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Felid Taxon Advisory Group
Regional Collection Plan 2024

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TAG Mission Statement

The mission of the Felid TAG is to support AZA and partner zoo and aquarium initiatives by facilitating sustainable management of felid populations, advancing husbandry to optimize wellbeing, fostering scientific research, and promoting the conservation of felids while also inclusively developing effective and influential zoo professionals that are competent, communicative, and safe.

TAG Operating Context

Exotic felines are a staple in zoological facilities. Big cat species are iconic and a major attendance draw as well as effective ambassadors for the ethical missions of zoological facilities. As a result, it is extremely important to the industry that zoological facilities work proactively and collaboratively to ensure populations of big cat species are sustainable so that individuals are available for display to support every facility's programs. Despite their recognized value, we still are struggling industry-wide to confidently ensure that these programs are sustainable. Recently, programs such as the Jaguar SSP and Amur tiger SSP, that we thought of as sturdy and relatively safe have gone through a bust cycle leaving us concerned for their stability. Big cat populations in general are better off compared to smaller felid species. However, they still are at risk and not as robust as we would like them to be.

Medium/small felid species do not have the iconic reputation as big cats and yet, they historically seemed to establish and maintain. Many small cat species have elevated zoological facilities under the radar, but their value does not seem to receive the attention they deserve. Some individual small cats have even received worldwide popularity and a prominent following through social media such as Mr. White Cheeks, the sand cat or Pickles, the fishing cat, yet their popularity was not capitalized upon to generate a cascading positive effect on the health of their species' populations. Sand cats and fishing cats as well as other small cat species are on the brink of extinction in AZA zoos. Although previously maintaining, their perseverance is now at risk. Some programs that seemed to have started to gain traction towards sustainability years ago have dropped off completely, forcing the TAG to shift focus away from them with the hope that this diversion of focus would result in a positive impact on the few medium and small felid programs that remain within scope. In the 2019 RCP, the Felid TAG diverted focus from caracals, eliminating them as an SSP. There is no measurable evidence that doing so has benefited other programs as most medium/small felid populations continue to decline. In this plan, the Felid TAG is further diverting focus away from more small cat species with the hope that it will benefit the few that remain.

The sustainability issue of Felid TAG programs always seems to most prominently be attributed to "lack of space." However, this attribution may be a red herring or an oversimplification of the problem. Some examples of issues that resonate beyond lack of space:

1. One could compare similar sized footprints dedicated to breeding lions at two different facilities, but one facility can only accommodate one pride with the need to remove offspring as soon as they reach sexual maturity, while the other facility is designed to accommodate 2-3 groupings and can hold offspring for years until the SSP is ready to place them elsewhere. The latter facility was designed with sustainability in mind. In this case, the issue is more about the number of spaces and the flexibility of the space available rather than the size of the space as a whole.
2. When building new habitats, if a facility's design process is under-developed such as being non-inclusive of personnel that are actively involved in the felid care community such as the Felid TAG, the result is often over-designed or mis-designed, large habitats for iconic species like tigers where a fraction of that large space ends up being relatively unused by the tigers. Had the facility included input and data from the industry experts, they may have been able to dedicate a fraction of that space to a smaller cat species and displayed both species. In this example, the issue is more about the process used to design the space rather than the space itself.
3. Recently, many of our felid species have been less successful at breeding than they historically have been even though there is space dedicated to them. As the Felid TAG investigates the reasoning behind this, it is becoming apparent that there is a lot of inconsistency between facilities on protocols or techniques used to breed and there are several facilities dragging their feet on

115	introducing pairs. The latter appears to either be due to a lack of confidence in best timing or ability
116	introduce safely or due to disagreement between personnel at the facility on what the process
117	should look like. In this example, the issue is not due to space at all, but due to expertise in
118	breeding cats.

4. A number of small cat species have had medical concerns endemic to them that have resulted in premature loss of life. These concerns include bladder cancer in fishing cats, amyloidosis in black-footed cats, toxoplasmosis in Pallas cats, etc. As some of these populations did not persevere due to these medical inflictions, many facilities reallocated their spaces to other species.
5. The complexity of the importation process and the longevity it takes to do so is also a big concern and has prevented the successful exchange of bloodlines between regions. For some of these species, if a female does not reproduce earlier in her life, then her probability of breeding decreases. We have had many instances where we identified a 3–5-year-old cat for import but the animal wasn't able to be imported for years. By the time it was imported and the time it takes to introduce pairs, the pairing was too late.

To address the above issues, the Felid TAG asks that institutions are proactive, collaborative, and strategic in the manner in which they collection plan, design/build exhibits, and manage felids. Please do not work in a bubble. During the collection planning process, please reach out to the Felid TAG steering committee members and/or utilize the RCP as a guide to understand what the needs are related to felids or how the Felid TAG may best help support your institution's goals. Enable your staff to be proactively involved with the Felid TAG so that they are familiar to some degree with all aspects of modern felid husbandry and each species' program management. This may include attending our mid-year meeting, volunteering to help with the work being performed, or utilizing the resources available such as advisors, workshops, the Felid TAG Community on the AZA Network, or Animal Care Manuals. This also includes ensuring there is a pathway for the knowledgeable and involved staff members to implement what they learned and communicate information up the chain to senior leadership at your facility. Communicate outcomes of your husbandry efforts. As we recognize inconsistencies across institutions in husbandry, we are trying to document more and more what has worked and what hasn't across all aspects of husbandry. We invite your staff to contribute to the Felid TAG Times, our Newsletter. As you recognize the iconic species with new facilities and attention, also take a chance on the lesser iconic species and recognize their potential and value. Finally, do not limit your felid involvement to your animal care staff. Find a way to involve your non-animal care staff so that they may immerse themselves in the culture of animal care allowing them to further their passion and understanding of how to support the sustainability of felids both in situ and ex situ.

TAG Action Plan/Strategic Plan

The Felid TAG developed a set of core ideals, focused goals, and recommendations for managed felids in 2007 during a Strategic Planning workshop. The plan was re-evaluated formally in 2013 and is re-visited annually at the Felid TAG Mid-Year Conference. During each re-evaluation, the criteria are modernized to incorporate advances in program and felid management and to accommodate changes in industry standards, processes, and trends. The ideals, goals and recommendations outlined below are a continuation of this process. The Felid TAG commits that all work on behalf of the Felid TAG will be conducted in accordance with the outlined ideals, and they will be used to guide decision-making processes to accomplish well-defined goals and make recommendations.
The Felid TAG embraces the ideals and goals outlined below.

Felid TAG Ideals:
1. Preserve the Felid TAG's integrity, productivity, and viability
2. Optimize sustainability within all managed ex situ felid populations
3. Develop current and future felid care professionals, scientists, and conservationists through education and mentoring
4. Conduct TAG activities through inclusivity, equity, partnerships, and collaborations

168   5. Continue to remain connected to felid field conservation efforts and support initiatives when
169   relevant
170
171 **Felid TAG Focused Goals 2024 - 2029:**
172 Communication and Transfer of Knowledge:
173   1. Conduct the Felid Husbandry Course and the Advanced Felid Husbandry Course annually.
174   Advance course topics are determined through evaluation of industry needs. The current topics
175   that rotate annually are Reproduction and Safety.
176   2. Conduct an annual Felid TAG Conference with associated meetings and provide an update
177   meeting at the AZA annual conference.
178   3. Maintain the publication of the Felid TAG Times newsletter.
179   4. Develop an active list of tasks and activities with contacts to facilitate new member recruitment and
180   involvement.
181   5. Utilize technological and virtual resources for industry-wide and public messaging.
182
183 Addressing Ex situ/In situ Issues:
184   1. Evaluate every felid program critically and develop goals and action items to improve sustainability
185   of managed populations and support the conservation of species.
186   2. Improve the resilience and sustainability of TAG managed programs.
187   3. Set a high standard for program leader communication and responsiveness.
188   4. Form partnerships and collaborate with relevant in situ programs.
189   5. Develop relationships with policy makers and better understand legislative issues facing felids.
190
191 Addressing Husbandry Issues:
192   1. Develop advisement pathways to help institutions overcome problems.
193   2. Finalize and update Animal Care Manuals.
194   3. Define specific research needs for managed felids and collaborate with scientists to address these
195   needs.
196   4. Communicate directly with leaders and decision-makers regarding felid needs and solicit support
197   for overcoming issues.
198
199 **Felid TAG Recommendations for Managed Felids:**
200 The Felid TAG strongly encourages the following recommendations for all institutions exhibiting or
201 planning to exhibit felids:
202   •   It is imperative that institutions use the RCP as a guide when planning for, acquiring, and breeding
203   species/specimens.
204   •   The Program Coordinator or Studbook Keeper should be contacted regarding new acquisitions,
205   dispositions, births, deaths, and transfers in a timely manner.
206   •   Encourage collaboration. Long-term success of some felid species will require concerted, multi-
207   institutional efforts and partnerships for importing new founders.
208   •   All holders of felids should develop, implement, and monitor a robust environmental enrichment
209   program for their resident felids.
210   •   Disease, contraception, reproduction and diet/nutrition issues are high priority concerns. Holders
211   of felids are urged to monitor and cooperate with SSP-supported and endorsed research projects
212   addressing these issues.
213   •   The AZA's Policy on Responsible Population Management should be followed for all animal
214   placements.
215   •   Private ownership of wild felids as exotic pets is strongly opposed, as is the creation/propagation
216   of exotic domestic cat crosses (hybrids).
217   •   Because successful genetic management and conservation of felid species is inextricably linked to
218   scientific studies, the Felid TAG (1) recognizes the value of ex situ populations as a research
219   resource and (2) strongly endorses and recommends collaborative, multidisciplinary research in
220   these populations.
221   •   Follow recommended best safety practices as communicated by the TAG.
222

TAG Operational Structure & Succession Plan

The Felid TAG operating structure reflects its foundational ideals. Sound program management and modern scientific research have been core values since the inception of the TAG. Although on paper, the TAG maintains the structure of a single chair and single vice-chair as required in AZA's TAG Handbook, the TAG operates as if these positions are co-chairs with one person being experienced in program management and the other being experienced in scientific research. There are no formal term limits for officers, but historically, chairs have held their positions for 10 years or shorter allowing for healthy turnover. It was determined during the last set of co-chairs that there would be an attempt to stagger the tenure of these two people by at least two years to allow for a seamless transition of leadership. There has also been precedent with past co-chairs to identify two steering committee members to serve as mentees to these two positions for further succession. There are currently plans to revisit this practice.

The Felid TAG ambitiously strives to be an active TAG with high standards. To accomplish that, we attempt to create multiple layers of succession as well as a fleet of active participants to tackle the mounds of work trying to be accomplished. The steering committee is maintained at or near the maximum number of people allowed per the AZA TAG Handbook with professionals that are experienced across the multiple disciplines captured in the TAG's ideals. There are currently 15 steering committee members.

