A Force for Nature: Assessing the impact of the IUCN Species Survival Commission

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Submitted for the MSc in Conservation Science
DECLARATION OF OWN WORK

I declare that this thesis, “A force for nature: Assessing the impact of the IUCN Species Survival Commission” is my own work. In all cases where the work of others is utilised, it is appropriately referenced, and/or appropriate acknowledgement given.

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<tr>
<td>IUCN</td>
<td>International Union for the Conservation of Nature</td>
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<td>df</td>
<td>Degrees of freedom</td>
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<td>KII</td>
<td>Key Informant Interview</td>
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<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
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<td>p</td>
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<td>SG</td>
<td>Specialist Group</td>
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### WORD COUNT

6,032 words
ABSTRACT

There is a growing need for conservation organisations to assess the impact they have. Not only do impact assessments highlight what is being done well, they also provide useful knowledge on where improvements can be made. Resources, for example, may be targeted more appropriately to achieve desired goals. However, conducting impact evaluations is not an easy task. There are complexities both within and outside of the control of conservationists. For this reason, it may be best to apply a model, such as the theory of change used in this research, to simplify the process by setting out the stages (inputs, activities, outputs, outcomes) that need to be reached in order to achieve impact.

The IUCN Species Survival Commission, a voluntary network comprising 10,000 expert conservation members from around the globe, has never directly had its impact assessed. At the end of its 4-year strategic period, it was an ideal opportunity to conduct this research. A theory of change was designed, building from key informant interviews (KII) and literature reviews. A questionnaire was then developed to test the validity of the theory of change, which was sent out to all members of the Commission to gain representation from across the organisation.

Overall, it was found that the Species Survival Commission is far from achieving its impact, but it is enhancing the ability of individual members to make a greater contribution to conservation. Furthermore, due to the scale of the organisation, there are many inferences that can be applied to wider conservation. For
example it takes a long time to see an impact, this affects how individuals view their achievements and the success of the intervention.

KEYWORDS
Impact assessment, monitoring, evaluation, conservation, organisational effectiveness, theory of change

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INTRODUCTION

The Species Survival Commission (SSC) is one of six commissions that form a global network of expert volunteers for the International Union for the Conservation of Nature (IUCN). With over 10,000 members spread across 140 Specialist Groups, the SSC is the largest volunteer network of conservationists in the world (Rabb & Sullivan 1995) and so forms a vital part of the global conservation movement. The SSC brings members - from conservationists to government representatives - together to address current conservation issues.

Established shortly after the IUCN, SSC has been in existence for over 65 years. Despite this there have been relatively few attempts to assess its progress, and ultimately the impact it has had, with no large-scale review undertaken of SSC members' views. Previous attempts to research SSC do provide a number of interest findings though, with SSC seen to be an overall “positive force” but with an “overcentralisation of power” in Holdgate’s (1999) review. This is an especially interesting summary as Holdgate is a former Director General of the IUCN. An external review by Bruszt & Turner (2000) highlighted the benefits of knowledge generation by the SSC, but was unable to determine any discernable impact due to the lack of monitoring and evaluation (M&E) capacity within such a voluntary organisation. A more focused review by Turner (2000) found that SSC is far from reaching its ultimate goal of “halting the loss of biodiversity”.

Overall the consensus is that SSC is genuinely benefitting conservation, however, there are significant gaps inhibiting its progress including member disconnect, operational inefficiency and financial constraints (Price 2001; Turner 2000).
an internally commissioned voluntarism study of select SSC members (Price 2001), a number of these views were reflected but again echoed the conclusion that SSC is ultimately a driving force for good within conservation.

While the research is unanimous in its belief that SSC is making a positive difference, there is little demonstration of how this is actually occurring. This not only makes it difficult to highlight and expand on success, but also makes it difficult for SSC to focus its future efforts and resources. Rondinini et al (2013), Kapos et al (2008) and Wagner et al’s (2009) research is just some of a growing number showing that conservation organisations are having to focus increasing efforts on understanding their impact. Limited resources and funding within the conservation arena means a greater focus on outcomes is required to ensure resources are directed correctly. Measuring impact is the current challenge for conservationists, but how does one define impact and consequently how does one measure it?

Extensive research has been conducted into addressing the challenges associated with M&E. Some identified challenges are out of the control of conservation professionals, for example environmental and political factors, but they should still be incorporated into the planning process, not ignored (Brechin et al 2002, Margoluis et al 2008). Recent studies have attempted to find ways of alleviating these externally-generated complexities within the evaluation process, whilst still accounting for them in the overall picture through the use of conceptual models (Margoluis et al 2009).
Despite this, many factors are within the control of conservation professionals that should be given special consideration when planning conservation projects or setting conservation goals. These include the allocation of resources, the activities being carried out and the overall strategy. By focusing on the factors that one can influence, there may be a greater chance of achieving a desired impact as the targets can be tailored, whilst still being aware of the wider context of the situation. Regardless of acknowledging the complexities surrounding conservation work in general, it still remains that there is not one universal way of measuring impact (Ferraro & Pattanayak 2006).

Defining the term “impact” in itself proves complex, often with a lack of clarity within objectives (Kapos et al 2008). Conservation organisations, projects and governments each work to their own specified impacts, targets or goals. At the organisational level there may be set targets, but differing project targets that do not obviously feed into this overarching target. As such, before impact evaluation can be carried out, there must be an overall consensus on the definition of the impact being evaluated (Kleiman et al 2000). Having clearly written targets is also highlighted in conservation leadership literature, where a “clear purpose will inform a relevant view of the future” (Black, 2015). As a leader, you need a clear goal to inform an effective strategy to achieve this.

The growing focus on M&E in conservation has seen the emergence of methods often associated with business auditing (Christensen 2003, Black & Groombridge 2010). Such models are useful, because they not only highlight what is working, but also what is not. When assessing impact, it is as important to address
failures, in addition to achievements in order to maintain effective strategies going forward (Kapos et al 2010, Saterson et al 2004, Crees et al 2016, Stem et al 2005). Creating logic models, theories of change and conceptual models at the onset of a project is becoming widely accepted as a useful tool for addressing this (Funnell & Rogers 2011; Rogers, 2014). These tools are adaptable, enabling conservationists to visualize projects, or organisational goals from end to end, whilst allowing for assumptions to be made, which accounts for aforementioned factors that are uncontrollable. Ferraro (2009) argues, “environmental programmes should at a minimum formulate complex Theories of Change with causal hypotheses and explicit assumptions”.

