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The jaguar in South America – status review and strategy

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SOUTH AMERICAN JAGUAR CONSERVATION ACTION TEAM

Regional conservation strategy for the jaguar in South America

The jaguar *Panthera onca* has been classified as Near Threatened in the 2017 IUCN Red List assessment (Quigley et al. 2018). However, jaguar population is declining fast: only in the last 20 years its range has decreased by about 20% (Sanderson et al. 2002, Jędrzejewski et al. 2023a) and the decline rate is likely speeding up. Jaguar conservation programs must aim to stop this negative trend. They also have to respond to all important threats identified by the studies presented in this volume that include: (1) deforestation and other habitat transformations carried out to enlarge livestock pastures and agricultural crops, (2) the killing of jaguars due to conflict with cattle ranching, (3) the killing of jaguars by hunters in natural areas, often related to the trade and trafficking of jaguar skins or other body parts, (4) habitat fragmentation and development of transportation infrastructure that disrupts the jaguar movements and gene flows, (5) development of mining, especially gold mining, that takes place in protected areas and destroys jaguar core areas (Berzins et al. 2023. Jędrzejewski et al. 2023b, Thompson et al. 2023). The studies also pointed to other problems, such as the small number of protected areas in some ecoregions (e.g. in the Llanos), poor law enforcement in most countries and the low level of ecological awareness and knowledge regarding jaguar biology and conservation problems. Any conservation plans also need to take into account the genetic differences among the jaguar populations inhabiting different ecoregions. This indicates a need to protect all jaguar populations with their unique, genetically inherited adaptations to exploit different habitats prey populations (Roques et a. 2016, Lorenzana et al. 2020). Other challenges are the necessity for more scientific research, continuous monitoring of jaguar populations across the continent and the need to expand international cooperation related to jaguar conservation.

Consequently, the IUCN Cat Specialist Group has set as a high priority to establish a long-term South American jaguar conservation strategy. In November, 2019, representatives with expertise in jaguar ecology, biology and conservation from all eleven South American range countries, plus three wildlife conservation non-governmental organisations, gathered to 1) review and assess the status and conservation needs of jaguars in South America, (2) update its current and historic distribution range maps, (3) develop a Regional Conservation Strategy as a baseline for future conservation work in this region and (4) identify priority actions for each country. This chapter is the result of the third objective in that list.

Planning process and workshop procedures

The development of the Conservation Strategy followed the IUCN Guidelines for Species Conservation Planning (IUCN SSC Species Conservation Planning Sub-Committee 2017) and, more specifically, the Strategic Planning Cycle as explained in the Cat SG's Cat Conservation Compendium (Fig. 1; see Breitenmoser et al. 2015).

The conservation status and needs of the jaguar in South America were reviewed by three regional working groups of experts ahead of the workshop and the results presented at the jaguar regional planning meeting that took place on 18–21 November 2019 (see Appendix II for a list of participants).

The status presentations served as information input for drafting the Range-wide Strategy for the Conservation of the jaguar. The draft version of this Strategy was developed in a participatory, multiple step approach according to the "Zielorientierte Projekt Planung" ZOPP (Fig. 2; see Breitenmoser et al. 2015), including the status reviews and analyses of Threats (Table 1) and resulted in the development of a logical framework (LogFrame; Table 2).

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

1. Development of a Vision, which is a wishful perspective for the next 25–50 years, describing the ideal future scenario for the subspecies. It reflects an optimistic view of the future of the jaguar and is meant to be a source of inspiration;
2. Development of a Goal, which is a more concrete intention than the Vision. It is a feasible, realistic and measurable long-term aim (10 years) for the conservation of the jaguar;
3. Performing a Threat Analysis by analysing the Strengths, Weaknesses, Opportunities and Threats (SWOT analysis; Table 1);
4. Development of Objectives based on the Threats and Weaknesses. Objectives support reaching the Goal, directly address important Threats and Drivers, they are impact- and result-oriented, and realistic, achievable, and measurable;
5. Formulation of Results based on the Strengths and Opportunities. Results are the concrete achievements or direct outcomes needed to reach every Objective. Results are the direct outcome of the implementation of a Logical Framework (LogFrame) and should be SMART (Specific, Measurable, Achievable, Relevant and Time-bound);
6. Development of a number of clear and feasible Activities = Actions to achieve each Result, with a defined Actor, Indicator and a Timeline (Table 2). Implementation of Activities/Actions is the ultimate goal of the strategic planning process (Breitenmoser et al. 2015, IUCN – SSC Species Conservation Planning Sub-Committee 2017).

SWOT analysis

Evaluation of Threats faced by the jaguar across its range is crucial for the strategic planning of its conservation. Additionally, however, gaining an understanding of current Strengths, Weaknesses, and Opportunities can strengthen the conservation approach and is critical in order to identify appropriate measures to mitigate Threats and achieve conservation Objectives. Therefore, a SWOT analysis was performed during the workshops, during which the participants discussed Strengths, Weaknesses, Opportunities and Threats within their subjective Workgroup (WG). Subsequently, the outcomes were discussed in the plenary session and ranked in order to determine their relative importance (Table 1).

Weaknesses are shortcomings or gaps which hamper the conservation of jaguars. Based on the discussions, it became clear that poor regulation and law enforcement (both presence and prosecution), as well as

a lack of biological/social science, knowledge and/or information are deemed some of the most important weaknesses (sum scores of 4). These weaknesses were followed by the suboptimal collaboration between institutions/NGOs and limitations to reach decision makers (sum scores of 3; Table 1).

A threat is a direct or indirect factor threatening the conservation of jaguars. Direct killing, whether this was retaliatory killing, out of fear, out of prevention, casual killing or as a result of trade or trafficking was ranked to be an important threat, together with habitat loss, resulting from mining, agriculture, ranching, infrastructure, and fires (sum scores of 4). Habitat loss due to unsustainable logging and urban development was ranked as relatively less important (sum scores of 2), followed by prey base depletion, climate change, civil unrest and direct killing of jaguars for hunting (Table 1). The weaknesses and threats discussed were later utilised in order to formulate Objectives

Strengths are qualities of this group supporting the conservation of jaguars. The strengths deemed most important (sum scores of 4) were those of increasing scientific interest in order to provide advanced knowledge and experience for jaguar conservation, the acceptance of the jaguar as a flagship species, followed by the improved management/awareness of PAs and increased landscape protection, cohesive communities of jaguar experts, conservationists and high levels of commitment, and the resilience of jaguars as a species (sum scores of 2; Table 1).

Opportunities were the present chances that we have to conserve jaguars. The opportunities deemed most relevant (scores of 2) were those of the current momentum, the Post 2020 Global Biodiversity Framework and other conventions, the timing and international attention, the opportunity to have the jaguar serve as a flagship species, the growing trend of (eco)tourism, the increased availability of technology and the increased demand for sustainable and environmentally-friendly products. The other opportunities were cumulatively ranked as 1. Together, these opportunities and strengths were utilised in order to phrase realistic Results and set realistic priorities (Table 1).