Beyond the steering committee, we have created multiple advisor positions to ensure we have subject matter experts to turn to on all relevant topics. The TAG tries to be as inviting and inclusive as possible to attract and develop zoo/aquarium professionals by creating multiple avenues to get involved and educated. Between offering felid husbandry courses, conducting online workshops, and sharing content during the annual conference including husbandry, research, conservation, staff management and mental health, program management and updates, etc., there are ample opportunities to learn. As the need for work arises, we are inviting and encouraging of professionals at various levels of experience to get involved with helping or serving in working groups. We also encourage the SSP program leaders to form management groups so that they have a diverse pool of input and successors for their programs.

Table 1: Current TAG officers, steering committee, advisors, program leaders, and species monitors

Steering Committee

Name	Position	Facility	Email	Phone
Dan Dembiec	Chair	National Aquarium	ddembiec@aqua.org	410-986-2307
Jason Herrick	Vice Chair	Omaha's Henry Doorly Zoo	jason.herrick@omahazoo.com	402-738-2008
Ivy Brower	Secretary	Zoo Miami	Ivy.Brower@miamidade.gov	786-798-4824
Tyler Boyd	Treasurer	Oklahoma City Zoo	tboyd@okczoo.org	405-425-0657
Hollie Colahan	Steering Committee	Birmingham Zoo	hcolahan@birminghamzoo.com	205-397-3848
Jay Tetzloff	Steering Committee	Blank Park Zoo	jrtetzloff@blankparkzoo.org	515-974-2567
Craig Saffoe	Steering Committee	Smithsonian's National Zoo and Conservation Biology Institute	saffoec@si.edu	202-633-3217
Rebecca McCloskey	Steering Committee	Northwest Trek Wildlife Park	becca.mccloskey@nwtrek.org	360-832-7196
Shanna Simpson	Steering Committee	Topeka Zoo	ssimpson@topekazoo.org	785-368-0167
Lindsey Vansandt	Steering Committee	Cincinnati Zoo and Botanical Gardens	lindsey.vansandt@cincinnatizoo.org	513-569-8223

Tara Harris	Steering Committee	Phoenix Zoo	tharris@phoenixzoo.org	602-914-4317
Tim Sampson	Steering Committee	John Ball Zoo	tsampson@jbzoo.org	*616-336-4301 x8004*
Stacey Johnson	Steering Committee	Roger Williams Park Zoo	sjohnson@rwpzoo.org	401-785 3510 x309
Jilian Fazio	Steering Committee	Turtle Back Zoo	jfazio@parks.essexcountynj.org	201-341-1279
Jill Dignan	Steering Committee	Lincoln Park Zoo	JDignan@lpzoo.org	312-742-7703

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Advisors

Name	Position	Facility	Email	Phone
Adam Felts	Animal Welfare	Columbus Zoo and Aquarium	Adam.Felts@columbuszoo.org	614-724-3492
Stacey Panteck	Education	Cleveland Metroparks Zoo	smp@clevelandmetroparks.com	216-661-6500
VACANT	Education			
Leslie Lyons	Genetics	University of Missouri	lyonsla@missouri.edu	573-882-9777
Jill Dignan	Husbandry	Lincoln Park Zoo	jdignan@Lpzoo.org	312-742-7703
Hannah Fulmer	Mental Health	Growing Resiliency for Aquarium and Zoo Employees, LLC	hfullmer.graze@gmail.com	720-449-6787
Dr. Cheryl Morris	Nutrition	Iowa State University	clmorris@iastate.edu	402-670-4804
Dr. Ellen Dierenfeld	Nutrition	Zootrition Software	edierenfeld@aol.com	314-717-3885
Dr. Katherine Rose Kerr	Nutrition	San Diego Zoo	krkerr2@gmail.com	970-988-1386
Dr. Michael Kinsel	Pathology	University of Illinois	kinsel@illinois.edu	312-585-9050
Dr. Karen Terio, DVM	Pathology	University of Illinois - Zoological Pathology Program	kterio@illinois.edu	312-585-9094
Lynn McDuffie	Permits	Disney's Animal Kingdom	lynn.mcduffie@disney.com	321-263-6343
Kathy Traylor-Holzer	Population management	retired	kathy@cpsg.org	507-645-7166
Dr. Jason Herrick	Reproduction	Omaha's Henry Doorly Zoo & Aquarium	jason.herrick@omahazoo.com	402-738-2008
Dr. William Swanson, DVM, PhD	Reproduction	Cincinnati Zoo & Botanical Garden	william.swanson@cincinnatizoo.org	513-569-8227
Tim Sampson	Safety	John Ball Zoo	tsampson@jbzoo.org	616-336-4301 x8004
Shanna Simpson	Safety	Topeka Zoo	ssimpson@topekazoo.org	785-438-0039

Dr. Ellen Bronson	Veterinary	Maryland Zoo in Baltimore	ellen.bronson@marylandzoo.org	443-552-3389
Jay Tetzloff	APMC liaison	Blank Park Zoo	jrtetzloff@blankparkzoo.org	515-974-2567
John Andrews	SPMAG liaison	Lincoln Park Zoo	jandrews@lpzoo.org	312-742-6600
Sara Sullivan	SPMAG liaison	Brookfield Zoo	sara.sullivan@species360.org	215-715-9875

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GSMP, SSP, or Consortium Program Leaders

Name	Program	Facility	Email	Phone
Michael Frushour	Amur leopard GSMP	Toledo Zoo & Aquarium	Michael.frushour@toledozoo.org	419-385-5721 x2084
Tim Sampson	Canada Lynx SSP	John Ball Zoo	tsampson@jbzoo.org	*616-336-4301 x8004*
Adrienne Crosier	Cheetah SSP	Smithsonian's National Zoo and Conservation Biology Institute	crosiera@si.edu	540-635-6594
Jilian Fazio	Clouded leopard SSP	Turtle Back Zoo	jfazio@parks.essexcountynj.org	201-341-1279
Stacey Johnson	Jaguar SSP	Roger Williams Park Zoo	sjohnson@rwpzoo.org	401-785 3510 x309
Andrew Haertzen	Lion SSP	Audubon Zoo	ahaertzen@auduboninstitute.org	763-300-8559
Laura Carpenter	Ocelot SSP	Cincinnati Zoo & Botanical Garden	laura.carpenter@cincinnatizoo.org	513-364-7678
Scott Kayser	Pallas' Cat SSP	Birmingham Zoo	skayser@birminghamzoo.com	205-879-0409 x243
Heather Down	Sand Cat SSP	The Living Desert Zoo and Gardens	hdown@livingdesert.org	760-568-0723
Dan Dembiec	Serval SSP	National Aquarium	ddembiec@aqua.org	410-986-2307
Jay Tetzloff	Snow Leopard SSP	Blank Park Zoo	jrtetzloff@blankparkzoo.org	515-974-2567
Trista Fischer (PL for all Tiger programs)	Tiger SSP (Amur)	Minnesota Zoological Garden	trista.fischer@state.mn.us	952-431-9328
Leigh Pitsko (Vice-PL for Generic Tiger phase out)	Tiger SSP (Generic Phase-out)	Smithsonian's National Zoo and Conservation Biology Institute	pitskol@si.edu	202-633-0144
Lyn Myers (Vice-PL for Malayan Tiger SSP)	Tiger SSP (Malayan)	Fresno Chaffee Zoo	lmyers@fresnochaffeezoo.org	559-492-4437
Ivy Brower (Vice-PL for Sumatran Tiger SSP)	Tiger SSP (Sumatran)	Zoo Miami	Ivy.Brower@miamidade.gov	786-798-4824

	Black-footed Cat Consortium	Fossil Rim Wildlife Center	jasona@fossilrim.org	218-341-5830
Jason Ahistus				

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Studbook keepers

Name	Program	Facility	Email	Phone
Michael Frushour	Amur leopard	Toledo Zoo & Aquarium	Michael.frushour@toledozoo.org	419-385-5721 x2084
Jason Ahistus	Black-footed Cat	Fossil Rim Wildlife Center	jasona@fossilrim.org	218-341-5830
Kathryn Juliano	Bobcat	Smithsonian's National Zoo and Conservation Biology Institute	julianok@si.edu	240-357-7786
Kellee Wolowitz	Canada Lynx	Seneca Park Zoo	kwolowitz@monroecounty.gov	585-753-2514
Kristen Clark	Caracal	Smithsonian's National Zoo and Conservation Biology Institute	clarkk@si.edu	
Erin Moloney	Cheetah	John Ball Zoo	emoloney@jbzoo.org	616-336-4301 x8014
Jilian Fazio	Clouded leopard SSP	Turtle Back Zoo	jfazio@parks.essexcountynj.org	201-341-1279
Anna Chaney	Fishing Cat	Memphis Zoo	achaney@memphiszoo.org	901-333-6601
Stacey Johnson	Jaguar SSP	Roger Williams Park Zoo	sjohnson@rwpzoo.org	401-785 3510 x309
Hollie Colahan	Lion SSP	Birmingham Zoo	hcolahan@birminghamzoo.com	205-397-3848
Laura Capenter	Ocelot SSP	Cincinnati Zoo & Botanical Garden	laura.carpenter@cincinnatizoo.org	513-364-7678
Scott Kayser	Pallas' Cat SSP	Birmingham Zoo	skayser@birminghamzoo.com	205-879-0409 x243
Nikki Smith	Puma	Columbus Zoo and Aquarium	nikki.smith@columbuszoo.org	614-724-3675
Heather Down	Sand Cat SSP	The Living Desert Zoo and Gardens	hdown@livingdesert.org	760-568-0723
Lori Hieber	Serval SSP	San Diego Zoo Safari Park	Lhieber@sdzwa.org	619-917-4352
Lynn Koscielny	Snow Leopard SSP	Cleveland Metroparks Zoo	lmk@clevelandmetroparks.com	216-635-3339
Lisa Van Slett	Tiger SSP (all varieties)	Dallas Zoo	lisa.vanslett@dallaszoo.com	469-554-7205

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260 ## TAG Taxa

261 All species from the Felidae family are within the purview of the Felid TAG; this includes 41 species from
262 14 genera. The taxonomic level in which Felid TAG programs are managed may vary focusing on species,
263 sub-species, or even regional designations. This inconsistency can be attributed to many historic
264 influences since the inception of each program including but not limited to availability of animals or
265 species, conservation-related priorities and changes in these priorities over time, completeness of the
266 taxonomic understanding and agreement within species, etc. The following examples may provide context
267 towards how level of taxonomy has been influenced by such factors:

- Due to conflicting data and lack of rigor for which serval sub-species have been recently studied, the Serval SSP focuses on servals at the species level. Even though it is believed that all servals in the population have been sourced from the South African/Namibian African region, efforts have not been made to confirm the location of the source of all specimens. Even if efforts were made to confirm location, servals are not rigorously defined scientifically at the sub-species level to allow for confident classification.
- The taxonomic classification of leopards is better studied and documented than servals resulting in the existence of eight sub-species (IUCN redlist). Multiple sub-species were managed in AZA facilities historically, but it was determined in the 2004 RCP to focus on the Amur leopard (*orientalis*) and phase out the other subspecies.
- The documentation of tiger sub-species has changed over time. When the current Tiger SSPs were originated, all three were classified as individual sub-species, although at the time, the Malayan tiger was lumped in with Indochinese tigers (*corbetti*). They later have been divided into separate sub-species. The most recent genetic research suggests there to be only two sub-species, *sundaica* which includes Sumatran tigers, and *tigris*, which includes all other surviving tigers (Wilting et al., 2015). If this new classification is recognized, then the current Tiger SSPs are being managed based on region.
- Originally ocelots were managed at the species level. Later, in an attempt to focus on a sub-species with a conservation need, the SSP decided to focus on the Brazilian sub-species (*mitis*). With successful imports from Brazil, the SSP tried to replace the generic ocelots with the Brazilian ocelot. However, due to further importing difficulties, the SSP was not able to import more Brazilian ocelots to bolster the population and complete the transition. As a result, they now manage two populations of ocelots, generic and Brazilian. They are now reassessing how to manage ocelots at the subspecies level as the generic ocelots may be useful to the Ocelot SAFE program.

Wilting A., Courtiol A., Christiansen P., Niedballa J., Scharf A. K., Orlando L., Balkenhol N., Hofer H., Kramer-Schadt S., Fickel J. & Kitchener A. C. 2015. Planning tiger recovery: Understanding intraspecific variation for effective conservation. Science Advances 1, e1400175.

Table 2: Species within TAG purview

Common Name	Scientific Name	Common Name	Scientific Name
Lion	*Panthera leo*	Canada lynx	*Lynx canadensis*
Jaguar	*Panthera onca*	Eurasian lynx	*Lynx lynx*
Leopard	*Panthera pardus*	Iberian lynx	*Lynx pardinus*
Tiger	*Panthera tigris*	Bobcat	*Lynx rufus*
Snow leopard	*Panthera uncia*	Puma	*Puma concolor*
Sunda clouded leopard	*Neofelis diardi*	Cheetah	*Acinonyx jubatus*
Clouded leopard	*Neofelis nebulosa*	Jaguarundi	*Herpailurus yagouaroundi*
African golden cat	*Caracal aurata*	Mainland leopard cat	*Prionailurus bengalensis*
Caracal	*Caracal caracal*	Sunda leopard cat	*Prionailurus javanensis*
Serval	*Leptailurus serval*	Flat-headed cat	*Prionailurus planiceps*
Pampas cat	*Leopardus colocolo*	Rusty spotted cat	*Prionailurus rubiginosus*
Geoffroy's cat	*Leopardus geoffroyi*	Fishing cat	*Prionailurus viverrinus*
Guiña (kodkod)	*Leopardus guigna*	Pallas's cat	*Otocolobus manul*
Southern tiger cat	*Leopardus guttulus*	Chinese mountain cat	*Felis bieti*
Andean cat	*Leopardus jacobita*	Domestic cat	*Felis catus*
Ocelot	*Leopardus pardalis*	Jungle cat	*Felis chaus*

Northern tiger cat	*Leopardus tigrinus*	Afro-Asiatic wildcat	*Felis lybica*
Margay	*Leopardus wiedii*	Sand cat	*Felis margarita*
Borneo bay cat	*Catopuma badia*	Black-footed cat	*Felis nigripes*
Asiatic golden cat	*Catopuma temminckii*	European wildcat	*Felis silvestris*
Marbled cat	*Pardofelis marmorata*		

297 Kitchener, A. C.; Breitenmoser-Würsten, C.; Eizirik, E.; Gentry, A.; Werdelin, L.; Wilting, A.; Yamaguchi, N.;
298 Abramov, A. V.; Christiansen, P.; Driscoll, C.; Duckworth, J. W.; Johnson, W.; Luo, S.-J.; Meijaard, E.;
299 O'Donoghue, P.; Sanderson, J.; Seymour, K.; Bruford, M.; Groves, C.; Hoffmann, M.; Nowell, K.;
300 Timmons, Z. & Tobe, S. (2017). "A revised taxonomy of the Felidae: The final report of the Cat
301 Classification Task Force of the IUCN Cat Specialist Group" (PDF). *Cat News* (Special Issue 11): 66–68.
302

Capacity and Commitment Assessment

304 CPT refers to Commitment Population Trend, a 5-year realistic trend that represents the direction the
305 population is projected to shift. CPS refers to Commitment Population Size, which is an optional number
306 the TAG believes the population will be at in 5 years if projected commitment to hold the species was
307 fulfilled. CPT and CPS generally do not take into account biological (breeding rates) or husbandry
308 (breeding problems) limitations as these are taken into account during the Breeding & Transfer Plan
309 process. However, you will notice described in the next paragraph that to assign a realistic number as the
310 CPS, we did take into account breeding rates. The TAG goal is the direction the TAG would like to take the
311 population.
312
313 To determine CPT and CPS, a survey was sent to 152 institutions and responses were received from 122
314 for an overall response rate of 80.3%. Each institution indicated how many spaces for each species they
315 currently maintain. Institutions were then asked if they plan to maintain or phase out that species over the
316 next 5 years. Institutions were also asked if they planned to add a new species to their collection within 5
317 years and, if so, how many spaces for each species. Using the current number of spaces and the 5-year
318 projected number of spaces, we calculated a projected percentage growth rate of space.
319
320 Since number of spaces is commonly believed to be the primary limiting factor preventing growth for felid
321 populations, we intended to use this projected percentage growth rate to calculate a projected population
322 size as if the current population grew at the same rate as the space and use this number as the 5-year CPS.
323 However, for some species the percent space increase was higher than can reasonably be filled through
324 breeding and imports resulting in an unreasonable 5-year CPS. In these cases, we determined that growth
325 rate was the limiting factor and set an ambitious but reasonable growth rate of 10%. Table 3 shows the new
326 5-year CPS and compares it to current population. For all SSPs, the current population was taken from the
327 most recent Breeding and Transfer Plan. For the non-SSPs, the current population was taken from the
328 following sources:
329
330 Puma – Population listed in the ZIMS studbook as of September 16, 2024
331 Black-footed cat – 2023 Black-footed Cat Consortium Annual Report
332 Fishing Cat – 2023 Breeding and Transfer Plan
333 Caracal - Population listed in the ZIMS studbook as of September 16, 2024
334 Bobcat - Population listed in the ZIMS studbook as of September 16, 2024
335 Generic Tiger - Population listed in the ZIMS studbook as of September 16, 2024
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337 **Table 3: Species Capacity & Commitment Expected Growth Table**

Common Name	Current Pop. Size	Current # of paces from survey	Projected # of spaces in 5 years from survey	Projected % growth rate	5-year CPS[1]
Amur Tiger	110	78	81	+3.8%	114

Sumatran Tiger	68	56	65	+16.1%	75
Malayan Tiger	57	36	46	+27.8%	73
Generic tiger	15	13	6	-54.2%	63
Lion	349	212	222	+4.7%	365
Jaguar	85	56	62	+10.7%	94
Snow Leopard	116	86	96	+11.6%	128
Amur Leopard	75	58	67	+15.5%	83
Puma	122	82	94	+14.6%	134
Cheetah	333	294	302	+2.7%	342
Clouded Leopard	67	51	70	+37.3%	74
Canada Lynx	115	62	82	+32.3%	127
Serval	63	61	73	+19.7%	69
Ocelot	60	39	64	+64.1%	66
Sand Cat	37	48	78	+62.5%	41
Pallas Cat	61	27	63	+133.3%	67
Black-Footed Cat	27	26	49	+88.5%	30
Fishing Cat	16	19	25	+31.6%	18
Caracal	22	22	31	+40.9%	24
Bobcat	130	61	73	+19.7%	143

338   [1]**Note that if projected growth rate was > 10%, then we used 10% as the growth rate to calculate 5-**
339   **year CPS.**
340

341   If the projected % growth rate from Table 3 was > 3%, then the CPT is "Grow. If it is < -3%, then the CPT is
342   "Decline". If the CPT falls in between 3 and –3 %, then we listed the CPT as stable. Table 4 shows a
343   comparison of the 5-year CPT and the TAG goal as well as a comparison of population size and space
344   across this RCP and the previous 2 RCPs. In all cases the 5-year CPT and the TAG goal matched. All felid
345   species are expected to experience a growth in space over the next 5 years except generic tigers and
346   cheetahs. Generic tigers are projected to experience a desirable decline in space. Even though the cheetah
347   population is projected to experience a 2.7% increase in space, this is a small number relative to the
348   population and considered a match to the desire to maintain a relatively stable cheetah population. Previous
349   RCP population sizes and projected space estimates are provided to see how the populations have fared in
350   the last 15 years.

351   **Table 4: Species Capacity & Commitment Comparison Table**

Common Name	Current Pop. Size	5-Year CPT	TAG Goal	2019 RCP Pop. Size	2019 RCP Projected Space	2009 RCP Pop. Size	2009 RCP Projected Space
Tiger (All sub-species)	250	Grow	Grow	319	269	375	295
Amur Tiger	110	Grow	Grow				
Sumatran Tiger	68	Grow	Grow				
Malayan Tiger	57	Grow	Grow				
Generic tiger	15	Decline	Decline				
Lion	349	Grow	Grow	244	284	317	311
Jaguar	85	Grow	Grow	102	82	93	104

Snow Leopard	116	Grow	Grow	115	105	128	126
Amur Leopard	75	Grow	Grow	78	88	68	79
Puma	122	Grow	Grow	119	126	136	128
Cheetah	333	Stable	Stable	298	253	230	251
Clouded Leopard	67	Grow	Grow	59	68	58	74
Canada Lynx	115	Grow	Grow	48	45	38	53
Serval	63	Grow	Grow	76	56	103	63
Ocelot	60	Grow	Grow	81	71	92	111
Sand Cat	37	Grow	Grow	23	22	19	27
Pallas Cat	61	Grow	Grow	37	30	53	50
Black-Footed Cat	27	Grow	N/A	53	39	28	40
Fishing Cat	16	Grow	N/A	39	37	42	57
Caracal	22	Grow	N/A	31	28	42	35
Bobcat	130	Grow	N/A	122	91	128	82

352

SSP Assessment Process

354 The TAG used the standardized AZA SSP Assessment Process to identify appropriate SSP
355 designations for the species under its purview. This process is presented and described in
356 Appendix B."
357
358 Program assessments for all populations with 15 or more facilities began during the 2022 AZA
359 Midyear meeting. All program leaders, with assistance from steering committee and advisors,
360 completed assessments for the programs that met all the initial required criteria. The
361 assessments were scored and reviewed by the steering committee as well as the Animal
362 Population Management Committee in the Fall of 2022. Below are the results of the species that
363 exist at 15 or more facilities, but we do not recommend formal management (Table 4) and those
364 populations that meet all the initial criteria (Table 5) to qualify for assessment of the SSP
365 framework (Appendix B).