One way of evaluating conservation impact is to assess what the situation would have been in the absence of an intervention – the counterfactual (Rodrigues 2006). In the first major assessment of the IUCN, Holdgate (1999) speculates that the situation would be far worse without any global conservation movement, but argued that this is something too complex to assess. Nearly 20 years on, an increasing number of conservationists argue that the counterfactual is in fact a necessity in gauging conservation impact. Ferraro (2009) additionally argues, “Counterfactual thinking is important in any evaluation seeking to identify program impacts”. An example of its application is in Hoffmann’s et al (2010) analysis of the effect of conservation on the status of the world’s vertebrates, where a counterfactual analysis is used to conclude that regardless of the species’ current status, the situation would have been worse had there been no intervention. More recently research by Durrell Wildlife Conservation Trust has
been used to inform their ‘Durrell Index’ (Young et al 2014), by also using counterfactual analysis.

With this in mind, the overall objective of this research paper is to try and establish whether SSC had enabled its conservationists to achieve an impact that would not have been possible without the organisation’s existence. A secondary objective is to establish the factors leading to any differences in perception of whether there had been an impact, such as length of membership or gender.
METHODS

SSC commissioned this research at the end of the 2013-2016 quadrennial period. As the organisation was going through a transitional phase, a decision was made to conduct research into the level of impact the SSC is having, and to get the views of the members that it supports. In doing this, the SSC could implement any necessary strategic changes.

An initial launch meeting was held with senior members of SSC, including the incumbent Chair Simon Stuart. We discussed the background of SSC and previous efforts to review its work, the reasons this research had been commissioned and what SSC hoped the research to achieve.

Following this, I attended conservation conferences and meetings; including an annual Red list Committee meeting at Cambridge in April 2016. Here I was able to meet with a number of conservation experts, laying the groundwork for establishing contact with a number of senior level Species Survival Commission members and identifying topics to be discussed in the KII.

KIIs were arranged with Specialist Group (SG) Chairs, Steering Committee and Red List Committee members with the purpose of understanding the day-to-day work of SSC and identifying major and recurrent themes that would help us to develop a Theory of Change (TOC) model. The idea being that this would later be tested through response of SSC members to a questionnaire. Understanding what activities were being done and what outcomes were being seen as a result was a main aspect of these initial conversations. In total, 25 semi-structured interviews
were carried out, either in person, or on Skype in accordance with ethical
guidelines as stipulated by Imperial College London. A list is provided as
supplementary information.

The KIIIs highlighted various complexities within SSC. These included significant
differences in the conservation issues facing SGs, for example the Cetacean SG
focuses more on international policy, whilst the Crocodile SG focuses more on
industrial farming practices of crocodilians. The areas SGs focus their efforts on
may also be fluid, changing over time in response to whatever conservation
problems arise. I therefore decided that an overarching TOC would be developed
that was a suitable representation of all SGs contributing to the desired impact of
SSC, regardless of the conservation issues they were addressing.

The key component of my TOC was the overall ‘impact’ of SSC, which as
previously mentioned relies upon the goal of the organisation. I reviewed SSC
literature to find their overriding goal to be: “The species extinction crisis and
massive loss of biodiversity are universally adopted as a shared responsibility
and addressed by all sectors of society taking positive conservation action and
avoiding negative impacts worldwide” (SSC membership welcome pack). This is
supported by 4 additional strategic objectives that cover the intersessional
period from 2013-2016. Further reading and interviews led me to a simplified
statement as ‘halting biodiversity loss’. For the purpose of my questionnaire, I
decided it would be more suitable to define impact as ‘a genuine improvement in
population or Red List status of a species’. This is because it easier for individuals
TOC models typically encompass a series of pathways or components – input, activities, outputs, outcomes and impact (Funnell & Rogers, 2011). The wide use of TOC and lack of a set style has led to multiple definitions of the terms outputs, outcomes and impact. My approach utilised those provided by Kapos et al (2010) and successfully employed by Washington et al (2014). The specific activities, outputs and outcomes were decided upon through the literature review and the KIIs. Due to the large number of activities identified, they were also subdivided into 5 categories for ease of analysis: science, representation, action, dissemination, and advice.

The model chosen for my final TOC was based on a technique utilised by Rogers (2014). The technique used is one where a detailed TOC is produced, inclusive of all complexities and mindful of the external factors when addressing a large scale, global organisation like the IUCN SSC. A simplified version is then developed, enabling a clearer focus on the key aspects of the sequence, therefore making it more user-friendly. This was chosen because it is a model used by an intergovernmental organisation (UNICEF) working on a global scale, and so was more applicable to the context in which this research was being conducted. An overview of the final TOC can be seen in Fig 1. The full TOC is available as supporting information.
The questionnaire was designed around the TOC. This was so I could test its viability and strengths in relation to the SSC's goals, whilst also keeping the counterfactual in mind ('would this be the case if the SSC did not exist?') when designing the questions. Additional questions were included to give context to responses, and also to gain deeper understanding of the members and their opinions (the full questionnaire is attached as supporting information).

The questionnaire was fine-tuned through discussions with supervisors. Verified translations in French and Spanish were produced to maximize the potential response. It was created in Qualtrics, as this enabled easy distribution, translation and formatting. I piloted the questionnaire on non-SSC members to check for flow and understanding of the questions, it was then sent to all SSC members on file at the IUCN. All members were approached as this had not been
attempted before and it was important to get the views of all members, not just those in positions of authority. This member-wide distribution strengthened the results, as bias from only asking SG Chairs was removed, with all members able to give their opinion.
RESULTS

Respondent Characteristics

The questionnaire was successfully sent to 9,014 SSC members. Of these, 1,038 questionnaires were completed - an overall response rate of 11.5%. There was representation from 122 SGs, giving valuable feedback from across the entire SSC. 22% of respondents fulfilled a senior position within the SSC (SG Chair, Red List Coordinator, Subcommittee Chair or Steering Committee Member).

