

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AZA Web Resources

AZA Board Approved Policies
https://www.aza.org/board-approved-policies-and-position-statements

Animal Exchange
To access Animal Exchange, the user must be logged in to the AZA website and have Animal Exchange privileges assigned to your individual record in order to use this feature. Never share your log-in information with anyone as you will directly be held responsible for any changes or edits made to secured areas. Once logged in, the Animal Exchange link will be found on the Animals & Conservation > Animal Care & Management dropdown.

Animal Programs Database
The Animal Programs Database contains all Animal Program Data, and is separated out into Animal Program pages. There are separate pages for TAGs, SSP Programs, Studbooks and SAGs. Each Animal Program page can be accessed by going through the:

Animal Program Page Search Portal

Each Animal Program page contains the following (*information only available if logged in):
- Program Leaders, Officers, Advisors
- Program Leader, Officers, Advisors contact information*
- Animal Program details (start dates, websites, etc.)
- Animal Program Species
- Related Animal Programs
- Animal Program Documents*
- Animal Program IR list*

SSP Sustainability Reports and Search Portal

The SSP Sustainability Reports summarize SSP species’ basic care, exhibit design, and population management considerations and priorities. The Search Portal automatically generates these reports which allow collection planners to perform searches that identify appropriate species for their collection planning criteria, while also directing resources and attention to managed species. The SSP Sustainability Reports and Search Portal were designed as a member service for collection planners, Program Leaders, ILS, IRs, research scientists, and other zoo and aquarium staff. Access is available for staff at AZA-accredited facilities and Certified Related Facilities.

Animal Programs Resources
https://www.aza.org/animal-programs-resources

The Animal Programs Resources page contains numerous links, documents and templates aimed to assist Program Leaders. These include:
- Program Leader Handbooks (including guides and resources related to being a new Program Leader, assessing Sustainability Partners, TAG strategic planning, PVA FAQs, and transitioning to ZIMS for Studbooks)
- Templates and Applications
- Contact information for TAGs Chairs, Institutional Liaisons, APM Committee TAG Liaisons, SPMAG TAG Liaisons
- Animal Program Sustainability Designations (updated quarterly)
- Animal Programs Monthly Update
- Current Program Leader Vacancies
- Illustrative protocols to help Program Leaders navigate the Animal Programs Database

Accountability Information and Instructions
http://www.aza.org/animal-program-deadlines/
PMCTrack
Website: [www.pmctrack.org](http://www.pmctrack.org); Email: pmctrack@lpzoo.org

PMCTrack evaluates breeding and transfer recommendations to:
• Determine whether each recommendation occurred based on studbook data
• Collect reasons from Institutional Representatives for recommendations not occurring as planned
• Improve management of AZA’s Animal Programs and increase long-term viability of these populations

Population Management Center
Website: [http://www.lpzoo.org/population-management-center](http://www.lpzoo.org/population-management-center); Email: pmc@lpzoo.org

Reproductive Management Center
Website: [https://www.stlzoo.org/animals/scienceresearch/reproductivemanagementcenter/](https://www.stlzoo.org/animals/scienceresearch/reproductivemanagementcenter/); Email: contraception@stlzoo.org

ZIMS for Studbooks
Website (Live): [https://zims.species360.org/](https://zims.species360.org/)
Website (Sandbox): [https://studbooks.species360.org](https://studbooks.species360.org)
Email: support@species360.org

ZIMS for Studbooks is an online database where Studbook Keepers maintain and track their studbook databases.
• Transitioning to ZIMS for Studbooks for Animal Program Leaders is a guide that includes, but is not limited to, migration tips, where to find training materials, and who to contact for help.
  o [https://www.speakcdn.com/assets/2332/wcmc_-_transitioning_to_zims_for__studbooks_for_program_leaders.pdf](https://www.speakcdn.com/assets/2332/wcmc_-_transitioning_to_zims_for__studbooks_for_program_leaders.pdf)
Accountability - Accountability refers to the processes by which Animal Program participants including Program Leaders, Institutional Representatives (IRs), and Institutional Liaisons (ILs) are responsible for producing and reviewing documents, and communicating among appropriate individuals. Accountability of Animal Programs includes meeting deadlines, requesting extensions if needed, maintaining communication with all individuals, and adhering to the AZA's Full Participation Policy and the Species Survival Plan® Animal Management Reconciliation Policy.

Advisor - An advisor is a non-voting participant of an AZA Animal Program (AP) that provides advice to the AP in their efforts to identify, develop and implement goals related to their species. An advisor may also provide input on Animal Care Manuals and assist with the development of education materials and research projects related to the Advisor's area of expertise.

Animal Care Manuals (ACMs) - Animal Care Manuals (ACMs) are a compilation of animal care and management knowledge that has been gained from recognized species experts, including AZA Taxon Advisory Groups (TAGs), Species Survival Plan® Programs (SSPs), biologists, veterinarians, nutritionists, reproduction physiologists, behaviorists and researchers. Content is based on the current science, practice, and technology of animal management. The manual assembles best practices, animal care recommendations and AZA accreditation standards to maximize capacity for excellence in animal care and welfare and is updated every 5 years. All ACMs are peer reviewed, widely valued, and acclaimed by other regional associations. All TAGs are required to coordinate the publication of ACMs for the taxa within their purview.

Animal Exchange - The Animal Exchange allows representatives from AZA-Accredited Facilities, Certified Related Facilities and Approved Non-Member Participants to list and search for individuals of a species that can be exchanged to meet the goals of their Institutional Collection Plan (ICP) or the Regional Collection Plan (RCP).

Animal Population Management Committee (APM Committee) - The Animal Population Management Committee (APM Committee) works collaboratively with other Committees and is responsible for facilitating the professional and scientific management of the animals cared for in AZA-Accredited zoos and aquariums, Certified Related Facilities, and Approved Non-Member Participants. Committee members serve up to two three-year terms and consist of Directors, Vice Presidents (VPs), curators, and registrars. APM Committee develops, oversees, promotes, evaluates, and supports the cooperative animal management, conservation, sustainability, and scientific initiatives of the AZA.

Animal Population Management Committee (APM Committee) Liaison - Each Taxon Advisory Group (TAG) is assigned one member of the Animal Population Management Committee (APM Committee) who serves as a liaison for that TAG. APM Committee members typically serve as a liaison for 3 TAGs. They communicate with the TAG regularly and serve a crucial advisory role for any policy, procedure, or processes questions the TAG may have, and act as the primary contact and mentor during the TAG's Regional Collection Plan (RCP) developmental and review process.

Animal Programs Database - The AZA Animal Programs Database allows anyone to access general information about AZA's Taxon Advisory Groups (TAGs), Species Survival Plan® (SSP) Programs, Studbooks, the individual species included in these AZA Animal Programs (APs), and view Program Leader, Officer and Advisor contact information. AZA members can log in to the AZA Animal Programs Database to gain access to more detailed AP information and have the ability to download Institutional Representative (IR) lists and associated final and draft documents.

Animal Program Summary Table - Animal Program Summary Table identifies each AZA Animal Program (AP) (Species Survival Plan® (SSP) Programs and Studbooks) recommended by the TAG for cooperative management. The following information is included for each AP: the date of the last Breeding and Transfer Plan; the current population size, current gene diversity, designation, and target population size; the number of additional spaces needed to achieve the target population size; and the 5-year population trend, conservation status, and top three goals. This table must be updated as APs are analyzed by the Population Management Center (PMC), a PMC Adjunct or an approved Small Population
AZA Animal Programs include Taxon Advisory Groups (TAGs), Species Survival Plan® (SSP) Programs, and Studbook Programs. APs are responsible for the extraordinary leadership, development, oversight, promotion, evaluation, and support of AZA’s cooperative animal management, conservation, and scientific initiatives. Management tools, databases, reference materials, policies, and management plans have been developed to facilitate exceptional AP collaboration within and amongst AZA-accredited facilities.

AZA Brand/Branded: The signature for the Association of Zoos & Aquariums is a unique piece of artwork that has been designed specifically for our brand. Consisting of the AZA wordmark and the AZA ampersand symbol, the signature is an extremely valuable asset and the most concise visual representation of our brand.

AZA Board Approved Policies: AZA policies may be drafted by AZA Committees, Scientific Advisory Groups (SAGs), and Animal Programs (APs) in collaboration with their AZA Staff and Board Liaisons but all AZA-related policies must be approved by the AZA Board of Directors before being finalized, published, or distributed. AZA policies may cover topics such as animal management, animal programs, conservation, ethics, health, husbandry and welfare, research and technology, and safety.

AZA Dedicated Funds Account: AZA Committees, Scientific Advisory Groups (SAGs), Taxon Advisory Groups (TAGs), Species Survival Plan® Programs, and SAFE Species Programs who hold and distribute money raised specifically to support projects initiated or coordinated by their group must use an AZA Dedicated Funds to manage all transactions.

