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Pallas's cat Status Review & Conservation Strategy

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Cover Photo: Camera trap picture of manul in the Kotbas Hills, Kazakhstan, 20. July 2016
(Photo A. Barashkova, I Smelansky, Sibecocenter)

Conservation Strategy for *Otocolobus manul*

The Pallas's cat or manul *Otocolobus manul* is a characteristic species of the lowland and mountain steppes of south-western and Central Asia's and the Himalayas. Because of its specific habitat requirements and its dependence of a variety of small mammalian prey, this archaic cat is an indicator of a healthy ecosystem. For thousands of years, it has shared its living space with nomadic herders. Only when motorised transport and heavy equipment became available in the 20th century, man has started to alter these marginal, low productive habitats considerably. We know very little about the long-term and large-scale changes in the distribution and abundance of the Pallas's cat, but we can assume that increasing human pressure on the steppe habitats and its fauna have impacted the small cat's population in recent decades and that further development may have an increasingly negative effect if not sensibly mitigated.

But to conserve the manul as a flagship species of the Asian steppes, we must understand its ecology and population dynamics. This requires more systematic observation of its conservation status, more research to close important gaps of knowledge, and at the same time, we need start reducing obvious threats. But these works are slowed down by the vast and fragmented distribution of the species, its generally low abundance and the shortage of funds for research and conservation. All this calls for concentrating our efforts and for a range-wide cooperation between scientific institutions, conservation organisations and the relevant authorities of all range states. The first step for a range-wide cooperative conservation approach has been taken at the Global Pallas's Cat Action Planning Meeting in Nordens Ark, 12–15 November 2018, where the Pallas's Cat International Conservation Alliance PICA, the Pallas's Cat Working Group PCWG and the IUCN SSC Cat Specialist Group Cat SG met to review the conservation status of *Otocolobus manul* (see previous chapters in this Special Issue) and to develop the here following range wide Conservation Strategy. The meeting has been attended by 28 participants (Appendix I; Editorial Fig. 1), including species experts from 8 of the 16 range countries, and was supported by the Fondation Segré, Nordens Ark, the Royal Zoological Society of Scotland and Cincinnati Zoo.

Planning process and workshop procedures

The strategic planning workshop followed the IUCN guidelines for strategic planning for species conservation (IUCN – SSC Species Conservation Planning Sub-Committee 2017) and the practical guidelines for strategic and project planning in cat conservation developed by the Cat SG (Breitenmoser et al. 2015; Chapter 1). The planning process was participatory and consensus driven, engaging all participants of the workshop into the development of the Conservation Strategy through repeated group work and plenary discussion, allowing capturing the knowledge and expertise of all participants. The workflow followed the “Zielorientierte Projekt Planung” ZOPP, included the analyses of threats and gaps (Table 1) and resulted in the development of a logical framework (LogFrame; Table 2). The status review, shown as a part of the process in Editorial Fig. 2, was prepared before the

meeting and shared with the group in several presentations (previous chapters of this Special Issue).

Following Breitenmoser et al. (2015), the strategic planning process included six steps:

1. Development of a Vision, a wishful perspective for the next 25–50 years, describing the ideal future scenario for the species. It reflects an optimistic view of the future of the Pallas's cat and is meant to be a source of inspiration;
2. Development of a Goal, a more concrete intention than the Vision. It is a feasible, realistic and measurable long-term aim (10–20 years) for the conservation of the species;
3. Threat and Gap Analysis, in order to understand which obstacles and shortcomings are preventing us from reaching the Goal and Vision;
4. Development of Objectives, which support reaching the Goal and directly address important Threats and Gaps as identified under Step 3;
5. Development of (several) Results to reach every Objective. Results are the direct outcome of the implementation of a LogFrame and should hence be SMART (specific, measurable, achievable, relevant and time-bound);
6. Development of a number of Actions or Activities to achieve each Result, including a time line, actor, if possible methods and a budget. Implementation of Activities is the ultimate goal of the strategic planning process. However, careful planning, monitoring and evaluation avoid “jumping into action” without a clear purpose and hence reduce the risk of losing (financial) resources and precious time.

The Strategy was finally summarised in the LogFrame Matrix (Table 2), which provides a short, tabulated overview of the elements and facilitates the monitoring and evaluation of the Conservation Strategy.