366 **Table 5: Species within TAG purview found at 15 or more AZA facilities that the TAG is not**
367 **recommending for more formal management.**

Common Name (Scientific Name)	Justification
Puma (Puma concolor)	Imports through breeding do not exceed imports through acquisition. Many facilities hold this species because of their geographical significance as a native North American felid species, their high education value, and because they are relatively available. Since there is occasionally a need for rescuing orphaned or rehabilitated individuals that cannot be re-wilded, AZA facilities better serve as a refuge for individuals that need a home. Since the need for housing individuals that need a home is frequent enough, this is an adequate source for animals to support AZA facility programs making the need for a breeding program unnecessary.
Bobcat (Lynx rufus)	Imports through breeding do not exceed imports through acquisition. Many facilities hold this species because of their geographical significance as a native North American felid species, their high education value, and because they are relatively available. Since there is occasionally a need for rescuing orphaned or rehabilitated individuals that cannot be re-wilded, AZA facilities better serve as a refuge for individuals that need a home. Since the need for housing individuals that need a home is frequent enough, this is an adequate source for animals to support AZA facility programs making the need for a breeding program unnecessary.

SSP Assessment Results

369 **Table 6: SSP Assessment Results Summary Table**

Species	Genetics	Demography	Space & Interest	Husbandry	Designation
Amur leopard	Neutral	+	-	Neutral	Provisional SSP
Black-footed Cat	Neutral	-	-	-	AZA Studbook
Canada lynx	+	+	Neutral	Neutral	Signature SSP

Cheetah	+	+	+	+	Signature SSP
Clouded leopard	Neutral	+	+	Neutral	Signature SSP
Jaguar	Neutral	-	Neutral	Neutral	Provisional SSP
Lion	+	+	+	Neutral	Signature SSP
Ocelot	+	+	+	-	Provisional SSP
Pallas' cat	+	+	+	Neutral	Signature SSP
Sand cat	Neutral	+	Neutral	Neutral	Provisional SSP
Serval	+	-	+	Neutral	Provisional SSP
Snow leopard	Neutral	+	+	-	Provisional SSP
Tiger, Amur	+	-	+	Neutral	Provisional SSP
Tiger, Malayan	+	-	Neutral	Neutral	Provisional SSP
Tiger, Sumatran	+	+	Neutral	Neutral	Signature SSP

370

Animal Programs Summary

Table 7: Animal Programs Summary Table

Common Name (Scientific Name)	Program designation	Current Pop. Size[1]	# AZA facilities	5 Year Lambda (λ)	Date of most recent BTP
Amur Leopard (*Panthera pardus orientalis*)	Provisional SSP	75 (36.39)	36	0.984	7/29/2024
Canada lynx (*Lynx canadensis*)	Signature SSP	65 (28.37)	26	1.072	3/7/2023
Cheetah (*Acinonyx jubatus*)	Signature SSP	333 (171.162)	52	0.99	2/2/2024
Clouded leopard (*Neofelis nebulosa*)	Signature SSP	67 (27.40)	26	1.00	9/14/2021
Jaguar (*Panthera onca*)	Provisional SSP	84 (37.47)	46	0.976	2/10/2022
Lion (*Panthera leo*)	Signature SSP	349 (159.190)	96	0.976	12/6/2022
Ocelot (*Leopardus pardalis*)	Provisional SSP	63 (30.33) Generic – 29 (13.16) Brazilian – 34 (17.17)	37	Average – 0.945 Generic - 0.926 Brazilian – 0.964	12/13/2022
Pallas' Cat (*Otocolobus manul*)	Provisional SSP	41 (23.18)	18	0.96	10/2/2024

372

Sand Cat (*Felid margarita*)	Provisional SSP	31 (16.15)	16	1.113	12/10/2021
Serval (*Leptailurus serval*)	Provisional SSP	77 (37.40)	45	0.968	1/24/2022
Snow Leopard (*Panthera uncia*)	Provisional SSP	115 (55.61)	53	0.965	9/9/2024
Tiger, Amur (*Panthera tigris altaica*)	Provisional SSP	110 (48.62)	46	0.956	9/12/2024
Tiger, Malayan (*Panthera tigris jacksoni*)	Provisional SSP	57 (30.25.2)	23	0.996	9/13/2024
Tiger, Sumatran (*Panthera tigris sumatrae*)	Signature SSP	68 (30.38)	31	0.98	9/11/2023
Black-Footed Cat (*Felis nigripes*)	AZA Studbook	28 (12.16)	15	N/A	N/A
Bobcat (*Lynx rufus*)	AZA Studbook	105 (53.52)	63	N/A	N/A
Caracal (*Caracal caracal*)	AZA Studbook	30 (14.16)	14	N/A	N/A
Fishing Cat (*Prionailurus viverrinus*)	AZA Studbook	33 (17.15.1)	9	N/A	N/A
Puma (*Puma concolor*)	AZA Studbook	103 (51.52)	55	N/A	N/A
Tiger, Generic (*Panthera tigris*)	Phase Out	15 (5.10)	7	N/A	N/A

373 [1]For all SSPs, the current population was taken from the most recent Breeding and Transfer Plan. For the non-SSPs, the
374 current population was taken from the following sources:
375
376 Puma – Population listed in the ZIMS studbook as of September 16, 2024
377 Black-footed cat – 2023 Black-footed Cat Consortium Annual Report
378 Fishing Cat – 2023 Breeding and Transfer Plan
379 Caracal - Population listed in the ZIMS studbook as of September 16, 2024
380 Bobcat - Population listed in the ZIMS studbook as of September 16, 2024
381 Generic Tiger - Population listed in the ZIMS studbook as of September 16, 2024
382

383 SSP Roles and SMAART Goals

384 The following animal program roles and SMAART goals for the next five years have been
385 developed for the TAG's SSP programs (Table 7).
386
387 A SMAART goal explains a behavior using the following components:

Specific	A SMAART goal identifies a specific action or event that will take place.
Measurable	The description of a SMAART goal will allow you to determine your progress towards completion, and let you know when you are finished.
Achievable	A SMAART goal should be achievable given available resources.
Agreed-upon	A SMAART goal should encourage collaboration and cooperative ownership of plans.
Realistic	A SMAART goal should require you to stretch some beyond your normal routine and regular abilities, but allow for likely success based on your skills and the time available.
Time	A SMAART goal should state the specific time period in which it will be accomplished.

388

389 **Table 8: SSP Role and Goals Table**
390

Common Name (Scientific Name)	Amur Leopard (Panthera pardus orientalis)
Program Designation	Provisional SSP
Program Role	Represents a top predator species in the old world with a renowned coat pattern and an engaging conservation story.
SMAART Goal #1	Reach a population size of 100 animals by producing a minimum of 5 cubs per year through natural breeding and AI.
SMAART Goal #2	Increase holding institutions by a net of three institutions over the next 5 years
SMAART Goal #3	Import 2-3 animals from EAZA (and/or potentially JAZA) over the next 5 years in order to increase GD

391

Common Name (Scientific Name)	Canada Lynx (*Lynx canadensis*)
Program Designation	Signature SSP
Program Role	Represents a northern North American small carnivore species adapted for cold weather and seasonality
SMAART Goal #1	Develop the newly formed steering committee of 5-8 people. *Rationale:* Increasing the number of people committed to Canada Lynx breeding and expanding husbandry techniques will bring a greater focus on this issue. *Action items (may change as more information on the issue is gathered):* 1. Hold at least one committee meeting by mid-December 2024 2. Hold at least 4 committee meetings in 2025 to track progress
SMAART Goal #2	Utilize the newly formed steering committee as a task force to acquire information about current husbandry trends/practices, collate into meaningful data, and use that data to establish best husbandry practices that will optimize breeding with assigned roles for each committee member to explore husbandry trends/practices that may be beneficial to the on going management of Canada Lynx Action Items: 1. Collate information on status/details of breeding recs by September, 2025. 2. Start strategizing on how to address breeding deficiencies during December meeting. This includes simultaneously collecting information on husbandry to update information for the Small Felid Animal Care Manual. Likely this will include developing one or more surveys. 3. Form a documented strategy and track progress during the 4 meetings in 2025. Disseminate any surveys by the time meeting 3 occurs. Have results of surveys by meeting 4. 4. Communicate elements of the strategy and results either in Felid TAG Times or in State of the Canada Lynx Address.
SMAART Goal #3	Increase at least 5 spaces for Canada lynx in the next 5 years. Action items: 1. Develop process to work with Non-AZA institutions. A focus on CAZA members could be a possibility. Identify AZA facilities willing to export to non-AZA institutions by 2024.

	2. Post on Felid TAG and other AZA list serves to recruit more institutions every year within three months of compiling breeding and transfer plan.

Common Name (Scientific Name)	**Cheetah** *(Acinonyx jubatus)*
Program Designation	Signature SSP
Program Role	Represents an iconic African large carnivore species best known for its unique adaptations that allow it to be the fastest land mammal on Earth.
SMAART Goal #1	Improve overall health of the population & conduct research Participate in the following research initiatives: • Assisted breeding techniques • Gut microbiome analysis • Review population health and mortality data obtained from the veterinary health workshop conducted in 2018 and determine need for next health workshop.
SMAART Goal #2	Publish Animal Care Manual
SMAART Goal #3	Conduct North American Cheetah Husbandry Course biannually

Common Name (Scientific Name)	**Clouded Leopard** *(Neofelis nebulosa)*
Program Designation	Signature SSP
Program Role	Represents a unique and attractive medium-sized tropical Asian felid species

SMAART Goal #1	Increase GD from 87% to 90% over next 5 years to improve population sustainability
	1. Import 4 genetically valuable cats (founders) every 5 years for 26 years
	2. Identify range country partners that can provide founders and work with both SSP and EEP
	3. Facilitate logistics of import process – ID animals, provide permitting letters etc.
	4. Exchange cats with EEP and other international partners
	5. Research potential of becoming a GSMP during 2024
	   a. Discuss with other Felid GSMP
	   b. Reach out to WAZA about process

SMAART Goal #2	Recruit at least 3 new spaces over next 5 years to accommodate growth of population demographics, imports and births from founder animals. 1. Contact AZA facilities: Directors, Curators, animal managers each year 2. Recruit facility that can manage similar to C2S2 facilities by 2024 3. Established institutions increase their capacity even to 2-3 pairs or retired 4. Complete ACM draft by end of 2024
SMAART Goal #3	Research pairing and rearing options to provide flexibility in individual and population management. 1. Recruit 5 zoos over the next 5 years to parent rear cats. 2. Measure the effects of different social structures (i.e. trios) on breeding success over the next 5 years.

