

One Health in Action: Responsible Hunting and Invasive Species Control in El Palmar National Park, Argentina

Issue Overview and One Health Context

Argentina faces growing challenges from a One Health perspective, particularly in protected areas where interactions among wildlife, livestock and humans are intensifying. El Palmar National Park, Entre Ríos Province, exemplifies this complexity. The park harbors invasive species such as wild boar (*Sus scrofa*) and axis deer (*Axis axis*), which threaten native biodiversity, ecosystems and public health. These animals act as reservoirs of zoonotic diseases including brucellosis, tuberculosis, leptospirosis, and trichinellosis, transmissible to livestock and humans. Their increasing presence,

combined with unregulated hunting and limited sanitary controls, heightens outbreak risk. In 2007, wild boars culled in the park were found infected with *Trichinella spiralis* despite the province's historical trichinellosis-free status (Cohen, 2010). Since 2016, researchers from National University of Central Buenos Aires (UNICEN) and University of Buenos Aires (UBA), together with the National Parks Administration, have implemented monitoring and promoted safer hunting practices. El Palmar has thus become a reference case for applying the One Health approach to invasive wildlife management.



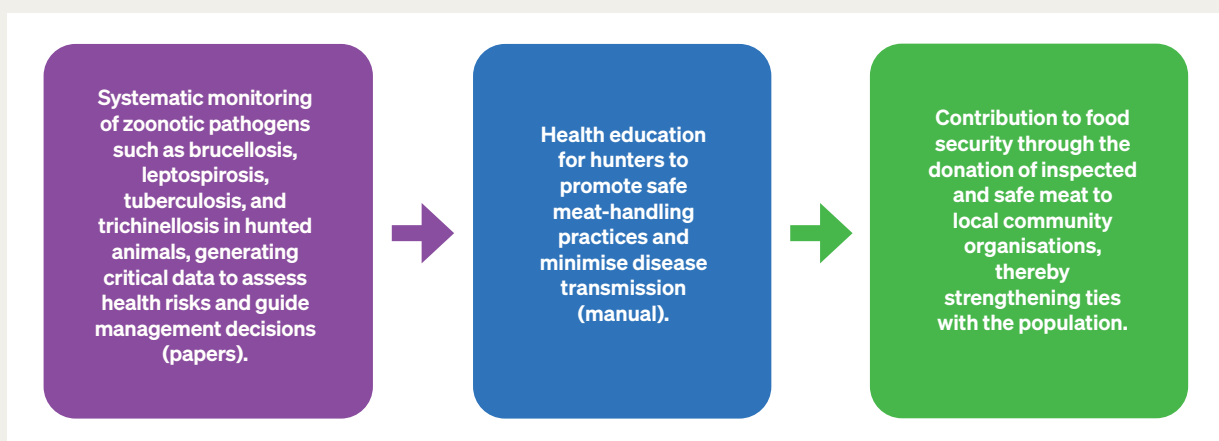
Figure 1. Yatay palm grove (*Butia yatay*) and park roads in El Palmar National Park (Entre Ríos, Argentina), an emblematic ecosystem of the region.

Solution and Mitigation Strategies

To address the interrelated challenges of invasive species proliferation, zoonotic disease risk and environmental contamination in El Palmar National Park, the Invasive Exotic Mammal Control Plan (PC-MEI Plan) was developed. This plan applies One Health principles by integrating ecological, health and community dimensions. It was implemented collaboratively by the park administration, a local

hunters' association, and, initially, researchers from UNICEN, later continuing and consolidating under the leadership of the Faculty of Veterinary Sciences at UBA. Its central objective is to reduce populations of wild boar and axis deer, while simultaneously promoting public, animal and environmental health.

Since its inception in 2016, the plan has developed interdisciplinary efforts that include:



The hunting method used under the PCMEI Plan relies on baited stands strategically distributed across the park. This activity requires coordination, training and standardised protocols. Detailed field records and sanitary evaluations are compiled to guide adaptive management and public health responses.

A key component is the active involvement of park staff, including rangers and apprentices, who work closely with university teams. Beyond conducting sanitary inspections, the Faculty of Veterinary Sciences at UBA also develops extension and training activities, engaging undergraduate and graduate students, generating thesis projects. They are also training rangers and hunters in sample collection for zoonotic disease diagnosis and in the identification of pathological wounds. These capacities strengthen local autonomy and improve responses to health emergencies.

In addition, periodic talks and participatory workshops are held to maintain information flow among all stakeholders, reinforce interdisciplinary collaboration, identify weaknesses in the plan, and propose improvements. This ongoing work has established a framework of trust and shared responsibility among park authorities, the hunting community and academia.

Beyond its direct benefits to public health, the PCMEI Plan contributes to biodiversity restoration and the protection of native species by reducing the pressure exerted by invasive exotic mammals on local ecosystems. The accumulated experience and the participatory structure of the plan make it a replicable model for the sustainable control of invasive species, integrating conservation, health and community participation under the One Health approach.

“Participating in the control programme changed the way we hunt. Now we know how to handle the meat safely, avoid health risks for our families, and also help protect native species. For us, it is not only hunting anymore, it is part of a bigger responsibility.”

Member of the Colon Hunters Association,
El Palmar

Stakeholders Involved

The project is led by El Palmar National Park staff and the Faculty of Veterinary Sciences of UBA. Park rangers, hunters and community groups played key roles in hunting, meat processing and distribution. National Service for Health and Agri-Food Quality (SENASA) monitors diseases relevant to animal production and public health, conducts diagnostics of exotic and endemic pathogens, and reports notifiable

diseases to the World Organisation for Animal Health (WOAH). Collaboration has also begun with the Ministry of Health to include wildlife tuberculosis cases in the national notification system. Actions are coordinated through participatory planning and shared protocols, with community engagement central to long-term ecological and health goals.



Figure 2. Visitors walking along the trails of El Palmar National Park, within a yatay palm grove (*Butia yatay*) landscape, Entre Ríos, Argentina.

Impact and Outcomes

The initiative has generated highly valuable health and ecological data, including the first local records of zoonotic pathogens in wild boar and axis deer. Between 2016 and 2022, 320 wild boars were analysed, and each hunting event involved an average of 20–30 hunters strategically distributed across different posts within the park. Scientific monitoring has strengthened disease surveillance in the absence of a national wildlife health system, helping to close a critical gap.

Outreach activities have enhanced hunters' awareness and increased public knowledge about health risks and safe practices. Community health has also benefited from the distribution of inspected meat from hunted animals to local institutions.

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Receiving inspected wild boar meat has been a great support for our community kitchen. We feel safer knowing that it comes from a programme that controls diseases and also helps the environment.

”

Cafeteria staff at Manuel Belgrano School, Colón, Entre Ríos

Initial results demonstrate that this project has addressed an essential gap through scientific monitoring and community collaboration. These achievements contribute simultaneously to public health, biodiversity conservation and responsible wildlife management under a One Health framework.

Discussions are currently underway to expand this model to other national parks and protected areas in Argentina.



Figure 3. Native wildlife in a wetland area of El Palmar National Park (Entre Ríos, Argentina): capybaras (*Hydrochoerus hydrochaeris*).

Implementation Challenges

The main challenges included the absence of national regulations for the integrated management of hunted meat and by-products, as well as limited funding for long-term health and ecological monitoring. Coordination among conservation, public health and hunting sectors required continuous dialogue and the building of trust. Additionally, the lack of a standardised wildlife health surveillance system made pathogen detection and monitoring more difficult.

These barriers were addressed through stakeholder training, participatory governance, and field-based demonstrations of safer and more sustainable practices. Through collaboration with academic institutions and the implementation of field protocols, the initiative established a *de facto* wildlife monitoring system, compensating for the absence of national frameworks. The development of educational tools and partnerships with institutions such as SENASA further reinforced the project's credibility and ensured its long-term sustainability.

Lessons Learnt

This case highlights several key lessons for applying the One Health approach in protected areas. Early integration of ecological, health, and social dimensions is fundamental to ensuring long-term success.

Building trust with local stakeholders, particularly hunters, proved crucial for implementing disease prevention measures and promoting sustainable hunting. The combination of public education, scientific research and policy dialogue created a solid foundation for cross-sectoral collaboration. Practical actions, such as safe meat handling and hunting waste management, are essential practices with both health and environmental benefits.

For future efforts, a national regulatory framework and dedicated funding mechanisms are required to scale up, sustain and strengthen implementation.

The El Palmar experience demonstrates that community-based conservation linked to public health goals

can serve as a replicable model for other national parks in Argentina facing similar challenges from invasive species and zoonotic diseases. Institutional support and strong national frameworks are essential to expand impact.

“The One Health approach gave us tools to work together with universities and the community. Today, rangers are not only controlling exotic species but also contributing to public health and conservation. This cooperation has strengthened our daily work in the park.”

Cecilia Moyano, Park Ranger of the El Palmar Park Ranger

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Relevance to the One Health Joint Plan of Action (OH JPA)

This case study provides a concrete example of how the OH JPA can be effectively operationalised at the national and local level. The integrated management of invasive species and associated zoonotic diseases in El Palmar National Park, Argentina, illustrates how policy and governance (Pathway 1), multisectoral collaboration and integration (Pathway 2) and the generation of scientific evidence (Pathway 3) contribute to the practical implementation of the One Health approach. The initiative also advances Action Tracks 2, 3, 4 and 6 of the OH JPA by focusing

on reducing risks from zoonotic threats, controlling endemic diseases, strengthening food safety practices and integrating environmental health into conservation strategies.

By aligning invasive species control, disease surveillance, academic research and community engagement across the human, animal and environmental sectors, this case underscores the transformative value of One Health in strengthening local capacities, protecting biodiversity and enhancing health security in protected areas.

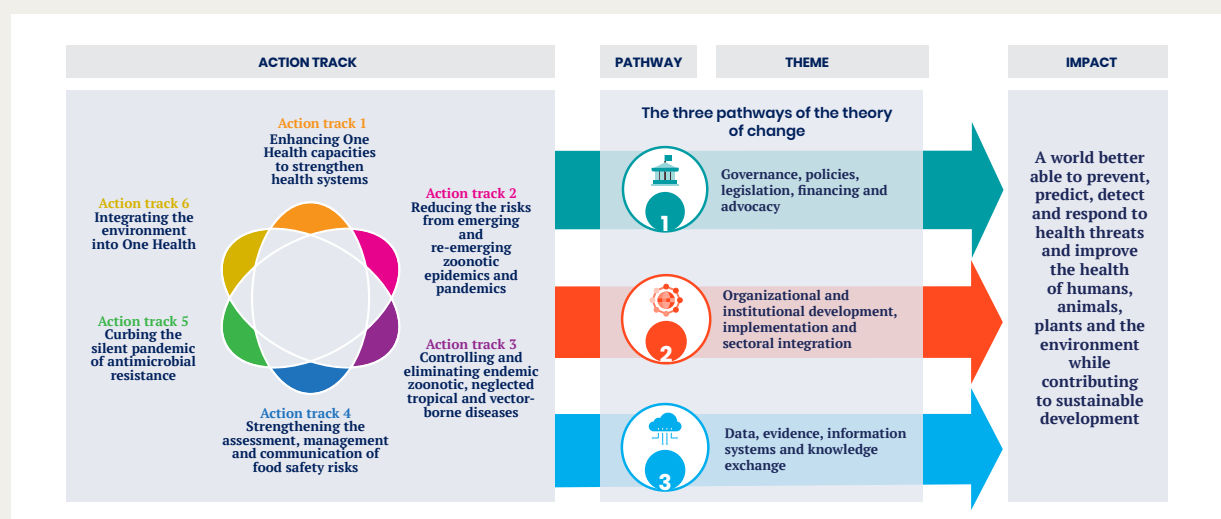


Figure 4. Pathways of Change and Action Tracks of the One Health Joint Plan of Action (OH JPA)

Resources

1. Administración de Parques Nacionales. Resolución 154/2005: Control de mamíferos exóticos invasores - El Palmar – aprobación. Buenos Aires: Administración de Parques Nacionales; 2005.
2. Tammone A, Estein S, Uhart M, Condorí E, Barandiaran S, Riva E, et al. Prevención de zoonosis: manipulación responsable de piezas de caza en el Parque Nacional El Palmar, control de especies exóticas invasoras en favor de las especies nativas. Tandil: Centro CIC-Centro de Investigación Veterinaria Tandil (CIVETAN); 2018.
3. Cohen M, Costantino SN, Calcagno MA, Blanco GA, Pozio E, Venturiello SM. Trichinella infection in wild boars (*Sus scrofa*) from a protected area of Argentina and its relationship with the presence of humans. *Vet Parasitol.* 2010;169(3-4):362-6. <https://doi.org/10.1016/j.vetpar.2010.01.005>.
4. Barandiaran S, Marfil MJ, La Sala LF, Tammone A, Condorí WE, Winter M, et al. Tuberculosis in wild pigs from Argentina. *EcoHealth.* 2024. <https://doi.org/10.1007/s10393-024-01681-y>
5. Gürtler RE, Rodríguez-Planes LI, Gil G, Izquierdo VM, Cavicchia M, Maranta A. Differential long-term impacts of a management control program of axis deer and wild boar in a protected area of north-eastern Argentina. *Biol Invasions.* 2018;20:1431-47. <https://doi.org/10.1007/s10530-017-1635-6>.
6. Santos AT, Riva E, Condorí WE, Rodríguez MG, Rivero MA, Rivero MA, et al. Trichinella infection in culled wild boar (*Sus scrofa*) from El Palmar National Park, Argentina, and exposure risk in humans and dogs consuming wild boar meat. *J Wildl Dis.* 2024; 60:401-12. <https://doi.org/10.7589/JWD-D-23-00027>.
7. Tammone Santos A. Aportes al Plan de Control de Mamíferos Exóticos Invasores del Parque Nacional El Palmar bajo el enfoque Una Salud: relevamiento de zoonosis y exposición a plomo de origen cinegético. Tandil: Universidad Nacional del Centro de la Provincia de Buenos Aires; 2022.

Implementing One Health: Country experiences and lessons learnt is a series of case studies showcasing practical examples of how the One Health approach is applied at national and local levels. The series highlights multisectoral collaboration across human, animal, and environmental health sectors, demonstrating how countries operationalise the One Health Joint Plan of Action (OH JPA) to address complex health challenges. Each case study provides insights into the strategies, interventions and tools used to strengthen surveillance, improve risk management and support evidence-based decision-making. By capturing successes, challenges, and lessons learnt, this collection serves as a resource for policymakers, practitioners and partners to inform the adaptation and scaling up of One Health initiatives globally, reinforcing the value of integrated approaches for health security and sustainable development.

Implementing One Health Case Studies is an initiative of the One Health team at the World Organisation for Animal Health (WOAH) Headquarters, under the leadership of **Dr Chadia Wannous**, WOAH OH Global Coordinator, with the support of **Kurmanzhan Dastanbek**, WOAH OH Project Manager.

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