AZA Mission: The Association of Zoos & Aquariums (AZA) provides its members the services, high standards and best practices needed to be leaders and innovators in animal care, wildlife conservation and science, conservation education, the guest experience, and community engagement.

AZA Network: The Association of Zoos & Aquariums’ online private social networking tool.

AZA Policy for Full Participation: AZA policy stating that all AZA-accredited facilities and Certified Related Facilities having a Green SSP animal in their collection are required to participate in the collaborative SSP planning process (e.g., provide relevant animal data to the AZA Studbook Keeper, assign an Institutional Representative (IR) who will communicate institutional wants and needs to the SSP Coordinator, comment on the draft plan during the 30-day review period, and abide by the recommendations agreed upon in the final plan). All AZA member facilities and Animal Programs (APs), regardless of management designation, must adhere to the AZA Policy on Responsible Population Management, as well as the AZA Code of Professional Ethics.

AZA Strategic Plan: AZA accredited zoos and aquariums will be recognized for leading a compelling wildlife conservation movement. We will achieve this by caring for wildlife and wild places; educating and engaging public, professional and government audiences; serving and increasing membership; and developing a robust and sustainable economic model which empowers AZA to provide superlative member services.

Breeding and Transfer Plans: Breeding and Transfer Plans (BTPs) summarize the current demographic and genetic status of a Species Survival Plan® (SSP) Program, describe the SSP Program management designation, and recommend breeding pairs and transfers. Breeding and Transfer Plans are designed to maintain a healthy, genetically diverse and demographically stable population.

Candidate Programs: TAG managed Animal Programs are not considered official AZA cooperatively managed Animal Programs; however the TAG has the goal to grow these populations to meet minimum criteria to be an SSP Program. Candidate Programs manage smaller populations (19 or fewer individual
animals), and/or manage populations among only one or two participating AZA member facilities. New Animal Programs that do not have a published AZA Regional Studbook will also be classified as Candidate Programs until an AZA Regional Studbook is published.

**Certified Related Facilities**- Organizations holding wildlife that are not commercial entities, and are not open to the public on a regularly scheduled, predictable basis. The facility shall be under the direction of a professional staff trained in animal husbandry, and shall be further defined as having conservation and preservation as part of its mission—a mission that shall have a beneficial, tangible, supportive impact on the zoological and aquarium professions. This includes wildlife ranches, wildlife refuges or rehab centers, research facilities, survival centers, breeding farms, and/or similar organizations.

**Conservation Grants Fund (CGF)** - Established in 1984, CGF supports the cooperative conservation-related scientific and educational initiatives of AZA and AZA-accredited zoos and aquariums and their collaborators. CGF grants are awarded in six categories: Animal Health, Animal Welfare, Conservation Education, Field Conservation and/or Reintroduction, Management and/or Breeding, Research.

**Conservation Partner**- Organizations that support the vision, mission and goals of zoos and aquariums. Conservation Partners represent AZA-Accredited Facility member societies and associated organizations, professional societies, conservation organizations, universities, some government entities and other non-profits.

**Ex situ Conservation**- Preservation of species outside of their native habitat.

**Global Species Management Plan (GSMP)**- GSMPs are formal, international population management plans among a minimum of two regional zoological associations, and are overseen by WAZA. GSMPs are a valuable partnership when population goals for increasing sustainability cannot be met within a single region. A GSMP provides an opportunity to combine several regional populations, thus improving the genetic and demographic management potential by increasing the population's size, carrying capacity, and other resources.

**Green Species Survival Plan® (Green SSP) Program**- A Green SSP Program has a population size of 50 or more animals and is projected to retain 90% gene diversity for a minimum of 100 years or 10 generations. Green SSP Programs are subject to AZA's Full Participation and Sustainability Partner Policies.

**International Studbook**- The World Association of Zoos and Aquariums’ (WAZA) Committee of Population Management (CPM) administers and provides oversight to International Studbooks. International Studbooks provide a valuable service to the zoological community by offering the most complete and accurate global data on the ex situ population's pedigree and demography, if possible including husbandry and veterinary guidance, and enhancing management of the ex situ population through analysis of the International Studbook data.

**In situ Conservation**- Preservation of natural communities and populations of species in the wild.

**Institutional Liaison (IL)**- The Institutional Liaison (IL) assures that there is effective communication and participation between the facility and AZA's Animal Programs (APs). The IL designates Institutional Representatives (IRs), keeps the facility's IR list current, and is responsible for updating IR contact information on the AZA website. The IL serves as the default IR for any AP which does not have an IR assigned and is required to respond accordingly. The IL works with Program Leaders and IRs to assure that their facility fully participates in all associated Taxon Advisory Groups (TAGs) and Species Survival Plan® (SSP) Programs, and if necessary, will meet in conflict resolution processes.

**Institutional Representative (IR)**- The Institutional Representative (IR) is the primary contact between his/her facility and the Program Leader of the Animal Programs (APs) to which s/he has been designated. The IR is responsible for maintaining open communication between the AP and the facility, communicating to the Program Leader on behalf of the facility, and participating in the AP communications and activities.

**Management Group**- At a minimum, the Management Group is composed of the Coordinator, Vice Coordinator, and AZA Regional Studbook Keeper. The Management Group serves as the voting body for Species Survival Plan® (SSP) Program business and all members are integrally involved in the SSP
Program appointments, publications, and meetings. Management Group members must be elected from the SSP Program’s Institutional Representative (IRs).

**MateRx** - The primary output is a matrix of genetic ratings for every possible breeding pair in a population which allow Program Leaders to quickly discover how the genetic status of animals in their collections compare to the rest of a managed population. Note that this does not include any demographic, logistic, or other variables that should be considered when recommending breeding.

**Monthly Animal Programs Update** - AZA’s Monthly Animal Programs Update contains information about the most recent news pertaining to Animal Programs (APs), Professional Development Courses, workshops, conferences, meetings, funding and award opportunities, new Program Leaders, Program Leader vacancies, new publications, and information regarding Breeding and Transfer Plans.

**Officer** - Officer positions for an Animal Program (AP) include the Program Leader Taxon Advisory Group (TAG) Vice Chair or Species Survival Plan® (SSP) Program Vice Coordinator, TAG or SSP Secretary, and if any financial components are incorporated into the Animal Program, a TAG or SSP Treasurer. Officers, with the exception of the TAG Chair or SSP Coordinator, are elected from the TAG Steering Committee or SSP Management Group and the Steering Committee/Management Group forms the electorate for that vote.

**PMC Adjunct** - PMC Adjunct Population Biologists are advisors that are approved by AZA and advise AZA Animal Programs from their home institutions. PMC Adjuncts provide many services for AZA Animal Programs including producing Breeding and Transfer Plans, providing informal genetic or demographic advice between plans, investigating unknown or partially-known pedigrees, developing pedigree assumptions and creating analytical studbooks, conducting research and helping to develop software to improve methods of population management, and troubleshooting software problems.

**PMCTrack** - PMCTrack is a web-based database and monitoring system designed to evaluate the outcomes of breeding and transfer recommendations made through the AZA Animal Programs (APs) such as Species Survival Plan® (SSP) Programs. PMCTrack provides the necessary tools and data to understand, monitor, and improve AZA’s cooperative population management system. PMCTrack includes survey functionality to request additional information from institutions on the information needed for preparing for SSP Breeding and Transfer Plans (wants/needs, reasons for unfulfilled outcomes).

**Population Management Center (PMC)** - The AZA Population Management Center (PMC) hosted by the Lincoln Park Zoo in Chicago, Illinois, as well as San Diego Zoo Global in San Diego, California, is responsible for conducting demographic and genetic analyses needed to develop and distribute population management recommendations for all SSP Programs. PMC staff, including Population Biologists, Planning Coordinator, and Research Assistant, assist each SSP in the development of their population management plans by making sure the data are accurate, determining the current population status, predicting the future population status, identifying specific breeding and transfer recommendations, and distributing the plan to all participating AZA-accredited institutions. In addition, the PMC contributes valuable information for AZA Sustainability Reports and Regional Collection Plans (RCPs).

**Population Sustainability** - AZA’s cooperatively managed Animal Programs reach population sustainability when the projected gene diversity (% GD) at 100 years or 10 generations is greater than or equal to 90%. The SSP Breeding and Transfer Plan for each species makes recommendations to maintain demographically stable populations with the greatest possible genetic diversity for the long-term future of a healthy and sustainable population. Sustainability of the population is related to many factors including its gene diversity, demographic stability, husbandry expertise, etc.

**Population Viability Analysis (PVA)** - A PVA is a computer model that projects the likely future status of a population. PVAs are used for evaluating long-term sustainability, setting population goals, and comparing alternative management strategies. Several quantitative parameters are used in a PVA to calculate the extinction risk of a population, forecast the population’s future trajectory, and identify key factors impacting the population’s future.