Conservation Strategy

Our *Vision* for the Pallas's cat is a

Prospering manul populations across the historic range, living in harmony with people as a valued symbol of the steppe and mountain grassland ecosystem.

The wording of the Vision was carefully chosen:

- *Prospering manul populations* means viable, ecologically functional and sustainable Pallas's cat populations able to persist in the long-term;
- *Across the historic range* highlights that the species should not only be conserved across its current range but also recover in every part of its historic (> 1750) and projected range from Armenia and Azerbaijan in the west to China in the east, forming viable and connected populations;

Table 1. Identified Threats (current and emerging) as well as Gaps, weighted per region: South-west Asia (SWA), Central Asia and Russia (CA & R) and the Himalayas and China (H & C). Threats were ranked according to their importance (1 = minor, 2 = medium, 3 = major) and the capacity available to meet them were assessed (1 = poor, 2 = medium, 3 = good). Threats assessed to be out of the influence of the Conservation Strategy are written in *italics*.

Threats	Importance			Capacity		
	SWA	CA & R	H & C	SWA	CA & R	H & C
Infrastructure development (mining, road construction, resource extraction)	2	1	2 (China 3?)	1	1	1
Habitat destruction and habitat fragmentation (unsustainable grazing regime, fire, increased agriculture)	2	2	3	1	1	3 (locally), 1–2 (regionally), 3 (India: good capacity, poor implementation)
Population fragmentation	2	2	2	1	1	1/2
Illegal killing (including unintentional killing) ¹	1	2	1	2	2	1 (India) 2 (Nepal)
Legal hunting	–	1	–	–	2	–
Illegal trade	1	1	–	2	2	2
Dog attacks (e.g. herding dogs)	2	3	3	1	2	1 (good knowledge)
Poisoning of prey	2	1	2 (Tibet 3?)	1	3	2 (Nepal)
Diseases	1	2	2 (no inf.)	1	2	1
Development (infrastructure)	2	3	2	1	2	2
<i>Increasing human pressure</i> ²	?	–	2? (site specific)	1?	–	2 (Nepal 1)
<i>Political instability</i>	2	2	1	1	–	–
<i>Climate change</i>	1	–	3	1	–	1 (Nepal), 2 (India)
Gaps and shortcomings						
Lack of knowledge on basic ecology, pop. dynamics, genetics, diseases, etc.)	3	3	3	2	3	3 (general monitoring) 1 (Nepal)
Lack trained researchers, rangers for law enforcement, monitoring, research	2	3	2	2	3	2–3
Lack of network and knowledge exchange	1	2	1/2	3	3	3
Lack of awareness	2	2	1	2	3	3 (social media)
Lack of stakeholder collaboration including governments	2	2	1 (site specific)	2	3	3 (Nepal) 1 (India)
Lack of regulation and law enforcement	2	2	1	2	2	1–2
Lack of financial means	2	3	3 (Nepal) 2 (India)	2	1	–

¹ Although the motivation for illegal (poaching) and unintentional (bycatches) killing may be different, they are clustered here because in practice, the reasons are often not known and all killing is, with the exception of the legal hunting in Mongolia, an illegal act.

² Including population growth, but also resettlement, changed land use, etc.

- *Living in harmony with people* stresses that the long-term survival of the Pallas's cat depends on the attitudes and comportment of people. Pallas's cats should be tolerated by local people and be allowed to live across sufficiently large and minimally disturbed steppe habitats;
- *Valued symbol of the steppe and mountain grassland ecosystem* implies that the Pallas's cat should not only be known and tolerated by the local people but also valued and cared for as an ancient part of the natural heritage and a flagship symbol of a unique ecosystem.

Our **Goal** is to initiate

A sustainable, science-based conservation programme to protect and restore Pallas's cat populations, addressing present and emerging threats, which is supported by the local people as well as the respective governments.

The wording of the Goal was again carefully and deliberately developed:

- *Sustainable, science-based conservation programme* highlights that conservation efforts should lead to long-term maintenance of the population(s) and be informed by the best available science, including efficient ways of monitoring the population trend, which again implies capacity development and scientists working on Pallas's cat conservation in all range countries;
- *Protect and restore Pallas's cat populations* indicates that not only the existing populations should be protected but that populations should also be restored within the historic range and connectivity be maintained and improved;
- *Addressing present and emerging threats* emphasises that we worry not only about present threats but also about emerging ones such as climate change, diseases, or infrastructure development;
- *Supported by the local people as well as respective governments* indicates that the conservation of the Pallas's cat will need the support of local people and all relevant governmental institutions. It will be of crucial importance to incorporate stakeholders, national governmental agencies and to gain the support of local people to achieve an effective long-term conservation of the species.