Over 130 nationalities were represented in the responses. The gender breakdown of respondents was 25% female and 75% male. As there is limited data collected on file for gender of SSC members, I could not determine the accuracy of this in comparison with the actual split.

Respondents were asked to list, in order of their level of engagement, SGs they were members of. For this reason, the first given group was taken as being the primary SG. For ease of analysis, SGs were divided into their overarching categories (Amphibians and Reptiles, Birds, Fishes, Fungi, Invertebrates, Mammals, Plants, Disciplinary Groups (including Task Forces), and Subcommittees). Responses from these groups are displayed in Fig.2. Due to low sample sizes, some overarching categories were left out for certain analyses.

The IUCN provided a current membership database enabling us to establish accurate response rates for overarching SGs. The highest response rates were from Mammals (9.9%), Fungi (9.5%) and Amphibians and Reptiles (9.3%). Lowest response rates were from Birds (3.6%) and Subcommittees (2.6%).
Respondents were members of, on average, 2.2 different SGs. This is in comparison with the IUCN database, which records an average of 1.3 SGs per SSC member. Coupled with the high response rate from members in a position of authority, this suggests that responses are from more engaged members and as such there is a level of bias to be acknowledged.

**Membership and Activities**

The reasons why people became a member of SSC are potentially important determinants of their engagement with, and contribution to SSC’s impact. From a multiple-choice selection, we determined that the main driving factor was for ‘networking opportunities with other conservationists’ (26.3%), followed by
giving ‘greater access to species information’ (18.1%), ‘access to information regarding publications and results’ (15.9%), and ‘giving greater influence internationally’ (15.5%). By far the lowest response was for ‘prestige’ (4.5%). These responses were consistent within each overarching SG as well. Of the 241 members that selected ‘other’, 50.2% gave their reason for joining as being because they are simply passionate about conservation and want to increase their chance of having a genuine impact on conservation.

The average number of activities selected by each respondent was 4.08 out of a possible 23 (these were subsequently split into 5 subcategories). The largest category was activities related to ‘advice’ (32%), with fewest members undertaking activities related to ‘representation’ (9.9%). 10.9% of respondents selected ‘other’. This suggests that we were accurate in the production of activities put forward for the TOC.

Results showed that there was a significant association between membership duration and time spent carrying out activities for the SSC ($X^2$ test, $X^2=62.123$, df=35, $p=0.003$). As membership duration increased, more time was spent conducting SSC-related activities.

**Outputs and Outcomes**

To validate the TOC it was necessary to gauge the outputs (short term consequences) and outcomes (long term consequences) that respondents felt SSC membership was leading to, whether these were in line with the TOC or not.
Outputs were provided as a multiple-choice list; 1,038 respondents made a total of 3,117 selections. Most commonly selected outputs were ‘improved scientific knowledge’ (21%) and ‘understanding, or quantifying the nature and magnitude of threats to a species’ (20%), followed by ‘increased public awareness’ (16.2%). Least selected outputs were ‘increased funding’ (5.8%), ‘discussions established with government bodies as a result of formal intervention’ (5.5%) and ‘governments begin to implement policy or legislation changes’ (5%). 4% of respondents did not know if they had seen an output.

Outcomes were also displayed as a multiple choice list; 1,038 respondents made a total of 2,064 selections - over 1,000 less than selected for outputs. Most frequently selected outcomes were: ‘research advances the ability of conservationists, communities or governments to conserve a species’ (21.3%), ‘identified threats become actively addressed by governments and/or industry’ (14.2%). The least frequently selected included ‘changed international policy’ (4.5%), ‘industry incorporating their advice into their policy or procedures’ (5.2%), and ‘overcoming a conservation issue or threat’ (5.6%). A total of 13.8% respondents did not know if their had been an outcome.

Perception of Impact

Respondents were asked whether they felt SSC had hindered or enhanced their ability to have a conservation impact. The majority of respondents (70.3%) said that their conservation impact had either been enhanced or significantly enhanced, whereas less than 1% of respondents believed that SSC membership had hindered or significantly hindered their conservation impact. No significant
association was found between SG and whether the SSC affects their ability to have a conservation impact ($X^2$ test, $X^2=27.583$, df=21, p=0.152).

In addition, respondents were invited to provide examples of how, if at all, the SSC had helped or hindered their ability to have a conservation impact. The most common responses for hindering work included the amount of voluntary time it takes to contribute to SSC work, political factions within SGs, poor SG leadership and lack of funding. It is important to highlight that 70% of respondents ‘did not know’ and the most common response for those who provided a text response was ‘no hindrances’ (53.2% of the 173 text responses provided), but this should not undermine the views provided by the other respondents.

A larger number of examples were given for ‘enhanced’ impact (697 text responses equating to 60.5% of all respondents). Examples included: giving better credibility and influence, ability to disseminate information to a wider audience, networking opportunities, authoring opportunities, coordinating global conservation efforts, better cooperation from outside parties (e.g. governments and businesses), and informing policy decisions. Few respondents provided a ‘none’ response; 28% of all respondents said ‘I do not know’, 0.6% specifically wrote ‘none’.

When asked about ‘impact’ in relation to the definition put forward in the TOC, SG members were less positive about their impact as a direct result of their specific contribution to SSC activities (see Fig.3). 26.0% of respondents, or less within each overarching SG had seen a genuine improvement in the population
size of a species with which they work. Amphibians and Reptiles recorded the highest ‘yes’ response (26.0%) and Birds provided the lowest ‘yes’ response (9.7%). Conversely, Birds provided the highest ‘no’ response (40.9%) whilst Fishes recorded the lowest (20.0%). The largest response was 49% of total respondents who did not know if their SSC activities had led to a direct impact.