	3. Research the effects of social rearing (SR) [Mother reared cats which are socialized to people] on future pairing and breeding success
	4. Compile data on success of MR, HR and SR reproduction
	5. Compile data on survivability of MR, HR and SR cubs
	6. Monitor success of repairing successful mature males

394

Common Name (Scientific Name)	Jaguar *(Panthera onca)*
Program Designation	Provisional SSP
Program Role	Represents a top predator species in the new world with a renowned coat pattern and other impressive adaptations.
SMAART Goal #1	Import at least three pairs of genetic founders before the end of 2027. (This is actually feasible, as I have identified more than three institutions willing to work on a group import project.)
SMAART Goal #2	Before the end of 2025, investigate and implement steps that consistently achieve at least 50% success of the breeding recommendations made by the SSP.
SMAART Goal #3	Through personal communication, add at least two new participating facilities capable of breeding jaguars before the end of 2027. At least 2 new facilities have been identified.

395

Common Name (Scientific Name)	Lion *(Panthera leo)*
Program Designation	Signature SSP
Program Role	An iconic zoo species that highlights an African top predator and a unique felid species with a predominately non-solitary social structure
SMAART Goal #1	Husbandry-focused: Form a group of advisors to consult on husbandry topics in lions, update ACM, gather data on current range of husbandry practices, develop vet and pathology projects,
SMAART Goal #2	Demography-focused: Collaborate with centers around AZA focusing on reproduction in large cat species, addressing when contraceptives should be replaced, developing a record and protocol for planning a female's contraception over its lifetime, and updating records of who has what contraceptive to grow the data pool.
SMAART Goal #3	Space/Interest-focused: Perform an in-depth population analysis, determining the impacts of imports, developing a method to evaluate an institution's true capacity to hold lions, project what shifts will be made in the lion population in the future, address challenges related to AZA's growing multinational membership, and create more resources on what elements are being added into new lion habitats.

396

Common Name (Scientific Name)	Ocelot *(Leopardus pardalis, mitis)*
Program Designation	Provisional SSP
Program Role	Highlight a new world, small carnivore with a conservation story in the United States
SMAART Goal #1	Improve ocelot breeding and general husbandry by supporting AZA facilities through the following actions: 1. Conduct 4 husbandry workshops annually and regular office hours via Zoom with program leaders, advisors, steering committee members, IRs, curators, and keepers at SSP

	institutions to discuss best practices for pairing ocelots, managing neonates, and addressing overgrooming behaviors and any other general husbandry issues.
	2. Facilitate modifications to existing habitats and holding spaces, to improve enclosure designs and ensure safety and efficiency with introductions, breeding and rearing. Will collaborate with SAFE ocelot program to offer grants to facilities with breeding recommendations
SMAART Goal #2	Increase the probability of ocelots breeding by combining the Brazilian and generic ocelot populations and importing 14 new ocelots: Six (3.3) Brazilian ocelots have been identified for importation from Brazil and two (1.1) from Trinidad in 2025. An additional 6 ocelots will be identified for importation from European zoos in the next two years.
SMAART Goal #3	Define the collaboration between the Ocelot SSP and the recently accepted Ocelot SAFE program. Increase education and outreach initiatives in the US, esp. Texas To increase awareness of ocelot conservation needs and the reintroduction program for ocelots in Texas, the SSP will prioritize establishment of a comprehensive education program for this species beginning in Fall 2023. The Ocelot SSP Education advisor, SSP coordinator and steering committee will work with education staff at SSP institutions, their associated AAZK chapters, and the Ocelot Recovery Program participants through Ocelot SAFE (East Foundation, Texas A&M University, USFWS, Texas Parks and Wildlife) to create and distribute accurate and consistent messaging. Using social media, Ocelotapalooza fundraisers and other outreach approaches, we will engage more zoos in ocelot conservation efforts while educating the public to increase their support for this species and the recovery program.

397

Common Name (Scientific Name)	**Pallas' Cat** ***(Otocolobus manul)***
Program Designation	Signature SSP
Program Role	Represents a unique small Asian felid species adapted for a temperate ecosystem
SMAART Goal #1	Achieve and maintain target population of 65 cats as set in the 2019 Breeding and Transfer Plan
SMAART Goal #2	Improve genetic diversity to ensure long-term viability of population
SMAART Goal #3	Develop the Pallas' Cat SSP as a husbandry resource for holding institutions

398

Common Name (Scientific Name)	**Sand Cat** ***(Felis margarita)***
Program Designation	Provisional SSP
Program Role	Represents an old world small felid species uniquely adapted for arid environments
SMAART Goal #1	Achieve target population size set in the 2024 Breeding and Transfer Plan to advance population sustainability through developing a strategy to recruit three new spaces in three years by providing new partner and breeding opportunities. Essential Actions:

	1. Identify new holding institutions through developing responsible partnerships with non-AZA facilities/programs to increase space for AZA institutions, achieve new resources, and expand expertise through partnerships. 2. Communicate with existing holders to determine if there is a possibility to increase existing space through management changes (e.g., housing non-breeding pairs/groups together). 3. Conduct genetic testing of the unknown pedigrees in two AZA institutions and network to understand genetic lineage of animals from potential non-AZA partnerships.
SMAART Goal #2	Design and implement an "education and well-being" information sharing plan for sand cats in the next two years. Essential Actions: 1. Facilitate purpose driven/focused workshops (at least two a year for three years) to work through areas in the 2023 Sand Cat Husbandry Survey assessing what we could improve on, increase the small cat network, and foster expertise exchange through surveying the needs of the institutions. 2. Develop a care sheet with support of, or in collaboration with, Felid TAG or Small Cat Alliance. This would distribute "best practices", familiarize the small cat network with available information, contacts for questions, and increase standardization of the program. 3. Foster a relationship to network with EAZA and private and/or non-AZA institutions for information exchange.
SMAART Goal #3	Leverage assisted reproductive technology (ART) to improve genetic management and long-term sustainability of sand cats. Essential Actions: 1. Collect and cryopreserve sperm from each male in the population to develop a functional genome resource bank, which can provide frozen sperm for artificial insemination (AI) and serve as a safeguard against the loss of genetic diversity. 2. Conduct five AIs in the next three years with either fresh sperm from resident/nearby males or frozen sperm from underrepresented or founder males

399

Common Name (Scientific Name)	**Serval** ***(Leptailurus serval)***
Program Designation	Provisional SSP
Program Role	Highlight a medium-sized African predator with unique adaptations and provide a felid option to satisfy demand at institutions with ambassador programs
SMAART Goal #1	Increase overall breeding success within this SSP to at least 2 surviving litters in 2025 and at least 3 surviving litters all subsequent years during this 5-year RCP cycle. *Rationale:* The Serval SSP assessment revealed a negative score in Demography and neutral score in Husbandry. There has been poor breeding success with this population over the last 5 years without a clear explanation other than our past successful breeding individuals have aged out. However, there have been ample individuals born that are now breeding age as well as some importation of new bloodlines that are of breeding age.

	Essential Actions: • Utilize the newly formed management group as a task force to identify/define potential reasons for poor breeding by surveying holding institutions on various husbandry factors • Compile and analyze information by September of 2025 • Disseminate conclusions directly to serval holding institutions and publish in Felid TAG Times
SMAART Goal #2	Increase percentage of attempted breeding to > 75% per Breeding and Transfer Plan cycle. *Rationale:* This year's PMCTrack outcomes survey revealed that despite > 95% compliance in performing recommended transactions, only 40% of pairings were attempted to be put together to breed. Essential Actions: • Using information from the actions outlined in the first goal, assign a mentor from the management group for each institution, and have them have multiple touch points with their assigned holding institutions (how many times will depend on need) to work through husbandry problems and help develop solutions to encourage introductions.
SMAART Goal #3	Optimize the number of servals in the population that can be recommended to breed by validating a genetic analysis process that ensures a high percentage of known pedigree within the population and by continuing to explore the feasibility of incorporating ambassador servals into the breeding population. *Rationale for validation of a genetic analysis process:* The Serval SSP has traditionally had a relatively high percentage of unknown pedigree within the population. Due to the availability of servals from private holders in the US, AZA facilities have acquired servals of unknown origin from private holders regularly regardless of SSP advisement. Conventionally, unpedigreed servals were disqualified from being recommended to breed. Modern genetic analysis techniques allow for the redefining of the mean kinship baseline of a population and comparison of relatedness between unpedigreed individuals, thus allowing these unpedigreed individuals to be incorporated into the breeding plan. Essential Actions: • Finish the genetic analysis to redefine the mean kinship baseline of the Seval SSP population and use it to create a MateRX. This work is 90% complete. • Consult with population biologists and geneticists on how to incorporate future unpedigreed servals into the population opportunistically. *Rationale for exploring the feasibility of incorporating ambassador servals into the breeding population:* The Serval SSP has traditionally been composed of a high percentage of ambassador servals. Conventionally, it was believed that ambassador servals could not also be breeding servals because they would either be poor breeders/parents or the act of breeding would prevent them from continuing to function as an ambassador animal. Recent pilot pairings have proven that both of these conventions are not necessarily true.

	Essential Actions: • Recommend at least two pairs of ambassador servals to breed in each breeding and transfer plan and work with the breeding institution to document factors that result in success.

400

Common Name (Scientific Name)	**Snow Leopard** *(Panthera uncia)*
Program Designation	Provisional SSP
Program Role	Highlights an Asian felid species, with unique and appealing adaptations to be a top predator in high altitude regions.
SMAART Goal #1	Increase births by 10% over the next 5 years by improving breeding success.
SMAART Goal #2	Submit to AZA an Animal Care Manual within 24 months of the official template being finalized. Possible collaboration with Amur Leopard, Puma and Jaguar to create a combined ACM.
SMAART Goal #3	Increase at least 5 spaces for Snow leopards in the next 5 years.

