Species Conservation Toolkit Initiative
&
Species360

[August 2022 Update]

The Species Conservation Toolkit Initiative (SCTI) is in transition and the future model, leadership, and structure of the team are being reviewed.

The following explores a transition for SCTI, combining SCTI into the structures of Species360 to promote long-term viability and continued innovation for conservation. Can we leverage the membership, operational strength, and zoo and aquarium credibility of Species360 to help in this critical leadership transition for SCTI?

This is a draft intended to generate ideas and discussion. Please read this with positive intent and add comments to improve the document. We are continually editing this proposal to include the feedback and insights from the founders of the initiative (Bob and Jon), the Structure and Governance Working Group, the Advisory Committee, CZS leadership, the Species360 Board of Trustees, and other stakeholders.

Support to continue developing this proposal has been received by:

1. Chicago Zoological Society (CZS) via Mike Adkesson, CEO
2. SCTI Founders Bob Lacy and Jon Ballou and Onnie Byers, the third member of the SCTI management team
3. The Species360 Board of Trustees
4. The Structure and Governance Working Group for SCTI supports this proposal and continued to work to resolve the identified challenges.

In October of 2022, we intend to review this proposal with the SCTI Advisory Committee. We continue our deeper assessment and due diligence of the proposal and seek to answer remaining questions and mitigate key risks.

The Concept

Species360 manages the world's most comprehensive database on the life histories of wild animal species and we have only just begun to tap the potential for these data to be used to achieve real wildlife conservation outcomes.

SCTI is *the* One-Plan Approach toolkit: it has the potential to link analyses for intensive wildlife management (PMx) with those for extensive management of wild populations (VORTEX, etc.), all to help create sustainable populations of wildlife: an inherently One-Plan philosophy.

Both PMx and VORTEX(+) rely on the type of data curated by Species360. All regional association studbook data fed to PMx comes from ZIMS for Studbooks. (Currently, VORTEX doesn't use Species360 data directly.)

Species360 is poised to take the next step to realize the full, One-Plan Approach conservation potential of the data and to make the tools easily accessible to all potential users. We need to create a seamless integration between the data and its analyses to help manage and conserve wildlife. Closer collaboration and even unifying SCTI and Species360's state-of-the-art tools could create opportunities that have not been possible before and change the landscape of how users of both tools conduct population management in the future. This opportunity can only be fully realized by supporting SCTI development from within Species360.

Can we leverage the science, population biology, technology, operational and administrative capabilities, governance model, and scale of Species360 to support the tools used to continue the SCTI mission and vision?

The Approach

Move Species Conservation tools to the management of Species360. Most urgently this would include PMx and Vortex, and then all SCTI tools.

While we believe there are many reasons to support this approach, there are several Critical Open Questions and Risks mentioned later in the document yet to be discussed and mitigated.

We will start with the key benefits of this model:

Key Benefits

1. **Governance:** The Species360 Board of Trustees already includes key SCTI Z&A Stakeholders, providing an existing and immediately effective governance structure.

Because of the non-profit nature of Species360 and its governance structure, the ongoing, long-term viability and succession planning of the organization is sound.

Representatives from WAZA, EAZA, AZA, ZAA (Australasia), and CPSG, the most frequent users of the SCTI tools for population management and conservation planning, are represented on the Board. With the Board's consent, this governance could be extended to ensure the SCTI-related needs of the associations are addressed.

The Species360 Board of Trustees represents the Species360 global member base and broader conservation community. This includes:

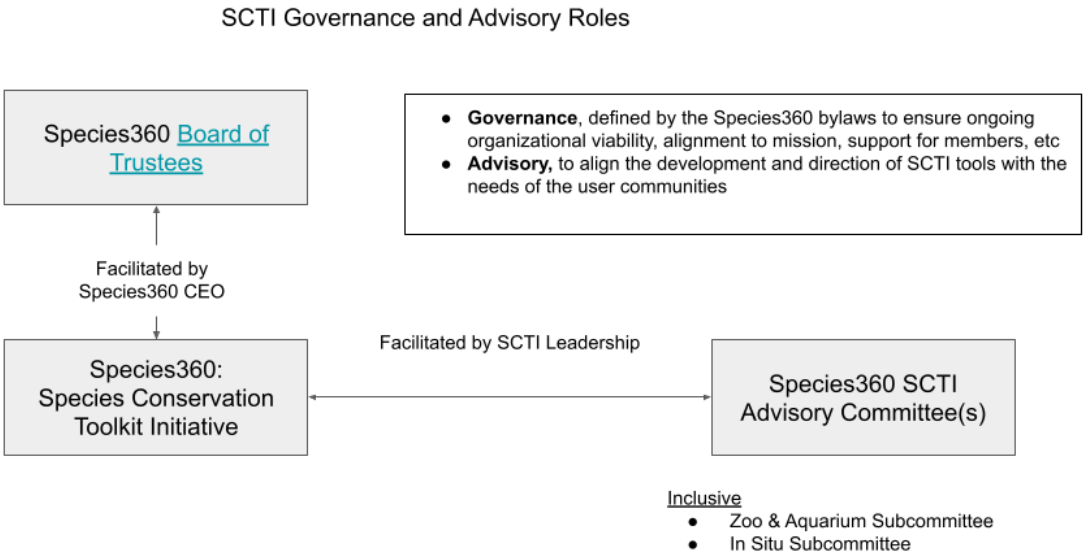
- Ten (10) *Institutional Trustees* – leaders representing Species360 member institutions
- Ten (10) *External Trustees* – leaders chosen by the Species360 trustees for their ability to provide general or specific leadership relevant to the Species360 mission and vision.
- Six (6) *Association Trustees* – leaders representing Species360 member associations. Associations representing one-sixth or more of Species360 membership have an automatic seat: WAZA, AZA, and EAZA. Currently, ZAA (Australasia), PAZA, and ALPZA are also represented on the Board. All of these regions leverage ZIMS for Studbooks and likely use or will use PMx.

Today SCTI is governed by a management team that includes representation from CZS, SCBI, and CPSG. SCTI leverages an Advisory Committee. This group includes financial sponsors as well as individuals with unique skills or insights supporting the mission and vision of SCTI. The Advisory Committee provides consultation but does not have an official role. We anticipate this group (or similar structure), in addition to Governance by the Species360 Board of Trustees, will provide the necessary guidance and counsel for SCTI leadership.

Z&A associations rely on SCTI's PMx software for their key business operations, sustaining small population viability. Association sponsors have expressed their need for a more formal structure to ensure governance is commensurate with their level of funding and their dependency on SCTI tools. Transitioning governance to the Species360 Board would provide this oversight.

28 July 2022 Update: *At their 28 July 2022 meeting, the Species360 Board of Trustees agreed to support the continued development of this proposal and the formation of a working group of trustees (primarily association trustees) to provide ongoing counsel as plans evolve.*

The future governance and advisory structure could follow this model:



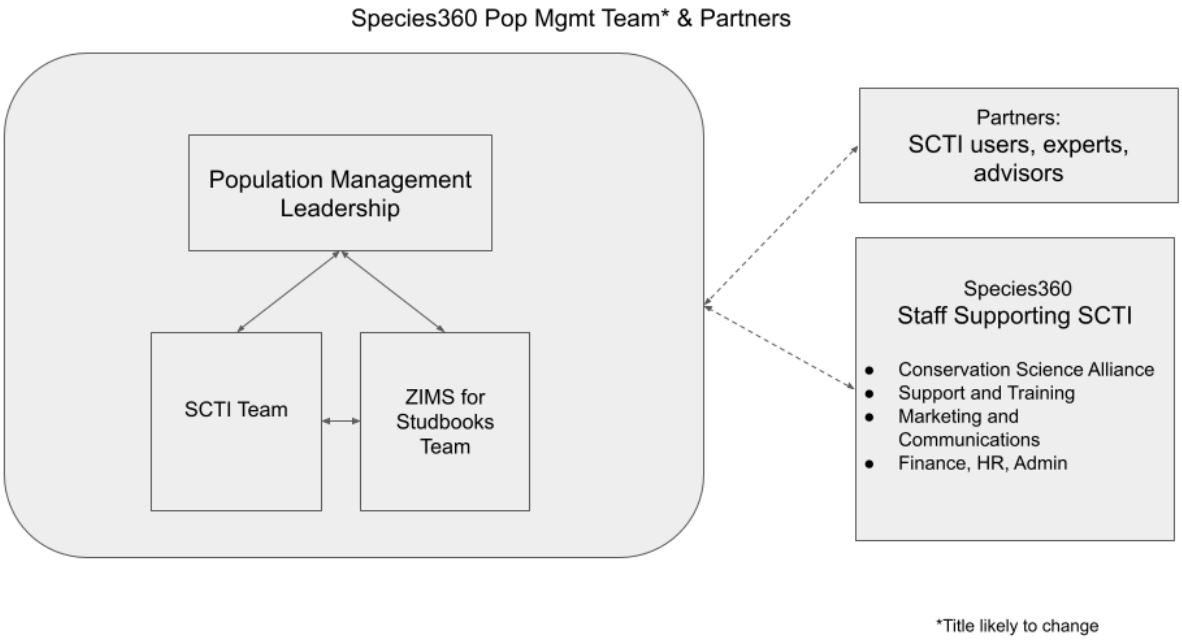
The role of the Species360 Board of Trustees is well defined in the bylaws. The Advisory Committee that exists today, to define the future structure of SCTI, can evolve to focus more on the needs of the tools and will need to serve two key audiences: the zoo and aquarium community and the in situ conservation community. Forming two subcommittees may meet our needs:

1. Zoo and Aquarium Tools Advisory Committee
    - Works closely with SCTI leadership to align and prioritize tool investments to ensure efficient use of limited resources
    - Understands budget limitations and opportunities, scaling needs to resources
    - Provides leadership for capital or grant funding requests
    - Includes key leaders from associations using tools to advocate for the tools within the community, and to advocate for the communities needs from the tools
    - Sponsorship required (levels TBD)
    - Well represented in the Species360 Board of Trustees
2. In Situ Tools Advisory Committee
    - A diverse group of users/leaders/practitioners knowledgeable on in situ tools
    - Sponsors are invited, but sponsorship is not required

- Advocates for the tools within the in situ conservation community
- Not well represented in the Species360 Board of Trustees

2. Leadership

While there are specific skills and leadership required for this position we do not anticipate this position requires a full-time leader as long as the full set of skills are available in the Species360/SCTI combined team. There would also be significant opportunities to improve SCTI and Species360 tools and products through combined leadership of population management-type tools, specifically ZIMS for Studbooks and SCTI tools. A key leader providing vision and leadership for all related tools is our preferred option. This leader will be ensure the team maximizes their impact, serving all stakeholders as they are able w/in given funding constrataints, while leveraging the broader Species360 team as necessary.



3. Staff Skills

Species360 staff includes many of the key skills required to support SCTI software, including demographic, statistical, population biology, data analysis and visualization, software, training, communications, and administrative skills. While moving SCTI responsibilities to Species360 will require hiring new staff and ideally onboarding existing SCTI staff to Species360, ***it is possible to leverage the skills of Species360's existing staff on a part-time basis as needed, eliminating the need for SCTI to hire full-***

staff positions for every key skill or resource need. This could create significant efficiencies. While Species360 resources may, in general, be more expensive than SCTI's current and past staff, it is likely we will recoup those costs through the efficiency of using existing staff and resources in a part-time capacity.

Population Biology/Product Management

Katelyn Mucha has been the product owner for *ZIMS for Studbooks* and AZA PMC adjunct for more than seven years and served in AZA's PMC for five years prior to joining Species360. She is responsible for the rollout of over 1,500 studbooks in ~19 regional associations globally. She is an expert in population management and PMx and at developing a product roadmap with global partners, and leverages a small software development team to implement that roadmap. Katelyn already works closely with SCTI in building integration from *ZIMS for Studbooks* to PMx and she works closely with the population biologists of many regional associations to ensure their priorities are included in the product roadmap. Katelyn would be a key resource in adopting PMx and planning the roadmap to coincide with key association needs and the ongoing evolution of *ZIMS for Studbooks*. As stated above, we expect to find significant synergies by having the same leader set direction and lead the team building all of the population management tools used by the associations and for in situ conservation.

Integration with ZIMS could revolutionize how Z&A users are managing species today. Managing this set of tools under one leader/team enables us to be more agile with any *ZIMS for Studbooks* to *PMx* issues, more innovative with new feature enhancements, etc. Today if we want to make a change, the Species360 and SCTI teams have to collaborate extensively and find a time when resources are available from both teams to design, develop, test, and roll out new features or bug fixes. In the future, that would be part of the Species360 standard process. Today the teams often don't make changes due to the complexity of aligning two teams across different organizations. It can even be unclear who owns resolution of reported issues.