![Figure 3: Response to ‘Have the SSC activities in which you have been involved led to a genuine improvement in either the population, or Red List status of a species?’](image)

Respondents who said they had seen a direct impact were subsequently asked to provide an example evidencing their response. Of the 188 responses, only 21 ‘yes’ respondents gave a clear instance of an increase in population or Red List status. An example of this is the population of Bukhara deer rising from 350 to 2400 over a 16-year period. Other responses fitted more with the definitions
associated with ‘output’ or ‘outcome’, rather than impact, for example
‘conservation action plans have been implemented as a result of Red Listing data
collection’.

No significant association was found between SG and respondents’ view of an
SSC-related impact ($X^2=23.503$, df=14, $p=0.053$), so further tests were
done to see if there were correlations elsewhere. The most significant trend was
found to be the length of time dedicated to SSC activities ($X^2=57.052$, df=10,
$p<0.001$). As length of time spent undertaking SSC activities increased, the more
positive respondents were about the impact they had seen.

Membership duration is also seen to influence impact. A significant association
was seen when tested against perception of impact ($X^2=61.339$, df=14, $p<0.001$).
The proportion of ‘yes’ responses rose from 9% for members of less than 1 year,
to 43%, for members of over 31 years. The opposite was true of ‘no’ responses,
which decreased as membership length increased. Nonetheless, across all ranges
at least 38% of respondents did not know either way. This is displayed in Fig.4.
Figure 4: Relationship between SSC membership duration and perceived impact from SSC-related activities

The degree (negligible, minor or major) and scale (locally or globally), which respondents felt the SSC had enabled them to have an impact on biodiversity was also addressed (see Fig. 5). 66.5% of respondents selected at least one impact. Of these, most respondents selected ‘minor global’ (23.4%), but overall most respondents’ feel their impact has been at the minor or major ‘local’ level (41.2%), this compares with 36% who have seen a minor or major global impact. When compared with SGs, a maximum of 18% of respondents from each group had seen a negligible/negative impact at either a global or local level. This compares to 56%-84% who state that minor or major impacts have been seen at a local or global scale. Despite this, 23.5% of respondents remained unsure.
Interestingly, a significant association was found between gender and view of impact ($X^2 = 12.286$, df=4, $p=0.015$). Males were more positive about impact than females, reporting a 20.2% 'yes', compared with 12%. The ‘no’ response was recorded as 39.7% for females and 30.8% for males. Just under half of both groups reported that they did not know either way.

**Theory of Change**

From these results, we can surmise that the drafted TOC is, as far as possible, an accurate representation of the processes that lead to the SSC’s desired impact. Less than 11% of the respondents provided the response of ‘other’ for any of the categories ‘activity’, ‘output’ or ‘outcome’. This suggests that we had accurately covered the majority of options in each case.
DISCUSSION

Complexities associated with conducting impact assessments (Ferraro & Pattanayak, 2006) have been reflected in these results. The TOC that was developed attempted to alleviate these complexities and simplify the process by guiding the direction of the analysis towards how an impact is achieved. This was, in part, because of the scale and breadth of the SSC. The total response rate of 11.5% provided us with a good representative sample, with responses from almost 85% of the total SGs. This is the largest response rate from any study conducted on the SSC to date.

Although results prove the TOC to be correct in its design, it is important to gauge whether it is working in practice with detailed case studies (Funnell & Rogers 2011), ensuring the TOC is both practicable and indeed happening.

Factors affecting perception of impact

Although no significant link was found with overarching SG, Bird SGs had the lowest positivity of impact, and also had the lowest response rate. Amphibians and Reptiles SGs alternatively, were the most positive. One reason could be that Bird SGs are less reliant on the SSC for additional support due to the strength of organisations such as BirdLife International. Amphibian SGs may not have the same external platform of global support, and so rely more on the SSC. It would be interesting to look at this in more depth and see what caused this discrepancy.

The overall low response to there being an impact as a result of activities could be due to the definition of impact put forward not being a true reflection of what
some SGs are able, or striving to achieve. For example, there may be species with declining populations, regardless of input from the SSC. In this instance, the conservation goal is likely to be different. Furthermore, a number of Disciplinary Groups do not work across taxonomic groups, so do not specifically target single species. The Sustainable Use and Livelihoods SG for example promotes conservation and sustainable livelihoods, so they will not have such a species-specific goal. As Stem et al (2005) argue, conservation impact is as hard to define as it is to measure.

A trend was highlighted between gender and view of impact, with males being more positive than females. There is not enough data from my results to speculate why this is happening, but due to the trend, it is certainly a potential area of further research. It could be that males have been members of the SSC for longer, or as discussed by Spooner et al (2015), is it indicative of gender issues within conservation?

Leadership is not something we set out to investigate, but it became apparent that a number of responses linked their view of the SSC’s impact to the SG leadership. Numerous comments echoed the sentiment “active and engaged leaders are fundamental to having an effective group”. On the other hand, a dissatisfied member argues his SG has been “…hamstrung by poor leadership and exclusionary leadership policies. As such, the best work on the species is occurring outside the SSC and has been so for some time”. Although not necessarily a reflection of an entire SG, respondents went out of their way to
mention ‘leadership’ and so it should not be dismissed. As discussed by Black & Copsey (2014) perhaps conservationists need a new method of leadership.

My results indicate that the longer an individual is a member of the SSC, the more chance they have of observing an impact as a result of the activities they have carried out. Wider research conducted on the interrelationship between these two factors has indicated a wait of 16.3 years before an impact is observed (Young et al, 2014). It can be surmised that it takes a very long time to achieve an impact, which could explain why some members had not yet seen an impact. This is also in addition to uncontrollable factors that play a role in conservation interventions as highlighted by Margoluis et al. (2008). Conservation is by no means a straightforward task, but members of SSC must be seeing some benefit to remain a member for over 30 years.

SSC: A platform for members to make a greater contribution?

Individuals join SSC for overwhelmingly positive reasons, aiming to benefit conservation as a whole. This suggests that SSC has a reputation as being a force for good. Although the impact perceived by many respondents is not “impact” as defined by the TOC (more an ‘outcome’) a majority still perceive themselves to be better placed to achieve an impact because of SSC. These outcomes may not conform to SSC’s strategic targets, but it certainly does suggest that SSC is only adding to a member’s ability to have an impact, both on a local and a global scale.