**Program Leader** - Program Leaders include Taxon Advisory Group (TAG) Chairs, Species Survival Plan® (SSP) Program Coordinators, AZA Regional Studbook Keepers, and Candidate Program Leaders.
Publish- An SSP Breeding and Transfer Plan, AZA Regional Studbook, Population Viability Analysis, MateRx, or a TAG Regional Collection Plan is considered published once the document is posted on that Animal Program’s page in the AZA Animal Programs Database.

Red Species Survival Plan® (Red SSP) Program- A Red Species Survival Plan® (SSP) Program has a population size of twenty or more animals managed among three or more participating AZA institutions. If a population does not meet these minimum criteria, but has an IUCN designation of Critically Endangered, Endangered, or Extinct in the Wild, and the TAG has developed three goals to sustain this population, then the population will be considered a Red SSP Program. Red SSPs cannot retain 90% gene diversity for 100 years or 10 generations and participation by AZA institutions is voluntary. Red SSPs are subject to AZA’s Sustainability Partner Policy.

Regional Collection Plan (RCP)- Taxon Advisory Groups (TAGs) develop Regional Collection Plans (RCPs) to recommend species for cooperative management among the Association of Zoos and Aquariums (AZA) member institutions, determine the sustainability goals for each recommended Animal Program (AP) within its purview, identify objectives relevant to their long-term collection plans, and assure adherence to AZA’s animal management and conservation goals.

Reproductive Management Center (RMC)- The AZA Reproductive Management Center (RMC), hosted by the Saint Louis Zoo, is responsible for assessing factors such as contraception type efficacy, reversibility, and safety; an animal’s age, reproductive status, behavioral and social needs, and delivery system practicality when recommending appropriate contraception methods for the animals cared for in AZA-accredited institutions.

Scientific Advisory Group (SAG)- Established in 1991, Scientific Advisory Groups (SAGs) help facilitate, support, network and coordinate the relevant research activities of its member institutions. SAGs are made up of experts in a particular field of wildlife science. Members include veterinarians, researchers and zoo- and aquarium-based curators with appropriate scientific training, as well as university, government and other outside scientists with a commitment to sharing their particular expertise.

Small Population Management Scientific Advisory Group (SPMAG)- A Scientific Advisory Group (SAG) that provides technical advice pertaining to population management for AZA Animal Programs. SPMAG helps advance the science of applied small population biology and develops tools for use by small population managers.

Species Survival Plan® (SSP) Program- Established in 1981, the mission of an AZA Species Survival Plan® (SSP) Program is to cooperatively manage specific, and typically threatened or endangered, species population within AZA-Accredited Zoos and Aquariums, Certified Related Facilities, and Approved Sustainability Partners. Each SSP manages the breeding of a species in order to maintain a healthy and self-sustaining population that is both genetically diverse and demographically stable.

Species Survival Plan® (SSP) Coordinator- An Species Survival Plan® (SSP) Program Coordinator performs various duties to lead and support the AZA SSP program. The SSP Coordinator works with Institutional Representative (IRs), the AZA Regional Studbook Keeper (if different from the Coordinator), the Taxon Advisory Group (TAG), the Animal Population Management Committee (APM Committee), and the AZA Conservation, Management, and Welfare Sciences Department, as well as any associated governmental agencies, to develop, oversee, promote, and support the cooperative animal management, conservation, and research initiatives of the SSP Program. The primary responsibility of the SSP Coordinator is to regularly complete and distribute an SSP Breeding and Transfer Plan for the managed population.

SSP Sustainability Report- An automatically generated 5-page report that summarizes husbandry practices, exhibit management, species appeal, educational opportunities, multi-species exhibit considerations, species biology, SSP population dynamics, management priorities, challenges to sustainability, and research needs. The report is a compilation of the SSP Coordinator’s expertise and the current and projected population summaries from the SSP Breeding and Transfer Plan or PVA.

SSP Sustainability Search Portal- An online tool for collection planners, Program Leaders, ILs, IRs, research scientists, and other zoo and aquarium staff. The searchable format allows collection planning
users to perform searches that identify appropriate species for their collection planning criteria, while also directing resources and attention to managed species.

**Statement of Individual Commitment**- A signed statement by the potential new Animal Program (AP) officer to show that the individual is willing and able to meet the commitments and responsibilities of the AP and leading the group in its mission.

**Statement of Institutional Support**- A signed statement by the potential new Animal Program (AP) officer’s facility to show that the facility is willing and able to support this individual in meeting the commitments and responsibilities of the AP and leading the group in its mission.

**Steering Committee**- The Steering Committee serves as the voting body for Taxon Advisory Group (TAG) business, and all members are integrally involved in TAG decision making, appointments, publications and meetings. The Steering Committee is composed of 5-15 members, including Officers. Each TAG may determine the optimal size and management of its Steering Committee.

**Studbooks**- An AZA Regional Studbook dynamically documents the pedigree and entire demographic history of each individual in a population of species. These collective histories are known as the population's genetic and demographic identity and are invaluable tools that track and manage each individual cared for in AZA-Accredited Zoos and Aquariums, Certified Related Facilities and by Approved Sustainability Partners as part of a single ex situ population.

**Studbook Keeper**- The AZA Regional Studbook Keeper is responsible for maintaining an accurate record of the histories of all individual animals in an ex situ population. The AZA Regional Studbook Keeper works directly with the associated Taxon Advisory Group (TAG) and Species Survival Plan® (SSP) Program, all participating AZA member institutions, the Animal Population Management Committee (APM Committee), Population Management Center (PMC), a PMC Adjunct, or an approved Small Population Management Advisory Group (SPMAG) advisor, and the AZA Conservation, Management, and Welfare Sciences Department to complete and distribute a timely and accurate AZA Regional Studbook to be used for demographic and genetic analyses relevant to the SSP Program’s population management.

**Sustainability Designations**- An initial Studbook, or a Population Viability Analysis (PVA), Breeding and Transfer Plan, or MateRx determines an Animal Program’s (AP’s) designation. Sustainability Designations include Green Species Survival Plan® (SSP) Programs, Yellow SSP Programs, and Red SSP Programs. This list is updated quarterly on the Association of Zoos and Aquariums (AZA) website.

**Sustainability Partners**- AZA Animal Population Management Committee (APM Committee) approved wildlife facilities that regularly exchange animals with AZA-accredited facilities and certified related facilities, typically as part of the Species Survival Plan® (SSP) Program Breeding and Transfer Plan or other SSP Program management process.

**Target Population Size (TPS)**- The desired number of SSP animals to be held across AZA and approved partner facilities over a specific, stated timeframe. This number is determined with consideration for program roles and goals (genetic, demographic, and others), logistical constraints, spatial competition with other TAG-managed species, and other population-specific concerns. Target Population Size is determined by the Taxon Advisory Group (TAG) and published in their Regional Collection Plan (RCP).

**Taxon Advisory Group (TAG) Annual Report**- Taxon Advisory Group (TAG) Annual Reports update the Animal Population Management Committee (APM Committee) and the Association of Zoos and Aquariums (AZA) Conservation, Management, and Welfare Sciences Department on the conservation work of the TAG, and the Animal Programs (APs) within the TAG’s purview. TAG Annual Reports provide the Chair an opportunity to document and communicate any potential issues within the TAG’s programs, and allow an opportunity for the TAG to submit AP meeting minutes and other materials to AZA on an annual basis. Reports are due to the AZA Conservation, Management, and Welfare Sciences Department July 15 of each year.

**Taxon Advisory Group (TAG)**- Established in 1990, Taxon Advisory Groups (TAGs) examine the conservation and management needs of entire taxa, or groups of related species. TAGs establish priorities for management, research, and conservation. TAGs select appropriate species for AZA
conservation and management programs and provide a forum for discussing husbandry, veterinary, ethical, and other issues that apply to entire taxa.

**Taxon Advisory Group (TAG) Chair** - The primary responsibility of the Taxon Advisory Group (TAG) Chair is to assure the completion and distribution of a Regional Collection Plan (RCP). Additional responsibilities include leadership of the TAG, organization of its members, oversight and consistent communication with all Animal Programs within the TAG’s purview (Species Survival Plan® (SSP) Program, AZA Regional Studbooks, and Candidate Programs), the Institutional Liaisons (ILs), Institutional Representatives (IRs), and reporting to the Animal Population Management Committee (APM Committee). The TAG Chair serves as the primary contact and AZA expert for the taxon and abides by the duties and responsibilities defined for the position.

**Yellow Species Survival Plan® (Yellow SSP) Program** - A Yellow Species Survival Plan® (SSP) Program has a population size of 50 or more animals but cannot retain 90% gene diversity for 100 years or 10 generations. Yellow SSP participation by AZA institutions is voluntary. Yellow SSP Programs are subject to AZA’s Sustainability Partner Policy.
Appendix A: AZA Regional Studbook Keeper Application

Individuals interested in becoming an AZA Regional Studbook Keeper must complete the following application and submit it to the TAG Chair or, if the TAG does not have a current, approved RCP, the AZA Conservation, Management, and Welfare Sciences Department for review.