Threat and Gap analysis

Current and emerging Threats as well as information Gaps and shortcomings in our understanding or capacity were listed and discussed in three regional and one international working group. The three regional working groups noted problems specific to their region. The international working group concentrated on general problems and on threats mentioned in the literature. Similar or equal Threats and Gaps were grouped in the plenary discussion. The final list of Threats and Gaps were ranked per region according to their significance, but also the capacity available to address them (Table 1). We focussed on Threats and Gaps which can be addressed directly or indirectly when implementing the Strategy. However, although some Threats such as climate change, increasing human population and political instability were considered beyond the reach of this Strategy, they are listed in Table 1, because we all recognise their importance.

Objectives and Results

Based on the Goal and the Threat and Gap analysis, three working groups developed Objectives, addressing the eight major Threats and Gaps identified: land use, use and trade, human caused mortality and co-existence, knowledge and information, capacity development, network and information transfer, awareness and education, and finances. Each Objective addressed a particular challenge that needs to be addressed in order to reach the Goal and Vision. The Objectives as proposed by the working groups were then discussed in the plenary and finalised. The same procedure was then applied to define a number of Results for each Objective. Results are concrete achievements needed to reach an Objective; they often address a very specific challenge. Results are formulated to be SMART (specific, measurable, achievable, relevant and time-bound) and should be reached within 3–5 years.

Land use addresses the need to conserve habitat and prevent habitat destruction and fragmentation by increasing protected areas and minimise the impact of infrastructure and agriculture development.

Objective 1: To prevent habitat destruction and fragmentation and mitigate negative impact of infrastructure and agriculture development.

- | | |
|-------------|---|
| Result 1.1: | Number of protected areas in key Pallas's cat habitats (community PAs) increased in Pallas's cat range countries in 10 years. |
| Result 1.2: | Impact of agriculture/livestock husbandry and infrastructure development on Pallas's cat is understood and recommendations for manul-friendly practices are given to the range countries by 2025. |
| Result 1.3: | Pallas's cat conservation is included in Global Snow Leopard Ecosystem Protection Program GSLEP landscape management plans by 2025. |

Use and trade covers the problem of lack of knowledge on the legal and illegal use and trade of Pallas's cats and their impact on the population, the lack of political awareness and capacity to tackle these issues.

Objective 2: To make legal hunting sustainable (Mongolia purpose only), stop illegal killing and illegal trade in Pallas's cat.

- | | |
|-------------|--|
| Result 2.1: | Mongolian Pallas's cat population size and distribution is known and impact of hunting on the population discussed with the Mongolian authorities in charge by 2025. |
| Result 2.2: | The drivers and extent of illegal killing and illegal trade on Pallas's cat are understood, compiled in a report and submitted to all range countries by 2025. |

Result 2.3: Border guards and custom officers are trained in identification of Pallas's cats and derivatives by 2023.

Human caused mortality and co-existence tackles the lack of knowledge on the relative importance and causes of Pallas's cat mortality and how to mitigate those as well as problems relating to coexistence of people and their way of life with the Pallas's cat.

Objective 3: To understand and reduce human-caused mortality of Pallas's cat (free-ranging dogs, poisoning, etc.).

Result 3.1: Information on relative importance and causes of Pallas's cat mortality are compiled across the range by the end of 2021.

Result 3.2: Mitigation programmes addressing the main causes of Pallas's cat mortality are initiated by the end of 2023.

Knowledge and information concerns the need to enhance the understanding and knowledge on the species to identify most urgent conservation needs and to guide and prioritise effective conservation measures.

Objective 4: To increase the scientific research and understanding of the species basic ecology and population dynamics.

Result 4.1: The six most critical research needs are identified and prioritised across the range by the Pallas's Cat Working Group PCWG by the end of 2019.

Result 4.2: Priority research projects (as identified under Result 4.1) are launched to increase knowledge and to guide conservation strategies in each of the regions by the end of 2021.

Capacity development addresses the need to enhance capacity in regard to Pallas's cat research, surveys and conservation across its range, including the training of scientists and the development of accurate monitoring and surveying methods.