For the individual, the networking opportunities SSC offers are invaluable. Members are given access to knowledge sharing that is unrivalled in any other
voluntary or non-voluntary conservation organisation (Rabb & Sullivan, 1995; Holdgate, 1999). This is what the IUCN prides itself on, and numerous respondents referred to the networking opportunities throughout this research. Opportunities given were not just internal, but with contacts in governments and businesses that may not otherwise be accessible. A united and active SG that utilises these links will arguably have more chance of achieving an impact. SSC should continue to build on this, and perhaps share lessons across the conservation field to maximize potential conservation impact.

Despite this, 23.5% of respondents were unable to say their SSC-linked work had impacted the status of biodiversity on either a local or global scale. Location of occupation appeared to have an effect on the ability of members to achieve an impact. Countries in South America and Central Africa, for example, were highlighted as receiving little support or funding for conservation from SSC. This is something that should be investigated in more depth by SSC to continue to strengthen the network.

Previous research highlighted a lack of capacity for M&E within the SSC (Bruszt & Turner 2000). Moving forward, the SSC could look to change this, by developing a universal M&E framework using the TOC. A common theme in the results was the amount of time required to conduct SSC-specific work, consequently the framework should be as simple and user-friendly as possible. The aim of the M&E framework would be to clearly present progress towards a target following a TOC-style setup. SGs and therefore the SSC as a whole would be able to document their progress in a visual way, by tracking the activities they
have commenced, and keeping track of the consequences of those activities. This would allow the individual SG’s, and the SSC’s steering committee to track and monitor if these activities were genuinely contributing to achieving conservation targets.

This is perhaps an idea that could be developed and trialed by selected SGs to see if it works in practice, or whether adaptations will make it workable. The idea would be for SGs to work to their own targets, whilst contributing to the overall SSC targets specified in the 3-year Strategic Plan, and would ultimately form an auditable trail.

**Is the SSC achieving its desired impact?**

The results here suggest the SSC is not close to achieving its overall goal of ‘halting biodiversity loss’. Only 2% of respondents report a genuine impact in line with the proposed TOC. There are multiple factors affecting this, across SGs and at individual level. However, the SSC is enhancing the individual members’ contribution to conservation as a whole. Networking and knowledge-sharing capabilities are its strength, and members do report a high number of outputs and outcomes from activities that may ultimately lead to an impact. Therefore the SSC is definitely making positive changes within conservation, but there needs to be sound M&E capability established to monitor this more effectively going forward, allowing it to provide clear evidence for its additional impact, in relation to a clear counterfactual.
LITERATURE CITED


Black SA. 2015. A clear purpose is the start point for conservation leadership. Conservation Letters 8:383-384


Ferraro PJ. 2009. Counterfactual thinking and impact evaluation in environment policy. New Directions for Evaluation 122:75-84


SUPPORTING INFORMATION

Full TOC (Appendix S1), Questionnaire (Appendix S2), KII list (Appendix S3), interview structure and themes (Appendix S4) and additional results and findings (Appendix S5) are available online. The authors are solely responsible for the content and functionality of these materials. Queries (other than absence of the material) should be directed to the corresponding author.
### S1: Full Theory of Change

<table>
<thead>
<tr>
<th>Stage</th>
<th>Inputs</th>
<th>Measurable Indicators</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time</td>
<td></td>
<td>• Funding from the IUCN provides a support structure for the SSC as a whole.</td>
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<td></td>
<td>Expertise</td>
<td></td>
<td>• Members are willing and able to put in time and expertise to the SSC.</td>
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<tr>
<td></td>
<td>Funding</td>
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<td></td>
<td>Resources</td>
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**INPUTS ARE REQUIRED FOR THE ACTIVITIES TO HAPPEN**

### Activities (on behalf of the SSC or individual Specialist Groups)

- **Science**
  - Conducting IUCN Red List Assessments
  - Establishing a conservation strategy or action plan
  - Conducting research funded by, or on behalf of the IUCN SSC

- **Representation**
  - At international conventions
  - Attending internal Specialist Group meetings
  - Attending external Specialist Group meeting

- **Action**
  - Fundraising for a field-based conservation project
  - Implementation of projects or recommendations in an IUCN action plan
  - Promoting rapid action to deal with an urgent conservation issue

- **Dissemination**
  - Authoring a scientific paper
  - Authoring a newsletter or website
  - Authoring a report
  - Input to IUCN SSC social media
  - Media outreach
  - Contributing to the development of IUCN SSC policies, standards and guidelines
  - Giving a talk on behalf of IUCN SSC

- **Advice to:**
  - National Government
  - Business or industry
  - Academic researchers
  - NGOs
  - International conventions

### Measurable Indicators

- Number of Red List Assessments undertaken per Specialist Group, per year.
- Number of strategies and/or action plans completed and disseminated per year.
- Number of research projects undertaken per year.
- Number of members attending conventions
- Number of conventions/internal meetings/external meetings attended
- Amount of funding raised
- Amount of SSC projects receiving funding
- Number of SSC projects established (by which Specialist Group)
- Number of recommendations published in action plans
- Number of urgent conservation issues responded to/how they were responded to
- Number of papers published by members representing the SSC
- Number of websites set up, by which SG
- Number of newsletters published per SG per year
- Number of reports published
- Number of active social media accounts per SG
- Number of articles published by external parties about the SSC/SGs
- Number of talks given on behalf of the SSC
- Keeping a log of the number of meetings/calls with documented external agencies.

