

Conclusions

In this study I have showed that Cape fur seals are able to discriminate between odors. They are able to discriminate between fish with salmon oil and fish without salmon oil.

This study have also showed that seals can be trained to discriminate between odors.

The seals also showed a long-term memory for odors. How long is yet to be determined.

Can Cape fur seals detect fish rich in oil with their sense of smell?

Final thesis

Madeleine Svelander



Contact information:

E-mail:
madeleine.svelander@gmail.com

Phone: 0733-994720

International Masters Programme
Applied Biology, Linköping University
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Introduction

This study was about the sense of smell in seals. The aim was to develop a method to test their ability to discriminate between odors and to test if they are able to discriminate between odors and in particular between the odors of fish that differ in their content of oil. I also measured if they have a long-term memory for odors.

There have been few studies performed on the sense of smell in seals and there is an inconsistent picture of their capabilities. Seals have somewhat reduced areas in the brain responsible for the sense of smell and some authors have stated that seals have a poor sense of smell. Is that the case? Are Cape fur seals able to discriminate between odors by using their sense of smell?



A Cape fur seal making a choice by one of two odorports. The odors were in two containers behind the plastic board.

Method

Four Cape fur seals participated in this study. The seals had to choose between two different odors that were simultaneously presented to them. One of the odors were considered to be the correct and rewarded odor. I tested different odor combinations for example fish with salmon oil (rewarded odor) and fish without salmon oil (unrewarded odor).

After two longer breaks (7 and 14 days) I was able to measure the seals long-term memory for odors.

Percentage of correct choices was calculated for each session. The seals had to reach an criterion of 75% in two consecutive sessions to be regarded as successful.

Results and discussion

All four animals were able to discriminate between odors. They succeeded to discriminate between fish with salmon oil and fish without salmon oil. An ability that they may use in their foraging behavior.

The seals were able to perform negative (change of unrewarded odor) and positive transfer (change of rewarded odor).

The seals were performing in a similar way before and after the breaks which shows that they have a long-term memory for the reward value of odors as showed in other species of animals.

These results suggests that the sense of smell in seals is more important than previously believed.