*Please note that this application is available in a digitized Word form at [https://www.aza.org/templates-and-applications](https://www.aza.org/templates-and-applications)

1. Applicant Name: _________________________  
   AZA supporting facility: ____________________  
   Phone: _________________________________  
   Email: __________________________________  
   Are you an Individual AZA Member? ________  
   Date Application Submitted: _________________

2. Common and Scientific name(s) of the species: ______________________________

3. Which TAG oversees this AZA Regional Studbook Program? ____________________

4. If this is for an SSP Program Studbook, is there a separate SSP Coordinator? Yes / No

5. My current facility has historically held this AZA Regional Studbook Yes / No

6. List all other AZA Program Leader positions (e.g., Studbook Keeper, SSP Coordinator, etc) you hold or have held, and the most recent publication date of relevant Animal Program documents (e.g., Studbook, Breeding and Transfer Plan, RCP).

<table>
<thead>
<tr>
<th>Program Leader Position</th>
<th>Term dates</th>
<th>Publication</th>
<th>Date Last published</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.g.: XX Studbook Keeper</td>
<td>2010 – present</td>
<td>Studbook</td>
<td>12 May 2014</td>
</tr>
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</tr>
</tbody>
</table>

7. Attach a current *curriculum vitae*. 
AZA Regional Studbook Keeper Statements of Commitment and Support

AZA Regional Studbook Keepers and their supporting facilities must be willing and able to devote the necessary resources to oversee, manage and publish an AZA Regional Studbook. As outlined in the AZA Regional Studbook Keeper Handbook these duties and responsibilities include:

- Completing the Population Management 1 (PM1) Professional Development course.
- Creating, updating and submitting a current AZA Regional Studbook report to the AZA Conservation, Management, and Welfare Sciences Department for publication on the AZA website.
- Submitting a complete, current AZA Regional Studbook database to the AZA Conservation, Management, and Welfare Sciences Department and the PMC at least once every three years. In the event of loss of employment/resignation, assure that the Studbook Keeper and/or supporting facility provide relevant AZA Regional Studbook documents to the TAG Chair and to the replacement AZA Regional Studbook Keeper.
- Sending copies of all significant AZA Regional Studbook documents and correspondence to the AZA Conservation, Management, and Welfare Sciences Department, the relevant TAG Chair, the SSP Coordinator (if the AZA Regional Studbook Keeper is not the SSP Coordinator), and the PMC, PMC Adjunct, or SPMAG Advisor.
- Providing an up to date AZA Regional Studbook database to the SSP Program’s Population Advisor (PMC, PMC Adjunct, or SPMAG Advisor) prior to each formal population planning meeting, or as needed for population management purposes.
- Understanding that failure to meet these obligations and those outlined within the AZA Regional Studbook Keepers Handbook could result in removal from the Animal Program.

The __________________ (Name of facility) is committed to providing the necessary resources to oversee, manage and publish the _____________ AZA Regional Studbook as outlined above. This may include:

- Funding to attend Population Management 1 and 2.
- Access to computers and software necessary for database management, assembling a complete studbook for distribution and communication via email.
- Funding for travel to professional meetings, workshops or to meet with Population Advisors.
- Scheduled time within routine work schedules to accomplish studbook related tasks.

The above-named facility further acknowledges that information gathered for AZA Regional Studbooks supported by the facility is not the exclusive property of the facility and enters public domain upon publication on the AZA website. In the event the AZA Regional Studbook Keeper leaves the facility or the Program Leader position, the facility may be asked to provide relevant AZA Regional Studbook documents to the TAG Chair and to the replacement AZA Regional Studbook Keeper.

Name of Applicant: ____________________________
Date: ______________

Name of the Director/Governing Official: ____________________________
Date: ______________

The following will serve as your digital signature:
I, ___________ (Name of Applicant) have read and agree to the terms and conditions stated above.

The following will serve as your digital signature:
I, ___________ (Name of Director/Governing Official) have read and agree to the terms and conditions stated above.
Appendix B: Regional to International Studbook Application

*Please note that this application is available in a digitized Word form at https://www.aza.org/templates-and-applications

1. Applicant Information
   Applicant Name: ________________________________________________________________
   AZA Member Facility: ____________________________________________________________
   Phone: _______________________________________________________________________
   Fax: _________________________________________________________________________
   Email: _______________________________________________________________________
   AZA Membership Number: _______________________________________________________
   Date Application Submitted: ______________________________________________________

2. Common and Scientific name(s) of the species: ______________________________________

3. Which TAG oversees this AZA Regional Studbook Program?: ___________________________

4. List the dates of AZA Regional Studbook publication: ________________________________

5. List other AZA Regional and International Studbooks maintained by the applicant and the dates of
   their publication: _____________________________________________________________________

6. List of other AZA Regional and International Studbooks maintained by Studbook Keepers at the
   applicant’s facility:________________________________________________________________

7. Describe the status of the global managed population, analyzed by region, including:
   Population sizes:
   Sex ratios:
   Genetic status:
   Demographic trends:
   Husbandry issues:

8. Describe the need for expansion of the AZA Regional Studbook:

9. Describe the current status of the wild population:

10. Attach a curriculum vitae, including professional experience, academic background, experience with
    ZIMs for Studbooks, PopLink, and SPARKS, and experience with the taxon for which the applicant is
    applying.

11. Attach a copy of the recommendation from the TAG to maintain this AZA Regional Studbook at the
    international level.

Please submit this application to the TAG Chair, and the APM Committee Vice Chair of SSPs and
Studbooks for consideration. The APM Committee will review and, if approved, send a letter of
endorsement to the Studbook Keeper and TAG Chair. The Studbook Keeper must then submit
WAZA’s International Studbook application to WAZA’s Director of Conservation
(secretariat@waza.org). For more details and for the International Studbook Application, see the
Resource Manual for International Studbook Keepers at
Appendix C: AZA Communications Guidelines

Guidelines on communications that represent the
Association of Zoos and Aquariums and its Members

All public statements* that may be construed to represent a communication from the Association of Zoos & Aquariums (AZA) or are made by or on behalf of any AZA Program** must be reviewed and approved by the appropriate AZA Department prior to public release or publication. In addition, plans to create such documents should involve input from AZA and other appropriate AZA entities** during their conceptualization and development.

* For example, but not limited to, position or advocacy statements, letters of support / endorsement or censure, policies, petition signatures, proposals, and comments on legislative / regulatory actions

** For example, but not limited to, Committees, Scientific Advisory Groups, Taxon Advisory Group, Species Survival Plan® Programs, Population Management Plan Programs, Conservation Action Partnerships, Task Forces, the Population Management Center, and the Reproductive Management Center.
Appendix D: Steps to Publish an AZA Regional Studbook

How to Publish a Studbook Using PopLink

1. Open a Microsoft Word Document
2. Create a Cover page with these required items or contact the PMC Planning Coordinator (pmc@lpzoo.org) for a publication template:
   a. Species common name, species scientific name, studbook keeper name, studbook keeper institution, studbook keeper e-mail, and geographical and chronological scope can be found in the Studbook Overview tab in PopLink
   b. Date that the Studbook Data is current to
   c. Date of the Studbook Publication
   d. Photo of species
3. Create a Table of Contents
4. Create a Table including the Living Population
   a. Open studbook in PopLink
   b. Click on the Reports menu and select Studbook Report
   c. In the ‘Sort By’ menu, select ‘Current Location’
   d. Click on the ‘Filter By’ button
      i. In the ‘Status’ tab, check Living
      ii. In the ‘Date’ tab, check ‘As of End Date’
   e. Click ok twice and your report will appear on the screen
   f. Click on the ‘Export’ button at the top right of the report
      i. When using PopLink version 2.2 and subsequent versions, reports will automatically export to your internet browser. You can copy/paste the reports into the studbook document, OR find the reports in your PopLink Databases folder.
   g. Find the studbook report by opening the folder appropriate for the version of PopLink you are using
      i. For PopLink 1.3 - C: \ Program Files\ PopLink 1.3\ PopLink Databases\ Studbook name
      ii. For PopLink 2.1 - C:\Documents and Settings\your computer's name\My Documents\PopLink 2.1\PopLink Databases
      iii. For PopLink version 2.2, 2.3, and 2.4 - C:\Documents and Settings\your computer's name\Documents\PopLink\PopLink Databases
   h. Right-click on the studbook report, go to ‘Open With’, and choose Microsoft Word
   i. Copy from Microsoft Word OR your internet browser and paste the living population table into your studbook document
   j. Format the table
      i. Highlight the entire table
      ii. Right-click over the table and select ‘Table Properties…’
      iii. In the ‘Row’ tab, uncheck “Allow row to break across pages” and click ok
      iv. Highlight the header row (i.e. first row) of the table
      v. Right click over the header row and select ‘Table Properties…’
      vi. In the ‘Row’ tab, heck “Repeat as header row at the top of each page’ and click ok
      vii. Highlight the entire table again and change the font size to 10
5. Create a Table including the entire Historical Population
   a. Click on the Reports menu and select Studbook Report
   b. In the ‘Sort By’ menu, select ‘Studbook ID’
   c. Click ok and your report will appear on the screen
   d. Click on the ‘Export’ button at the top right of the report
   e. Find the studbook report by opening the folder appropriate for the version of PopLink you are using OR copy and paste the report from your internet browser if using PopLink 2.2 or 2.3
i. For PopLink 1.3 - C:\ Program Files\ PopLink 1.3\ PopLink Databases\ Studbook name
ii. For PopLink 2.1 - C:\Documents and Settings\your computer's name\My Documents\PopLink 2.1\PopLink Databases
iii. For PopLink 2.2, 2.3, and 2.4 - C:\Documents and Settings\your computer's name\Documents\PopLink\PopLink Databases
f. Right-click on the studbook report, go to 'Open With', and choose Microsoft Word
g. Copy and paste the historical population table into your studbook document
h. Format table as described above in step 4 j