**Assumptions**

- Individual activities can be broken down into the stated broader categories, meeting a wide range of specialisms members may have.
- Different activities can lead to different outputs, and therefore different outcomes.
- There is no set route for an activity to follow.
- One activity may have numerous outputs and outcomes.
- Parties being given advice are receptive to it and willing to make changes – regionally, nationally or internationally.
- SSC members attend conventions and meetings in their capacity as an SSC member.
- Knowledge is shared and disseminated internally throughout the SSC and across Specialist Groups.
- SSC has good public relations capability.
- Specialist Groups have the capacity to set up social media accounts.
- These activities listed are applicable to all 140+ Specialist Groups.
### Stage List

<table>
<thead>
<tr>
<th>Measurable Indicators</th>
<th>Assumptions</th>
</tr>
</thead>
</table>

**ALL OF THE ABOVE ACTIVITIES CAN LINK TO ANY OF THE BELOW OUTPUTS** *(there is not one set path for one activity to follow to reach impact)*

### Outputs

<table>
<thead>
<tr>
<th>Science, knowledge and understanding</th>
<th>Assumptions</th>
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<tbody>
<tr>
<td>Improved scientific knowledge of the species Understanding, or quantifying the nature and magnitude of threats to a species Participants attending workshops/meetings gain a clear understanding of IUCN SSC conservation goals Government(s) understand specific IUCN SSC conservation needs and begin the process of implementing changes to policy and/or legislation Increased public awareness</td>
<td>Compelling and detailed scientific evidence is produced and presented to defend a change in policy. Threats are identifiable and the scale can be quantified Plans can begin to form in order to address threats Government officials working with SSC representatives have the authority to begin the process of making change at a national, or international level Funding is able to come in (perhaps through an associated partner, i.e. a zoo as Specialist Groups are not legal entities, or from internal SSC funds) SSC members/ specialist groups have the capacity to improve or establish conservation projects on the ground Industry representatives respond in some way to formal correspondence.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action</th>
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<tbody>
<tr>
<td>Increased funding in your area of specialisation and/or for a conservation project on the ground Establishment or improvement of conservation projects on the ground Discussions, or open dialogue established with industry or government bodies resulting from formal intervention (e.g. writing a letter to government bodies)</td>
<td></td>
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</table>

**ALL OF THE ABOVE OUTPUTS CAN LINK TO ANY OF THE OVERLEAF OUTCOMES** *(there is not one set path for one output to follow to reach impact)*
<table>
<thead>
<tr>
<th><strong>Outcomes</strong></th>
<th><strong>Policy</strong></th>
<th><strong>Action</strong></th>
</tr>
</thead>
</table>
|             | Changed national policy  
               Changed international policy (including CITES, CMS, World Heritage etc.)  
               A conservation issue that was identified as part of SSC work is actioned and overcome  
               Research leads to advances in the ability of conservationists/communities/governments etc. to conserve a species  
               Business/industry incorporates your advice into their policy and/or procedures | **Protected Area establishment**  
               Reduction in identified threats  
               Identified threats become actively addressed by government and/or industry  
               Research leads to advances in the ability of conservationists/communities/governments etc. to conserve a species  
               Business/industry incorporates your advice into their policy and/or procedures | **Number of national and international policies amended with updated data (including Red List data)/ additional conservation knowledge (e.g. on threats)**  
               **Number of Protected Areas (including marine and bird) established with SSC contribution, and where they are located**  
               **Number and type of threats removed (e.g. invasive rat species identified and removed from island)**  
               **Number of cases governments are working with SSC members to address documented threats**  
               **Number and type of external parties working with the SSC to address a conservation issue**  
               **Number of policies that have SSC conservation knowledge incorporated into their policies**  
               **Number of communities, governments, conservationists and organisations that have benefited from SSC knowledge to better address conservation issues** | **Outcomes that arise achieve the desired goal – e.g. national policy changes put in place are effective and monitored by government.**  
               **There is a lack of government corruption enabling outcomes to happen**  
               **Threats are able to be overcome, and new threats do not emerge to uproot previous work**  
               **Research can be effectively implemented in practice to benefit the situation of conservation on the ground**  
               **Changes can be made at the community-level, as well as at government and industry level.**  
               **Businesses are committed to making a positive environmental change and incorporate SSC advice into their policy going forward, leading to a behavior change.** |

| **Impact** | **A genuine improvement in either the population or Red List status of a species** | **Number of species that have recovered, been down-listed from the Red List.**  
               **Data is up to date and confirms this**  
               **Documented list of species to which this applies**  
               **Documentation of the length of time taken to achieve this (when did SSC conservation work commence to achieve this)**  
               **What activities resulted in this positive change?** | **Foundations have been laid from the all of the previous stages to enable the support of successful species population growth** |
S2: Questionnaire to Species Survival Commission Members

Q1 (Not A Question)
Dear Species Survival Commission member,

The IUCN Species Survival Commission (SSC) is conducting a survey to get a better understanding of the impact of the SSC and its members. To facilitate independence in analysing the results, the survey is being undertaken in collaboration with Imperial College London, led by Jennifer Christelow.

As a member of the SSC, your input into this survey is critical, as the information produced will allow us to understand the time members are spending on SSC activities, outputs resulting from these activities, and the impacts you have seen happening. We hope also to be able to identify areas where improvements can be made in the performance of the SSC.

The survey should take around 20 minutes of your time. It is available in English, Spanish and French. All data collected will be collected and reported completely anonymously, so please do answer the questions as frankly as possible.

If you would like further information, or would like to add any additional comments, please contact Jennifer (Jennifer.christelow15@imperial.ac.uk).

Thank you in advance for your time and input. The survey will remain open until Sunday 17th July 2016.

Q2 How many years have you been a member of the Species Survival Commission (SSC)?
- Less than a year (1)
- 1 - 5 years (2)
- 6 - 10 years (3)
- 11 - 15 years (4)
- 16 - 20 years (5)
- 21 - 25 years (6)
- 26 - 30 years (7)
- 31 years and above (8)
Q3 Which Specialist Group(s), Task Force(s), Sub-Committee(s), or Disciplinary Group(s) are you currently a member of? Please list all groups below in order of your level of engagement with them (in decreasing order):

- Group 1: (1) ____________________
- Group 2: (2) ____________________
- Group 3: (3) ____________________
- Group 4: (4) ____________________
- Group 5: (5) ____________________
- Group 6: (6) ____________________
- Group 7: (7) ____________________
- Group 8: (8) ____________________
- Prefer not to say (9)

Q4 What is your motivation for being a member of the Species Survival Commission? Please select all that apply:

- Gives me greater influence nationally (1)
- Gives me greater influence internationally (2)
- Gives me greater access to information about my species (3)
- Gives me networking opportunities with other conservationists (4)
- Gives me access to information about events and publications (5)
- Prestige (6)
- Other, please specify: (7) ____________________
- I do not know (8)
- Prefer not to say (9)

Q5 Which one of the options below best describes the sector you work in?

