Toothed Spleenwort

Asplenium dentatum

Bermuda Protected Species
GOVERNMENT OF BERMUDA
Department of Environment & Natural Resources

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Current Status

Native

BPSA: Level 2

CITES: No

Bda Red List: EN (B1a,b)

CMS: No

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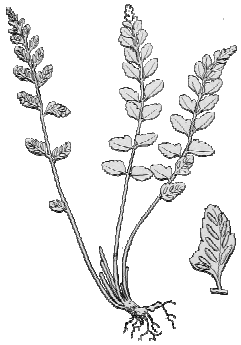
Ecology

Identification

The blades of Toothed Spleenwort are up to 3 inches (7.5 cm) long with 6-8 pairs of pinnae (the leaflets of a fern). The pinnae are medium green, and are irregularly shaped with slightly toothed margins. The central stem of the leaf blade (the rachis) is green with no scales or hairs. The spores of this Spleenwort are found in rows on the underside of the pinnae on fertile leaf blades. Fertile blades tend to be held erect, while blades without spores usually lie flat against the rock



Britton, 1918

Habitat

In his 1918 book Flora of Bermuda, N.L Britton records the distribution of this small fern as occurring on Abbot's Cliff and on shaded rocks around caves in the Walsingham area, and on the islands in the Great Sound. Its island-wide distribution is currently being mapped. It can still be found in several locations at Walsingham and Abbott's Cliff Nature Reserves, growing alongside mosses and other protected ferns, and is also known from Paynter's Hill, Blue Hole and Church Cave.

Range

The Toothed Spleenwort is native to Bermuda, Florida, the Caribbean, Mexico and Central America.

Reproduction and Life Cycle

Ferns do not reproduce by flowers and fruits like other plants. They produce dust-like spores on the underside of a mature frond. The spores develop into a small, flat, often heart shaped, prothallus. The prothallus has organs containing eggs and sperm on its surface. Ferns mostly occur in wet habitats, where water accumulates on the surface of the prothallus, allowing the sperm to move across the surface and reach the egg. Once fertilisation has occurred the sporophyte begins to develop; this is the mature fern that we see with roots and fronds.

Why protect this species?

Toothed Spleenwort is listed as Endangered in Bermuda because it occupies a restricted habitat, much of its habitat has been lost to development, the quality of the remaining habitat is degrading due to invasive species, its population is fragmented and a continued decline of the species is predicted without intervention.

Ferns, and fern-like plants such as Spleenworts, have a complex life cycle which makes it difficult for them to recover from habitat disturbance and population fragmentation.

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What is being done to conserve it?

Listing: Level 1, 2012 re-graded to Level 2, 2016

IUCN Red List: Not assessed

Recovery Plan: the main goals in the Plan are to protect and manage habitat, increase size and number of populations, maintain existing populations, conduct field surveys for new populations and potential habitat for introduction. Viewable for download www.environment.bm

Public awareness: campaign needed.

Research: has focused on mapping the current island-wide distribution

Habitat protection: Most known spleenworts are found within existing protected areas. Expanding protection to known populations on private land needs to be pursued. Control of invasive plants in fern habitats is ongoing.

Monitoring: Actions currently underway include recording the location when a specimen is discovered and monitoring the health of known specimens in nature reserves.

Artificial propagation: To date, attempts to raise young plants by germinating spores have been unsuccessful. Further attempts under different conditions are planned.

Protective legislation

Protected Species Act (2003)

What you can do?

Learn: more about the species. Understand how destruction of habitat leads to loss of Bermuda's plant and animal diversity. Tell others what you have learned.

Control invasive plant species: Invasive plants should be managed in areas known to have Spleenworts so that they do not become overwhelmed by other vegetation.

Grow and plant: Plant native and endemic plants on your property, and encourage your favourite garden centre to carry them. Do not dig up native plants from natural areas.

Protection: As a protected species, any specimen found in a proposed development area should be relocated to a nature reserve. If you see a specimen on private property email environment@gov.bm

Information sources

To learn more please visit: www.environment.bm

Nathaniel L. Britton. 1918. Flora of Bermuda. Charles Scribner's Sons, New York.

Samia Sarkis. 2010. Recovery plan for six fern species from Bermuda (*Diplazium laffanianum* (Baker) C. Chr*, Goniopteris bermudiana* (Baker) comb.**,** *Ctenitis sloanei* (Poepp. Ex Spreng.)*, Asplenium heterochroum* Kunze*, Asplenium dentatum* L.*, Rumohra adiantiformis* (G. Forst.) J. Department of Conservation Services, Government of Bermuda. 27 pages

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