

Holloway's Crystalwort

Atriplex hollowayi de Lange et D.A.Norton

Stranded



Holloway's crystalwort. Bec Stanley, DOC

Quickfacts

Grows buried in sand of just two northern beaches.

Reason for decline not fully understood.

Life on a beach

Holloway's crystalwort is an unusual plant that has very rapidly disappeared from many of the beaches from which it was known. It is a soft, succulent, annual plant that inhabits what is known as the strand line, the unvegetated stable sand above the high tide line, of some of the larger North Island beaches between Northland and East Cape. Now, it only inhabits Waikuku and Whareana Beaches near North Cape where its survival is dependent on an intensive conservation programme of collecting seed, growing plants in cultivation, and re-sowing seed back onto the beach. The stem and leaves of Holloway's crystalwort look like they are coated with sugar crystals, hence their common name of crystalworts. They are a member of the Chenopodiaceae family, which includes beetroot and silver beet, plus other beach-loving species. Being an annual, it is dependent on producing masses of seed to overcome the huge number of seeds lost to wave and wind erosion. What seeds that are not washed away lie dormant in the sand for up to four years until germinating after being uncovered and stimulated by rainfall or immersion in freshwater seeping from a nearby stream. Holloway's crystalwort plants are usually mostly buried by sand with just the tips of the



branches poking above a sandy mound that forms around the plant. Its seeds are well-adapted for being carried to other beaches by the sea.

A search, in 2000, for this plant, found that only 16 plants remained. Cuttings and seed collected from these last plants has been grown in the Native Tree Nursery at Te Manawa of Ngati Kuri in Ngataki and it is from here the an annual programme of planting and spreading seeds on its Northland beach strongholds is undertaken by Ngati Kuri, community groups and the Department of Conservation. It is not readily apparent why this species is so rare – but it is easily killed if trampled or run over and the ever-increasing use of four-wheel drive vehicles on northern beaches probably is partly to blame. In some cases botanists have collected many plants which would have contributed to the plant's disappearance from some beaches. Exotic plants such as *Salsola kali* and sea rocket (*Cakile* species) are now common in the areas where Holloway's crystalwort used to occur and these exotics are undoubtedly competing for the few habitable spaces on the mostly plant-unfriendly beach fronts. It is thought that rabbits and hares eat plants, and sand being washed away by storms is another threat. The number of plants that are present on these beaches each year varies hugely – from none to over 200.

A similar species, *Atriplex billardiarei*, was found on beaches around the southern Australian coast, Tasmania, and New Zealand's South Island and Chatham Islands. It has disappeared from most of these places and is now present only in Tasmania and the Chatham Islands, where it can be common on some beaches, in some years.

What next?

The threats to the survival of Holloway's crystalwort are not really known, while there are a range of potential threats, the beaches it inhabits are large and relatively un-used. The first step would be to more accurately determine what factors are stopping Holloway's crystalwort from flourishing. While that is being investigated the cultivation, planting and seed sowing needs to continue, preferably with an increased annual output.

More information

Website: New Zealand Plant Conservation Network – *Atriplex hollowayi*. [Link](#)

Book: Threatened Plants of New Zealand. By Peter de Lange, Peter Heenan, David Norton, Jeremy Rolfe, John Sawyer. Canterbury University Press, Christchurch, 2010.

News article: 'Sugar-coated' help to restore Rarawa Beach. Northern News, 6 January 2009.

Book: Threatened plants of Northland Conservancy. By Lisa Forester and Andrew Townsend. Department of Conservation, Wellington. 2004.

Article: The case for crystalworts. By Peter de Lange. New Zealand Geographic, March-April 2001.

Scientific paper: Taxonomy, ecology, and conservation of *Atriplex billardi* and *A. hollowayi* sp. nov. (Chenopodiaceae) in Australasia. By P.J. de Lange, D.A. Norton and G.M. Crowcroft. New Zealand Journal of Botany, Vol. 38, pages 551-567, 2000.
[PDF](#)

Photos



Holloway's crystalwort plant. Bec Stanley, DOC

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