Objective 5: To develop science and conservation capacity in field ecology and conservation in Pallas's cat range countries.

Result 5.1: The major gaps in capacity for research and conservation are identified in each country by the PCWG by the end of 2020.

Result 5.2: Capacity building programmes to address gaps in research and conservation (as identified under Result 5.1) are initiated by the end of 2022.

Network and information transfer refers to the necessity of creating a Pallas's cat network and to enhance the information exchange in order to improve collaboration among experts and project implementers and to ensure that all available information is effectively disseminated.

Objective 6: To develop the global network (PCWG) and participation of Pallas's cat specialists to increase knowledge and conservation of manul.

Result 6.1: By 2020 a PCWG with an agreed organisational structure and roles of members with at least one member per range country and experts from non-range countries is established.

Result 6.2: By 2020 PCWG a formal relationship (e.g. MoU) with the IUCN SSC Cat Specialist Group is agreed.

Result 6.3: By 2021 review on projects detailing successes and failures of conservation activities/engagement is produced, shared and regularly updated (e.g. a web tool).

Awareness and education addresses the need to enhance global awareness and education for the species by producing education materials and guidance documents, development of training workshops and improve the cooperation between projects and information sharing.

Objective 7: To increase global awareness and education on Pallas's cat to support conservation efforts for the species.

Result 7.1: By 2021 educational material is produced, translated to the range country languages and made (freely) accessible and available.

Result 7.2: By 2023 best practice guidance documents for species identification and monitoring are produced to inform experts, project implementers and range country wildlife units.

Result 7.3: By 2024 training workshops with governmental environmental agencies across all range countries are completed.

Result 7.4: By 2021 all existing projects on Pallas's cat are connected via social media to increase global profile (see also Result 6.3).

Result 7.5: By 2020 a shared Pallas's cat image and video database for use with global awareness activities is established.

Finances refer to the necessity to ensure funding for the long-term conservation of the species by engaging further stakeholders and institutions into the conservation efforts for the Pallas's cat.

Objective 8: To increase engagement with funders to promote long-term coordinated financial support for conservation efforts.

- Result 8.1: By 2020 a minimum of 25k Euros over 3 years are secured to deliver conservation recommendations from global meetings of the PCWG.
- Result 8.2: By 2020 zoos are engaged and provide €10'000 per year to Pallas's cat conservation.
- Result 8.3: By 2020 PICA has secured additional support for Pallas's cat projects from at least 2 new potential funders.

Because Results are formulated to be SMART, they need a quantitative or qualitative indicator allowing tracking the progress. These indicators were not yet defined at the workshop, but they should be included in a more elaborated LogFrame or work plan for the implementation of the Strategy.

Activities

Implementing conservation measures is the ultimate purpose of the planning process. Activities were hence defined to reach the Results, Objectives and ultimately Goal and Vision. Sets of Activities were developed by the working groups and discussed in the plenary to meet the respective Result. Typical timeline for an Activity is 1–3 years. Activities need to be very specific, including an actor and time-line, but ideally also selected methods, monitoring and assessing progress, and last but not least a budget. To define such details was not possible during the workshop at Nordens Ark. The simple LogFrame presented below (Table 2) hence will need to be refined (e.g. at the level of Objectives or Results) to become a more practical working tool for the implementation of the Strategy.

Conclusions

The Conservation Strategy presented here is the first attempt to develop a long-term plan for the conservation of the Pallas's cat across its entire current and historic range. It was designed by the participants at the workshop in Nordens Ark (Appendix I). Although developed in a collaborative and participatory way, not all range experts and range countries were able to participate, and no stakeholder involvement was possible at this global level. The Strategy is therefore intentionally kept general in some parts and defines foremost Activities within the reach of the group that met in November 2018 at Nordens Ark. However, the Strategy is based on the best information presently available and the assessment of the conservation status of the Pallas's cat according to IUCN Red List rules and the IUCN recommendation for strategic planning in species conservation. We therefore recommend this Strategy to be considered for the development of National Action Plans and for the design of further research and conservation projects.