Science

Species360 Conservation Science Alliance staff are experts in demography and statistical analysis and are globally connected to and collaborate extensively with other experts in the same and related or relevant disciplines (e.g., genetics, computer sciences). Associate Professors Dalia Conde (full-time Species360 Director of Science) and Fernando Colchero (half-time Species360 Principal Statistical Analyst) provide leadership to this team from their joint positions at the University of Southern Denmark (SDU). Dalia and Fernando are members of staff in the Interdisciplinary Center on Population Dynamics (CPOP) and Fernando is a member of the Advisory Council. Fernando is an Associate Prof. at the Department of Mathematics and Computer Sciences (IMADA) at SDU. They bring their own expertise and an extensive network of collaborators, plus

access to students and post-doctoral researchers passionate about population dynamics and species conservation. Their past involvement in SCTI and partnership with Jon and Bob, engagement with CPSG, development of demographic tools and analytical models, innovative approach to science, and development of Species360 tools will be essential components of this new organizational model.

The Species360 Conservation Science Alliance team and *ZIMS for Studbooks* product owner represent a very talented and passionate group. Add the existing SCTI staff, the support of the founders Jon and Bob, the association population management leaders, expertise from CPSG, and other partners knowledgeable on the science and application of these tools and we would create a sustainable and powerful conservation science partnership.

Software Development

The Species360 software development staff includes a professional team of 11 full-stack engineers, a quality advocate, and an agile development scrum master. This team could be leveraged or expanded to support SCTI tools. The tools and processes used to deploy effective, high-quality software to Species360 members and partners around the world would be leveraged for the SCTI toolset. SCTI tools do not use the same languages as Species360 tools, but the languages are not foreign to the Species360 engineers. There will be an onboarding phase for Species360 to learn and understand the SCTI tools. Ideally, we can contract, hire, or leverage existing experts (Jon, Bob, Taylor Calicreate, Jamie Ivy, etc.) to support this onboarding.

As an added benefit, some of the Species360 staff have Z&A backgrounds and all have a passion for the mission. They will take pride in ownership of the SCTI tools.

Training & Support

Species360 support and training staff are led by Elisabeth Hunt, Director of Training & Support, and includes a five-person support team and a two-person training team. These teams are skilled across all Species360 software and support almost 1,300 diverse global institutions and over 16,000 individual users.

Support for SCTI tools today includes online help/training content and experts from SCTI or CPSG staff and volunteers. Regional associations' population management teams are also skilled in the use of PMx. For efficiency and to leverage these deep skills, it is essential to maintain these partnerships and continue to develop skills in these teams. In this proposed model we expect first-level support and significant training will continue to be handled by Z&A Association staff, CPSG, or by a broader partner network as part of their existing population management and other training courses. CPSG provides training for Vortex and this training will be just as valuable in this model. To

support the effectiveness of partner training we believe a part time training resource is required for SCTI to provide tool and curriculum updates across all associations and to support the in situ focused tools.

Species360 has two training staff. With some additional funding for part-time resource help and training events, and partnership with the community of SCTI experts, we expect this team could also support training for PMx. *ZIMS for Studbooks* and PMx training go together very well, and we could see many opportunities in the future where we could offer training for both at the same time, as has been done historically. Species360 staff attends major Z&A conferences to provide ZIMS workshops and training. Adding PMx and potentially other tool training could be an efficient, incremental addition to their responsibilities.

There is an opportunity to streamline support for users. Typical users of PMx often do not understand that ZIMS and PMx are managed by different organizations. Integration into the same team could reduce user confusion and frustration.

Communications

Species360 has a one-person communications team. Having most recently served as the communications specialist at WAZA, they are well connected to the global Z&A and broader conservation community. They would work closely with CZS and other key partner communications staff to raise the profile of the SCTI tools, ideally leading to more financial support and a broader user base. Supporting SCTI communications with this one, already very busy staff member may not be feasible, so additional communications funding, staff, contractors, or support will be necessary.

Administration

To simplify administration, Species360 Finance, Administrative and HR staff could be used to support the needs of SCTI. Continued partnership with CZS and/or the associations could be considered as well if that is important.

Fundraising

Species360 administration is effective at financial processes related to membership fee revenue. If a meaningful portion of future SCTI funding is raised through recurring and regular payments with a defined set of sponsors, expanding that invoicing process will be straightforward, though it will require slightly more staff time and internal costs. Our expectation (or hope?) is that for users in Z&A Associations, fees would be collected/generated by the associations and paid to Species360 for the service of maintaining the tools (PMx and potentially Vortex).

