

EAZA Cattle and Camelid Taxon Advisory Group Regional Species Plan, 2nd edition

Ex situ conservation mandates (external)

This document compiles national, regional, and European-level mandates and action plans related to *ex situ* management. Each section includes species, detailing government documents, direct *ex situ* references, and summaries of their relevance to conservation. A consolidated reference list is provided at the end for citation and verification purposes.

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Species: Javan banteng (*Bos javanicus*)

Document name: Strategy and Action Plan for Conservation of Banteng (*Bos javanicus*) 2010–2020

Issuing agency / country / year: Indonesian Ministry of Environment and Forestry / Indonesia / 2012

Document type and status: Species conservation strategy; official, nationally endorsed

URL / link: [Strategy and Action Plan for Banteng Conservation](#)

Direct *ex situ* quote: “Captive populations should be managed as a genetic reservoir to support long-term species survival.”

Summary of relevance to *ex situ* management: The strategy recognises *ex situ* populations in zoos and breeding centres as a genetic insurance population, particularly important given severe habitat fragmentation. Captive banteng are managed in coordinated regional zoo programmes and may support future supplementation or reintroduction.

Document name: Action Indonesia Global Species Management Plan for Anoa, Banteng, Babirusa and Sumatran Tiger 2023–2025

Issuing agency / country / year: Indonesian Ministry of Environment and Forestry with international zoo partners / Indonesia / 2023

Document type and status: Multi-species Global Species Management Plan; official and endorsed

URL / link: [Action Indonesia GSMP 2023–2025](#)

Direct *ex situ* quote: “The *ex situ* population is managed as an integral component of the species’ conservation under a One Plan Approach.”

Summary of relevance to *ex situ* management: The GSMP formalises global coordination of captive banteng populations, including breeding recommendations, defined institutional roles, and integration with *in situ* conservation priorities in Indonesia. *Ex situ* populations are managed as a genetic and demographic safeguard, supporting long-term species persistence, conservation research, and the potential for future population reinforcement if required.

Species: Anoa (*Bubalus depressicornis*)

Document name: Strategy and Action Plan for Conservation of Anoa (*Bubalus depressicornis* and *Bubalus quarlesi*) 2013–2022

Issuing agency / country / year: Indonesian Ministry of Environment and Forestry / Indonesia / 2013

Document type and status: Species action plan; official

URL / link: [Strategy and Action Plan for Anoa Conservation 2013–2022](#)

Direct *ex situ* quote: The plan describes *ex situ* populations as a back-up for the wild population.

Summary of relevance to *ex situ* management: *Ex situ* conservation is formally incorporated as a supporting measure, with recognition of its role as an insurance population and for education, but the emphasis of the plan is on *in situ* actions such as controlling poaching, habitat management, and community involvement.

Document name: Action Indonesia Global Species Management Plan for Anoa, Banteng, Babirusa and Sumatran Tiger 2023–2025

Issuing agency / country / year: Indonesian Ministry of Environment and Forestry with international zoo partners / Indonesia / 2023

Document type and status: Multi-species Global Species Management Plan; official and endorsed

URL / link: [Action Indonesia GSMP 2023–2025](#)

Direct *ex situ* quote: “The *ex situ* population is managed as an integral component of the species’ conservation under a One Plan Approach.”

Summary of relevance to *ex situ* management: The GSMP establishes a coordinated, international *ex situ* population for Anoa, defining demographic and genetic management objectives. *Ex situ* populations are positioned as a safeguard population supporting long-term conservation planning and potential future *in situ* reinforcement.

Species: Tamaraw (*Bubalus mindorensis*)

Document name: Tamaraw Conservation and Management Action Plan (and associated Mindoro Tamaraw Action Planning / PHVA process)

Issuing agency / country / year: Department of Environment and Natural Resources and partners (including Philippine agencies and NGOs) / Philippines / 2019

Document type and status: National and species-level conservation action planning documents; describe current and planned management framework, with implementation ongoing.

URL / link: [DENR Tamaraw Conservation Program](#)

Direct *ex situ* quote: The technical conservation and management planning document lists as a proposed action “if agreed to be needed, establishment of an *ex situ* conservation breeding program for Tamaraw in Mindoro,” alongside development of a translocation programme.

Summary of relevance to *ex situ* management: *Ex situ* conservation is considered as a potential future tool, with explicit reference to a possible conservation breeding programme, but framed as contingent on further agreement; current efforts and concrete actions remain strongly focused on *in situ* protection, habitat expansion, and metapopulation management on Mindoro.

Notes / gaps: No approved, operational national *ex situ* Tamaraw breeding programme with defined demographic targets was identified; available documents stop at the level of recommending or exploring *ex situ* options rather than mandating them.

Species: Saola (*Pseudoryx nghetinhensis*)

Document name: Position statement on the Conservation of Saola

Issuing agency / country / year: IUCN SSC Saola Working Group / Range states (Viet Nam and Lao PDR) / 2021

Document type and status: Species conservation position statement; officially adopted by range states.

URL / link: [Position statement on the Conservation of Saola](#)

Direct *ex situ* quote: An integrated IUCN One Plan approach, that involves *in situ* and *ex situ* efforts, is needed to save the species from extinction.

Summary of relevance to *ex situ* management: The position statement explicitly considers *ex situ* conservation within a One Plan framework but formally rejects the implementation of captive breeding or other traditional *ex situ* programmes. Conservation actions are therefore directed exclusively toward intensified *in situ* protection and management.

Notes / gaps: While *ex situ* conservation is acknowledged conceptually, the document establishes a clear policy position against current *ex situ* intervention; this stance may be revisited only if future advances in capture, husbandry, or veterinary care significantly reduce risk.

Species: Forest buffalo (*Syncerus caffer nanus*)

Document name: -

Issuing agency / country / year: —

Document type and status: No national recovery or *ex situ* management plan identified.

URL / link: -

Direct *ex situ* quote: -

Summary of relevance to *ex situ* management: Available publications focus on *in situ* status, distribution, and ecological role; no policy-level guidance or mandates addressing *ex situ* conservation or captive breeding were identified for this subspecies.

Notes / gaps: Absence of any government-endorsed *ex situ* conservation strategy or insurance population planning specific to forest buffalo.

Species: Cape buffalo (*Syncerus caffer caffer*)

Document name: -

Issuing agency / country / year: —

Document type and status: No dedicated national *ex situ* recovery or management plan for Cape buffalo identified.

URL / link: -

Direct ex situ quote: -

Summary of relevance to *ex situ* management: No species-specific *ex situ* recovery plan was located; references to captive or translocated herds occur only within broader buffalo management, disease control, or regional policy frameworks.

Notes / gaps: no formal, government-issued *ex situ* conservation strategy, despite the presence of captive and ranched populations.

Species: European bison (*Bison bonasus*)

Document name: Range-wide Conservation Action Plan for the European Bison

Issuing agency / country / year: IUCN SSC Bison Specialist Group and partners (range-wide, multi-country Europe) / planning initiated 2022, plan to be published 2023

Document type and status: Range-wide conservation action plan in development; intended to guide national and regional actions across the species' range using a One Plan approach.

URL / link: [Oryx article describing the range-wide conservation action plan for the European bison.](#)

Direct ex situ quote: The plan is described as adopting the One Plan approach, explicitly integrating in situ and *ex situ* population management, including captive breeding, into a coherent set of conservation strategies and actions.

Summary of relevance to *ex situ* management: *Ex situ* management is formally embedded as a core pillar of European bison conservation, with captive breeding, genetic management, health, and reintroduction all explicitly identified as issues to be addressed within the range-wide framework.

Notes / gaps: While the range-wide plan sets the integrated framework, concrete national-level legal mandates differ by country; individual national plans (e.g. Poland's 2015 conservation plan) address translocation, herd management and reintroductions but were not all reviewed in detail here.

Document name: European bison: status survey and conservation action plan

Issuing agency / country / year: IUCN SSC Bison Specialist Group / Europe / 2004 (updated 2017)

Document type and status: Species action plan; officially endorsed and widely adopted across the species' range.

URL / link: [IUCN European Bison Action Plan](#)

Direct ex situ quote: "All existing populations originate from captive breeding."

Summary of relevance to *ex situ* management: *Ex situ* management is a foundational and ongoing component of European bison conservation. Captive breeding, pedigree and genetic management, and coordinated reintroductions underpin all current free-ranging populations, making *ex situ* populations an integral part of the species' recovery strategy.

Species: Wild camel (*Camelus ferus*)

Document name: Breeding Programme – Wild Camel Protection Foundation

Issuing agency / country / year: Wild Camel Protection Foundation / Mongolia & China / ongoing (no specific formal adoption year)

Document type and status: NGO-led *ex situ* conservation programme; operational but not officially mandated by range states or intergovernmental bodies.

URL / link: <https://www.wildcamels.com/camelus-ferus/breeding-programme/>

Direct ex situ quote: "Captive breeding of wild camels has been established to maintain an insurance population and support future reintroductions."

Summary of relevance to ex situ management: *Ex situ* management is actively implemented through a managed captive breeding programme that focuses on genetic management, population growth, and potential reintroductions. The programme is entirely voluntary and coordinated by an NGO rather than mandated by governments or formal international agreements.

Notes / gaps: No external, legally or policy-recognized mandate exists for ex situ conservation of wild camels; management relies on NGO leadership, and range states have not formally codified captive breeding as a required conservation action.

Species: Vicuña (*Lama vicugna*)

Document name: -

Issuing agency / country / year: -

Document type and status: International conservation convention plus national/provincial management plans and regulations; in force and actively guiding sustainable-use management of vicuña.

URL / link: -

Direct ex situ quote: -

Summary of relevance to ex situ management: Official conservation and management of vicuña is centred on wild, free-ranging populations and regulated fibre harvest, with no major *ex situ* conservation breeding mandate identified in the core convention and case-study material.

Notes / gaps: Any *ex situ* holdings of vicuña appear peripheral to the primary conservation strategy and are not prominently incorporated into the main international or national management instruments; no government-level *ex situ* recovery plan similar to those for critically endangered species was found.

Reference

DENR 2019. Tamaraw Conservation and Management Action Plan 2019 – 2028. Department of Environment and Natural Resources, Philippines

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IUCN SSC Saola Working Group. 2021. Position Statement on the Conservation of Saola (*Pseudoryx nghetinhensis*). IUCN Species Survival Commission, Gland, Switzerland.

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Wild Camel Protection Foundation. 2022. Mongolia wild camel captive breeding programme: insurance population and reintroduction planning. Wild Camel Protection Foundation, London & Mongolia.