The group that developed this Strategy will advance the cooperation within the PCWG (see e.g. Objective 6 and related Results/Activities). The institutions that met at Nordens Ark agreed to enhance their collaboration and invite additional individuals and institutions to join in. A steering group within the PCWG will oversee the implementation of the Conservation Strategy and facilitate the monitoring and regular evaluation of the progress, reviewing the Strategy at intervals of about 5 years (or whenever adequate). To enhance the outreach and implementation of the Strategy, it will be submitted to the Range States' authorities in charge of species conservation or wildlife management, as well as to international institutions involved in nature conservation in Central Asia. An efficient collaboration and cooperation between all stakeholders, including governmental agencies, species experts, researchers, local people and international organisations as well as the continued sharing of information and knowledge on the status and distribution of the Pallas's cat are essential for the implementation of this Conservation Strategy and the long-term conservation of the Pallas's cat.



Photo V. Kirilyuk

Table 2. Activities (three digit numbers) by Objectives and Results. Time line is the expected date for finishing or the approximate period for implementing the respective Activity. Actor indicates the responsible implementer(s). For Activities beyond the responsibility of the participants of the workshop, no time line or actor were defined.

Activity	Time line	Actor
Objective 1. To prevent habitat destruction and fragmentation and mitigate negative impact of infrastructure and agriculture development		
Result 1.1 Number of protected areas in key Pallas's cat habitats (community PAs) increased in Pallas's cat range countries in 10 years		
Activity 1.1.1 Review of official (international, national and sub-national) plans and programmes on creating and enlargement of protected areas	end of 2020	PCWG/PICA will coordinate with 1–2 point persons in each range country
1.1.2 Identify key Pallas's cat habitats based on scientific knowledge and conduct national consultative meetings and prepare recommendations for the governments	end of 2025	
1.1.3 Analyse the regimes and zoning of existing PAs and make recommendations to increase effectiveness of the protected areas for manul conservation	end of 2028	
1.2 Impact of agriculture/livestock husbandry and infrastructure development on Pallas's cat is understood and recommendations for manul-friendly practices are given to the range countries by 2025		
1.2.1 Review the threats and challenges of agriculture/livestock husbandry and infrastructure development to Pallas's cat	end of 2021	PCWG/PICA will coordinate with 1–2 point persons in each range country
1.2.2 Ensure environmental impact assessment are conducted for large infrastructure projects and that issues with possible impact on the Pallas's cat are included	end of 2021	
1.2.3 Make recommendations for governments, companies, farmers and pastoralists in regard to manul-friendly practices	end of 2025	
1.3 Pallas's cat conservation is included in GSLEP (Global Snow Leopard Ecosystem Protection Program) landscape management plans by 2025		
1.3.1 Consult, cooperate and mutually agree with the GSLEP working group on our activities and plan	end of 2020	PICA/SLT will coordinate with 1–2 point persons in each range country
2. To make legal hunting sustainable (Mongolia purpose only), stop illegal killing and illegal trade in Pallas's cat		
2.1 Mongolian Pallas's cat population size and distribution is known and impact of hunting on the population discussed with the Mongolian authorities in charge by 2025		
2.1.1 Carry out nation-wide research of the Pallas's cat distribution and population size in Mongolia	end of 2020	PCWG/PICA will coordinate a point person in Mongolia
2.1.2 Analyse the status of legal hunting and trade, and its potential impact on the national population	end of 2023	
2.1.3 Make recommendations and provide them to the relevant governmental body	end of 2025	
2.2 The drivers and extent of illegal killing and illegal trade on Pallas's cat are understood, compiled in a report and submitted to all range countries by 2025		
2.2.1 Study and analyse the status of illegal hunting and trade in each range country	end of 2021	PCWG/PICA will coordinate with 1–2 point persons in each range country
2.2.2 Assess its impact on the Pallas's cat population for each country	end of 2022	
2.2.3 Compile a report and present it to the governments	end of 2024	
2.3 Border guards and custom officers are trained in identification of Pallas's cats and derivatives by 2023		
2.3.1 Produce guidelines for the identification of Pallas's cat and its derivatives for border guards and custom officers	end of 2020	PCWG/PICA will coordinate with 1–2 point persons in each range country
2.3.2 Contact CITES, TRAFFIC, INTERPOL and NGOs currently working on traffic monitor and control of wildlife trade in the range countries	end of 2020	
2.3.3 Organise trainings for border guards and custom officers in the relevant countries	2021–2023	
3. To understand and reduce human-caused mortality of Pallas's cat (free-ranging dogs, poisoning, etc.)		
3.1 Information on relative importance and causes of Pallas's cat mortality are compiled across the range by the end of 2021		
3.1.1 Identify a point person per range country to help formulate the survey	July 2019	PICA will coordinate the point persons
3.1.2 Define questionnaire to compile information about Pallas's cat mortality	July 2019	
3.1.3 Develop and distribute survey protocol for field specialists and practitioners, collect and compile information	May 2020	
3.2 Mitigation programmes addressing the main causes of Pallas's cat mortality are initiated by the end of 2023		
3.2.1 Identify main mortality causes of Pallas's cats based on survey results and produce report with recommendations on mitigations in each country language	Dec. 2020	PICA