- Private sector (1)
- NGO (2)
- Academic or education (3)
- Government (4)
- Professional, scientific or technical services (5)
- Other, please specify (6) ____________________
- I do not know (7)
- Prefer not to say (8)
Q6 Which one of the options below best describes your current occupation outside of SSC membership?
- CEO or other (1)
- Director (2)
- Administrator (3)
- Senior Manager (4)
- Junior Manager (5)
- Consultant (6)
- Researcher (7)
- Technical Staff (8)
- Field Conservationist (9)
- PhD Student (10)
- Unemployed (11)
- Retired (12)
- Other, please specify: (13) ____________________

Q7 What is your current age?
- Under 25 (1)
- 26 - 35 (2)
- 36 - 45 (3)
- 46 - 55 (4)
- 56 - 65 (5)
- Over 65 (6)

Q8 Are you male or female?
- Female (1)
- Male (2)
- Prefer not to say (3)

Q9 What is your nationality?
- Please state: (1) ____________________
- Prefer not to say (2)

Q10 Do you hold any of the following positions within the SSC? Please select all that apply:
- Sub-committee Chair (1)
- Specialist Group Chair or Task Force Chair (2)
- RLA Coordinator (3)
- Member of the SSC Steering Committee (4)
- Prefer not to say (5)
Q11 How much time have you dedicated, over the last 12 months, to activities which are directly related to your role as an SSC member (e.g. attending SSC meetings, Red List assessments, IUCN reports or missions)
   - Up to 1 day (1)
   - Up to 1 week (2)
   - Up to 2 weeks (3)
   - Up to 1 month (4)
   - More than 1 month (5)
   - I do not know (6)

Q12 In the past 12 months, what activities have you been involved in in your role as an SSC member. Please select all that apply:
   - Science: Conducting IUCN Red List Assessments (1)
   - Science: Establishing an IUCN SSC-branded Conservation Strategy or Action Plan specific to a species in the remit of your Specialist Group(s) (2)
   - Science: Conducting research funded by, or on behalf of IUCN (3)
   - Representation: Representing IUCN at international conventions (e.g. CITES, CBD, CMS) (4)
   - Representation: Attending an internal Specialist Group workshop or meeting (5)
   - Representation: Attending an external meeting or workshop on behalf of IUCN (please specify) (6) ____________
   - Action: Formal intervention (e.g. writing letters to government bodies or industries) in your IUCN SSC role (7)
   - Action: Fundraising for a field-based conservation project (8)
   - Action: Implementation of projects or recommendations in an IUCN action plan (9)
   - Action: Promoting rapid action to deal with an urgent conservation issue (10)
   - Dissemination: Authoring a scientific paper based on SSC work (11)
   - Dissemination: Authoring a newsletter or website contribution for your Specialist Group(s) (12)
   - Dissemination: Authoring a report based on SSC work (13)
   - Dissemination: Contribution to social media in your IUCN SSC capacity (14)
   - Dissemination: Media outreach (including interviews and press releases) (15)
   - Dissemination: Contributing to the development of IUCN SSC policies, standards and guidelines (16)
   - Dissemination: Giving a talk on behalf of IUCN SSC (17)
   - Advice: to national Government (18)
   - Advice: to business or industry (19)
   - Advice: to academic researchers (20)
   - Advice: to NGOs (21)
   - Advice: to international conventions (22)
   - Other, please specify (23) ____________
   - None of the above (24)
   - I do not know (25)
Q13 Have the activities you have carried out in your role as an SSC member had any of the following outputs (immediate results achieved after conducting an activity)? Please select all that apply:

- Improved scientific knowledge of the species (1)
- Understanding, or quantifying the nature and magnitude of threats to a species (2)
- Participants attending workshops/meetings gain a clear understanding of your IUCN SSC conservation goals (3)
- Government(s) understand your IUCN SSC conservation needs and begin the process of implementing changes to policy and/or legislation (4)
- Increased public awareness (5)
- Increased funding in your area of specialisation and/or for a conservation project on the ground (6)
- Establishment or improvement of conservation projects on the ground (7)
- Discussions, or open dialogue established with industry or government bodies resulting from formal intervention (e.g. writing a letter to government bodies) (8)
- Other, please specify: (9) ____________________
- I do not know (10)
- Prefer not to say (11)

Q14 Have the activities you have carried out in your role as an SSC member led to any of the following outcomes (long-term results) throughout your time as a member of the SSC? Please select all that apply:

- Changed national policy (1)
- Changed international policy (including CITES, CMS, World Heritage etc.) (2)
- Protected Area establishment (3)
- Reduction in identified threats (4)
- Identified threats become actively addressed by government and/or industry (5)
- A conservation issue that was identified as part of your SSC work is actioned and overcome (6)
- Research leads to advances in the ability of conservationists/communities/governments etc. to conserve a species (7)
- Business/industry incorporates your advice into their policy and/or procedures (8)
- Other, please specify (9) ____________________
- I do not know (10)
- Prefer not to say (11)

Q15 Have any of the activities in which you have been involved as an SSC member led to a genuine improvement in either the population or Red List status of a species, which would not have been possible without your involvement in the SSC?

- Yes (1)
- No (2)
- I do not know (3)

Q16 If you answered 'yes' to the above question: Please provide an example and briefly describe how this was achieved, and how the SSC facilitated it/what the SSC’s role was:
Q17 Please identify the single most influential activity you have carried out in your time as an SSC member, which you would not have undertaken if you had not been a member of the SSC. Please indicate when it was and why it was particularly influential.

☐ Please provide response in the box: (1) ________________
☐ I do not know (2)
☐ Prefer not to say (3)

Q18 Thinking back over your time as a member of the SSC, how would you rate the overall impact of your SSC-linked work on the conservation status of biodiversity? Please select all that apply:

☐ Negligible or negative impact locally (1)
☐ Negligible or negative impact globally (2)
☐ Minor impact locally (3)
☐ Minor impact globally (4)
☐ Major impact locally (5)
☐ Major impact globally (6)
☐ Not sure (7)
☐ Prefer not to say (8)

Q19 Do you feel that being a member of the SSC has enhanced or hindered your ability to have conservation impact, compared with if you had not been a member?