The strengths, weaknesses, opportunities, and threats discussed can be divided into eight general themes: (1) knowledge, information, data collection, and distribution; (2) direct killing; (3) monitoring of jaguars; (4) prey depletion; (5) habitat loss and degradation; (6) regulation and law enforcement; (7) cooperation; and (8) awareness and education. These themes were used to guide the development of Objectives, related Results and finally Activities, with their respective Actors, Indicators, and Timelines (Table 2). The four workgroups (Appendix II) each had the task to define 1–3 Objectives for their assigned themes, formulate related SMART Results and Activities, and then add Actors, Indicators and Timelines for each of these Activities throughout the 3rd, 4th and 5th day of the workshop.

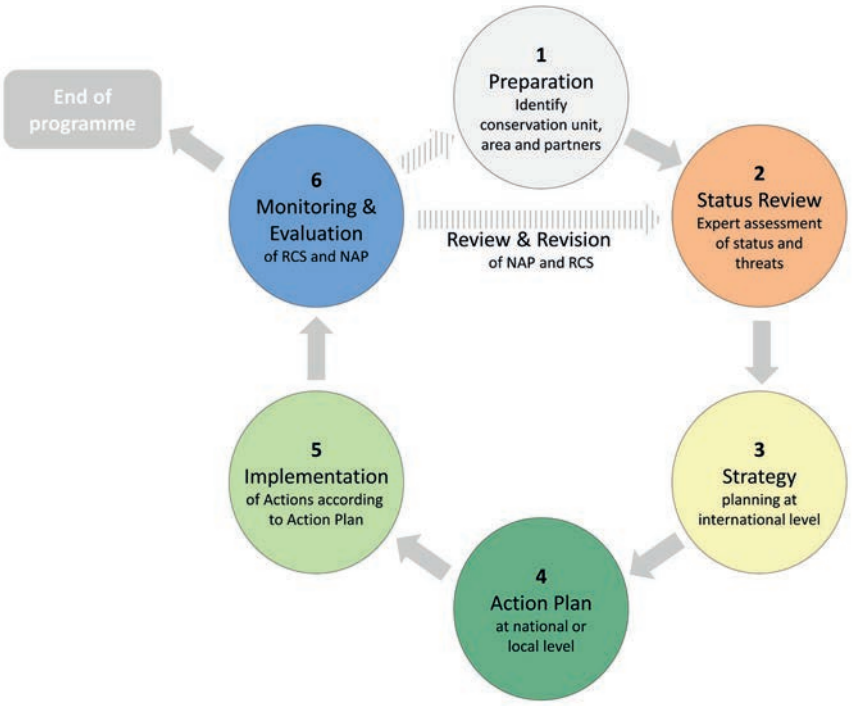

Fig. 1. The Strategic Planning Cycle. The preparatory steps (Points 1 and 2) are important for sensible planning, which is the first step to successful conservation. The actual planning process (done in participatory workshops) is covered by Points 3 and 4. The ultimate goal of the whole proce-dure is the implementation of conservation actions (Point 5), but these will only be successful if properly planned and subsequently monitored and evaluated (Point 6). The purpose of the whole participatory process is not to have a plan but the effective implementation of conserva-tion measures. This circle implies that conservation is an adaptive process (Breitenmoser et al. 2015). RCS stands for Regional Conservation Strategy.

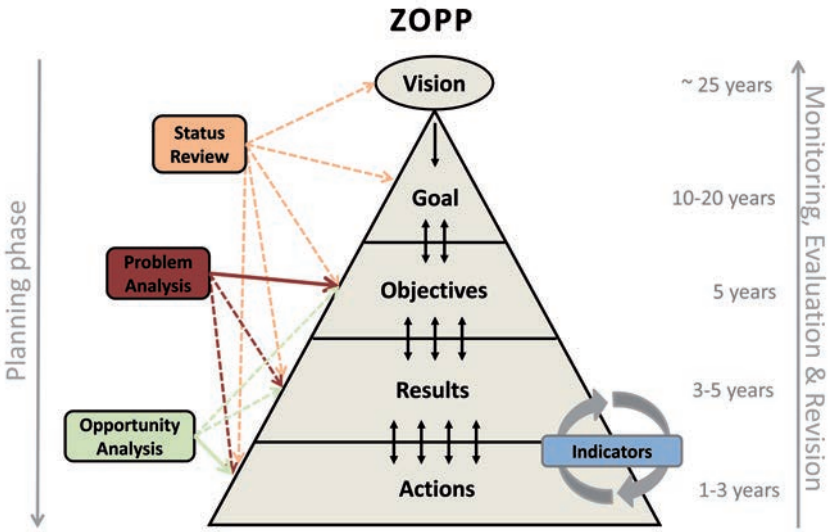

Fig. 2. The ZOPP ("Zielorientierte Projektplanung" goal-oriented project planning) pyramid as a scheme to explain the planning process in a participatory workshop. The ZOPP is an analytical process (Breitenmoser et al. 2015).

Table 1. Overview of the discussed weaknesses, threats, strenghts and opportunities, and their relative importance according to the four WGs, the higher the sum, the more important a respective weakness/threat/strenght/opportunity is deemed. Weaknesses, threats, strenghts and opportunities are ordered according to their ranked importance.

Weaknesses	**WG1**	**WG2**	**WG3**	**WG4**	**Sum**
Poor regulation & law enforcement (presence & prosecution)	X	X	X	X	4
Lack of biological/social science [4] knowledge/information	X	X	X	X	4
Suboptimal collaboration between institutions/NGOs	X		X	X	3
Limitations to reach decision-makers [2]		X	X	X	3
Corruption	X		X		2
Poverty/Lack of alternative/sustainable livelihoods and opportunities for people	X	X			2
Poor land-use planning	X		X		2
Inadequate capacity (knowledge, patrol, PA management)	X		X		2
Political instability/Slow political traction / poor governance / poor will	X		X		2
Lack of education and awareness and misconception of general public		X		X	2
Lack of suited PAs and proper management of PAs, and PADDD		X	X		2
Inadequate resources/investments – limited funding	X				1
Lack of biodiversity mainstreaming into different sectors		X			1
Lack of political will [3, 4]					0
Poor communication / lack of multidisciplinary cooperation					0
Threats					
Direct killing – retaliatory (livestock, dogs)	X	X	X	X	4
Direct killing – trade/trafficking	X	X	X	X	4
Habitat loss – infrastructure (hydro, transport, urbanisation)	X	X	X	X	4
Habitat loss – mining	X	X	X	X	4
Habitat loss – agriculture (palm, soy, …)	X	X	X	X	4
Habitat loss – ranching	X	X	X	X	4
Direct killing – fear/preventative/casual	X	X	X		3
Habitat loss – fire	X		X		2
Habitat loss – unsustainable logging	X		X		2
Habitat loss – urban development			X	X	2
Prey base depletion – sustenance and commercial hunting	X		X		2
Prey base depletion – same causes as above (habitat loss and direct killing)	X				1
Prey base depletion – invasive and feral species			X		1
Climate change		X			1
Civil unrest		X			1
Direct killing – hunting (sustenance/trophy)					0
Strengths					
Increase in scientific research/interest in jaguar range countries	X	X	X	X	4
Charismatic jaguar accepted as a flagship species	X	X	X	X	4
Improved management/awareness of PAs and increased landscape protection		X		X	2
Cohesive community of jaguar experts, conservationists/commitment		X		X	2
Resilience of the jaguar as a species			X	X	2
Increasing collaboration, information exchange between different actors		X			1
Existing legal frameworks protecting jarugaars across most countries		X			1
Private sector awareness in conservation		X			1
Existing conservation planning exercises		X			1
(Increased awareness from) international conventions			X		1
Conservation will			X		1
Cultural value of jaguars			X		1
Opportunities					
Current momentum	X			X	2
Post 2020 Global Biodiversity Framework, Conventions		X	X		2
Timing and international attention (funding and political leverage)			X	X	2
Jaguar as a flagship species, symbol	X			X	2
Growing (eco)tourism	X	X			2
Increased availability of technology	X	X			2
Increased demand for sustainable, environmentally friendly products	X	X			2
Attention of Cat SG		X			1
Carbon trade	X				1
Increasing (urban) public concern about environmental issues		X			1
Exchange of experience and lessons from other species, regions, etc.		X			1
Low human population density across jaguar habitats		X			1
Wide-ranging species			X		1
Indigenous movements to protect traditions/elevated voice of indigenous to protect	X				1
Increased attention to the role of private reserves in conservation		X			1