Activity	Time line	Actor
3.2.2 Increase awareness of local people and governmental agencies (brochures, internet) about Pallas's cat mortality and identify partners for collaborative work	2023	PICA
4. To increase the scientific research and understanding of the species basic ecology and population dynamics		
4.1 The six most critical research needs are identified and prioritised across the range by the Pallas's Cat Working Group (PCWG) by the end of 2019		
4.1.1 Identify six most important research needs based on gap analysis (see above)	End 2019	Steering group
4.1.2 Request review of proposed research needs with PCWG and share with partners/range countries	July 2019	PICA, steering group
4.2 Priority research projects (as identified under Result 4.1) are launched to increase knowledge and to guide conservation strategies in each of the regions by the end of 2021		
4.2.1 Identify priority areas for presence/absence survey throughout the range with point-person	End of 2019	Jim Sandersan (PCWG) and Urs Breitenmoser (Cat SG)
4.2.2 Conduct survey with obvious proofs (photograph, genetic/physical evidence) in identified priority areas	End of 2021	(point-person with funding through PICA)
4.2.3 Review monitoring techniques in each region and standardise methodologies and produce monitoring guidelines available to interested people	End of 2019	Sergey Naidenko will consult with the PCWG and GSLEP
4.2.4 Develop standardised protocols for genetic sample collection storage and analysis for Pallas's cats	End of 2019	Helen Senn will consult with PCWG
4.2.5 Develop genetic and other biological samples database and strategy for biological sampling	Mid-2020	Helen Senn and Sergey Naidenko, consult with PCWG
4.2.6 Coordinate genetic and disease sampling analysis with point person in each range country	End 2022	Helen Senn and Bill Swanson
4.2.7 Combine data from Russian sources to understand the range of Pallas's cat population fluctuations in this region	End of 2020	Vadim Kirilyuk, Anastasia Antonevich, Anna Barashkova
4.2.8 Develop standardised protocols for biological sample collection storage and analysis for Pallas's cats disease ecology	March 2020	Bill Swanson will consult with PCWG
4.2.9 Identify social scientist in range countries and connect them with local biologists to assess human dimension aspects	End of 2019	Shekhar Kolipaka
5. To develop science and conservation capacity in field ecology and conservation in Pallas's cat range countries		
5.1 The major gaps in capacity for research and conservation are identified in each country by the PCWG by the end of 2020		
5.1.1 Identify a point person for each range country to help formulate the survey	End of 2019	PICA to coordinate point person
5.1.2 Define the questionnaires to get information about research and conservation capacity gaps in each range country and advice on capacity building	End of 2021	Point person of each range country
5.1.3 Distribute survey protocols to science and conservation partners in each country and compile information	May 2022	Point person and PICA
5.2 Capacity building programmes to address gaps in research and conservation (as identified under Result 5.1) are initiated by the end of 2022		
5.2.1 Identify based on surveys the main capacity needs for science and conservation in range countries and write report summarising the compiled information	End of 2020	PICA
5.2.2 Present survey results to government and conservation stakeholders in each country and advice on capacity building	End of 2021	Point person of each range country
6. To develop the global network (PCWG) and participation of Pallas's cat specialists to increase knowledge and conservation of manul		
6.1 By 2020 a PCWG with an agreed organisational structure and roles of members with at least one member per range country and experts from non-range countries is established		
6.1.1 Attendees to agree structure of PCWG: coordinating individual, regional representatives, steering committee	Spring 2019	PCWG, PICA, Cat SG
6.1.2 Inform to all non-attendees and potential additional PCWG members	Spring 2019	PCWG, PICA, Cat SG
6.1.3 Create list of existing websites for steering committee and select web hosting site for PCWG (new or existing)	Spring 2019	Coordinator (t.b.d.) and steering committee
6.1.4 Agree on roles for membership and process for joining PCWG; steering committee to propose terms of reference and membership conditions and roles (see also 3.1.1, 5.1.1)	July 2019	PCWG, PICA, Cat SG

