

Atriplex billardierei

COMMON NAME

crystalwort

SYNONYMS

Theleophyton billardierei Moq., *Atriplex chrystallina* Hook.f.; *Obione billardieri* Moq.; *Theleophyton chrystallina* Hook. f.; *Theleophyton billardierei* Moq.; *Obione billardierei* Moq.

FAMILY

Amaranthaceae

AUTHORITY

Atriplex billardierei (Moq.) Hook.f.

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

No

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Herbs - Dicotyledons other than Composites

NVS CODE

ATRBIL

CHROMOSOME NUMBER

2n = 18

CURRENT CONSERVATION STATUS

2017 | Threatened – Nationally Endangered | Qualifiers: DP, EF, TO

PREVIOUS CONSERVATION STATUSES

2012 | At Risk – Relict | Qualifiers: EF, TO

2009 | At Risk – Relict | Qualifiers: EF, TO

2004 | Range Restricted

DISTRIBUTION

Indigenous. New Zealand: South Island (formerly present in the Foveaux Strait area), Stewart Island/Rakiura (last seen in that area in 1982), Chatham Islands. Also in Australia (Tasmania, apparently extinct elsewhere).

HABITAT

It is generally found in the strand zone on open beaches and sandy banks through the build up of sand where it forms low sandy mounds.



Atriplex billardierei at Waitangi West Beach, Chatham (Rekohu) Island. Photographer: Gillian M. Crowcroft, Date taken: 01/02/1996, Licence: All rights reserved.



Atriplex billardierei at Whangatete Bay, Chatham Island. Photographer: John Smith-Dodsworth, Licence: CC BY-NC.

DETAILED DESCRIPTION

Decumbent, sprawling, lightly branched, succulent, leafy, monoecious, annual herb, forming circular mats or low mounds within sand, to 2 or 3 m diameter. **Branches** 20–150 mm long, succulent, cream or yellow, rooting at nodes; exposed surfaces coated with deciduous, watery, spherical, glistening papillae. **Leaves** 5–20 × 2–7 mm, oblong-obovate, ovate, elliptic, or lanceolate, green to glaucous-green, succulent. **Petioles** short, 0.5–1 mm. Leaf surface sparsely to densely covered in deciduous watery, spherical, glistening papillae; apex and base obtuse; margin entire, very rarely within one or two lobes. **Male flowers** axillary, in clusters of 3–4, rarely single; occasionally with rudimentary stigma; perianth lobes 5, green or pale cream, 1.2 mm long, elliptic-oblong, apex inflexed, cucullate, margins lacinate-crenate, abaxial surface covered in watery papillae; stamens 5, filaments 0.6 mm long, white, anthers 0.2 mm long, oblong, basifixed, pollen sulphur yellow. **Female flowers** minute, 1–2 mm, shortly stipitate, borne in leaf axils, either solitary, or in pairs, usually accompanied by a short shoot with one pair of reduced leaves. **Peduncles** minute, 0.25 mm long. **Perianth** absent; bracteoles fused for $\frac{3}{4}$ of their length, lips entire; external bracteole surfaces glistening, papillae 0.2–0.3 mm diameter; style connate, stigmas 2.1–1.3 mm, white, half exerted, tapering-terete, 0.1–0.2 mm diameter, exerted portion with antrorse papillae. **Ovary** flattened at right angles to lips, 0.5 mm diameter, sessile or almost so. **Fruiting bracteoles** 3.3–9.5 × 2.2–6.0 mm, light brown or tan, subsessile or shortly stipitate; urceolate, valves rigidly fused for $\frac{3}{4}$ of their length, swollen toward base, corky, otherwise coriaceous with an entire margin, apex usually entire, rarely finely crenate, or fimbriate; surface densely coated in watery papillae 0.2–0.3 mm diameter. **Seed** circular in outline, convex, 1.8–4.0 mm diameter, testa chesnut-brown, maturing purple-brown, fading to black in dried specimens, surface matt, ± smooth. or finely rugose; radicle lateral, erect.

SIMILAR TAXA

Atriplex prostrata DC. often grows in similar habitats but has large arrowhead shaped leaves. *Atriplex buchananii* (Kirk) Cheeseman has been confused with *A. billardierei* but it lacks the distinctive spherical pustules on the leaves; also it has smaller fruit. *Cakile edentula* (Bigelow) Hook. and *Cakile maritima* Scop. are introduced plants that occupy similar habitats.

FLOWERING

November–February

FLOWER COLOURS

Cream, Green

FRUITING

December–April

LIFE CYCLE

Spongy nutlet dispersed by water and possibly also wind and granivory (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easy from fresh seed but difficult to maintain.

THREATS

Possibly very vulnerable to human disturbance. Wide-scale coastal erosion and storm inundation are probably the greatest natural threats. It is occasionally browsed by sheep and cattle and horses. There is evidence from Australia and New Zealand that it is susceptible to competition from other introduced strand plants. Plants are easily killed by trampling and by vehicles using beaches. In much of its former range it has also suffered from collection of specimens for museums.

ETYMOLOGY

atriplex: From an ancient Latin name whose derivation is uncertain, but a possible explanation is the name comes from the Greek *a-* 'without' and *traphein* 'nourishment' because many of these species grow in arid desert soils
billardierei: Named after Jacques Houttou de Labillardiere (1755-1834), 19th century French botanist who described several New Zealand plants

WHERE TO BUY

Not commercially available

ATTRIBUTION

Description based on de Lange et al. (2000).

REFERENCES AND FURTHER READING

de Lange PJ, Norton DA, Crowcroft GM. 2000. Taxonomy, ecology, and conservation of *Atriplex billardierei* and *A. hollowayi* sp. nov. (Chenopodiaceae) in Australasia. *New Zealand Journal of Botany* 38(4): 551–567.

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Thorsen MJ, Dickinson KJM, Seddon PJ. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 11: 285–309. <https://doi.org/10.1016/j.ppees.2009.06.001>.

NZPCN FACT SHEET CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Atriplex billardierei* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/atriples-billardierei/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/atriples-billardierei/>