

# Can Dassen Island's breeding seabirds survive predation by Great White Pelicans?

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## Introduction

- Pelican predation on birds is unusual and rare outside southern Africa. It has been recorded in Brown Pelicans, Australian Pelicans and Great White Pelicans.
- Great White Pelican predation on seabirds was first recorded in South Africa in the 1800s. The earliest recorded predation in Dassen Island was in 1993.
- Recent times have witnessed a high increase in predation. This has led to concerns that they may threaten southern Africa's endemic and threatened seabirds.

## Aim

To assess the scale of pelican predations and the impact on the breeding success of seabirds at Dassen Island.

## Objectives

1. To determine the number of seabird chicks predated upon by pelicans.
2. To determine the effect of pelican predation on breeding success of seabird species.

## Study Site

### Dassen Island Facts

- Is an important breeding area for many seabirds.
- One of only two breeding areas for Great White Pelican in South Africa.



Map source: Wolfaardt, A.(2000) Dassen Island Management Plan



## Methods

- Observation and filming of predation activities from a light house
- Monitoring all nests of target species to determine breeding success
- Crude breeding success determined as number of fledged chicks per nest
- Nesting success determined using Mayfield's method



Great White Pelicans waiting to take Crowned Cormorant chicks from under the adults

## Results

### Cape Cormorant



- 107 nests monitored (80% of all nests)
  - No chicks fledged
  - 2 chick predations seen
  - Destroyed by a combination of rough seas and pelican predation
- Cause for concern!**

### Kelp Gull



- 144 nests were marked and monitored (3% of all nests)
- 142 chick predations observed.
- Crude breeding success: 0.063 fledglings/nest (0.11%)
- Expected Crude breeding success: 0.16-1.33 fledglings/nest.

**Although its population is still increasing there is a future cause for concern due to low success.**

### Crowned Cormorant



- 237 nests monitored (95% of all nests).
- 200 nests destroyed in a day
- 5 chick predations observed
- Crude breeding success: 0.076 fledglings/nest (3.3% nesting success)
- Expected Crude breeding success: 1.3 fledglings/nest

**There was some breeding later in the season but is still a concern because of the massive mortalities in the main season**

### Bank Cormorant



- 20 nests monitored (90% of all nests) were monitored
- No chicks fledged
- Pelican disturbance was seen but no predation observed.
- Nests destroyed by rough seas and possibly abandoned due to pelican disturbance.

**Cause for concern since global population has been declining.**

### White-breasted Cormorant



- 23 nests monitored (100% of all nests)
- No chick predation observed
- 7 nests fledged 11 chicks
- Crude breeding success: 0.56 fledglings/nest (36.9% nesting success)
- Expected Crude breeding success: 1.6 fledglings/nest

**Little or no predation on this cormorant species by pelicans in spite of the fact that they nest exclusively with them.**



The pelicans hunt Kelp Gull chicks by walking in groups of 15-30 (sometimes upto 60). They search under rocks and in bushes. Once a chick is sighted, they all scramble for it. The chick is swallowed whole.

*Pelicans nesting together with White-breasted Cormorants*



*Up: A Kelp Gull chick takes refuge at the lighthouse*

*Left: A pelican eats a Crowned Cormorant chick*

## Conclusions

- Predation reduced breeding success of at least 4 of the 5 species studied.

There is need for management actions to curb predation e.g.

- providing shelters.
- providing artificial nesting sites.
- scaring away the pelicans.
- selective culling.

Before drastic action such as culling is considered, there is need for further study on:

- Effect of predation on other islands with breeding seabirds (on going).
- Effect of predation on long-term population trends
- Whether there are specialized pelican predators

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