Regional Conservation Strategy

The ***Vision*** for the jaguar is the following:

A network of healthy jaguar populations coexisting with humans across their native South American habitats.

The ***Goal*** is

By 2035 priority landscapes will have stable jaguar populations and functional connectivity among them based on effective coexistence.

Objectives and Results

To work stepwise towards the Goal and counter the Threats and Drivers, nine Objectives, 30 related Results, and 100 related Activities were formulated within the eight themes described below. See Table 2 for the LogFrame with Objectives, Results and Activities with their respective Actors, Indicators, and Timelines.

Knowledge, information, data collection and distribution concerns the need to improve the understanding and data base on the ecology of the jaguar and the social science aspects (human-dimen-sion, conflicts) associated with its conservation to guide and prioritise effective conservation measures for the species.

Objective 1: **To fill knowledge gaps in jaguar ecology and social science aspects associated with jaguar conservation.**

Result 1.1: Knowledge gaps in jaguar ecology and social science aspects associated with jaguar conservation are identified by 2025.

Result 1.2: Funding is secured for research specifically filling the knowledge gaps identified under Result 1.1 by the end of 2025.

Result 1.3: Identified knowledge gaps, identified by Activity 1.1.4, are 50% resolved by 2028 and 100% resolved by 2033.

Result 1.4: Knowledge on the effect of disease(s) on wild jaguar populations is improved and demonstrated by at least two scientific publications per year by 2033.

Result 1.5: Necropsy manual for jaguar health, and for collection and storing of genetic samples from recently killed jaguars developed and distributed (Activity 1.4.4) by mid-2025.

Direct killing addresses the conflicts between humans and jaguars and how to mitigate those as well as the direct killing of jaguars by humans in retaliation, or for the legal or illegal use and trade; and the lack of law enforcement, political awareness and capacity to tackle these issues.

Objective 2: **To understand and reduce human-caused mortalities of jaguars**

Result 2.1: National protocols for addressing human-carnivore conflict in all South American jaguar range countries have been produced and begun implementation by the end of 2027.

Result 2.2: National/local social marketing campaigns are underway in all South American range countries to change attitudes towards/perceptions/social norms of jaguars by 2026.

Result 2.3: A minimum decrease of 10% in jaguar killing and trafficking though increasingly effective law enforcement, prosecution and other deterrents is documented by 2027; and a minimum decrease of 50% (compared to 2021 levels) by 2033.

Result 2.4: Sale of jaguar parts and products on local markets has been eradicated in South America by 2029.

Result 2.5: International airports in all range countries display information for tourists on jaguars and the illegality of all trade in (products of) jaguars by 2025.

Result 2.6: Social marketing campaigns to discourage use of jaguar parts have been implemented in at least two Asian markets by 2027.

Monitoring of jaguars tackles the lack of knowledge on jaguar population sizes, distribution and trends and the need to develop standardised methodologies and reference sites across its range for the long-term monitoring of the species across its South American range.

Objective 3: **To evaluate spatial and numerical trends in jaguar populations and the efficacy of conservation interventions.**

Result 3.1: Standards for data collection, management and communication to be utilised throughout this Strategy are established by mid-2025.

Result 3.2: An evaluation of existing data for spatial and temporal trends in jaguar distribution and abundance is underway by the beginning of 2026, with the goal of a first scientific publication by 2027.

Result 3.3: Baseline data on jaguar population status for unstudied areas in all South American range countries is published by 2031.

Prey depletion refers to the necessity to ensure an adequate prey species abundance to maintain a healthy jaguar population and satisfy the human needs.

Objective 4: **To ensure adequate prey species abundance for jaguars and humans.**

Result 4.1: Sustainable use of natural resources, jaguar-friendly agricultural production methods, and other forms of natural resources harvest are established to measurably begin ensuring a stable and abundant prey base in jaguar habitat by 2031.

Habitat loss and degradation addresses the need to conserve habitat and prevent habitat loss and degradation by identifying priority jaguar areas at regional and national level including those and corridors into land use plans as well as by efficient management of protected areas.

Objective 5: **To minimise loss, degradation and fragmentation of jaguar habitat.**

Result 5.1: At least five multilateral lending institutions include specific criteria for conserving priority jaguar landscapes in their agricultural, natural resource extraction, and real estate (larger than 10 hectares), loan eligibility requirements by 2026 (see also Jaguar 2030 – Conservation Roadmap for the Americas).

Result 5.2: Regional and national land use plans incorporating priority jaguar landscapes and corridors are adopted by all South American range countries by 2031 (see also Jaguar 2030 – Conservation Roadmap for the Americas).

Result 5.3: Verifiable measures for efficient management of protected jaguar habitat are in use across all South American range countries by 2031.

Result 5.4: In priority jaguar landscapes, production areas (agriculture, ranching, logging/forestry and mining) incorporate best practices compatible with jaguar presence/movement by 2031.

Result 5.5: Infrastructure in priority jaguar landscapes allows jaguar movement and can be demonstrated not to increase mortality of jaguars by 2029.

Result 5.6: All South American jaguar range countries implement fire risk maps, prevention and response protocols by 2031.

Regulation and law enforcement covers the problem of gaps in legislation and law enforcement in regard to the protection of jaguar, prey and their habitat and the shortfalls in resources to tackle these issues.

Objective 6: **To improve regulation and law enforcement regarding jaguars, prey and habitat protection.**

Result 6.1: For all South American countries, national gaps in legislation that apply to jaguar protection are identified by relevant authorities before the end of 2026.

Result 6.2: For all South American range countries, national shortfalls in resources for law enforcement related to jaguar conservation are eliminated by 2028.

Objective 7: **To promote decision making and political will towards jaguar conservation.**

Result 7.1: Natural resource management authorities and national decision-makers in all South American range countries can be demonstrably seen as allies for jaguar conservation by 2026.

Cooperation concerns the need to improve the cooperation across the distribution range of the jaguar in South America by creation of regional and national networks including researchers, institutions, governments, NGOs and local people (see also Jaguar 2030 – Conservation Roadmap for the Americas).

Objective 8: **To unite forces for jaguar conservation.**

Result 8.1: Regional and national networks for research, monitoring, and management of jaguars and their habitats in South America are implemented by 2025.

