

Project Southern Dunlin

Annual Report 2023



Photo by Mattias Ullman



In this report:

- Headstarted Southern Dunlins take to their wings on Öland
- Comprehensive survey shows worrying results
- Restored wetland on Öland will benefit waders



A young Dunlin with an orange colour ring. Photo by Mattias Ullman

Progress in 2023

The Southern Dunlin Project is a collaboration between Nordens Ark wildlife park and BirdLife Sweden. The project was initiated in 2022 with support from the Swedish Postcode lottery. The aim is to save the sub-species Southern Dunlin (*Calidris alpina schinzii*) from the brink of extinction, while at the same time highlighting the ongoing degradation of wetland areas and the impact that the loss of suitable habitat brings upon other shorebird species that share the Southern Dunlin's unique coastal environment. Within the past 100 years the Southern Dunlin has gone from being a common sight on coastal wetlands in Sweden to being Critically Endangered. In order to stop the ongoing decline and restore a viable population, the project works with four main objectives:

- Breeding and rearing by headstarting
- Actions in the field, to improve the birds' habitat
- Population monitoring
- Education and information about the Southern Dunlin and its distribution within Sweden

During 2023 the project progressed on all the listed activities with specific focus on a larger survey in suitable habitats and on headstarting activities in Ottenby, Öland.



Jodie Clemens, WWT and Dick Liljegren, Nordens ark in the aviary with four Dunlin chicks. Photo by Mattias Ullman

A headstart in life

Headstarting is a conservation method which is used to increase survival of species that in their early stages of life (as eggs or when young) have high mortality rates due to threats in their habitat, for example from diurnal and nocturnal predators, lack of suitable nutriment or due to extreme weather conditions. The method has earlier been successful on birds like the Spoon-billed Sandpiper and the Black-tailed Godwit in projects run in Great Britain and Russia. The method has never before been used in Sweden - prior this project.

Headstarting involves collecting eggs from the nests of birds in the wild, incubating and hatching them in designated breeding facilities by educated aviculturists, and rearing them in protected aviaries. When the juveniles are grown and fully fledged they are released back to the wild in suitable environments on Öland.

Successful results

As the largest remaining number of Southern Dunlin in Sweden are to be found on Ölands' open coastal meadows the choice of site fell on the diverse grasslands with the highest remaining number of pairs - the southernmost point of Öland, Ottenby Nature Reserve. The collection of eggs began at the end of April 2023. The Southern Dunlin usually lay four eggs per clutch, and a total of 6 clutches or 24 eggs were safely collected on the meadows.

Following the collection, the eggs were put in incubators - replacing the tedious work that the adult dunlin pair would otherwise have shared; to carefully incubate the eggs for three weeks until hatching. In two clutches we had no embryo development. This was most likely due to unfertilized eggs. All remaining eggs however developed and hatched successfully.

Survival among the hatched dunlin chicks was furthermore high. Out of 16 hatched chicks, 14 survived to be released onto the coastal meadows, fully fledged. All headstarted individuals were ringed and given individual combinations of colour-bands pre-release. Colour ringing was done to effectively follow the birds as individuals.

Between the 15th and 27th of May we found that a total of five Southern Dunlin broods hatched in the wild on Schäferiängarna. All were believed to be the second clutch laid by the dunlin pairs whose first clutch previously had been collected by the project aviculturists. Out of these five broods, two were subsequently victims of predation - but the other three broods were seemingly more fortunate - and stayed alive as long as the monitoring underwent.

Monitoring of released young

Monitoring the life of released headstarted dunlin chicks began on the release-day and proceeded for nearly three weeks. From this first year of monitoring headstarted chicks in Ottenby we can safely say that at least 12 of the 14 young were still alive 10 days after they were released. At that stage in life, the young dunlins are well developed and can fly without effort, which provides a higher survival probability. The young often moved about together, feverishly seeking food on the coastal meadows. They were showing the same natural behaviours seen in wildborn Dunlins - for example when in danger they laid flat on the ground and seemingly adapted well to their surroundings. After some weeks the project received reports from birdwatchers in the area. Headstarted birds were observed feeding on sand beaches in the northern parts of Ottenby's Nature Reserve, several kilometres from where they were initially released.

When the first Northern Dunlins (*Calidris alpina alpina*) began to arrive on Öland during their southbound migration route in June, we received unexpectedly good news. One of the ringed, headstarted birds had joined a flock of Northern Dunlins. Moreover, another project bird was seen doing a migration-attempt over the Baltic sea, a further indication that the project birds had adapted well and embarked on their first journey towards Africa.

Waiting for returnees

Southern Dunlins normally return to their summer locations to breed after two years, like many other waders. This means that the project will have to wait until spring 2025 to observe the headstarted dunlin chicks return to Öland.

The project staff are now in the midst of planning for the next headstarting season 2024.



Orange 0, one of the 14 dunlin chicks that were successfully raised during 2023. Photo by Mattias Ullman



Adult male Southern Dunlin. Photo by Mattias Ullman

Difficult conditions still remain for the shorebirds of Öland

This year's population survey shows a steep downward result

This year's population survey shows a steep decline for the Southern Dunlin. During the season a survey of all breeding waders on Öland's coastal meadows was made. In total, 45 sites were visited on two or three separate occasions between the end of April and the end of May. The sites chosen for the survey have had breeding / probable breeding attempts of Southern Dunlin from the year 2008 and onwards, where the intention was to apprehend current population statuses which can be followed up in a couple of years.

The result was found to be worse than we all expected: only 34 Southern Dunlin pairs/courting males was noted in-situ. Five years ago, it was estimated that nearly 100 pairs of Southern Dunlin nested on Öland, so the result from this year indicates a dramatic decline in population numbers.

At 33 of the 45 breeding sites surveyed, not a single Southern Dunlin was found – which means that during the past 15 years they have disappeared from 33 sites on Öland. The population is now estimated with a decline of at least 5% per year.

Several factors contribute to the decline, amongst these are loss of habitat and the fact that many eggs are being predated (mainly by fox, badger and hooded crow). As a result, regeneration of the population remains low. Results from this years' surveying of other breeding shorebird species on the coastal meadows (Northern Lapwing, Common Redshank, Ringed Plover, Black-tailed Godwit, Oystercatcher, Pied Avocet) which were conducted on Schäferiängarna, indicate that predation rate of eggs for all shorebird species lies around 50 – 90%.



Mattias Ullman, BirdLife Sweden
Photo by Bengt Grandin



Figure 1. Breeding pairs of Southern Dunlin on Öland. Since 1988, the population has been decreasing with almost 75%,



Nest with three Southern Dunlin eggs. Photo by Mattias Ullman

High time for restoration!



Restoration of Öland's coastal meadows benefits shorebird populations

Re-watering and clearing of brushwood and trees have been proven to be beneficial to waders. This group of birds is dependent on shallow bodies of water to find food and they do not thrive well in places with too much vegetation. On Öland the need for restoration is high after the extensive trench works of the 1800s and 1900s.

In the autumn of 2023, the Southern Dunlin Project co-founded a restoration project in the parish of Segerstad on eastern Öland, initiated by the County Administration Board of Kalmar. The area of almost 100 hectares had previously been an important breeding site for species like the Southern Dunlin, Eurasian Curlew and Black-tailed Godwit. Hopefully, the joined efforts will lead to the return of species-rich coastal meadow environments with sufficient water levels as well as higher nutritional and carbon dioxide uptakes. Hopefully this richly diverse, created shorebird habitat can inspire other landowners and make way for more projects to come, along the Ölandic' coasts.



Photo by Mattias Ullman

*The Southern Dunlin is a so - called
flagship species – if it benefits, so do
several other species that live in the
same environment.*

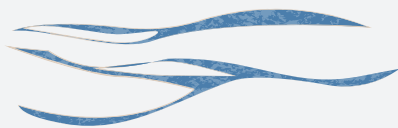


Photo by Mikaela Lindholm

Measures to bring back bustling life to the coastal meadows

In addition to the efforts of habitat restoration, the project works with both direct and indirect predator control. There are many reasons behind the fact that shorebird populations are in a rapid decline – but one of the biggest of threats today is the high nest predation rate. Managing the predators effectively is an important step in order to re-establish healthy numbers of ground nesting shorebirds – and particularly, the Southern Dunlin.

Direct, or lethal predator control means that predators are removed from the most important Dunlin breeding grounds, either by hunting or by methods of capture. Indirect predator control means making it more difficult for the predators to find structures for perching or hiding, e.g. by removing tall trees or bushes which can function as lookout places. During 2023 - two local partnerships were arranged in order to reduce the pressure of predation, both on Öland in Mörbylånga municipality - and on the West coast of Sweden, in Halland. In Mörbylånga the efforts are in line with the previously successful project “More waders on Öland’s coastal meadows” that was managed by Mörbylånga Hunting group and the County Administration Board of Kalmar. In Halland the project “Bustling life on Halland’s coast – from Northern Lapwing to Southern Dunlin” is a brand new partnership between the Southern Dunlin Project, the County Administration Board of Halland, the Swedish Hunting Association and local ornithological societies.



Photo by Nordens Ark

Why focus on the Southern Dunlin? The subspecies have high preferences in choosing breeding site, preferring heavily grazed grasslands without bushes or trees, with tufts of grass to hide its nest. When young, shorebirds like the Southern Dunlin rely upon moist environments with shallow pools of water for feeding and probing for insects and invertebrates. By focusing on restoring the southern dunlins’ narrow ecological niche, many other shorebird species which share its habitat will surely benefit. Because of this the Southern Dunlin is called a flagship- species.

Education and communication

An important part of working with endangered species and biological diversity is raising awareness among the general public. In this project we are working to increase the knowledge and awareness of the plight of the Southern Dunlin and other waders living in the same habitat and the threats that they are facing in the wild.

The project has also created a dedicated website where visitors can learn more about our conservation work and follow the development of the project. Over the past year we have continuously provided updates on the Southern Dunlin on Social Media and in an exhibition at naturum Ottenby. At Nordens Ark we have created an dedicated exhibition where visitors can find out more about our work to save the Southern Dunlin. During the year we have also given a number of presentations and excursions for children and families.



A big thank you for this year!

The Southern Dunlin Project is supported by the Swedish Postcode lottery. We would like to extend a heartfelt thank you to the lottery and everyone who buys tickets! The project is also financed by funds from the Lindberg Trust and the Ecological restoration fund.

We also want to thank all of our valuable partners; the County Administration Boards of Kalmar, Halland and Skåne, the Swedish Environmental Protection Agency, Ottenby Bird Observatory, Wildfowl and Wetlands Trust, the Swedish Hunting Association, Studieförbundet, SLU Swedish Species Information Centre as well as the Universities of Gothenburg and Lund.

Photo by Magnus Hellström



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Photo by Mattias Ullman