401

Common Name (Scientific Name)	**Amur Tiger** *(Panthera tigris altaica)*
Program Designation	Provisional SSP
Program Role	An iconic zoo species that highlights an Asian top predator and a unique and charismatic felid species with striking adaptations
SMAART Goal #1	Reach a population size of 115 over a 5-year period by producing 5-6 litters/year. Essential actions that will focus on improving the probability of recommendations to be successful: • Increase breeding recommendations for inexperienced females 3-7 yr. old, particularly those that are in the top 75% of the mean kinship list, to improve their future breeding success. • Consider pairing experienced breeders with naïve animals (vs. both animals being inexperienced) • Consider animals' personalities when making pairing recommendations. • Move future breeders at a younger age (~18 months of age) to allow time for transfers and for animals to settle into a new facility • Make fewer repeat carry-over breeding recommendations for pairs that have already had a carry-over and did not breed and do not carry over a breeding recommendation for more than 3 years. • Minimize breeding recommendations for older females (> 10 yr old) that have never bred before, **IF** it negatively impacts the ability to create pairs with a greater probability of success. • Conduct a new PVA to determine the factors contributing to the lower breeding success observed over the past 10-15 years. Essential actions that will increase the number of introductions that are occurring: • The Chair will conduct regular check-ins with facilities that have breeding recommendations to provide advice, encouragement or to determine if further assistance is needed. • Utilize THAT to help with breeding introductions by actively assigning a mentor to any facility that has not bred tigers in the last 3 years or that has had high staff turnover.

	• Utilize PMCTrack to evaluate recommendation outcomes and determine which facilities require further support. • Encourage the communication of case studies where tiger staff used behavioral management with individual tigers to ensure smooth transitions between facilities (e.g. crate training, hand injection training) • Convert generic tiger holding space in warmer climates to Sumatran Malayan tiger space as those spaces become available through natural attrition. • Ask institutions building/renovating tiger facilities to increase holding and exhibit spaces.
SMAART Goal #2	In the next 5-year period, import 2-3 animals from S. Korea and the EEP into North America to assist with maintaining at least 96% GD within the SSP. • Essential Action 1: Identify at least 2 animals for importation within the next year. • Essential Action 2: Identify receiving institutions for importation. Communication with prospective institutions is already in progress. • Essential Action 3: Annual evaluation of the potential for further imports and continue GSMP participation and leadership to promote regional and global population viability. • Essential Action 4: Make breeding recommendations for imported tigers.
SMAART Goal #3	Over the next 5 years, expand genetic representation (i.e., number of animals and number of samples per animal) within the Genome Resource Bank (GRB). • Essential Action 1: Review GRB objectives and strategy. • Essential Action 2: Review GRB holdings and identify priority animals for sampling. • Essential Action 3: Identify animals and institutions to participate in semen collection on a yearly basis in the breeding and transfer plan; attempt to bank semen from all males. • Essential Action 4: Add genetic representation of females to the GRB through cryopreservation of fibroblast biopsies.

402

Common Name (Scientific Name)	**Malayan Tiger** ***(Panthera tigris jacksoni)***
Program Designation	Provisional SSP
Program Role	An iconic zoo species that highlights an Asian top predator and a unique and charismatic felid species with striking adaptations
SMAART Goal #1	Improve gene diversity to at least 90% by pursuing imports of unrelated animals and/or animals with underrepresented genetic lines over the next 5 years. • Essential Action 1: Identify potential candidates for import. • Essential Action 2: Cultivate relationships and identify feasibility due to rules, terms and agreements and pursue imports if feasible. Progress: The SSP continues to carefully monitor the situation in Asian zoos with Malayan tigers and identify opportunities to collaborate on natural and assisted reproduction and discuss importation and exportation of Malayan tigers. Potential tigers have been identified.
SMAART Goal #2	Grow population by 5% within 5 years by breeding all viable (breeding age) females in the population.

	Essential actions that will focus on improving the probability of recommendations to be successful includes: • Provide breeding recommendations for all breeding age females. • Consider pairing experienced breeders with naïve animals (vs. both animals being inexperienced) • Consider animals' personalities when making pairing recommendations. • Move future breeders at a younger age (~18 months of age) to allow time for transfers and for animals to settle into a new facility • Make fewer repeat carry-over breeding recommendations for pairs that have already had a carry-over and did not breed and do not carry over a breeding recommendation for more than 3 years. • Minimize breeding recommendations for older females (> 10 yr old) that have never bred before, **IF** it negatively impacts the ability to create pairs with a greater probability of success. Essential actions that will increase the number of introductions that are occurring: • The Vice Chair will conduct regular check-ins with facilities that have breeding recommendations to provide advice, encouragement or to determine if further assistance is needed. • Utilize THAT to help with breeding introductions by actively assigning a mentor to any facility that has not bred tigers in the last 3 years or that has had high staff turnover.
SMAART Goal #3	Over the next 5 years, expand genetic representation (i.e., number of animals and number of samples per animal) within the Genome Resource Bank (GRB). • Essential Action 1: Review GRB objectives and strategy. • Essential Action 2: Review GRB holdings and identify priority animals for sampling. • Essential Action 3: Identify animals and institutions to participate in semen collection on a yearly basis in the breeding and transfer plan; attempt to bank semen from all males. • Essential Action 4: Add genetic representation of females to the GRB through cryopreservation of fibroblast biopsies.

403

Common Name (Scientific Name)	**Sumatran Tiger** ***(Panthera tigris sumatrae)***
Program Designation	Signature SSP
Program Role	An iconic zoo species that highlights an Asian top predator and a unique and charismatic felid species with striking adaptations
SMAART Goal #1	Grow the population by 10% over the next 5 years by producing 2-3 litters/year by improving the probability of recommendations to be successful and by increasing the number of introductions that are happening. Essential actions that will focus on improving the probability of recommendations to be successful includes: • Increase breeding recommendations for inexperienced females 3-7 yr. old, particularly those that are in the top 75% of the mean kinship list, to improve their future breeding success. • Consider pairing experienced breeders with naïve animals (vs. both animals being inexperienced) • Consider animals' personalities when making pairing recommendations.

	• Move future breeders at a younger age (~18 months of age) to allow time for transfers and for animals to settle into a new facility • Make fewer repeat carry-over breeding recommendations for pairs that have already had a carry-over and did not breed and do not carry over a breeding recommendation for more than 3 years. • Minimize breeding recommendations for older females (> 10 yr old) that have never bred before, **If** it negatively impacts the ability to create pairs with a greater probability of success. • Conduct a new PVA to determine the factors contributing to the lower breeding success observed over the past 10-15 years. Essential actions that will increase the number of introductions that are occurring: • The Vice Chair will conduct regular check-ins with facilities that have breeding recommendations to provide advice, encouragement or to determine if further assistance is needed. • Utilize THAT to help with breeding introductions by actively assigning a mentor to any facility that has not bred tigers in the last 3 years or that has had high staff turnover. • Utilize PMCTrack to evaluate recommendation outcomes and determine which facilities require further support. • Encourage the communication of case studies where tiger staff used behavioral management with individual tigers to ensure smooth transitions between facilities (e.g. crate training, hand injection training) • Convert generic tiger holding space in warmer climates to Sumatran Malayan tiger space as those spaces become available through natural attrition. • Ask institutions building/renovating tiger facilities to increase holding and exhibit spaces.
SMAART Goal #2	Reduce loss of gene diversity (GD >86.5%) and accumulation of population inbreeding in the population over the next 5 years or until genetically valuable tigers are available through the GSMP. • Essential Action 1: Identify potential candidates for import. • Essential Action 2: Continue to cultivate relationships with other regional organizations in range countries and identify feasibility of import due to rules, terms, and agreements. • Essential Action 3: Import tigers from the GSMP (likely from ZAA Australasia and/or PKBSI) when they become available. *1.1 Tigers have been identified for import and are in the process, including permits received. An additional 1.1 has been identified for future import in 2025/2026.*
SMAART Goal #3	Over the next 5 years, expand genetic representation (i.e., number of animals and number of samples per animal) within the Genome Resource Bank (GRB). • Essential Action 1: Review GRB objectives and strategy. • Essential Action 2: Review GRB holdings and identify priority animals for sampling. • Essential Action 3: Identify animals and institutions to participate in semen collection on a yearly basis in the breeding and transfer plan; attempt to bank semen from all males. • Essential Action 4: Add genetic representation of females to the GRB through cryopreservation of fibroblast biopsies.

Program Management Update

Table 8 below shows the status of current SSP programs currently and relative to the previous two regional collection plans.

Table 9: Management Update Table

Common Name (Scientific Name)	Current RCP Program Designation	Previous RCP Pgm. Designation 2019	Previous RCP Pgm. Designation 2009
Amur Leopard (*Panthera pardus orientalis*)	Provisional SSP	Yellow SSP	SSP
Canada lynx (*Lynx canadensis*)	Signature SSP	Yellow SSP	PMP
Cheetah (*Acinonyx jubatus*)	Signature SSP	Yellow SSP	SSP
Clouded leopard (*Neofelis nebulosa*)	Signature SSP	Yellow SSP	SSP
Jaguar (*Panthera onca*)	Provisional SSP	Green SSP	SSP
Lion (*Panthera leo*)	Signature SSP	Green SSP	SSP
Ocelot (*Leopardus pardalis*)	Provisional SSP	Yellow SSP	SSP
Pallas' Cat (*Otocolobus manul*)	Provisional SSP	Yellow SSP	PMP
Sand Cat (*Felid margarita*)	Provisional SSP	Yellow SSP	SSP
Serval (*Leptailurus serval*)	Provisional SSP	Yellow SSP	PMP
Snow Leopard (*Panthera uncia*)	Provisional SSP	Yellow SSP	SSP
Tiger, Amur (*Panthera tigris altaica*)	Provisional SSP	Green SSP	SSP
Tiger, Malayan (*Panthera tigris jacksoni*)	Provisional SSP	Yellow SSP	SSP
Tiger, Sumatran (*Panthera tigris sumatrae*)	Signature SSP	Yellow SSP	SSP
Black-Footed Cat (*Felis nigripes*)	AZA Studbook	Red SSP	SSP
Bobcat (*Lynx rufus*)	AZA Studbook	TAG-Monitored	DERP
Caracal (*Caracal caracal*)	AZA Studbook	TAG-Monitored	PMP
Fishing Cat (*Prionailurus viverrinus*)	AZA Studbook	Red SSP	SSP
Puma (*Puma concolor*)	AZA Studbook	TAG-Monitored	PMP
Tiger, Generic (*Panthera tigris*)	Phase Out	Red SSP	Not a program

Additional Animal Populations within TAG Purview

411 Table 9 contains species under the Felid TAG purview that are either only officially monitored with
412 a Studbook or are being phased out. The former Black-footed Cat SSP is now establishing a
413 consortium, and the former Fishing Cat SSP is exploring the benefits of forming a consortium. Both
414 species have conservation significance and our regional participation in these programs at a low
415 level of intensity is of interest to certain AZA facilities.