6. Create a Table of the Mnemonics for the Current Institutions
   a. Click on the Reports menu and select Historic/Current Institution List
   b. Click on the 'Export' button at the top right of the report
      i. When using PopLink 2.2, 2.3, and 2.4, reports will automatically export to your internet browser. You can copy/paste the reports into the studbook document, OR find the reports in your PopLink Databases folder.
   c. Find Historic/Current Institution List Report by opening the folder appropriate for the version of PopLink you are using
      i. For PopLink 1.3 - C:\ Program Files\ PopLink 1.3\ PopLink Databases\ Studbook name
      ii. For PopLink 2.1 - C:\Documents and Settings\your computer's name\My Documents\PopLink 2.1\PopLink Databases
      iii. For PopLink 2.2, 2.3, and 2.4 - C:\Documents and Settings\your computer's name\Documents\PopLink\PopLink Databases
d. Right-click on the Historic/Current Institution List Report, go to ‘Open with', and choose Microsoft Word or copy/paste the report from your internet browser if using PopLink 2.2 or subsequent versions
e. Combine the mnemonics found in the AZA and non-AZA lists to create one column of mnemonics
f. In order to fit the Historic/Current Institution List in the document, you may delete all of the columns after the “Mail Code” column

7. Update the Studbook Disclaimer with today’s date and studbook keeper institution
   a. Insert this disclaimer into the Word document

8. Add any extra information to your studbook (e.g., natural history, husbandry, bibliography)

9. Add a list of Data Field Descriptions (These are the default definitions. Change them to reflect any differences in your studbook)

  **Studbook ID** – unique number assigned to each individual in the studbook. The studbook number is a permanent number.

  **Birth Date** – This field indicates the date of an animal's birth. There is a birth date for every individual. Please check the next column “Birth Date Est.” to judge the accuracy of that date.

  **Birth Date Est.** – Indicated if the Birth Date field is an estimate.
   - None = No estimation
   - Day = The day is estimated
   - Month = The month is estimated
   - Year = The actual birth date is within the year of the Birth Date field

  **Sire/Dam** –
   - Numbers indicate the Studbook ID of the parents of the zoo born animals
   - WILD indicates that an animal was wild caught and its parents are unknown wild individuals
   - UNK indicates that the animal was zoo-born but identification of the parents is not known
   - MULT indicates that there are several possible parents in zoos, but the specific one could not be determined. A parental assumptions note in the Specimen Notes field is included with this parental designation to indicate which animals could be the potential parent.

  **Sex** – male, female, unknown
Event – This field documents the movements of individual animals from the first location to the current or last known location. This includes Birth/Hatch, Transfer, Death, Go LTF (Lost to Follow up), Return from LTF, and Release. UNKNOWN indicates that the animal exists or existed, but its location cannot be reliably confirmed.

Location – This field indicates the location where the event took place.

Local ID – This is the number assigned by the institution in which the event took place. UNKNOWN indicates that either an ID was not assigned or no information exists to indicate that an ID was assigned.

Date – This field documents the date that events occurred. Each event has a date associated with it. Also, check the adjacent column (Date Est.) to determine the accuracy of this date.

Date Est. – Indicates if the adjacent Date field is an estimate.

None = No estimation
Day = The day is estimated
Month = The month is estimated
Year = The actual date is within the year of the Event Date field

House Name – This field indicates the name given to the animal at a specific location. Individuals may be given a different house name each time they move to a different location.

10. Add any data conventions in your studbook that are not outlined in the AZA Data Entry Guidelines Manual
11. Update the Table of Contents
12. Click on Adobe PDF and select convert to Adobe PDF and save the PDF to your desktop.
13. Complete both 13 & 14 to finalize your Studbook Publication:
   a. *E-mail a copy of the Studbook Publication PDF to both Conservation@AZA.org and PMC@LPZoo.org.
   b. *Then send a copy of your database for archiving to PMC@LPZoo.org using https://wetransfer.com/
      a. Data.bin files can be sent as email attachments
      b. The PMC cannot receive ZIP files
      c. You may send your files using your preferred file transfer service: DropBox, OneDrive, Box, ShareFile, etc.

*Required to fulfill accountability deadline.
How to Publish a Studbook Using SPARKS

1. Open a new Microsoft Word document
2. Create a Cover page with these required items or contact the PMC Planning Coordinator (PMC@lpzoo.org) for a publication template.
   a. Species common name, species scientific name, studbook keeper name, studbook keeper institution, studbook keeper e-mail, and geographical and chronological scope can be found from the main menu of SPARKS by choosing 4 - System Utilities and then 6 - Footnotes
   b. Date that the Studbook Data is current to
   c. Date of the Studbook Publication
   d. Photo of species
3. Create a Table of Contents
4. Create a Table including the Living Population
   a. Open studbook in SPARKS
   b. From the main menu, select 3 - Reports
   c. Use your left arrow key to select filters
      i. Select End of Date Span
         1. Enter yesterday’s date for the Stop Date
         2. Enter E for End of date span
      ii. Select Living\Dead\LTF
         1. Select ‘Living by date shown’
   d. Press the right arrow twice to select the sort order – order by Location (alphabetic)
   e. Left arrow to get back to main menu and select 2 - Studbook Report
   f. Studbook Report settings
      i. Report Event Types – Y
      ii. Birth Origin column – N
      iii. Country column – N
      iv. Death Notes line – Y
      v. Death-Date column – N
      vi. Removal Date column – N
      vii. Rearing Type column – N
      viii. Tag/Band column – N
      ix. Tattoo Column – N
      x. Notch column – N
      xi. House Name – N
      xii. Breeder number – N
      xiii. Transponder number – N
      xiv. Regional stbk # -- N
   g. Obtain separate report for each institution – choose No
   h. Select ‘File’ from the list of options that appears
      i. Select ‘No codes’ from the second list that appears
   j. Page settings
      i. Include page headers & footers – Y
      ii. Print species notes – N
      iii. Print location glossary – N
      iv. Include contact names – N
      v. Include loan information – Y
   k. Select X - Exit to exit from SPARKS and select Y to ;Save output to file rather than print;
   l. Name the Studbook Report a unique name so you know what the file is and can find it easily
   m. Find the Studbook Report by opening C: \ SPARKS\ Studbook name
   n. Right click on the Studbook Report you just created, go to ‘Open With’, and choose Microsoft Word
   o. Copy and paste only the table into your studbook document
      i. Do not format the table yet
5. Create a Table including the entire Historical Population
a. Open studbook in SPARKS
b. Select 3 - Reports
c. Use your right arrow key to select the sort order
   i. Select ‘Studbook Number’
d. Left arrow to get back to the Reports menu and select 2 - Studbook Report
e. Use the same report settings that you used for living population. See steps 4f – 4j.
   i. The only exception to this is that ‘Print Location Glossary’ should be Y
f. Select X – Exit to exit from SPARKS and select Y to Save output file rather than print
g. Name the Studbook Report a unique name so you know what the file is and can find it easily
h. Find the Studbook Report by opening “C: \ SPARKS\ Studbook name
   i. Right click on the Studbook Report you just created, go to ‘Open With’, and choose Microsoft Word
   j. Copy and paste only the table into your studbook document

6. Format your studbook document
   a. Highlight the historical and living population tables
   b. Change the font to Courier New and font size to 9
   c. Click on File menu and then choose Page Setup
d. Change the margins so the top and bottom are 0.5” and the left and right are 0.25”

7. Update the Studbook Disclaimer (found on page 18 of this handbook) with today’s date and studbook keeper institution
   a. Insert this disclaimer into the Word document

8. Add any extra information to your studbook (e.g., natural history, husbandry, bibliography)

9. Add a list of Data Field Descriptions (These are the default definitions. Change them to reflect any differences in your studbook)

   Studbook ID – unique number assigned to each individual in the studbook. The studbook number is a permanent number.
   Birth Date – This field indicates the date of an animal’s birth. There is a birth date for every individual. Please check the next column “Birth Date Est.” to judge the accuracy of that date.
   Birth Date Est. – Indicated if the Birth Date field is an estimate.
      None = No estimation
      Day = The day is estimated
      Month = The month is estimated
      Year = The actual birth date is within the year of the Birth Date field

   Sire/Dam –
      Numbers indicate the Studbook ID of the parents of the zoo born animals
      WILD indicates that an animal was wild caught and its parents are unknown wild individuals
      UNK indicates that the animal was zoo-born but identification of the parents is not known
      MULT indicates that there are several possible parents in zoos, but the specific one could not be determined. A parental assumptions note in the Specimen Notes field is included with this parental designation to indicate which animals could be the potential parent.