Result 8.2: Multilateral and bilateral cooperation among governments in South America to improve knowledge, enforcement and joint actions towards jaguar conservation are developed by 2026.

Result 8.3: In all South American range countries, improved management of landscapes, law enforcement and joint actions for jaguar conservation via better intra-government cooperation and communication are developed by 2026 and fully implemented by 2031.

Awareness and education addresses the need to enhance globally, regionally and locally the awareness and education for the species by producing education materials and guidance documents and by promoting the value and cultural significance of the jaguar so that it is recognised as a positive symbol.

Objective 9: **To make jaguars universally recognised as a positive symbol.**

Result 9.1: A continental scale education and awareness project under a common logo "All4Jaguars" (Todos por los jaguares, Allen voor de jaguar, Tudo para jaguares) is launched using nature conservation materials that follow local education standards and featuring jaguars and used in schools across all South American range countries by 2031.

Result 9.2: The jaguar is shown to be one of the most loved South American wildlife species by 2033.

Result 9.3: Presence of jaguars is utilised by all South American range country environment and agriculture agencies as a positive indicator of ecosystem health by 2031 (linked to Results 2.2, 2.6, 3.1, and 5.1–5.5, Activity 7.1.1).

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 timeline, but ideally also selected methods, monitoring and assessing progress, and a budget. To define such details was not possible during the workshop. The simple LogFrame presented below (Table 2) hence will need to be further refined.

Table 2. Activities (three digit numbers) by Objectives and Results. Actor indicates the responsible implementer(s). Indicator signifies the outcome that should have been achieved. Time line is the expected date for finishing or the approximate period for implementing the respective Activity.

Activity	Actor	Indicator	Timeline
Theme. Knowledge, information, data collection and distribution			
Objective 1. To fill knowledge gaps in jaguar ecology and social science aspects associated with jaguar conservation			
Result 1.1. Knowledge gaps in jaguar ecology and social science aspects associated with jaguar conservation are identified by late 2025			
Activity 1.1.1 Working group identifies the major types of scientific data gaps currently present and sets a minimum of three specific, measurable, achievable, relevant and time-bound goals to close the gaps for each type identified	SAJCAT	SAJCAT Working Group established and key contacts in each range country recruited to participate in activities	mid 2024
1.1.2. Design, and distribute to university researchers, non-governmental organisations (NGOs) and government scientists, a digital questionnaire on knowledge gaps in jaguar ecology and social science aspects of jaguar conservation		Questionnaire sent to key contacts in all range countries	September 2024
1.1.3. Achieve a survey return rate of 100% and tabulate survey response data			January 2025
1.1.4. Develop and share document on survey results for revision and final approval to all participants (presented in Cat News)		Report/publication	October 2025
1.2 Funding is secured for research specifically filling the knowledge gaps identified under R.1.1 by the mid of 2025			
1.2.1 Inform and influence donor and NGO awareness on research priorities, as identified in A. 1.1.5, for jaguar ecology and social sciences associated with conservation	SAJCAT, identified group, Cat News editors, IUCN	Gaps specifically included in lines of funding	August 2024
1.2.2 Assemble teams and prepare proposals, including possible consortium	NGOs, researchers, institutions	No fewer than 20 proposals submitted that target identified gaps	November 2024
1.2.3 Using materials produced in A. 1.2.1, and 1.2.2, assemble a detailed list of no fewer than 20 sources of probable funding based on topics identified in 1.1.5, and associating each potential funder with a member of SAJCAT.	SAJCAT	List of sources published in platform (see A. 1.3.1)	December 2024
1.2.4 Formalise a host (e.g. one of the wildlife conservation NGOs) for this strategy and create a multi-institutional conservation fund to address the identified gaps/ priorities	SAJCAT with leading NGOs	Funds available	July 2025
1.3 Identified knowledge gaps, identified by A. 1.1.5, are 50% resolved by 2028 and 100% resolved by 2033			
1.3.1 Create open online jaguar research and conservation platform within IUCN that is moderated by Working Group 1 of the SAJCAT (The platform is to become a source of information on all organisations/researchers/funders, publications, priority research locations and topics, with automated # projects per priority topic)	SAJCAT WG 1, under the auspices of the Cat SG to set up platform with information from NGOs, researchers, institutions, donors	Platform launched	2024

Activity	Actor	Indicator	Timeline
1.3.2 Conduct research and publish on specific topics to fill all knowledge gaps identified by A. 1.1.5.	SAJCAT, key contacts from 1.1.1, NGOs, academic institutions, range country environment agencies	Publications and reports filed with the platform of A. 1.3.1	2025–2033
1.4 Knowledge on the effect of disease(s) on wild jaguar populations is improved and demonstrated by at least two scientific publications per year by 2033			
1.4.1 Create summary of existing information from published and grey literature and formulate research hypotheses	San Diego Zoo, WCS, SAJCAT	White paper published in Cat News and posted to jaguar conservation platform (1.3.1) on existing information and proposed research needs	September 2024
1.4.2 Establish a consortium and develop a plan to evaluate domestic and wild vectors, transmission, and prevalence of pathology in jags, including an evaluation of impacts on populations	San Diego Zoo, WCS, SAJCAT, wildlife health professionals	Research proposals	End of 2025
1.4.3 Obtain funding and execute relevant research/studies according to the plan from 1.4.2 across South American biomes	San Diego Zoo, WCS, SAJCAT, wildlife health professionals, government agencies	Number of publications on impacts of disease on wild jaguar populations	End of 2031 (and ongoing)
1.4.4 Analyse, summarise, publish results of studies, and generate a protocol for long-term monitoring of health in jags (linked to R. 1.5)	Researchers, colleagues in wildlife health	Number of published papers and long-term monitoring	End of 2033
1.5 Necropsy manual for jaguar health, and for collection and storing of genetic samples from recently killed jags developed and distributed (A. 1.4.4) by mid 2025			
1.5.1 Review literature on existing guidance for jaguar health check and collection and storing of genetic samples	San Diego Zoo, WCS, AZA Jaguar Species Survival Plan	White paper published in Cat News, possibly AZA connect, and posted to online jaguar conservation platform	End of 2024
1.5.2 Review and edit white paper and develop necropsy manual	San Diego Zoo, WCS, colleagues	Finalised manual available through Cat SG and posted to online jaguar conservation platform	June 2025
Direct killing			
2. To understand and reduce human-caused mortalities of jags			
2.1 National protocols for addressing human-carnivore conflict in all South American jaguar range countries have been produced and begun implementation by the end of 2027			
2.1.1 For all South American countries, compile, evaluate and tabulate existing protocols, including information on content, origin (e.g. legislation, executive action or agency regulation), implementation, functionality and effectiveness	A coordinator with SAJCAT	Review paper on protocols is published in Cat News	End of 2024
2.1.2 Share existing protocols on the jaguar conservation platform (A. 1.3.1)	SAJCAT members (sharing protocols), Cat SG (uploading)	Protocols available on platform	Time of platform launch
2.1.3 Identify key stakeholders in each range country without a protocol and organise WGs to develop protocols	SAJCAT country representatives	List of stakeholders and their potential roles	End of 2024
2.1.4 Facilitate enhancement of existing protocols and advocate for production and approval of new protocols at appropriate levels in all South American countries	SAJCAT country representatives with identified stakeholders	Approved protocols established in all range countries	Mid 2026