In addition, some sponsors fund the tools *not* used by the regional zoo and aquarium associations (Vortex, Outbreak, MetaModelManager, Spacial). If existing sponsors continue to fund these solutions predictably, we have a good chance of success. Of primary concern is Vortex, a critical tool used by CPSG and essential to the One Plan Approach.

Species360 is not well positioned and does not have the staff to take on broader fundraising needs for SCTI resources. We will need to extend discussions to current, past, and potential future sponsors of SCTI tools to fund the ongoing development of the remaining tools. A partnership with the Global Conservation Network (GCN) may be an option to resolve some of these concerns in light of the critical nature of Vortex to CPSG processes.

Access to international talent

Species360 is a fully remote organization with staff across the United States and the European Union. Though time zones and travel occasionally impact effectiveness, the location of candidates is less likely to be a hiring limitation.

4. Tool Simplification and Future Capabilities

Species360 already manages *ZIMS for Studbooks*, a critical tool and prerequisite to Z&A's use of PMx. Combining tools on one team would be more efficient. Longer term it would be valuable to consider migrating key PMx functionality to *ZIMS for Studbooks* as requested by many Species360 members, to simplify use and decrease development and maintenance costs. This would require an assessment of the Creative Commons License to ensure we understand any limitations.

There is also the possibility to integrate *ZIMS for Husbandry* data to PMx allowing for a much broader set of species to be supported than is possible through the relatively expensive and time-consuming studbook process. This capability has been requested from Species360 users in the past.

Integration of *ZIMS for Studbook* and/or *Husbandry* data could make Vortex a more powerful solution to support critical species viability assessment, especially for small, closely managed in situ populations.

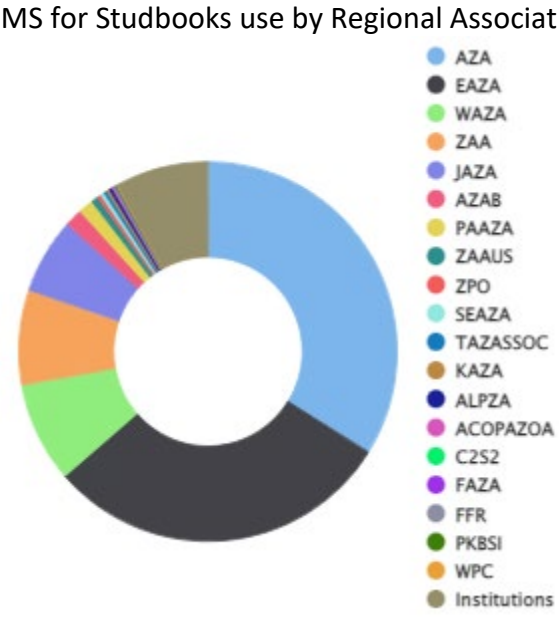
5. Key Partnerships and Relationships

Species360 has an established relationship with Jon, Bob, Onnie, and the SCTI team, making this transition easier. The SCTI management team and the broader Advisory Committee could continue to be involved if/as they are willing. Species360 also partners

with many of the key zoo and aquarium users of SCTI tools today, making the transition for users simpler as well.

It will be critical to start discussions with these and other partners early to increase chances for success and to propose formalizing relationships, including:

- **Regional Z&A Associations** leverage PMx and *ZIMS for Studbooks* as demonstrated in this chart:



  Partnership with the associations may look very similar to the existing partnership on *ZIMS for Studbooks*, and should consider:
  - Funding expectations to ensure association use is maintained and, if possible, improvements made to their critical tools. Topics to discuss:
    - Funding approach
    - Training and how to leverage expert users
    - Governance via the Species360 Board of Trustees + Advisory Committee
    - Product roadmap direction, key enhancements, fixes, etc. (dependent on funding/staffing levels)
    - Other topics to be discussed with the association
- **CPSG** is a key user of these tools. A close partnership and a formal agreement with CPSG would help ensure the ongoing viability of Vortex and potential other SCTI tools. Discussions have already started with Onnie Byers and will need to consider:
  - Funding options to sustain Vortex and possibly other SCTI tools

  - Key expert resources for documenting the solution, training, and planning
  - Product roadmap direction
- **Advisory Committee**. In addition to the Z&A association partners mentioned above, there will be an ongoing need for a broader Advisory Committee to inform product direction to ensure we are gathering input and expertise from a broad set of users and advisors.
- **Sponsors.** In addition to the partners above, it will be important to understand and grow relationships with partners who fund and otherwise support the SCTI tools today. This will include:
  - Current SCTI donors
  - Current project funders

6. Transition to a Funded Software Development and Services Model

SCTI uses the Creative Commons License. This is often perceived as limiting SCTI for raising funds from users of the software. We need to explore if this is truly a limitation. Open-source software is typically developed and maintained by an open-source project but is often financed and even supported extensively by revenue-generating *paid service* models. The Linux operating system is a well-known example. Many distributions of Linux are free, but some like SUSE or Red Hat are paid and include a support model, training resources, enhanced capabilities, etc.