Activity	Time line	Actor
6.2 By 2020 PCWG a formal relationship (e.g. MoU) with the IUCN SSC Cat Specialist Group is agreed		
6.2.1 MoU drafted by steering committee and circulated to membership for comments	July 2019	Steering committee, PCWG, PICA, Cat SG
6.2.2 Steering Committee to agree and sign MoU with IUCN SSC Cat Specialist Group	End of 2020	Steering committee, Cat SG
6.3 By 2021 review on projects detailing successes and failures of conservation activities/engagement is produced, shared and regularly updated (e.g. a web tool)		
6.3.1 Create a record database for project information hosted on PCWG webpage and share with members	End of 2019	PCWG volunteer member
6.3.2 Coordinating individual per project to update annually information on database	Annually	
7. To increase global awareness and education on Pallas's cat to support conservation efforts for the species		
7.1 By 2021 educational material is produced, translated to the range country languages and made (freely) accessible and available		
7.1.1 Collect and formulate key education messages (species description, life stories, threats, how to guide)	July 2019	Julia Hoffmann, PICA
7.1.2 Develop standardised education materials using key messages	End of 2019	Julia Hoffmann, PICA
7.1.3 Translate materials into all range country languages	2020	David Barclay (PICA)
7.1.4 Distribute materials through coordinating individuals to make publicly available	After 2020	PCWG, PICA
7.2 By 2023 best practice guidance documents for species identification and monitoring are produced to inform experts, project implementers and range country wildlife units		
7.2.1 Create standardised protocols for Pallas's cat identification (carcass, field signs, samples incl. genetic, lives specimen, skins)	2020	Volunteer from PCWG, Sergey Naidenko
7.2.2 Create basic field monitoring protocol (camera trapping, snow tracking, field sign)	Spring 2020	Ehsan Moqanaki
7.2.3 Identify key stakeholders and create contact list for document distribution	Spring 2020	Steering committee
7.2.4 Make best practice monitoring document available on networks website	Spring 2020	Coordinating individual
7.2.5 Translate document into all range country languages	Spring 2021	PICA
7.3 By 2024 training workshops with governmental environmental agencies across all range countries are completed		
7.3.1 Create workshop guideline and training materials linked to Activities 7.2.1 and 7.2.2	2021	Steering committee
7.3.2 Identify PCWG representative per range country to organise and deliver workshop	Nov. 2019	Coordinating individual
7.3.3 Create contact list for environmental agencies relevant for manul conservation for all range countries	July 2019	Regional PCWG members
7.4 By 2021 all existing projects on Pallas's cat are connected via social media to increase global profile (see also Result 6.3)		
7.4.1 Create list of active social media profiles from projects, members etc.	July 2019	PCWG members
7.5 By 2020 a shared Pallas's cat image and video database for use with global awareness activities is established		
7.5.1 Create storage space within webpage	Oct. 2019	Coordinating individual
7.5.2 Identify individual to collect and upload images/database	Oct. 2019	Coordinating individual
7.5.3 Create and sign terms of use document for sharing of images/videos, make accessible for funders	July 2019	Steering committee
8. To increase engagement with funders to promote long-term coordinated financial support for conservation efforts		
8.1 By 2020 a minimum of 25k Euros over 3 years are secured to deliver conservation recommendations from global meetings of the PCWG		
8.1.1 Secure funding and assign a minimum of 50% of funds toward priority research (4.1 and 4.2)	Annually	Steering committee / Funding project
8.1.2 Agree decision process of funding prioritisation and channelling process of funds	July 2019	Steering committee / PICA
8.2 By 2020 zoos are engaged and provide €10'000 per year to Pallas's cat conservation		
8.2.1 Share annual (project) reports and educational material with zoos to support fund-raising efforts	Annually	PICA, Julia Hoffman
8.3 By 2020 PICA has secured additional support for Pallas's cat projects from at least 2 new potential funders		
8.3.1 Identify list of potential funders and application deadlines	2019	PICA
8.3.2 Prepare project proposals to secure additional funding	2019	Steering committee, PICA