416 **Table 10: Additional Animal Programs Summary Table**

417

Common Name (Scientific Name)	Current Pop. Size	# Participating AZA facilities	Population Type	Growth Trend
Black-Footed Cat (*Felis nigripes*)	28 (12.16) per last studbook (2/22/2023)	15	AZA Studbook and Consortium	Decreasing
Bobcat (*Lynx rufus*)	105 (53.52) per last Studbook (1/30/2019)	63	AZA Studbook	Remaining stable
Caracal (*Caracal caracal*)	30 (14.16) per 2022 assessment	14	AZA Studbook	Increasing
Fishing Cat (*Prionailurus viverrinus*)	33 (17.15.1) per last Studbook (3/1/2023)	9	AZA Studbook	Decreasing
Puma (*Puma concolor*)	103 (51.52) per last Studbook (8/1/2018)	55	AZA Studbook	Remaining stable
Tiger, Generic (*Panthera tigris*)	15 (5.10) per communication with studbook keeper (9/12/2024)	7	Phase Out	Decreasing

418

Optional RCP Elements

Species Fact Sheets

421 Each SSP program leader or studbook keeper created a species profile for all species in this
422 document monitored by the Felid TAG. Those profiles can be found at this link.
423
424 [Felid TAG Species Profiles](#)
425

Conservation Status of Taxa

427 **Table 11: Conservation Status of Taxa Table. Information sourced from the IUCN Red List**
428 **Website (2024)**

Common Name (Scientific Name)	Conservation Status	Common Name (Scientific Name)	Conservation Status
Amur leopard (*Panthera pardus orientalis*)	Critically Endangered	Snow leopard (*Panthera uncia*)	Vulnerable
Canada lynx (*Lynx canadensis*)	Least Concern	Tiger, Amur (*Panthera tigris altaica*)	Endangered

Cheetah (*Acinonyx jubatus*)	Vulnerable	Tiger, Malayan (*Panthera tigris jacksoni*)	Endangered
Clouded leopard (*Neofelis nebulosa*)	Vulnerable	Tiger, Sumatran (*Panthera tigris sumatrae*)	Endangered
Jaguar (*Panthera onca*)	Near Threatened	Black-footed cat (*Felis nigripes*)	Vulnerable
Lion (*Panthera leo*)	Vulnerable	Bobcat (*Lynx rufus*)	Least Concern
Ocelot (*Leopardus pardalis*)	Least Concern	Caracal (*Caracal caracal*)	Least Concern
Pallas's cat (*Otocolobus manul*)	Least Concern	Fishing cat (*Prionailurus viverrinus*)	Vulnerable
Sand cat (*Felis margarita*)	Near Threatened	Puma (*Puma concolor*)	Least Concern
Serval (*Leptailurus serval*)	Least Concern		

Species Replacement Table(s)

Table 12: Species Replacement Table(s)

Non-Recommended Species	Replace With	Notes
Generic tiger	- Amur tiger - Malayan tiger - Sumatran tiger	No enclosure or husbandry modifications need to be made
Puma	- Amur leopard - Jaguar - Snow leopard	- No enclosure changes should be necessary - May need to make slight husbandry changes such as evaluate diet - If looking for a North American species, can tell the story of how the jaguar used to populate most of the US (Srigyan et al., 2024)
Bobcat	- Canada lynx - Ocelot - Pallas's cat - Sand cat - Serval	- May need to evaluate size of the exhibit if replacing with serval - May need to make slight husbandry changes such as evaluate diet - If looking for a US species, research whether ocelot used to inhabit your region

Srigyan, Megha, Schubert, Blaine W., Bushell, Matthew, Santos, Sarah H.D., Figueiró, Henrique Vieira, Sacco, Samual, Eizirik, Eduardo, and Shapiro, Beth. 2024. **Mitogenomic analysis of a late Pleistocene jaguar from North America.** *Journal of Heredity*, Volume 115, Issue 4, Pages 424–431,

TAG-monitored Species Goals

Table 13: TAG-monitored species goals

Common Name (Scientific Name)	Black-footed Cat (*Felis nigripes*)

Program Designation	AZA Studbook and Consortium
Program Role	Develop a model for a consortium-style program for one of the smallest felid species in the world and an example of a small African predator.
SMAART Goal #1	Increase breeding success by moving to a breeding center strategy to account for mate choice & incompatibility. Will focus on breeding hubs in central Texas and southern California. The initial breeding centers are Fossil Rim, The Living Desert, San Diego Zoo Safari Park. Will add Cameron Park Zoo as a fourth BC
SMAART Goal #2	Improve species-specific husbandry by developing a best-practices document for husbandry/management including habitat design, breeding management, diet, health, etc.
SMAART Goal #3	Increase genetic diversity through imports and the continued implementation of assisted reproductive techniques (ART). Actions will include: • Identification of new cats for future import from South Africa and begin importation process as soon as possible. • Establish a dedicated fund for AI expenses. • Incorporate artificial insemination techniques as part of the breeding plan. • Continue to support active ART research projects.

439

Common Name (Scientific Name)	**Bobcat** **(Lynx rufus)**
Program Designation	AZA Studbook
Program Role	Highlight a North American small cat species
SMAART Goal #1	Optimize husbandry advisement by • Contributing to the Small Felid Animal Care Manual • Serving as a resource for advisement to holding facilities
SMAART Goal #2	Make contacts with Fish and Game or similar departments in all range states and help place orphaned bobcats.
SMAART Goal #3	Advise institutions that may be phasing out bobcats to transition to an appropriate SSP species

440

Common Name (Scientific Name)	**Caracal** **(Caracal caracal)**
Program Designation	AZA Studbook
Program Role	Highlight a medium-sized African carnivore that also may provide a felid option to satisfy demand at institutions with ambassador programs
SMAART Goal #1	Establish a collective of current/past/interested holders of caracals within North America, to include ambassador caracals. The goal is to increase communication between all parties regarding placement/breeding/acquisition challenges and facilitate sharing of information within the collective. Additionally, this collective would incorporate non-AZA partners to increase demographics and address the challenge of sourcing animals within the current population rather than from private breeders/traders.
SMAART Goal #2	Establish a pathway whereby ambassador animals can be reported, as well as provided to interested facilities. Identify partnerships with zoos to provide hand-raised animals as requested, bearing in mind the resources

	that are required for such an undertaking. Work more within the Ambassador Animal Working Group on AZA's website to produce caracal ambassador literature as guidance for interested zoos
SMAART Goal #3	Identify 2-3 new holding facilities for offspring of recommended pairings in during the next RCP cycle

441

Common Name (Scientific Name)	**Fishing Cat** *(Prionailurus viverrinus)*
Program Designation	AZA Studbook
Program Role	Highlight a small Asian carnivore that is uniquely adapted for tropical regions and relying on aquatic species for nutrition.
SMAART Goal #1	Explore the formation of a consortium by identifying and establishing dialog for institutions committed to fishing cats.
SMAART Goal #2	Optimize the breeding potential of the current population by continuing to facilitate breeding in the North American population
SMAART Goal #3	Identify other associations with studbook-monitored fishing cat populations and explore the possibility of collaboration.

442

Common Name (Scientific Name)	**Puma** *(Puma concolor)*
Program Designation	AZA Studbook
Program Role	Highlight a top predator in North America's "backyard".
SMAART Goal #1	Form a management group
SMAART Goal #2	Optimize husbandry advisement by • Publishing an Animal Care Manual • Collecting data on husbandry through habitat review/surveys from holders
SMAART Goal #3	Make contacts with Fish and Game or similar departments in all range states.

443

Common Name (Scientific Name)	**Generic Tiger** *(Panthera tigris)*
Program Designation	Phase Out
Program Role	Provide spaces for SSP species
SMAART Goal #1	Continue to achieve negative population growth over the next 5 years through no breeding or no acquisition of generic tigers within AZA institutions. • Essential Action 1: Continue proactive communication with institutions about not acquiring or breeding generic tigers. • Essential Action 2: Work with facilities receiving generic tigers to find placement in sanctuaries or other suitable locations. • Essential Action 3: Contact institutions with generic tigers over 15 years of age in the population on a yearly basis to encourage planning for participation in managed tiger programs.

444

Appendix A. APM Committee RCP Review Checklist

This checklist **must** be completed by the TAG and submitted to the AZA Conservation & Science Department with their RCP draft for review.

*** *Please note that this checklist must be submitted with the RCP to the AZA Conservation & Science Department (conservation@aza.org) and the APM Committee Vice Chair of TAGs.*
*** *Please write the page numbers in the "pg #" column where each required element may be found in the submitted RCP.*
*** *This template is available in a Word form at https://www.aza.org/templates-and-applications*

TAG: Reviewer:_____

	pg #	Yes	No	Comments
Required Elements				
Table of contents & page numbers *(p. 41)*	**2-3**		**x**	**Not updated. can't figure out how to reformat accurately**
TAG mission *(p. 41)*	4	x		
TAG operating context description	4	x		
TAG action or strategic plan description	5	x		
TAG operating structure description and succession plan description	7	x		
Full Contact Information List	8	X		
TAG Taxa Description	11	x		
TAG Taxa Table	12	x		
Capacity Assessment description	13	x		
Capacity Assessment results table	14	x		
SSP Assessment description	15	x		
SSP Assessment results table	16	x		
Animal Program Summary Table	17	x		
Advised Population Size (APS) description and table (if relevant)			x	
Animal Program Roles, Goals, and Essential Actions Table *(p.50-51)*	19	x		
Management Update Table	30	x		
Additional Animal Population Summary Table	31	x		
Optional RCP Elements	32	x		
Species Fact Sheets	32	x		
Conservation status of TAG taxa (narrative or table form, source cited)	32	x		
Species replacement tables	32	x		
TAG-monitored Species Goals	33	x		
AZA/Board-approved positions, white papers, and guidelines relevant to TAG taxa specifically *(p. 54)*				

APM Committee Reviewer Comments:

Appendix B. Overview of AZA SSP Assessment Process

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462 The following flowchart illustrates the SSP assessment process. Existing SSPs begin with the
463 question regarding whether the program is externally managed (i.e. by a government agency) or
464 not.
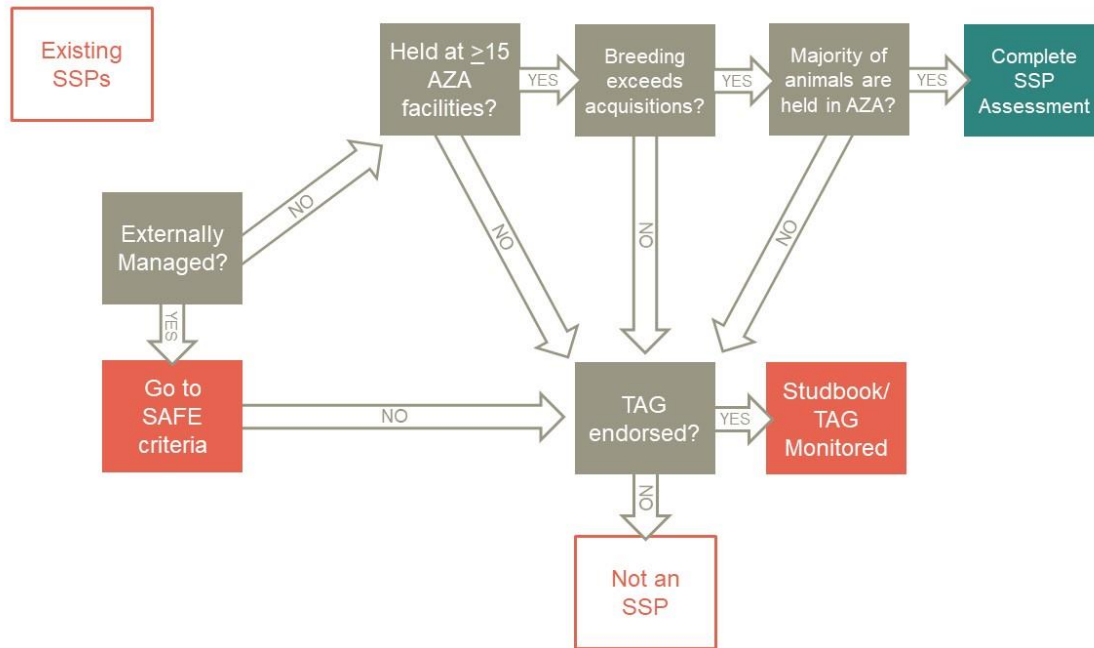
465
466 The SSP assessment worksheet can be accessed from the AZA Animal Programs Resources
467 website (https://www.aza.org/animal-programs-resources). The scoring method applied to
468 completed worksheets is shown below. TAGs will develop a consensus worksheet and score
469 during RCP preparation and vet this with their APM liaison. A final, agreed-upon score and
470 subsequent SSP-type designation will be presented in the draft regional collection plan for review
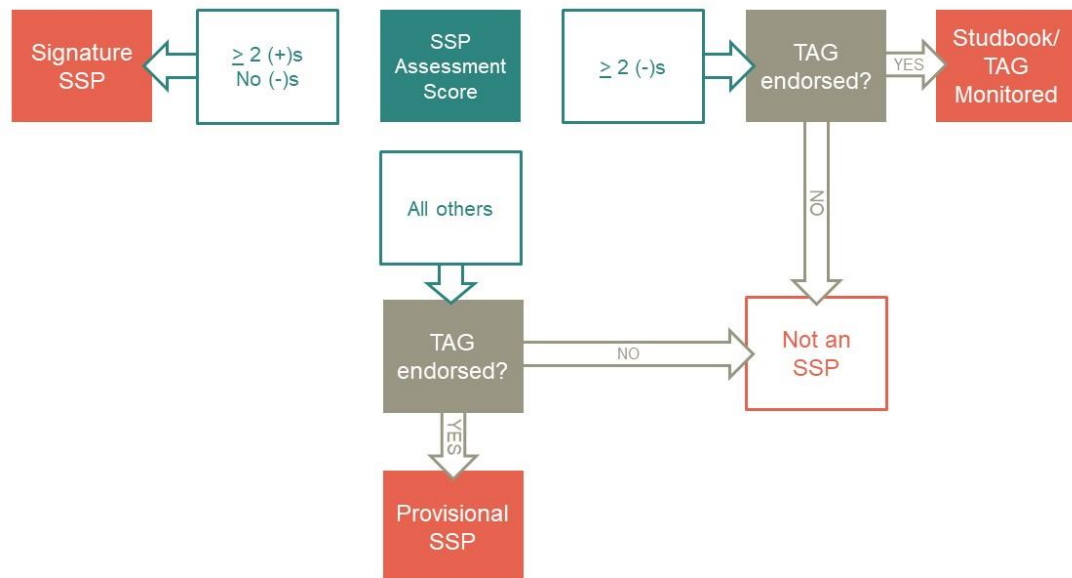471 by the
472

473 Evaluation Criteria for TAGs to review completed SSP Assessment forms.
474

Result	Genetics
+	If Mean Kinship answer is E
+	If Mean Kinship answer is D or C and potential founders exist in AZA population AZA or can be obtained
+	Genetic management strategy is not mean-kinship based and/or a robust demographic management strategy is in place even if gene diversity and mean-kinship cannot be calculated
Neutral	If Mean Kinship answer is D or C and potential founders do not exist in AZA population AZA or cannot be obtained
Neutral	If Mean Kinship answer is B or A and potential founders exist in AZA or can be obtained
-	If Mean Kinship answer is B or A and potential founders do not exist and/or unavailable

Result	Demography
+	Lambda is positive and due to breeding
+	Lambda is stable or decreasing as part of management goal
Neutral	Lambda is stable when goal is to grow
-	Lambda is negative when goal is to grow

Result	Space/Interest
+	Number of facilities have remained the same or increased and space is equal to TPS
+	Number of facilities have decreased less than 20% and current and/or Future space is equal to TPS
Neutral	Number of facilities have remained the same and current and/or Future space is well below TPS
Neutral	Number of facilities have decreased by less than 20% and current and/or Future space is well below TPS
-	Number of facilities have decreased more than 20% and current and/or Future space is well below TPS

Result	Husbandry
+	Goal number of births/hatches were achieved
Neutral	Births occurred, but goal was not met because of situations not related to husbandry
Neutral	Number of births/hatches were more than half of goal but did not meet goal due to husbandry related issues
-	Number of births/hatches were less than half of goal due to husbandry related issues
-	Any major husbandry issues expressed which effect MLE, first year mortality, or breeding success which are not currently being explored or researched

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483 Designation of SSP-type follows the flowchart below.

```
                                                          YES
Signature    ≥ 2 (+)s    SSP          ≥ 2 (-)s    TAG      ──▶  Studbook/
SSP          No (-)s     Assessment                endorsed?      TAG
                         Score                                  Monitored

                                                                NO

                         All others                            Not an
                                                                SSP
                         TAG          NO
                         endorsed?    ──▶

                         YES

                         Provisional
                         SSP
```

484

Citation Formats

486
487 **Citation of an SSP Breeding and Transfer Plan:**
488 *SSP Coordinator should be the first author, then Studbook Keeper, then the Population Biologist.
489
490 SSP Coordinator last name, first initial., Studbook Keeper last name, first initial., and Population
491 Biologist last name, first initial. Year published. Species common name (Scientific name). AZA
492 Species Survival Plan® Designation color Program Population Analysis & Breeding and Transfer
493 Plan. AZA Population Management Center: Chicago, IL.
494
495 McAuliffe, J., Ross, S., and Andrews, J. 2017. Chimpanzee (Pan troglodytes). AZA Species
496 Survival Plan® Green Program Population Analysis & Breeding and Transfer Plan. AZA
497 Population Management Center: Chicago, IL.
498
499 **Citation of a Global Species Management Plan**
500 GSMP Coordinator last name, first initial. and Population Biologist last name, first initial. Year
501 published. Species common name (Scientific name) WAZA Global Species Management Plan.
502 Institution name: City, State.
503
504 Myers, M., Gardner, L., and Lynch, C. 2018. Blue-crowned Laughingthrush (Dryonastes
505 courtoisi). WAZA Global Species Management Plan. Riverbanks Zoo: Columbia, SC.
506
507 **Citation of an AZA Regional Studbook:**
508 Studbook Keeper last name, first initial. Year published. Species common name (Scientific name)
509 AZA Regional Studbook. Institution name: City, State.
510

511 Ross, S. 2015. Chimpanzee (Pan troglodytes) AZA Regional Studbook. Lincoln Park Zoo:
512 Chicago, IL.
513
514 **Citation of a Regional Collection Plan:**
515 TAG Chair last name, first initial. Year published. TAG name Regional Collection Plan. Institution
516 name: City, State.
517
518 Holmes, C. 2018. Galliformes TAG Regional Collection Plan. Houston Zoo: Houston, TX.
519
520 **Citation of a Population Viability Analysis:**
521 (all Last name, First initial) Population Biologist., SSP Coordinator., Studbook Keeper., TAG
522 Chair., and TAG Vice-Chair. Year. Species common name (Scientific name) AZA Animal
523 Program Population Viability Analysis Report. Lincoln Park Zoo: Chicago, IL.
524
525 Johnson, B., Ray, J., Reinartz, G., Meinelt, A., Stoinski, T., and Fenn, T. 2016. Bonobo (Pan
526 paniscus) AZA Animal Program Population Viability Analysis Report. Lincoln Park Zoo: Chicago,
527 IL.
528
529 **Citation of an SSP Sustainability Report:**
530 SSP Coordinator last name, first initial. Year published. Species common name (Scientific name)
531 Species Survival Plan® Sustainability Report. Association of Zoos and Aquariums: Silver Spring,
532 MD.
533
534 McAuliffe, J. 2017. Chimpanzee (Pan troglodytes) AZA Species Survival Plan® Sustainability
535 Report. Association of Zoos and Aquariums: Silver Spring, MD.
536
537 **Citation of a Survival Statistic Report:**
538 (all Last name, First initial) SSP Coordinator., SSP Vice Coordinator., Studbook Keeper.,
539 Population Biologist. Year. Descriptive Survival Statistics Report for Species common name
540 (Scientific name). Chicago (IL): Lincoln Park Zoo.
541
542 Fischer, M., Gray, C., Keele, M., Ray, J., Long, S. 2014. Descriptive Survival Statistics Report for
543 Asian Elephant (Elephas maximus). Chicago (IL): Lincoln Park Zoo.
544
545 **Citation of PMCTrack:**
546 Faust, L., Theis, M., Long, S., and Shell, S. 2011b. PMCTrack: A Website for Monitoring Breeding
547 and Transfer Recommendations for Zoo Programs. Lincoln Park Zoo, Chicago, IL.
548 <https://www.pmctrack.org>.
549
550 **Citation of an Animal Care Manual:**
551 AZA (X) Species Survival Plan® (or Taxon Advisory Group). (YEAR). XXX Care Manual. Silver
552 Spring, MD: Association of Zoos and Aquariums.
553
554 **Citation of an Ambassador Animal Guideline:**
555 AZA Ambassador Animal Scientific Advisory Group, Species Common Name Species Survival
556 Plan® (or Taxon Advisory Group). (YEAR). Species common name Ambassador Animal
557 Guidelines. Silver Spring, MD: Association of Zoos and Aquariums.