

SURFING FOR SURVIVAL

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Results

- ✓ Surfing documented for decades in Argentina & New Zealand (Figs. 1-5)
- ✓ Cultural transmission (all practice, surfing taught to offspring) (Figs. 1 -3)
- ✓ Surfing likely enhances survival (wave knowledge=skill egressing) (Fig. 5)
- ✓ Surfing associated with foraging for near & onshore prey (Figs. 4-5)
- ✓ Surfing is also part of the **playing repertoire** for these orca (Fig. 1)
- ✓ All age classes documented surfing (Figs. 1-5)
- ✓ Both sexes surf (Figs. 2-5)
- ✓ Tides do not influence surfing
- ✓ Weather impacts surfing



Fig 2. At Punta Norte, Argentina, a mother teaches her <1 week old offspring surfing, starting in smaller waves. Photo © 2005, Ingrid N. Visser.



Fig 3. An adult male practises surfing in small waves, Argentina. Photo © 2009, Ingrid N. Visser.



Fig 1. A juvenile orca surfs a large wave, New Zealand. Photo © 2010, Mike Cunningham.



Fig 4. An adult female using a wave to surf in to the shore to capture a sea lion pup in Argentina. Photo © 2006 Ingrid N. Visser.



Fig 5. An adult female inside the surf zone, hunting for sea lions along the Argentinean coastline. Photo © 2019, Ingrid N. Visser.

Abstract

Orca (*Orcinus orca*) surf in the shore-breaks of New Zealand and Península Valdés, Argentina. We investigated the occurrence and function of surfing events and how they may be linked to foraging techniques. The species is known worldwide for its highly adaptive methods of foraging, some of which can be high-risk (e.g., barbs from stingrays) and habitat orientated (e.g., hunting close to shore poses inherent hazards such as stranding). The New Zealand Coastal orca hunt for various species of rays, sometimes in extremely shallow (< 3m) waters, where the risk of stranding is increased. For Punta Norte orca who hunt along the coast of Península Valdés, their strategy of intentionally stranding to take young sea lions (*Otaria flavescens*), likewise increases the risk of stranding.

Records were collated from photographic and videographic data collected during longitudinal studies of both populations. The resulting dataset extended over more than a decade for each population and showed that both sexes and all age classes surf in both locations. We documented youngsters accompanying adults during surfing sessions, perhaps as teaching scenarios, which then manifest as a cultural tradition in each of these two populations. Orca surfing behaviour does not appear to be influenced by the state of the tide, however it is impacted by weather conditions.

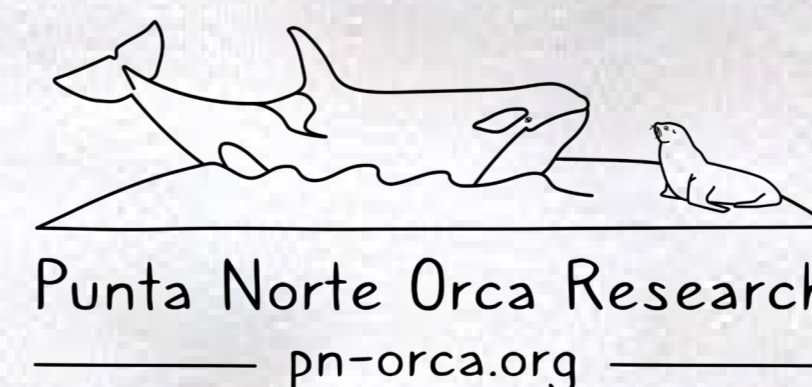
We suggest that skills obtained during surfing, such as familiarity with waves and aptitude to manoeuvre in surf, may reduce the chances of stranding by potentially providing the orca with techniques for recovery and extraction from surf zones. In addition, if stranded, an understanding of near-shore wave dynamics may assist with a successful retreat from the danger zone. Such a repertoire of skills would likely increase the long-term chances of survival for individuals and this may also reflect why these orca begin learning the technique at a young age.

Conclusions

- Surfing likely increases understanding of near-shore wave dynamics & reduces risk of unintentional stranding.
- Surfing is used as part of play & foraging repertoires.
- Surfing occurs in 2 distinct populations (Atlantic & Pacific Oceans).
- Surfing has impact on survival (foraging & high-risk environments).

More Details

- Punta Norte Orca Research (2021). Orca ID Guide Argentinean Orca. Available at: www.pn-orca.org/id-guide/.
- Visser I.N., Cooper T.E. (2020). Orca Research Trust Guide to New Zealand Orca. available at: www.orcaresearch.org/nz-orca-id-guide/.



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Abstract Tweet:

Orca surfing in NZ & Argentina: both sexes & all age classes surf = teaching & cultural traditions linked 2 high-risk foraging. Surfing skills may reduce chances of stranding & increase long-term chances of survival & reflect why young orca learn to surf