   Sex – male, female, unknown
   Event – This field documents the movements of individual animals from the first location to the current or last known location. This includes Birth/Hatch, Transfer, Death, Go LTF (Lost to Follow up), Return from LTF, and Release. UNKNOWN indicates that the animal exists or existed, but its location cannot be reliably confirmed.
   Location – This field indicates the location where the event took place.
   Local ID – This is the number assigned by the institution in which the event took place.
   UNKNOWN indicates that either an ID was not assigned or no information exists to indicate that an ID was assigned.
   Date – This field documents the date that events occurred. Each event has a date associated with it. Also, check the adjacent column (Date Est.) to determine the accuracy of this date.
   Date Est. – Indicates if the adjacent Date field is an estimate.
None = No estimation
Day = The day is estimated
Month = The month is estimated
Year = The actual date is within the year of the Event Date field

House Name – This field indicates the name given to the animal at a specific location. Individuals may be given a different house name each time they move to a different location.

10. Add any data conventions in your studbook that are not outlined in the AZA Data Entry Guidelines Manual

11. Update the Table of Contents

12. Click on Adobe PDF and select convert to Adobe PDF and save the PDF to your desktop.

**Complete both 13 & 14 to finalize your Studbook Publication.**

13. *E-mail a copy of the Studbook Publication PDF to both Conservation@AZA.org and PMC@LPZoo.org to post it on the AZA website

14. *Then send a copy of your database for archiving to PMC@LPZoo.org using https://wetransfer.com/
   a. The PMC cannot receive ZIP files
   b. You may send your files using your preferred file transfer service: DropBox, OneDrive, Box, ShareFile, etc.

*Required to fulfill accountability deadline
How to Publish a Studbook using ZIMS for Studbooks

1. Open a new Microsoft Word Document, or the Studbook Publication template

2. Create a Cover page with the following:
   a. Species common and scientific name
   b. Studbook keeper name, institution, and contact information
   c. Geographical scope of the data (e.g. AZA Regional, International)
   d. Date that the studbook data is current to
      i. The date of the first update response following a solicitation of institutional updates
   e. Date of the studbook publication
   f. Photo of species with photo credit

3. Create a Table of the Current, Living Population
   a. Open your studbook in ZIMS for Studbooks
   b. Under ‘All Animals In Studbook’ select ‘View List’
   c. Check the ‘Show History’ box next to the search bar:
   
   ![Image of ZIMS interface showing 'Show History' and 'Search Animal by Identifier/GAN' options]

   d. To create list of just living animals:
      i. Click down arrow for filter toolbar, just above the header list for the SB
      ii. Then select ‘Alive’ in Status field, and click ‘Search’:

   ![Image of ZIMS interface with 'Alive' selected in filter]

   e. Then sort by Studbook ID first and then Current Location (A to Z) by clicking the ‘Studbook ID’ and then ‘Current Location’ tab in the header

   ![Image of ZIMS interface with 'Studbook ID' and 'Current Location' tabs selected]

   f. Select the ‘Export List to Excel’ icon in top right corner:
      i. This should export a file to your downloads folder

   g. Open the Excel Export and format according to the following:
      i. Delete rows 1-4: The “Global/Regional Association,” “Studbook Name,” “Date of Export” & “Studbook Animals” rows.
      ii. Also delete “Copyright, Species360, Year. All rights reserved” at end of table.

   h. Select all cells holding data that should be presented in a SB publication and copy and paste into studbook document you created in Steps 1 & 2 or the template from Step 1.
You may want to delete some columns prior to copying according to what information has historically been presented in SB publications for this species. Common columns include: Studbook ID, Event History (in ZIMS this info is beneath the “GAN” column), Current Location, Current Local ID, Sex, Hatch/Birth Date, Sire, Dam, Hatch/Birth Type.

1. **Note**: prior to pasting, make sure the page to which you are pasting has ‘Orientation’ set to ‘Landscape’ and ‘Margins’ set to ‘Narrow’ (Narrow dimensions = 0.5/0.5/0.5/0.5). Both settings are accessible from the “Layout” tab.

2. **Format the table**
   1. Highlight the entire table
   2. Right-click the table and select ‘Table Properties…’
   3. In the ‘Row’ tab, uncheck ‘Allow row to break across pages’ and click ok
   4. Highlight the header row (i.e. first row) of the table
   5. Right click over the header row and select ‘Table Properties…’
   6. In the ‘Row’ tab, check ‘Repeat as header row at the top of each page’ and click ‘Ok’
   7. Highlight the entire table again and change the font size to 10 (or smaller if needed)
   8. Highlight the entire table and add borders to table by selecting ‘Borders’ -> ‘All Borders’ (see below)

9. Adjust column widths such that all table columns can be seen on a single page
   1. Can highlight the entire table, right-click and select ‘AutoFit’ -> ‘AutoFit to Window’ or ‘AutoFit to Contents’ and adjust as needed

10. **Rename any column headers as appropriate**

4. **Create a Table of the entire Historical Population**
   a. **In ZIMS**:
      1. Under ‘All Animals In Studbook’ select ‘View List’
      2. Ensure no filters are applied. Remove any remaining filters by going to filters and clicking ‘Reset’
      3. Check the ‘Show History’ box next to the search bar:
iv. Sort by Studbook ID by selecting the ‘Studbook ID’ tab in the header:

b. Export to excel by selecting the ‘Export List to Excel’ icon in top right corner:
   i. This should export a file to your downloads folder

c. Open the Excel Export and format according to the following:
   i. Delete rows 1-4: The “Global/Regional Association,” “Studbook Name,” “Date of Export” & “Studbook Animals” rows.
   ii. Also delete “Copyright, Species360, Year. All rights reserved” at end of table.

d. Select all cells holding data that should be presented in a SB publication and copy and paste into studbook document you created in Steps 1 & 2 or the template from Step 1. You may want to delete some columns prior to copying according to what information has historically been presented in SB publications for this species. Common columns include: Studbook ID, Event History (in ZIMS this info is beneath the “GAN” column), Current Location, Current Local ID, Sex, Hatch/Birth Date, Sire, Dam, Hatch/Birth Type.
   i. **Note:** prior to pasting, make sure the page to which you are pasting has ‘Orientation’ set to ‘Landscape’ and ‘Margins’ set to ‘Narrow’ (Narrow dimensions = 0.5/0.5/0.5/0.5). Both settings are accessible from the “Layout” tab.

e. Format the table
   i. Highlight the entire table
   ii. Right-click the table and select ‘Table Properties…’
   iii. In the ‘Row’ tab, uncheck ‘Allow row to break across pages’ and click ok
   iv. Highlight the header row (i.e. first row) of the table
   v. Right click over the header row and select ‘Table Properties…’
   vi. In the ‘Row’ tab, check ‘Repeat as header row at the top of each page’ and click ‘Ok’
   vii. Highlight the entire table again and change the font size to 10 (or smaller if needed)
   viii. Highlight the entire table and add borders to table by selecting ‘Borders’ -> ‘All Borders’

ix. Adjust column widths such that all table columns can be seen on a single page
   1. Can highlight the enter table, right-click and select ‘AutoFit’ -> ‘AutoFit to Window’ or ‘AutoFit to Contents’ and adjust as needed

x. Rename any column headers as appropriate
5. **Create a Table of the Mnemonics for the Current Institutions**
   a. From your studbooks dashboard in ZIMS, select ‘View List’ under the ‘Living Animals in Studbook’ section
   b. Select ‘Tools’ on the left-side tool bar and then ‘Institutional Holdings’
   c. Select ‘Current’ for ‘Report Scope’ near top of screen
   
