Bird Communities on Trischen

Natural Dynamics Shaping the Bird Community on an Island

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Trischen Island from the

Lessons for Large-scale Management from Trischen Island

Trischen is the only island in the area north of the Elbe estuary. It has been a renowned bird paradise throughout the past decades, and has been included in the core area of the National Park. Over the last few years, however, numbers of birds breeding and roosting on Trischen have declined significantly and the aura of a well preserved paradise is coming apart. Despite its changing avifauna, Trischen is a role model for modern conservation strategies, and can provide convincing arguments for conservation far surpassing those of single-species management.

Trischen is often called the "Jewel of the National Park", and justifiably so. No dike, no concrete or wooden breakwater, no artificial structure or any other measure of coastal protection impedes the fluxes of sediment across 180 sandy hectares. The sea can erode and deposit the sand where and when and how it desires. No sheep, cattle or ungulates graze the vegetation, and natural dynamics alone determine the composition and structure of the plant community. Trischen thus represents the principal idea of a National Park far more than most other islands in the southern North Sea. Originally, the island was protected as a bird reserve, and measures to protect breeding terns reach back to 1909. Over the past 20 years, only a handful of people set foot on Trischen, and this has led to a somewhat mystified image of a bird's paradise of epic dimensions.

Until the late 1990s, some 15,000 pairs of gulls and terns bred on the island, including large numbers of threatened species like Sandwich and Little Tern. In spring and autumn more than 80,000 waders used Trischen as a high tide roost, including up to 14,000 Sanderlings, thus rendering Trischen one of the most important sites for this species in the Wadden Sea.

Changes in bird numbers

Birdlife on the island has changed gradually over time. As on several other uninhabited islands, terns were replaced by gulls as dominant breeding birds in the late 1980s. This trend has accelerated lately, and large gulls now dominate the island. In the mid 1990s, the Common Tern population crashed,



Black-headed Gulls declined by 70% over the last five years, the Sandwich Tern colony decreased by more than 50% for two years in a row, and Little Terns and Kentish Plovers have become extinct on the island. On the other hand, numbers of breeding Lesser Black-backed Gulls continue to increase.

Even more striking are the changes among roosting waders: hardly 2,000 arctic waders remained on Trischen at high tide during spring migration in 2003, the maximum number of roosting Sanderlings has declined to 1,263 birds, and the numbers of foraging birds in the mud flats adjacent to Trischen has fallen far behind the numbers of the previous decades.

The exact causes for these changes are uncertain. They are, however, likely to be a result of natural processes reshaping the island, thus altering interactions between species and increasing flooding frequency. Has the National Park's aim to provide undisturbed naturalness turned out to be a farce? Is Trischen another conundrum of modern conservation strategies? While entirely legitimate, such concerns disregard the actual value of this island. The island is more than just large bird numbers. It is a flagship of the idea of naturalness in a sea of anthropogenically modified landscapes. The possibility to describe the natural changes on a pristine island, and present them to the public to increase the awareness of natural processes is an opportunity not to be missed in conservation.

Recent analyses reveal that the breeding bird community on Trischen is in a state of equilibrium where species come and species go. This dySpoonbills started breeding on Trischen in 2002, and have had two very successful breeding seasons.



namic balance is found on many islands world-wide. On Trischen, the main factor for this turn-over in species was the natural succession leading to taller vegetation. While terns disappear due to their preference for open sandy areas with little or low vegetation, other species colonise the island. In the 1990s, Water Rail, Cormorant and Peregrine joined the breeding community, and more recently Pintail, Spoonbill and Barnacle Goose established themselves on the island.

The Need for Natural Dynamics at a Larger Scale

What happens to the species that disappear from an island like Trischen? Like most dynamic systems, natural succession, too, has its winners and losers. The "losers" usually find a new place, be it newborn island or beach, where they can become "winners" again. The fact that species we observe today have not gone extinct in the long course of evolution indicates that they are perfectly capable of coping with the natural dynamics of the Wadden Sea. The Sandwich Terns, for example, which left Trischen in 2002, simply went to breed on Norderoog. Norderoog is another protected island 50 km further north, providing seemingly more flood-resistant breeding grounds. Common Terns have shifted their colonies to the mainland coast, probably due to the lower number of large gulls breeding there. But what happened to the 800 pairs of Little Tern and Kentish Plover breeding here some 80 years ago?

Trischen exemplifies that a single island *alone*, even in the most pristine and protected state, is simply not enough. Natural dynamics of local extinction can only work when other islands can be colonised should a traditional site become unsuitable. Several refuges, providing alternative breed-

ing sites between which species can shift in response to environmental changes, enable them to survive in the long run. The mere 180 hectares of Trischen is too little. Dynamic nature needs more space.

The national parks and nature reserves in the Wadden Sea do permit natural processes, but the system leaks where these processes are interrupted. Many of the Little Terns and Kentish Plovers that disappeared from Trischen decades ago have not been able to find a suitable substitute in the Wadden Sea, and their overall populations have declined dramatically in the 20th century. These losses are not a result of natural dynamics - it is the human oppression of dynamics causing them. Human oppression of dynamics works at very large spatial scales, and dynamics within a park might not be sufficient when its borders have been defined arbitrarily. Dikes are an arbitrary border for the Wadden Sea ecosystem, and its area today has been confined by land reclamations in the past, leaving it with too little space to work with. This impedes the formation of new islands which would be essential for Little Terns and Kentish Plovers. Even though we have stopped land reclamations in this part of the world, nature will continue to suffer from its consequences. The changes we observe on an aging island highlight the enormous impact of humans hampering with natural dynamics.

What Lies Ahead

Trischen is not deserted yet. There are still more than 9,000 pairs of shorebirds breeding here, and in summer, tens of thousands of moulting Shelducks congregate around the island. In order not to delude ourselves to having achieved protection for birdlife with a single island, we should emphasize the dynamic nature of this and similar islands. When the general public and politicians recognize that one tiny island or reserve alone will not function as Noah's Arch, but that many of these islands are required, then Trischen will have contributed a good share to conservation in general. In the future, hopefully, Trischen will not stand out as a jewel in the National Park anymore – the entire National Park should be like it.

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