Activity	Actor	Indicator	Timeline
2.1.5 Establish training resources and programs to implement protocols in all South American countries	SAJCAT, NGOs, IUCN, governments	Annual reports recording the number of agents trained and the number of times protocol(s) are applied in response to conflict reports in each country; resources available for conflict response per country	Starts with completion of 2.1.4, and is indefinitely
2.2 National/local social marketing campaigns are underway in all South American range countries to change attitudes towards/perceptions/social norms of jags by 2026			
2.2.1 Share existing initiatives and materials for wildlife awareness campaigns, with emphasis on jags, on platform created under Activity 1.3.1.	SAJCAT group, NGOs, researchers and institutions, IUCN	Materials available through platform (1.3.1)	Time of platform launch
2.2.2. Utilising the survey results document from Activity 1.1.4 and the human-carnivore conflict review paper from Activity 2.1.1, organise a working group of social scientists to identify and prioritise a minimum of ten desired human behaviour changes to be affected at appropriate scales (e.g. individual, local, regional, national)	Social science researchers	Reports/publications identifying priority areas for behavioural change	Beginning of 2025
2.2.3. Facilitate the creation of three international alliances (North-west, North-east, Central-South) to develop and implement behaviour change campaigns using the report output from Activity 2.2.2.	NGOs, governments, researchers, civil society, special interest groups	Number of target audiences and persons reached with campaigns	End of 2025
2.3 Document a minimum decrease of 10% in jaguar killing and trafficking though increasingly effective law enforcement, prosecution and other deterrents by 2027; and a minimum decrease of 50% (compared to 2021 levels) by 2033			
2.3.1 Review, analyse and document existing legal frameworks and enforcement activities for jag conservation across all South American range countries	WCS, Panthera, WWF-FVSA, IFAW	Publication in Cat News & availability on online jag conservation platform (1.3.1)	2024 (with platform launch)
2.3.2 Establish a working group to identify anti-trafficking and anti-poaching training practices and levels for law enforcement and judicial officers in all South American range countries	SAJCAT WG 1		End of 2024
2.3.3 Working group from A. 2.3.2 confirms application of training, resources and field practices against trafficking and poaching in all South American range countrie.			Mid 2025
2.3.4 Develop legal and law-enforcement training resources targeted to reduce jag killing and trafficking and make them available throughout South America	SAJCAT WG1, NGOs, governments, Interpol	Training materials adopted by all range countries	Beginning of 2026
2.3.5 Advocate for budget allocation and contributions for adequate support and implementation of training materials developed in A. 2.3.3.	SAJCAT, NGOs, governments	Amount of funds available for enforcement; # people trained per country, # enforcement incidents	End of 2026
2.3.6 Compare the numbers of jaguar killing and trafficking of 2023 to that documented in 2026 and 2032	SAJCAT WG 1	Report on # jaguar killings and trafficking in 2023 compared to that in 2026 and 2032 available	2033
2.4 Sale of jaguar parts and products on local markets has been eradicated in South America by 2029			
2.4.1 Conduct an informal survey of field scientists, NGOs, journalists and wildlife agency field officers to Identify and compile a list of the main markets, businesses and traders selling illegal wildlife products at national levels in each range country	SAJCAT WG1, Researchers, NGOs, governments, journalists	List of main markets, businesses and illegal traders, and estimates of annual value traded, made available to range country wildlife agencies and judiciaries	End of 2024

Activity	Actor	Indicator	Timeline
2.4.2 . Facilitate the adoption of official action plans by each range country to eliminate trafficking in jaguar parts and products	SAJCAT WG1, Researchers, NGOs, governments, journalists	Action plans adopted by every range country	End of 2025
2.4.3 . National wildlife authorities utilise action plans generated by A. 2.4.2 to confiscate contraband materials of significant actors and successfully prosecute them according to applicable laws	Governments (law enforcement)	# apprehensions, material confiscated and penalties	Start of 2026 (and ongoing)
2.5 International airports in all range countries display information for tourists on jags and the illegality of all trade in (products of) jaguars by 2025			
2.5.1 Design universal displays against South American wildlife trafficking for airports in representative languages (limit wording)	Graphic designer, SAJCAT supervisor, national CITES authorities	Design approved by SAJCAT and national CITES authorities	End of 2024
2.5.2 Design an airline screen announcement per jaguar range country destination with information on products not to buy	Graphic designer, SAJCAT supervisor,	Video approved by SAJCAT	End of 2024
2.5.3 Identify airports, airlines, and actors to install and fund the displays	SAJCAT, national CITES authorities	List of formal agreements with airports and airlines to display for agreed-upon duration	Mid 2025
2.5.4 Produce and distribute displays	Depend on 2.5.2	Number of airports with display	October 2025
2.6 Social marketing campaigns to discourage use of jaguar parts have been implemented in at least two Asian markets by 2027			
2.6.1 Using results and connections with social scientists engaged in achieving R. 1.2 and 1.3, conduct research on the jaguar market and target audience in Asia to evaluate what has already been done to discourage use of jaguar parts	SAJCAT WG1, social scientists from 1.2 and 1.3	Report on markets and audiences produced	End of 2024
2.6.2 . In collaboration with Asian counterparts who can advise on platform, language, design and cultural values, design social marketing campaigns to discourage use of jaguar parts	Social marketing group under supervisions of SAJCAT and Asian counterparts, WildAid, IFAW	Social marketing product	End of 2025
2.6.3 Assess the effectiveness of the campaign		Number of platforms and locations where campaign is launched	Beginning of 2027
2.6.4 Adapt and renew (or discontinue) the campaign	SAJCAT, Asian counterparts, social marketing group	Campaign updated or discontinued	Mid 2027
Monitoring jaguars			
3. To evaluate spatial and numerical trends in jaguar populations and the efficacy of conservation interventions			
3.1 Standards for data collection, management and communication to be utilised throughout this Strategy are established by mid-2025			
3.1.1 Develop standardised methods for data collection so that results can be integrated and compared with each other across the jags' range (interviews, camera trapping, disease, etc.)	SAJCAT, facilitated by WG1	Methods developed, results integrated and compared	Mid 2025
3.2 An evaluation of existing data for spatial and temporal trends in jaguar distribution and abundance is underway by the beginning of 2026, with the goal of a first scientific publication by 2027			
3.2.1 Make longitudinal estimations of jaguar population numbers and distribution in all range countries/important areas (Jaguar Conservation Units JCUs)	SAJCAT, Academic institutions, NGOs		October 2024
3.2.2 Elaborate standardised methodology for monitoring of distribution and population numbers/trends/densities	SAJCAT coordinated by M. Tobler	Manual produced as appendix to peer-reviewed publication	Beginning of 2025
3.2.3 Select and establish long-term monitoring sites across the jaguar range, representing all significant biomes and geographic regions, which will utilise the methodology published in Activity 3.2.2 for a minimum of five years	SAJCAT, researchers, NGOs, governments	Lists of sites with confirmed and funded projects	Mid 2025

Activity	Actor	Indicator	Timeline
3.2.4 Implement standardised methodology, as elaborated under A. 3.2.2. at all selected long-term monitoring sites (as defined under A. 3.2.3)	Researchers across jaguar range with SAJCAT WG1 monitoring and reporting progress to the Cat SG	Semi-annual notes published in Cat News of sites with established monitoring programmes	Beginning of 2027
3.2.5 Quantify conservation interventions by category, actors and financial investments. Associate conservation interventions to five-year population trend investigations undertaken in A. 3.2.4.	Researchers, governments, Paviolo et al.	Review of publications on impacts of interventions on jaguar populations	2031
3.3 Baseline data on jaguar population status for unstudied areas in all South American range countries is published by 2031.			
3.3.1 Identify areas lacking data on jaguar population presence, distribution, abundance and/or density published in scientific literature since 2000.	SAJCAT, coordinated by WG1	List of areas published in Cat News	End of 2024
3.3.2 . As of 2024, recruit projects to obtain presence data, estimates of population size and distribution from areas lacking information, as identified by A. 3.2.2, following standardised methods as defined under A. 3.1.1., and with the goal of initiating at least two studies per year	Researchers, NGOs, facilitated by SAJCAT	# publications, # sites researched	2025–2031
Prey depletion			
4. To ensure adequate prey species abundance for jaguars and humans			
4.1 Sustainable use of natural resources, jaguar-friendly agricultural production methods, and other forms of natural resources harvest are established to measurably begin ensuring a stable and abundant prey base in jaguar habitat by 2031.			
4.1.1 Develop standardised methods for data collection so that results can be integrated and compared with each other across the jag's range (interviews, camera trapping, disease, etc.)	Governments, NGOs, academia, research institutes	Number of jaguar habitats assessed	2026 (and ongoing)
4.1.2 Establish monitoring programmes for population trends of prey species (linked to Objective 3)		Number of monitoring programs established.	2027
4.1.3 Incorporate prey species into natural resource management frameworks (e.g. timber, Acaí, Brazil nuts, rubber, REDD+).	Private sector, producers, Governments, NGOs, academia, research institutes, local communities	Number of management frameworks, conservation agreements, and financial tools that include prey species as indicators.	2029
4.1.4 Develop and implement national or community-level management plans for wildlife species harvest in jaguar habitats	Government, NGOs, academia, research institutes, local communities	Number of management plans.	2029
4.1.5 Create and promote land-use practices compatible with the maintenance of abundant prey species	Governments, NGOs, academia, research institutes, private sector, engineering companies, construction companies, financial institutions	Number of systems developed	2029
4.1.6 Develop and implement innovative financial schemes towards maintaining prey species diversity and abundance	Financial companies, private sector, governments, development banks	Number of innovative schemes, amount of finances	2031

Activity	Actor	Indicator	Timeline
Habitat loss and degradation			
5. To minimise loss, degradation and fragmentation of jaguar habitat			
5.1 At least five multilateral lending institutions include specific criteria for conserving priority jaguar landscapes in their agricultural, natural resource extraction, and real estate (larger than 10 hectares), loan eligibility requirements by 2026 (see also Jaguar 2030 – Conservation Roadmap for the Americas)			
5.1.1 Develop guidelines for desired conservation outcomes and maps that identify priority jaguar areas in each country, at regional level	SAJCAT, facilitated by WG2; BINGOs (Big International NGOs), other NGOs, other specialists (multidisciplinary)	Criteria and maps available for South America through the Cat SG.	2025
5.1.2 Develop a communication and engagement strategy to approach the institutions	IUCN SSC CPSG, BINGOs	Communication and engagement strategy available	2025
5.1.3 Recruit and assist at least five major lending institutions in incorporating the criteria defined under A. 5.1.1 into their loan eligibility requirements	SAJCAT, IUCN, BINGOs, Lending Institutions	Number of institutions that have incorporated jaguar criteria into their requirements	2026
5.2 Regional and national land use plans incorporating priority jaguar landscapes and corridors are adopted by all South American range countries by 2031 (see also Jaguar 2030 – Conservation Roadmap for the Americas)			
5.2.1 Develop jaguar conservation criteria for land use and maps that identify priority jaguar landscapes at national level	SAJCAT; BINGOs, other NGOs, other specialists (multidisciplinary), Jaguar 2030 Roadmap Coordination Committee	Criteria and maps available for all countries	2025
5.2.2 Perform gap analysis of protected areas for jags throughout South America at national level	SAJCAT; Academia, National Governments, BINGOs, other NGOS	Gap analysis produced and published in scientific literature, including tiered recommendations for establishing new protected areas	2026
5.2.3 Develop a communication and engagement strategy to approach the national authorities to promote priority jaguar landscapes	SAJCAT, IUCN SSC CPSG, BINGOs	Communication and engagement strategies produced	2027
5.2.4 Utilising the published gap analysis produced in A. 5.2.2, and the strategy prepared in A. 5.2.3, meet before the end of 2027 with appropriate agencies in each range country to promote the creation of new Protected Areas where needed	SAJCAT, National Governments, IUCN Global programme on Protected Area, World Commission of Protected Areas	# new protected areas	2028
5.2.5 Utilising all the materials produced and relationships established in the activities under Results 5.1 and 5.2, recruit relevant stakeholders to support and participate with authorities in developing zoning and management plans that strengthen implementation of priority jaguar landscapes and corridors in all South American range countries	SAJCAT, IUCN, BINGOs, and other NGOs, Governments at different levels	# zoning and management plans that consider jaguar conservation	2030

Activity	Actor	Indicator	Timeline
5.2.6 Others and actors engaged in A. 5.2.1–5.2.5, assist authorities in developing incentives and public policies that promote jaguar conservation and promote positive circumstances for coexistence with humans	SAJCAT, IUCN, BINGOS, and other NGOs, Governments at different levels, multidisciplinary specialists	# incentives promoting jaguar conservation, extent of area covered by jaguar conservation incentives, # countries that have public policies aligned with jaguar conservation	2031
5.3 Verifiable measures for efficient management of protected jaguar habitat are in use across all South American range countries by 2031.			
5.3.1 Develop standard indicators of and evaluate the management status of key protected areas, as identified in maps produced under A. 5.2.1, to identify successes, needs and gap.	SAJCAT facilitated by WG2, BINGOs, and other NGOs, National Governments, IUCN Global programme on Protected Area, World Commission of Protected Areas	# protected areas that have undergone assessment	2026
5.3.2 Utilising assessments conducted in Activity 5.3.1, acknowledge high-performing key protected areas, if possible, using recognised certification schemes (e.g. Green List, Conservation Assured / Jaguar Standards) and improve management of others using certification as incentive	National Governments, SAJCAT, BINGOs and other NGOs	# of protected areas that are under the Green List and/or other certification schemes	2028
5.3.3 In conjunction with R. 3.2, conduct long-term jaguar population monitoring in key protected areas	SAJCAT, Researchers across jaguar range with SAJCAT WG1 monitoring and reporting progress to the Cat SG, National Governments	# protected areas with long-term jaguar population monitoring jaguar population estimates	2029
5.4 In priority jaguar landscapes, production areas (agriculture, ranching, logging/forestry and mining) incorporate best practices compatible with jaguar presence/movement by 2031			
5.4.1 Develop best-practice guidelines for production activities compatible with jaguar presence/movement, specifically considering and including outputs from A. 5.1.1, 5.2.1, 5.2.5, and 5.2.6.	SAJCAT, other jaguar specialists, multidisciplinary specialists, government and other sectors (production and other)	Guidelines for different production activities designed	2026
5.4.2 Recruit stakeholders from all facets of Objective 5 to collaborate with authorities in all South American range countries to develop public policies that are aligned with priority jaguar landscapes, particularly including outputs from A. 5.3.1 and 5.4.1.	SAJCAT, National Governments, BINGOs	# countries with public policies aligned for jaguar conservation, changes in jaguar habitat extension	2029
5.4.3 . Include jaguar presence/abundance as a criterion to provide conservation-related certifications such as FSC, WHC, among others.	SAJCAT, Certification agencies, BINGOs	# international certifications that include jaguar abundance as a criterion	2031

Activity	Actor	Indicator	Timeline
5.5 Infrastructure in priority jaguar landscapes allows jaguar movement and can be demonstrated not to increase mortality of jags by 2029.			
5.5.1 Identify critical corridors for jaguar across their South American range, including data and analysis produced by A. 3.1.2, 3.1.3, 5.1.3 and 5.3.1, and additional published information as available	SAJCAT, other jaguar specialists, specialists in road ecology	Map of critical corridors	2026
5.5.2 Recruit all South American range countries to develop and adopt guidelines for infrastructure planning and design that facilitate jaguar movement and dispersal across its range, utilising outputs from A. 5.4.1 and 5.5.1	SAJCAT facilitated by WG2, other jaguar specialists, specialists in road ecology	Guidelines produced for each country	2027
5.5.3 Advocate and facilitate cross-agency implementation of guidelines for infrastructure planning and design that facilitate jaguar movement and dispersal in all South American range countries	National Governments (Transport and infrastructure Ministries), SAJCAT coordinated by WG2	Number of infrastructures built under guidelines recommendations	2028
5.6 All South American jaguar range countries implement fire risk maps, prevention and response protocols by 2031.			
5.6.1 Review and analyse the existing fire risk maps, prevention and response protocols, with particular reference to priority jaguar landscapes	SAJCAT range country representatives, coordinated by WG2	Results tabulated and posted to online jaguar conservation platform (1.3.1)	2025
5.6.2 Advocate for South American range country governments to develop and/or refine fire risk maps, prevention and response protocols.	Governments, NGOs	Fire risk maps, and prevention and response protocols available	2028
Regulations and law enforcement			
6. To improve regulation and law enforcement regarding jags, prey and habitat protection			
6.1 For all South American countries, national gaps in legislation that apply to jaguar protection are identified and addressed by relevant authorities before the end of 2026.			
6.1.1 Coordinated by Working Group 2, all SAJCAT national representatives provide documentation to identify national gaps in legislation that applies to jaguar, prey and habitat protection (linked to A. 2.3.1.)	SAJCAT coordinated by WG2, National Governments and legal consultants	Report on identified national gaps per range country is available.	2024
6.2 For all South American range countries, national shortfalls in resources for law enforcement related to jaguar conservation are eliminated by 2028			
6.2.1 Convene a workshop to develop and implement tools which national authorities in all South American jaguar range countries use to assess the shortfalls in wildlife and environmental law	National Governments, United Nations Office on Drugs and Crime, IUCN SSC SAJCAT, BINGOs and other NGOs	Workshop took place and tools to assess shortfalls have been developed and are implemented.	2025
6.2.2 Using outputs from A. 6.2.1, set baseline targets, propose desired annual percentage increases and begin working to secure funds for enhanced law enforcement (linked to A. 2.3.3.). Produce an annual progress report to be posted to the online jaguar conservation platform (A. 1.3.1)	National Governments, United Nations Office on Drugs and Crime, SAJCAT coordinated by WG2, BINGOs and other NGOs, multilateral institutions	Report on targets is available	2026 (ongoing)

Activity	Actor	Indicator	Timeline
6.2.3 Using outputs from activities in O. 5 and 6, identify and collaborate with stakeholders to assemble informational resource kits to support and facilitate training and provide resources needed to address the identified shortfalls (linked to A. 2.3.2.). Post resource kits to online jaguar conservation platform as well as arrange stakeholder meetings to engage authorities in each jaguar range country	National Governments, United Nations Office on Drugs and Crime, SAJCAT, BINGOs and other NGOs	Amount and quality of resources allocated to law enforcement at each country	2026 (ongoing)
7. To promote decision making and political will towards jaguar conservation			
7.1 Natural Resource Management NRM authorities and national decision-makers in all South American range countries can be demonstrably seen as allies for jaguar conservation by 2026			
7.1.1 Design a communication campaign to improve the understanding of jaguar conservation (linked to Activity 2.3.2), specifically including all topics, challenges and opportunities outlined in Objectives 1–6	SAJCAT coordinated by WG2, BINGOs and other NGOs	Report on communication campaign is available	2024
7.1.2 Compile an annual report of actions taken by NRM authorities and national decision-makers, and results obtained, under Objectives 1–5 to be included with materials supplied to stakeholders for all meetings and workshops associated with this plan. Post the annual reports on the online jaguar conservation platform (Activity 1.3.1), as well	SAJCAT-coordinated by WG2, national governments, BINGOs and other NGOs	# authorities acknowledging and participate in jaguar conservation in each country	2026 (ongoing)
Cooperation			
8. To unite forces for jaguar conservation			
8.1 Regional and national networks for research, monitoring, and management of jaguars and their habitats in South America are implemented by 2025.			
8.1.1 Form and maintain at least one national network per country and one continental South American network composed of governments, NGOs, research institutes and academia to establish and use strategic frameworks of communication and collaboration for jaguar conservation	SAJCAT facilitated by WG3, governments, NGOs, research institutes and academia	# networks per country and continent wide; # strategic frameworks; # network groups organised to conduct activities under O. 1–6	End of 2024
8.1.2 Strengthen and promote the role of networks at country, regional and continental levels of jaguar conservation	Governments, NGOs, research institutes and academia	Networks involved in jaguar conservation decision making; Comparison of the number of national and regional interventions (action plans, database, studies, management plans) proposed, specifically including Objectives 1–6, versus those undertaken	End of 2025 (ongoing)
8.2 Multilateral and bilateral cooperation among governments in South America to improve knowledge, enforcement and joint actions towards jaguar conservation are developed by 2026.			
8.2.1 In partnership with the Jaguar 2030 Roadmap, establish a multi-national stakeholder working group to develop a template and utilise components of this strategy to advocate for the development/updating of jaguar national action plans for all South American range countries	SAJCAT coordinated by WG3, Governments, universities and NGOs	Template completed; Number of meetings held with legislators and agencies in range countries; number of countries with updated action plans	Mid 2024

Activity	Actor	Indicator	Timeline
8.2.2 Engage all South American jaguar range country governments in multilateral and bilateral initiatives, specifically incorporating components of this strategy, toward improving knowledge and enforcement for jaguar conservation	Governments (national level), secretariat of MEA's (Multilateral Environmental Agreements)	Participations of the governments in cooperative ventures; # engagement events; Established channels and identified topics agreed upon to achieve cooperation; # agreements signed; Reported number of attended committee meetings and signed agreements	2025
8.2.3 SAJCAT national representatives develop, submit and follow up on proposals to Colombia, Guyana, Suriname and Venezuela to join the United Nations Convention on Migratory Species	Governments (national level)	Number of new members to CMS	Mid 2024
8.2.4 Include the Jaguar 2030 Roadmap in all advocacy materials, communications plans and informational outputs of this strategy with the goal of all South American range countries adopting it by the end of 2025	All participants in this strategy, Governments (national level)	Number of countries adopting Jaguar Roadmap 2030	2026
8.3 In all South American range countries, improved management of landscapes, law enforcement and joint actions for jaguar conservation via better intra-government cooperation and communication are developed by 2026 and fully implemented by 2031			
8.3.1 For each South American jaguar range country, through direct connection and activating networks established through A. 8.1.1, identify and engage government ministries, agencies, divisions and departments to include in discussions of landscapes, law enforcement and jaguar conservation issues for the purposes of implementing the activities in this strategy	SAJCAT-coordinated by WG3, national authorities, ministries, NGOs, academia	Evidence of meetings, documents, reports, visits demonstrating continuity in ongoing participation	End of 2025
8.3.1 Incorporate results of the discussions (A. 8.3.1) among different levels of government ministries and associated agencies into management practices, law enforcement and jaguar conservation actions with particular emphasis on documenting and achieving Objectives 4–6	SAJCAT, networks established in Activity 8.1.1	Results of discussions incorporated in into management practices; refined management practices based on discussions; SAJCAT assessments of Activities from Objectives 5, 6 and 7 demonstrate multi-agency participation	End of 2026
Awareness and education			
9. To make jaguars universally recognised as a positive symbol			
9.1 A continental scale education and awareness project under a common logo "All4Jaguars" ("Todos por los jaguars", "Allen voor de jaguar", "Tudo para jaguares)) is launched using nature conservation materials that follow local education standards and featuring jags and used in schools across all South American range countries by 2031			
9.1.1 Collect science education standard documents from each range country and identify their objectives and goals into which content on jaguar conservation can readily be included	AZA Jaguar SSP/ SAFE, NGOs, education institutions	Number of collected science education standard documents from each range country	End of 2024

Activity	Actor	Indicator	Timeline
9.1.2 . Conduct an inventory of existing jaguar conservation educational content from zoos, NGOs and government agencies across South American range countries, AZA, EAZA and ALPZA	AZA Jaguar SSP/ SAFE, NGOs, education institutions	Number of collected existing jaguar conservation materials from AZA Jaguar SSP/ SAFE zoos, AZAB, Suriname Ministry of Education, WCS, WWF, NGOs and govt.	End of 2025
9.1.3 Construct a conceptual framework for jaguar conservation education and merge and/or produce additional content for different grade levels as necessary based on the identified gaps and convergence between existing materials and education standards collected in Activities 9.1.1 and 9.1.2 and referring to Objectives 1–5	AZA Jaguar SSP/ SAFE, NGOs, education institutions	Gaps identified, number of adapted or produced materials and information	Mid 2026
9.1.4 Materials approval/distribution by range country educators and/or government agencies in all South American jaguar range countries	AZA Jaguar SSP/ SAFE, NGOs, education institutions	Connections between SSP/SAFE zoo educators and volunteer teacher coordinators established in each country, and jaguar conservation activities/materials being used in 10 schools in each South American range country (some attention must be paid to urban vs rural schools)	2028
9.2 The jaguar is shown to be one of the most loved South American wildlife species by 2033.			
9.2.1 Carry out public service announcements about the value of protecting jaguars at least one by television/radio station in each country	SAJCAT-coordinated by WG4, Somebody with a TV Network connection, WildAid	Ratings data	2026
9.2.2 . Launch an "Yo <3 Jaguares" (Dutch (Ik <3 Jaguars), English (I <3 Jaguars) and Portuguese (Eu <3 Jaguares) social media campaign that receives 500,000 likes by mid-2024	Local NGO Facebook campaigns, with guidance and contributions from SAJCAT coordinated by WG4	Half a million likes	2025 (onwards)
9.2.3 Celebrate official jaguar day in all South American range countries	SAJCAT coordinated by WG4, local and international NGOs, range country wildlife agencies	Events/activities occurring in all range countries	At least half in 2027, 100% beginning in 2033
9.2.4 . Conduct before/after polls in 2023 and 2032 to establish the change in popularity over the decade	Diego Zoo Wildlife Alliance Conservation Science Community Engagement team and others	Published results	2024 and 2033
9.3 Presence of jaguars is utilised by all South American range country environment and agriculture agencies as a positive indicator of ecosystem health by 2031 (linked to Results 2.2, 2.6, 3.1, and 5.1–5.5, Activity 7.1.1).			
9.3.1 Identify methodology for environmental impact mitigation in each country	Each country participant of this workshop (SAJCAT)-coordinated by WG4	List compiled of regulations about environmental impact assessments/mitigation for all range countries	End of 2025

Activity	Actor	Indicator	Timeline
9.3.2 For each South American range country, compile and summarise scientific literature describing the jag's role in relevant ecosystems.	All workshop participants	Summary prepared	End of 2025
9.3.2 Using outputs of Result 9.1 and 9.2, and from Activity 9.3.1 and 9.3.2, prepare materials and language for inclusion in advocacy and networking activities in Objective 2–7, demonstrating that the presence of jaguar is a positive indicator of ecosystem health. Seek to incorporate the language into environmental impact regulations in all South American range countries	Workshop participants, coordinated by WG4, NGOs and government agencies	Materials incorporated into activities under O. 2–7, changes in the national environmental regulations of all range countries in favour of jags.	Beginning of 2027 (ongoing)

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Appendix I - Glossary

Term	Explanation
BINGO	Jargon term for Big International Non-Governmental Organisation. In the context of this plan, a BINGO is arbitrarily identified as an NGO with a total annual operating budget in excess of USD $100,000,000.
Cat SG	IUCN Species Survival Commission Cat Specialist Group. See http://www.catsg.org/
CPSG	IUCN Species Survival Commission Conservation Planning Specialist Group. See https://cpsg.org/
Green List	IUCN Green List of Protected and Conserved Areas. See www.https://www.iucn.org/theme/protected-areas/our-work/iucn-green-list-protected-and-conserved-areas
IUCN	International Union for the Conservation of Nature. See https://www.iucn.org/
JCU	Jaguar Conservation Unit, as defined in Zeller & Rabinowitz (2013). Using Geo-graphic Information Systems for Range-Wide Species Conservation Planning. Geographic Information Systems.
NGO	Non-governmental Organisation. NGOs are often presumed to have not-for-profit tax status and to focus on non-commercial missions and objectives. In the context of this plan, NGOs will usually have clearly defined conservation, education philanthropic and/or scientific missions
NRM	Natural Resource Management
SAJCAT	South American Jaguar Conservation Action Team

Appendix II - List of participants

SAJCAT: South American Jaguar Conservation Action Team. This list identifies all participants in the initial planning workshop, which took place at the San Diego Zoo Wildlife Alliance (formerly San Diego Zoo Global) Beckman Center for Conservation Research, November 18–22, 2019, and their contribution to the Working Groups (WG). Participants are listed based on their respective WG and then alphabetically based on their last name.

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