<table>
<thead>
<tr>
<th>Glyptemys muhlenbergii</th>
<th>Living Animals</th>
<th>Institutional Holdings</th>
</tr>
</thead>
</table>

   d. Select ‘Export List To Excel’ button in the upper right hand corner
   i. This should export a file to your downloads folder
   e. Open the Excel export in excel
   i. Delete rows 1-4: The “Global/Regional Association,” “Studbook Name,” “Date of Export” & “Institutional Holdings” rows.
   ii. Also delete “Copyright, Species360, Year. All rights reserved” at end of table.
   f. Select all cells holding data that should be presented in a SB publication and copy and paste into studbook document you created in Steps 1 & 2 or the template from Step 1. You may want to delete some columns prior to copying according to what information has historically been presented in SB publications for this species.
   g. Format the table
   i. Highlight the entire table
   ii. Right-click the table and select ‘Table Properties…’
   iii. In the ‘Row’ tab, uncheck ‘Allow row to break across pages’ and click ok
   iv. Highlight the header row (i.e. first row) of the table
   v. Right click over the header row and select ‘Table Properties…’
   vi. In the ‘Row’ tab, check ‘Repeat as header row at the top of each page’ and click ‘Ok’ (if spanning two pages)
   vii. Highlight the entire table again and change the font size to 10
   viii. Highlight the entire table and add borders to table by selecting ‘Borders’ -> ‘All Borders’
   ix. Adjust column widths such that all table columns can be seen on a single page
   1. Can highlight the enter table, right-click and select ‘AutoFit’ -> ‘AutoFit to Window’ or ‘AutoFit to Contents’ and adjust as needed
   x. Rename any column headers as appropriate

6. **Create a Table of the Mnemonics for the Historic Institutions**
   a. Repeat step 5 a-g but selecting ‘Historic’ in the ‘Report Scope’

7. **Add any extra information that you deem important to your studbook (e.g., natural history, husbandry, bibliography)**
8. Include the following list of Data Field Descriptions in the publication. These are the default definitions; please update to reflect any differences specific to your studbook.

**Studbook ID** – unique number assigned to each individual in the studbook. The studbook number is a permanent number.

**GAN** – Global Accession Number; unifying “key record” under which all animal data for that individual is tracked.

**Current Location** – Indicates the current location of a living animal or the last known location of a dead/LTF/released individual.

**Current Local ID** – Indicates the individual’s local ID identifier at its current holding institution if living, or its local ID identifier at its last known holding institution if dead/LTF/released.

**Sex** – male, female, undetermined

**Birth/Hatch Date** – This field indicates the date of an animal’s birth/hatch. There is a birth/hatch date for every individual. If there is any estimate surrounding this date it will be reflected in this field.

**Current Status** – Indicates whether the individual is living, dead, released, undetermined (LTF), etc.

**Sire/Dam** – Numbers reported in this field indicate the Studbook ID of an animal’s parents, when those parents are known. “WILD” indicates that an animal was wild caught and its parents are unknown, wild individuals. “UND” indicates that the parentage of that animal is undefined. “MULTX,” where X is a number, indicates that there are several possible parents, but the specific parent could not be determined. The possible parents within any given MULT are tracked within ZIMS and will be listed when you expand the ‘Parent’ field for that individual.

**Age** – If individual is still alive indicates age of individual at time of data export. If individual is no longer alive/tracked in the SB, indicates age at time of death/LTF/release.

**Birth/Hatch Type** – indicates whether the individual was born/hatched in the wild or a captive environment. Undetermined indicates the birth/hatch type is not known.

**Event Type** – This field documents the movements (i.e. transactions) of individual animals from the first location to the current or last known location. This includes Birth/Hatch, Transfer, Death, Go LTF (Lost to Follow up), Return from LTF, and Release.

**Date** – This field documents the date that any given event occurred. Each event has a date associated with it. If there is any estimate surrounding this date it will be reflected in this field.

**Location** – This field indicates the location where the event took place. Undetermined indicates that the animal exists or existed, but its location cannot be reliably confirmed.

**Local ID** – This is the number assigned by the institution in which the event took place. “-” indicates that either an ID was not assigned or no information exists to indicate that an ID was assigned.

**House Name** – This field indicates the name given to the animal at a specific location. Individuals may be given a different house name each time they move to a different location.

9. Add any data conventions used in your studbook database

10. Update the Studbook Disclaimer, found in either the template or the handbook, with today’s date and Studbook Keeper institution
    a. Insert this disclaimer into the end of the Studbook document

11. Add or update the Table of Contents on the page following the cover to match the page numbers and section titles of your publication

12. Save studbook publication as a PDF

13. E-mail a copy of the Studbook Publication PDF with a note that this is a ZIMS for Studbooks database to both Conservation@AZA.org and PMC@LPZoo.org.
14. For larger PDF files, please use your preferred file sharing site, such as DropBox or WeTransfer.com

15. If you do not receive a confirmation email from AZA, please contact them again to make sure they received your publication

*Required to fulfill accountability deadline.
Appendix E: Guidance for SSP Coordinators and Studbook Keepers on Sharing Studbook Data

The intention of this document is to provide guidance on when it is appropriate to share studbook data.

Sharing studbook data
There are many ways for SSP Coordinators and Studbook Keepers to share studbook data. Summarized data can be shared via exported population figures, tables, and reports (e.g., SPARKS, PopLink, ZIMS for Studbooks, PMx, Excel), Population Viability Analyses (PVAs), and Breeding and Transfer Plans (BTPs). Historic and current studbook data are viewable via AZA Studbook Publication documents. An entire studbook database may also be shared, potentially allowing someone to view, edit, or analyze the data.

It is important that you initially create an agreement with any collaborator(s) concerning sharing data from a studbook with third parties as well as publication of the data or any research results based on these data. Creating an agreement before sharing access to the studbook database will allow you to feel more comfortable with sharing these data. Researchers or anyone planning to publish results based on studbook data are required to fill out and submit the consent form (Appendix A) to both the Studbook Keeper and APM Committee Vice Chair of Studbooks and SSPs (conservation@aza.org) before data are shared.

Sharing access to your studbook database within ZIMS for Studbooks
Multiple people can have access at the same time to a single studbook database in ZIMS for Studbooks. This allows for all those with shared access to always be able to view the most updated version of the studbook database. However, the decision to share access to a studbook database should be carefully considered.

- Be aware that information in a studbook database has been contributed by numerous facilities, with the understanding that these data are only to be used for collaborative population management.
- Be aware that the studbook database may contain sensitive information or information that may be considered controversial (e.g., transfers, management euthanasia, individual animal's notes).
- Never share the log in information to your personal ZIMS account. People with whom you would like to share information must have their own log in access to ZIMS. If they do not already have an account, contact AZA (conservation@aza.org) for guidance.
- The AZA Studbook Keeper will always remain ultimately responsible for their studbook database and all data within it.

Sharing studbook data with colleagues within the AZA Community
We aim to be collaborative. See the list of considerations below, but if any SSP participants would like access to the studbook data, 'View and Export Only' access may be the best choice and can be requested from the Studbook Keeper and SSP Coordinator, who then request it from the AZA Administrators (conservation@aza.org). Potential SSP Participants may include: SSP Advisor, TAG Chair, TAG Advisor, participating SSP facility, researcher affiliated with an AZA facility, or other colleagues involved in the SSP. Researchers or anyone planning to publish results based on studbook data are required to fill out and submit the consent form (Appendix A) to both the Studbook Keeper and APM Committee Vice Chair of Studbooks and SSPs (conservation@aza.org) before data are shared.

Sharing studbook data with collaborators outside the AZA Community
Sharing studbook data with collaborators outside AZA may be more sensitive. There are many possible reasons in which SSP Coordinators and Studbook keepers would like to share their studbook data with colleagues outside of AZA (e.g., SSP Coordinators and TAGs in other regional associations, Advisors, researchers). Before doing so, please see the list of considerations below.

When considering sharing studbook data, be aware of the following:
- Before sharing studbook data, request a research proposal from the researcher to better understand why the studbook database is being requested, what specific data will be needed for the research study, and the appropriate usage agreements.
from the studbook database, and how the researcher intends to use the data. For an example of such a research proposal form, see the AZA Research and Technology Committee’s ‘AZA Standardized Research Application Form’ here: https://www.aza.org/research_and_technology_committee.

- Check in with your TAG before sharing data. Several AZA TAGs have existing processes for evaluating potential research involvement.
- For species that are government-owned, request approval from your corresponding government contacts before sharing studbook data.
- Verify who the researcher is that you are communicating with and about to potentially collaborate. You can do this by looking at their academic websites, LinkedIn, previously published articles, etc.
- Even those that have ‘View and Export Only’ access can export the entire studbook database to Excel, which allows them to analyze and share these data with others.
- It is important that you initially create an agreement with the collaborator concerning sharing the studbook data with third parties as well as publication of the data or any research results based on these data. Creating an agreement before sharing access to the studbook database will allow you to feel more comfortable with sharing these data (see Appendix A).
- We encourage SSP Coordinators and Studbook Keepers to at least be listed in the acknowledgements section and should be considered as co-authors on any publications using the studbook database (e.g., published journal articles, talks, posters), depending on their involvement and how prominently the studbook data are used.
- Studbook data are best interpreted by those trained in small population management and studbook data conventions and software. An AZA Population Biologist must be involved with data requests from external researchers to guide data analyses and interpretation.
- Identify the end date for the collaborator’s access to the studbook database. Depending on the research, this may be several weeks to several months or longer. If an end date is not identified, they will be assigned the default access of six months. It is good practice to annually review who has access to your studbook database and update, as needed.
- Researchers are required to include both the studbook Currentness date and date of access in any publications and presentations.
- The consent form in Appendix A must be filled out and submitted to both the Studbook Keeper and APM Committee Vice Chair of Studbooks and SSPs (conservation@aza.org).

