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## Degree projects on ecology of seals and cormorants

The contents and scope of the work can be discussed and adapted to prevailing conditions.

### Introduction

The populations of seals (harbour, grey and ringed seals) and cormorants in Sweden have increased in size and distribution during the last decades. Consequently, requirements and needs of information about the ecological role of seals and cormorants have increased, e.g. for inclusion of top predators in ecological models and for development of ecosystem-based management. In addition, conflicts with fish conservation biology and coastal fisheries have intensified. At present, relevant information on prey choice and abundance of these predators and their impact on fish stocks is insufficient.



The suggested topics are suitable for master student projects. The projects will include field work, literature studies and data analysis as well as scientific writing.

*Some suggestion of studies:*

**1. Diet analysis of seals and cormorants**

- Variability in prey choice (e.g. between areas, seasons, years, species)
- Traditional analysis vs. DNA-based diet analysis
- Development and application of image analysis in dietary assessments

**2. Predator-prey dynamics**

- Prey selectivity of seals and/or cormorants
- Diet data in relation to fish monitoring data



**3. Monitoring of seals and cormorants**

- Photo-ID of seals
- Camera surveillance of seals
- Regional monitoring of seals and cormorants for improved abundance estimates, e.g. in marine protected areas
- Development of a regional monitoring programme