Enhanced SCTI services could include (not exhaustive):

- Enhanced software in addition to the standard, free software
- Prioritized enhancements
- Training
- User support
- Improved documentation
- Consulting services in the use of the tools

A model similar to this with a predictable revenue stream from key association users would be necessary for Species360 to take responsibility for SCTI tools and may be necessary for any sustainable organizational structure.

Fees for services would be priced with minimal markup and/or administrative overhead funding, but in a way that fully supports SCTI development and does not require the use of existing Species360 member-funded resources. We need to ensure this model does not diminish or directly compete with services provided by Species360. Species360 may

continue a predefined donation or similar in-kind contribution to the SCTI tools at the discretion of Species360 leadership and/or the Board of Trustees.

Operational support and governance by Species360 may be more expensive than what is currently provided by SCTI. More governance, focused development, professional software engineering staff, and support and training can require more funding. This cost may or may not be substantial depending on the support levels required by associations and available funding, but there will be a minimum sustainable level of funding. Because it may not be necessary to staff a full-time director, training, communications, or other staff, these increased costs may be partially or fully mitigated by leveraging existing Species360 staff in a fractional capacity.

Critical Open Questions and Risks

Governance:

- Will the Species360 Board of Trustees support this transition?

  Update as of 28 July 2022: The Species360 Board of Trustees supports continued work on this proposal, will establish a working group to review ongoing revisions, and will expect to review and approve a final proposal.

- How can CZS and other founding institutions be involved in future governance models?

  Update as of 28 July 2022: Following conversations with Mike Adkesson, CEO of CZS, the Species360 Nominating Committee is proposing Mike join the Species360 Board of Trustees as an Institutional Trustee.

- Will this model fully resolve the existing governance concerns raised at the Advisory Committee meetings?

- Can the Species360 Board of Trustees effectively represent the ***in situ*** tools of SCTI with its current Z&A focus?

Staffing and Staff Skills:

Conservation "Consulting"

SCTI works with conservation programs around the world to use SCTI tools and help a diverse set of stakeholders understand and apply the resulting analytics. The Species360 team and the remaining staff of SCTI will need additional support to continue this key responsibility.

> ***15 September 2022 UPDATE: CZS is working with a potential sponsor to establish funding for an ongoing key leader to continue this key function for SCTI. While this funding is yet to be confirmed and the details are still in the works, we are optimistic this may resolve one of our larger concerns regarding the continued use and impact of in situ SCTI tools.***

Expect we will also look to key partners (starting with existing users) to support the use of PMx and Vortex and other SCTI tools for use in conservation initiatives. The ability to train, equip and onboard new users will be key to increasing the impact of the tools.

Leadership

Species360 leadership and staff are facing an unprecedented level of requests from the community and members. Leadership and staff capacity are already stretched. Taking ownership of SCTI will require additional resources to add new staff or backfill for Species360 staff used full or part time for SCTI. If not, it will reduce Species360's ability to meet the needs of Species360 members.

While several core skills will be largely familiar to the Species360 and SCTI team, they are not extensively trained on all SCTI tools. Those skills would need to be developed in partnership with existing or former SCTI staff and partners.

Existing SCTI staff, namely Sara Sullivan and potentially Jamie Ivy (currently a grant-funded contractor working with the team), would need to be considered in any future model. It is realistic to think they could transition to Species360 once the structure and roles are defined. Their skills, knowledge, credibility, and network would be valuable, perhaps critical. They already work well with the Species360 team.