As a reminder, all AZA Program Leaders can get access to ZIMS for Studbooks, even if your AZA facility is not a Species360 member. Contact the AZA Administrators (conservation@aza.org) for assistance if your AZA member facility is not a member of Species360. For colleagues that are neither an AZA member nor a Species360 member and want access to a studbook database, they first need to get a ZIMS login from Species360. In addition to permission from the Studbook Keeper, permission will also be required from the APM Committee Committee Vice Chair of Studbooks and SSPs (conservation@aza.org).
Required Consent Form for Access to an AZA Studbook Database for Analyses
*For researchers and anyone planning to publish results based on Studbook data

Attach a research proposal to briefly explain why the studbook data are being requested, what specific data will be needed from the studbook database, and how data will be analyzed and used. The SSP must also attach a letter of support for this specific researcher and their intended research.

I have read both the “AZA Guidelines for Roles and Access to ZIMS for Studbooks” and “Guidance for SSP Coordinators and Studbook Keepers on sharing studbook data” and I agree to the following terms (initial on each line):

___ I will only use the studbook data for analyses relevant to population management and species conservation.

___ Analyses of data from the ________________________________ (insert individual or multiple species’ name(s)) studbook database will never be presented or published without consent of the SSP Coordinator and Studbook Keeper.

___ Individual facility information contained in these records will not be shared in any way, without specific written permission from the respective submitting facilities.

___ Any publications and presentations resulting from analyses of data from the studbook listed above will have shared authorship with the SSP Coordinator and Studbook Keeper as well as any AZA staff or Population Biologist involved, as appropriate to the regional scope of the analysis.

___ All authors on any reports resulting from analyses of data from this studbook database will fully review the material to be submitted, will be willing to support the conclusions of the study, and can defend it.

___ The AZA Animal Population Management Committee reserves the right to block publication and presentation of results if agreement cannot be reached on the content of the reports.

___ When submitting manuscripts using studbook data to journals requiring deposit of data for public access and later use, the author must include the italicized statement below in the document to be deposited. All individual animal and institutional identifying information must be stripped from the deposited document and replaced with dummy codes.

The authors gratefully acknowledge the use of aggregate studbook data by permission of the Association of Zoos & Aquariums (AZA), the owner of this compilation of studbook data contributed by AZA members and other participants in its animal programs. That permission prohibits identification of particular facilities or identifiable details of particular animals.

Signature of Applicant: ____________________________________________          Date: ___________
Printed Name of Applicant: _______________________________________________

Approved by the AZA APM Committee Vice Chair of Studbooks and SSPs

Signature: ____________________________________________          Date: ___________
Printed Name: _______________________________________________

Date that studbook database and/or access to studbook database was given to applicant

Date: ___________
Appendix F: Guidelines for Roles and Access to ZIMS for Studbooks

ZIMS for Studbooks allows for different roles to be created to give access to specific features in each studbook database, such as the ability to view or edit data, run reports, and use available tools. Multiple people can have access at the same time to a single studbook database. The intention of this document is to outline AZA's currently existing roles and give guidance on whom they could be assigned.

At the request of approved AZA Studbook Keepers, access roles are currently assigned by the Regional Association Administrators (i.e., AZA Conservation and Science Coordinator and PMC Planning Coordinator). To simplify the customizability of ZIMS for Studbooks and protect data quality, the features available to roles are preset as described below.

Not all SSPs are managed the same. For this reason, SSP Coordinators and Studbook Keepers may request custom roles. Depending on the nature of the request and parties involved, a request must be submitted to conservation@aza.org and may need additional approval by the APM Committee and corresponding TAG. As ZIMS for Studbooks is updated with new features, populated with more studbook databases, and we learn from the requests coming from SSPs, these roles and access options may change to accommodate the perceived needs.

AZA Studbook Data Ownership:
Access and use of studbook data is vital to the AZA mission to maintain and perpetuate healthy populations of animals. To this end, AZA owns the compilation of studbook data contributed at any time by AZA members, Sustainability Partners, SSP Programs, and other participants in its animal programs (hereafter referred to as "Contributors"). By its participation as a Contributor, a Contributor gives AZA the non-exclusive right to use its contributed data for studbook purposes including unrestricted use by AZA members and the AZA right to authorize access and use by third parties (including researchers and other regional or worldwide zoological organizations) without further notice or additional permission. (Updated approval by the AZA Board, July 2019).

AZA Roles and Their Access for ZIMS for Studbooks

1. Studbook Keeper
   - Full view and edit access (except for the overlay tool)
   - Given to: TAG-appointed Studbook Keepers recognized by AZA will receive this access as soon as the studbook database is migrated into ZIMS for Studbooks. For Candidate Programs, TAG monitor populations, and AZA member facilities' own studbooks, the TAG or facility studbook maintainer will be treated the same as an SSP Studbook Keeper and receive access as soon as the studbook database is migrated into ZIMS for Studbooks.
   - Access: Can view and edit all data, and run any report or tool, except for overlays.
   - This role needs approval by the AZA office, to verify that they are an approved AZA Studbook Keeper, TAG-approved Candidate Program or TAG monitor population, or AZA member facility sponsored studbook database.

2. All View and Edit Access
   - Full view and edit access (customizable, as needed)
   - Given to: TAG-appointed Studbook Keepers and SSP Coordinators recognized by AZA or others, as approved by the Studbook Keeper and SSP Coordinator
   - Access: Can view and edit all data, and run any report or tool, including overlays, with the tool access being customizable, as needed.
   - If it is a Studbook Keeper or SSP Coordinator requesting this access, they need to have completed the PMII Course.
   - This role needs approval by the Studbook Keeper, SSP Coordinator, and Advising Population Biologist.
3. View and Export Only Access
   • Given to: the Studbook Keeper and SSP Coordinator approve who to give this access to and may include the former Program Leaders, International Studbook Keeper that maintains a different studbook database, another Regional Association’s equivalent Program Leader, Apprentice Studbook Keeper, TAG Chair, APM Committee member, SSP Advisors, TAG Advisors, ILs, PM1/PM2 instructors, Researchers, etc.
   • Access: Can view all studbook data, run any report or tool, and export data to Excel, but cannot edit data or use overlays.
   • Duration: Some ‘View and Export Only’ roles may include a specific timeframe that must be re-approved after each period.

4. Population Biology Advisor
   • Full view and edit access (all features)
   • Full access to data, editing, reporting, and tools
   • Given to: AZA Population Biology Advisors will receive this access as soon as the studbook database is migrated into ZIMS for Studbooks

5. Regional Administrator
   • Full administrative access
   • Given to: AZA Administrators (Rebecca Greenberg, Miranda Brauns, Haley Blackwell, Kendra Strohmayer, Kristine Schad Eebes)
   • Assign individuals to access studbook databases using one of the roles listed above

If any AZA member facilities wants access to the AZA studbook database, but are not involved in the SSP in any way, they must request access from both the Studbook Keeper and APM Committee Vice Chair of Studbooks and SSPs (conservation@aza.org).

A description of all features and how to create, delete, or edit roles can be found in the ZIMS for Studbooks Role Control document (http://training.species360.org/Documents/ZIMShelp/ZIMShelp-Studbooks-Update%20Roles.pdf).
Appendix G: Citation Formats

Citation of an SSP Breeding and Transfer Plan:
*SSP Coordinator should be the first author, then Studbook Keeper, then the Population Biologist.

SSP Coordinator last name, first initial., Studbook Keeper last name, first initial., and Population Biologist last name, first initial. Year published. Species common name (Scientific name). AZA Species Survival Plan® Designation color Program Population Analysis & Breeding and Transfer Plan. AZA Population Management Center: Chicago, IL.


Citation of a Global Species Management Plan
GSMP Coordinator last name, first initial. and Population Biologist last name, first initial. Year published. Species common name (Scientific name) WAZA Global Species Management Plan. Institution name: City, State.


Citation of an AZA Regional Studbook:
Studbook Keeper last name, first initial. Year published. Species common name (Scientific name) AZA Regional Studbook. Institution name: City, State.


Citation of a Population Viability Analysis:
(all Last name, First initial) Population Biologist., SSP Coordinator., Studbook Keeper., TAG Chair., and TAG Vice-Chair. Year. Species common name (Scientific name) AZA Animal Program Population Viability Analysis Report. Lincoln Park Zoo: Chicago, IL.


Citation of an SSP Sustainability Report:
SSP Coordinator last name, first initial. Year published. Species common name (Scientific name) Species Survival Plan® Sustainability Report. Association of Zoos and Aquariums: Silver Spring, MD.


Citation of a Survival Statistic Report:


Citation of PMCTrack:

Citation of an Animal Care Manual: