



IUCN SSC Pinniped Specialist Group



Conservation Success Stories

Shovelling snow to mitigate the effects of climate change on Saimaa Ringed Seal breeding success



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IMPLEMENTED BY

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THREAT ADDRESSED

The Saimaa Ringed Seal (*Pusa saimensis*) population, which comprises fewer than 500 individuals, is reliant on snow and ice for successful breeding. Mild winters have already increased pup mortality, and there is a real concern that natural breeding habitats may vanish entirely, threatening the long-term survival of the entire subspecies.

TARGET

Support SSC groups on behaviour change in their conservation actions. (T-028)

Over 300 volunteers involved annually in creating human-made snowdrifts



SUCCESS LEVEL

Highly successful

Success category: Local people involvement



Success story:



REASONS FOR SUCCESS

Seal lairs lie along shorelines, and because of strong site fidelity, the same areas are used yearly, allowing planned placement of human-made snowdrifts. Local volunteers are vital, building over 250 snowdrifts each winter. As snow and ice appear late, work must finish by mid-February, requiring rapid action and local expertise.

The conservation of the endangered Saimaa Ringed Seal has improved through low-tech interventions such as constructing human-made snowdrifts for breeding habitat. The seal inhabits Lake Saimaa, a fragmented freshwater lake in Finland with about 13,700 islands and 15,000 km of shoreline. In winter, seals dig lairs into snowdrifts along shorelines, where they rest, give birth, and nurse pups. These lairs protect pups from predators and harsh weather.

The human-made snowdrifts were constructed mainly by local volunteers who piled up snow into drifts to create sufficient snow depths to allow for lair construction by the seals, enhancing pup survival. These snowdrifts, mimicking natural conditions of previous decades, are piled up on known and potential lair sites of the seal by collecting snow on the lake ice using snow pushers and shovels. Between 2014 and 2024, more than 2,000 human-made snowdrifts were constructed; 48% were used by seals, sheltering 360 newborn pups. During the very mild winter of 2014, over 95% of observed pups were born in these drifts, and pre-weaning mortality was much lower compared to previous winters with similar poor snow conditions, without the human intervention efforts.

Human-made snowdrifts are effective when there is ice and snow. However, in 2020, Lake Saimaa lacked sufficient cover for natural or artificial lairs, and pre-weaning mortality reached 26%. These challenges highlight the need for new conservation tools, such as floating “nest boxes,” some already used by pups. Construction of snowdrifts and installation of nest boxes will continue in future winters.

Over 300 volunteers participate annually in creating human-made snowdrifts, increasing local awareness and commitment to seal conservation, reducing conflicts with fishing, land use, and recreation. Unfortunately, climate change is worsening, and winters like that in 2020 are becoming more frequent. Thus, reliance on nest boxes and other proactive measures is crucial for the subspecies’ survival.

Despite occasional space-use conflicts, attitudes towards the Saimaa Seal are very positive locally and nationally. Continued existence of the seals is deemed important, and locals have adopted human-made snowdrifts and other essential interventions as concrete tools to save their seals. ■ KIT KOVACS

SUPPORTING DOCUMENTS

https://erepo.uef.fi/bitstream/handle/123456789/16249/urn_isbn_978-952-61-1918-2.pdf; <https://link.springer.com/article/10.1007/s10584-024-03797-0>; <https://www.metsa.fi/luonto-ja-kulttuuriperinto/lajien-suojelu/saimaannorppa/norppatilanne/>



Vulnerable Northern River Shark,
(*Glyphis garricki*)
Photo: Grant Johnson

Interviews about human wildlife
interactions with local inhabitants
Photo: Kiran Thapa Magar

Vicuña management by Cooperativa
Agroganadera de Santa Catalina and Comunidad
Aborígen Atu Shapi de Morritos.
Santa Catalina, Jujuy Province, Argentina
Photo: Yanina Arzamendia

Story photo credits

Pup of *Pusa saimensis*, Alaska
Photo: Shawn Dahle, NOAA

A floating nest box installed on the shore ice
for the Saimaa Ringed Seal
Photo: Miina Auttila, Metsähallitus

Volunteers are constructing the man-made
snowdrift at shoreline of Lake Saimaa
in Finland
Photo: Miina Auttila, Metsähallitus

Community songbird monitoring and
protection, Indonesia
Photo: Asian Songbird Trade SG archives

Cacti from genera *Copiapoa* and *Eriosyce*
confiscated in Italy and repatriated to Chile in 2021
Photo: Andrea Cattabriga