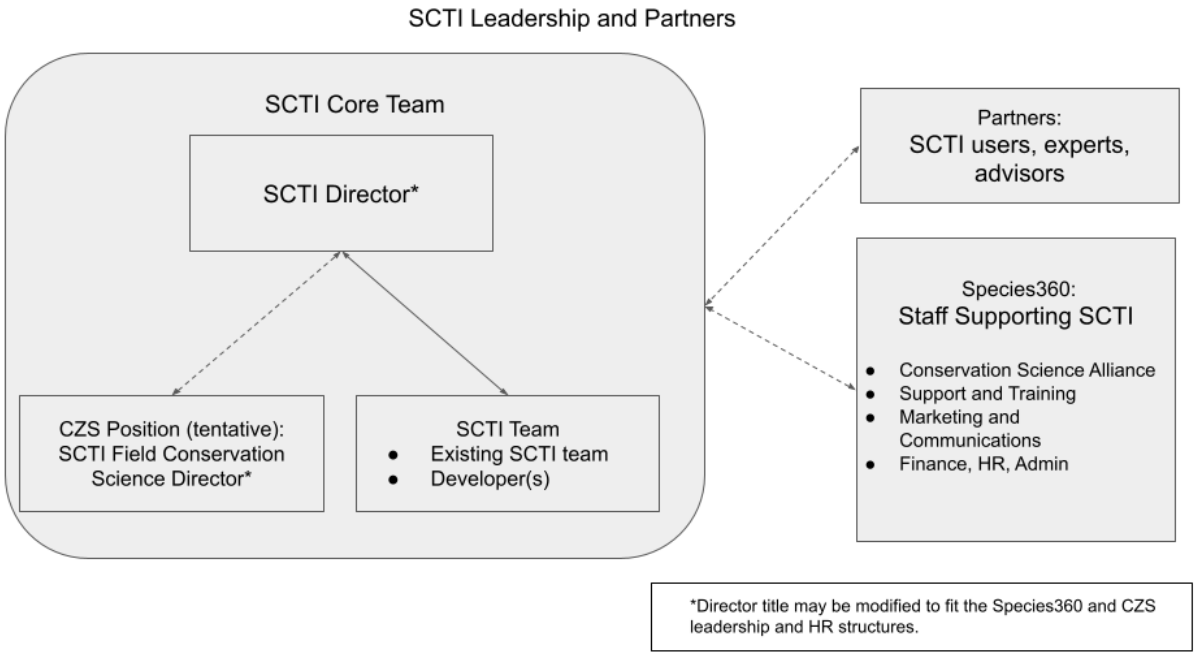
How much support is needed today? Number of calls/emails per month? And what level of support/expertise is required to help for the typical call? How/who will handle these calls in the future?

How will we develop new experts in these tools in the community? Species360's approach for regional "adjunct" global trainers combined with CPSG and other regional experts may prove effective, but will we require more train-the-trainer resources and

time going forward? Can we assume we can leverage the experts at CPSG, SCTI, PMC, etc.?

SCTI and Species360 training are on different platforms today. Would it be valuable to transition to one platform long-term and would this better support a training curriculum, especially for related training (e.g. PMx and *ZIMS for Studbooks*)?

Below is a potential model for the team structure of SCTI:



Funding and Fundraising:

The Fundraising Working Group of the SCTI Advisory Committee was put on hold, waiting for the Structure and Governance Working Group to complete a definition of the SCTI organization of the future. Can we re-engage that group to craft a fundraising plan for the future of SCTI in this new model? Can we create a story for SCTI that will lead to funding? Creativity and expertise will be very helpful.

Are Z&A associations willing to raise the funding to support the costs or is there another viable path to funding from this critical group of users?

For context only, $300k USD in additional, annual funding supported by every member of AZA, WAZA, EAZA, and ZAA (Australasia) would average less than $450 per association member per year. Spreading this cost to each association using the tools drops costs further. Similar math would apply for Species360 membership. (There are, of course, overlapping memberships across all of these organizations.) *This is not to propose the funding model, but purely to put the cost of these critical population management tools in perspective for the end users*

A Species360 membership fee increase would create meaningful reputational risk for Species360 because of its diverse membership. Many of their existing members do not use and should not need to support SCTI tools.

Associations and other users can legally use the free software available under the Creative Commons License. Should some of them decide to do this at any point in the future, the funding and support model could be reduced or quickly fail.
For equity, can we establish levels of funding from Z&A associations that appropriately account for size, regional financial situations, and other variables that influence ability-to-pay between regions?

It would be very easy for a new funding model to generate a negative response if we are not careful in how it is rolled out:

- Existing SCTI funding could be reduced or diverted
- If associations, Species360, or other organizations are expected to invoice their members/users it could be perceived as raising fees for no perceived benefit. Careful communications will be necessary.

It is critical that Species360's commitment to SCTI does not distract from its existing mission and commitment to Species360 members. The commitment of resources to SCTI tools will be limited to the level of sponsorship or other funding.

How do we ensure support for the broader set of SCTI tools and users, specifically MetaModel Manager, Outbreak, Spatial:

- Will donors and funded projects provide enough revenue to also support the broader SCTI toolset and users?
- What is the level of use and impact of these tools and what level of investment is warranted or required?
- What percentage of revenue would be applied to PMx vs. the other tools?
- Can we expect to use some portion of the contribution from the associations or other Z&A funders to support other SCTI tools?

How much will it cost to operate SCTI as a part of Species360? A key next step once we have general and broad approval for this proposal is to define the required and potential funding levels for SCTI. If funding is not sufficient or predictable then the tools will slowly depreciate and this transition would not be effective. The needs of the users community will need to be well understood to define funding. We suggest describing multiple options or tiers of support, for example:

- **Tier 1: "Keep the lights on" funding.** This level of funding will provide enough funding for a small dedicated and part-time staff to ensure critical tasks for the tools remain available, for example: fixing minor bugs, providing training and communications, supporting conservation projects through consulting services, and managing the administration of the team. Improvements to tools, necessary technology modernization, simplification, documentation or other project work would need additional funding through campaigns, grants, or other sources. While this tier is the least effective, it would also create additional stress and strain on the team and partners when additional work is necessary. Software users have high expectations, and this model will not meet those expectations. We do NOT recommend this level of support and it may not be tenable for Species360 to take on this responsibility.
- **Tier 2: Moderate investment funding.** This level of funding supports maintenance levels of Tier 1, plus some ongoing development of at least some of the tools, such as minor tool enhancements to meet key user needs, development of some new training or documentation for the tools, improved communications, improved management of Advisory Committee and other stakeholder input, etc. Additional investments to modernize or transform the tools will require campaigns, grant funding, or other support.
- **Tier 3: Fully funded team.** To be effective, software tools require continued upgrading, enhancements, and maintenance. The science, technologies, and design of these tools age, and a fully funded team can ensure the tools stay up to date. PMx, for example, is on old technology and could benefit from a complete platform migration. PMx functions and users also overlap significantly with *ZIMS for Studbooks* and could be applied much more broadly to non-studbook-managed species. Simplifying these technologies to work better for a broader set of users could provide significant value. This level of funding could support these meaningful transformations over time.

Technology Modernization and Needed Enhancements:

What is the urgency and level of investment required for developing the tools? The SCTI tools were built over many years. Over time the tools will need technology, functionality, and scientific upgrades. Most urgent, it seems, is a technology platform modernization for PMx. We also expect Z&A association users will require meaningful

investment into SCTI tools. Depending on funding levels, these upgrades may or may not be feasible. Technologies that are not modernized over time slowly become ineffective.

SCTI users are broader than Z&A associations. What additional conservation problems can these tools solve and how do we ensure the tools are sustained and developed so they continue to meet the needs of the conservation community? Do they require a different structure?

Can we assess the existing tools and identify any that are less-used and warrant less or minimal investment to decrease costs?

Communications:

The role and value of SCTI are not broadly understood by the global Z&A community so there will be limited perceived value of this transition by the broad Species360 membership. We will need to carefully manage the messaging and communication of this transition. Can we expect the Z&A associations to lead in this communication?

Intellectual Property Rights:

For Species360 to fully develop the roadmap and future technical solutions for SCTI tools without legal risk, they require a full and unlimited IP license. This includes an unlimited ability to change the software and potentially merge the software with existing Species360 tools and services. We believe the risk is manageable, though it will require a thorough legal review of the existing ownership and license.

> *29 July 2022 update: several of the contracts are held by CZS and early indications show that IP rights were contractually established for the tools during construction.*

We need to fully assess the implications of the Creative Commons License to ensure we are in compliance, understand options, and can establish funding model(s) that supports SCTI tools.

Other Key Challenges and Open Questions

How do we ensure we recognize CZS, SCBI, and key leaders (Jon, Bob) for their years of dedication and contributions?

What ongoing commitments exist for SCTI (e.g., Botanical Garden enhancements funded by IMLS, Outbreak for Mountain Gorillas)? Are there any other SCTI consulting or

training projects planned? Can we assume these projects will continue to completion and will they need additional resources beyond the grant funding to be successful?