☐ Significantly enhanced my conservation impact (1)
☐ Enhanced to some extent (2)
☐ Neither hindered, nor enhanced my conservation impact (3)
☐ Hindered to some extent (4)
☐ Significantly hindered my conservation impact (5)
☐ I do not know (6)
☐ Prefer not to say (7)

Q20 Please list up to three (3) examples of how your SSC membership has enhanced your ability to make a conservation impact, and that would not have been the case if you had not been a member of the SSC:

☐ Example 1: (1) ________________
☐ Example 2: (2) ________________
☐ Example 3: (3) ________________
☐ I do not know (4)
☐ Prefer not to say (5)

Q21 Please list up to three (3) ways your SSC membership has hindered your ability to have a conservation impact, and that would not be the case had you not been a member of the SSC:

☐ Example 1: (1) ________________
☐ Example 2: (2) ________________
☐ Example 3: (3) ________________
☐ I do not know (4)
☐ Prefer not to say (5)
Q22 Is there anything you would suggest that would improve the conservation impact and running of the SSC overall, or specifically your Specialist Group(s)? Perhaps your Specialist Group(s) does something well that you would like to share? Please make any additional comments below:
## S3: Key Informant Interview Participants

<table>
<thead>
<tr>
<th>Key Informant Interview Participants</th>
<th>Current Role within the SSC or IUCN Red List Committee</th>
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<tbody>
<tr>
<td>1. Amanda Vincent</td>
<td>Seahorse, Pipefish and Stickleback Specialist Group Chair</td>
</tr>
<tr>
<td>2. Ana Rodrigues</td>
<td>Centre d’Ecologie Fonctionelle et Evolutive, Montpellier. Researcher and Red List expert</td>
</tr>
<tr>
<td>4. Caroline Pollock</td>
<td>Programme Officer, IUCN Red List Unit</td>
</tr>
<tr>
<td>5. Craig Hilton-Taylor</td>
<td>Head of Red List Unit</td>
</tr>
<tr>
<td>6. David Keith</td>
<td>Red List of Ecosystems Co-Chair (Commission on Ecosystem Management)</td>
</tr>
<tr>
<td>7. David Mallon</td>
<td>Antelope Specialist Group Co-Chair</td>
</tr>
<tr>
<td>8. Domitilla Raimondo</td>
<td>Southern African Plant Specialist Group Chair</td>
</tr>
<tr>
<td>9. Elizabeth Bennett</td>
<td>WCS Observer on the SSC Steering Committee, Primate Specialist Group member, Candidate for SSC Chair 2016-2020</td>
</tr>
<tr>
<td>10. Jane Smart</td>
<td>SSC Steering Committee member and Global Director of IUCN Biodiversity Conservation Group</td>
</tr>
<tr>
<td>11. Justin Cooke</td>
<td>Cetacean Specialist Group member</td>
</tr>
<tr>
<td>12. Katherine Secoy</td>
<td>National Red List Working Group Chair</td>
</tr>
<tr>
<td>13. Lucas Joppa</td>
<td>Red List Informatics Working Group Chair</td>
</tr>
<tr>
<td>14. Mark Stanley Price</td>
<td>SSC Steering Committee member and Species Conservation Planning Subcommittee Chair</td>
</tr>
<tr>
<td>15. PJ Stephenson</td>
<td>Afrotheria Specialist Group Co-Chair</td>
</tr>
<tr>
<td>16. Rajeev Raghavan</td>
<td>Freshwater Fish Specialist Group (South Asia Region) Co-Chair</td>
</tr>
<tr>
<td>17. Stuart Butchart</td>
<td>Climate Change Specialist Group Steering Committee, Red List Committee member, Bird Red List Authority member</td>
</tr>
<tr>
<td>18. Viola Clausnitzer</td>
<td>Dragonfly Specialist Group Co-Chair</td>
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### Additional SSC members who provided time to help develop my SSC knowledge

<table>
<thead>
<tr>
<th>Role within the SSC</th>
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<tbody>
<tr>
<td>1. E.J. Milner-Gulland</td>
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<td>2. Jon Paul Rodriguez</td>
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<td>3. Mike Hoffmann</td>
</tr>
<tr>
<td>4. Rachel Hoffmann</td>
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<tr>
<td>5. Richard Young</td>
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<tr>
<td>6. Simon Pooley</td>
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<tr>
<td>7. Simon Stuart</td>
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S4: Interview Structure and Themes

- What is your role within the Species Survival Commission/ involvement with the Red List
- What activities do you do for the SSC?
- What is the main goal of the Specialist Group to which you belong? (policy change/industrial intervention etc.)
- Do you work with external parties, for example governments, other NGOs
- How does your SSC work fit in with your everyday work?
- Why did you join the SSC?
- What do you think are the benefits?
- Is there anything about the SSC you think does not work?
- Is there anything you would like to find out from the results of this research?
S5: Additional Results and Findings

The following results form a brief overview of responses to questions. Many more analyses were conducted to find interrelations and trends between responses. I wanted to get the most out of these results as possible, but some of those results do not translate well in graph format. For this reason, in my Supplementary Information, I present simple and effective findings that give the best overview from respondents, and best show any additional trends:
The above table displays the actual number of responses received in comparison with the response rate as a percentage of the total overarching Specialist Group membership.
Overarching Group response to the question of whether the SSC has enhanced or hindered the conservation impact of its members

- Across all groups, the majority of members agree that the SSC has either enhanced or significantly enhanced their conservation impact.

- Overall, 70.3% of members said either enhanced or significantly enhanced, whereas less than 1% of people believe SSC membership has hindered or significantly hindered their conservation impact.
Output, Outcome and Impact across overarching Specialist Groups:

Output (Q13) as % of overall SG

- Note the increase in ‘do not know’ responses as output progresses into outcome
- Most popular responses across all groups for Outputs was ‘improved knowledge’, ‘understanding threats’ and ‘public awareness’

Outcome (Q14) as a percentage of overall SG