Halophila stipulacea **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Liliopsida	Hydrocharitales	Hydrocharitaceae

Common name Halophila seagrass (English)

Synonym *Zostera stipulacea* , (Forssk&#65533;l, 1775)

Similar species

Summary *Halophila stipulacea* is a seagrass which has been introduced to the Mediterranean and more recently the Caribbean most likely through fragments transported by commercial and recreational shipping. Studies suggest that *H. stipulacea* is capable of displacing native seagrasses and associated communities and while yet to be confirmed, the potential threat to biodiversity posed by this rapidly spreading plant is serious *H. stipulacea* is included in the \"100 Worst Invasive Alien Species in the Mediterranean\".

view this species on IUCN Red List

Species Description
Halophila stipulacea is a euryhaline marine angiosperm, also known as a seagrass. Plants are dioecious with male and female flowers produced at each leaf node. Rhizomes are creeping, branched and fleshy, and roots appear solitary at each node of the rhizome, unbranched and thick with dense soft root hairs. Pairs of leaves are distributed on petioles along a rhizome, rooted in the sand. Petioles are 3 - 15 mm long while leaves are 3 - 8 mm wide and obovate, hairy and not narrowing at base; margin spinulose (Galil, 2006).
H. stipulacea displays high morphological and genetic variability to differing enviornmental and ecological factors (Procaccini *et al.*, 1999). Stands at comparable depths from different localities were found to be genetically more similar (Procaccini *et al.*, 1999).
Two unidentified photosynthetic pigments with the same retention time as two “siphonaxanthin-type\" pigments were isolated and relatively common in *H. stipulacea*. This could perhaps be a biochemical adaptation to different light regimes in seagrass species that can colonise deeper habitats (Casazza & Mazzella, 2002).

Habitat Description
In its native range, *Halophila stipulacea* occupies soft marine sublittoral sediments, growing in sheltered localities as isolated patches, on muddy bottom and coral rubble (Galil, 2006). In its introduced range, *H. stipulacea* also occupies marine sublittoral sediments intertidal to 65 m, but mainly at a depth of 30 - 45 m, usually in or in the vicinity of harbours (Galil, 2006).

Reproduction
Halophila stipulacea is dioecious with male and female flowers produced at each leaf node (Galil, 2006). These flowers of are solitary, with the axillary covered by spathes (Galil, 2006). Strings of four reniform trinucleate pollen grains contained in a mucilaginous moniliform tube are dispersed (Galil, 2006). In India, female flowers and fruits are noticed from February to April while in the Mediterranean, the main flowering season occurs in July-August, with fruits ripening in September (Galil, 2006). Experimental studies demonstrated that full sunlight completely inhibited seedling growth at a depth of 30 cm which may explain the absence of *H. stipulacea* from the uppermost part of the subtidal zone (depths of 0–2 m) (Malm, 2006). It is suggested that, as only male flowers are usually found in the Mediterranean area (Procaccini *et al.*, 1999), it may be difficult for female flowers to develop in the Mediterranean climate (Gambia *et al.*, 2009). This implies that main propagation of the species is by fragmentation and vegetative stolonization (Gambia *et al.*, 2009).

General Impacts
Halophila stipulacea is capable of out-competing native Mediterranean seagrasses while inducing changes in the composition of sublittoral communities (Galil, 2006). Tsiamis *et al.* (2010) state that while the high abundances of *H. stipulacea* observed may indicate invasive behaviour, no reports of native species displacement have yet been made. Williams (2007) states that no ecological consequences of the introduction and spreading of *H. stipulacea* have been reported, as *H. stipulacea* might be small enough to co-exist under the canopy of the larger native seagrasses.

Management Info
Halophila stipulacea is included in the \"100 Worst Invasive Alien Species in the Mediterranean\" list due to its potential to cause serious negative impacts on biodiversity (Streftaris & Zenetos, 2006). *Halophila stipulacea* is also included in the '100 of the worst aliens species in Europe' list (see Delivering Alien Invasive Species Inventories for Europe (DAISIE))
Preventative measures: The erection of a salinity barrier in the Suez Canal was mentioned in Galil (2006) to reduce the number of alien species such as *Halophila stipulacea* from entering the Mediterranean Sea.

Pathway
Halophila stipulacea is dispersed to new locations via current or vessel-borne plant fragments or fruits (Galil, 2006).

Principal source:

Compiler: IUCN SSC Invasive Species Specialist Group (ISSG) with support from the Overseas Territories Environmental Programme (OTEP) project XOT603, a joint project with the Cayman Islands Government - Department of Environment

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ALIEN RANGE

[1] CYPRUS
[2] EGYPT
[1] GRENADA
[1] KENYA
[1] MALTA
[1] SAINT LUCIA
[2] TURKEY
[1] DOMINICA
[11] GREECE
[1] ITALY
[1] LEBANON
[2] MEDITERRANEAN & BLACK SEA
[1] SEYCHELLES

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31 references found for **Halophila stipulacea**

Managment information

IUCN/SSC Invasive Species Specialist Group (ISSG)., 2010. A Compilation of Information Sources for Conservation Managers.
Summary: This compilation of information sources can be sorted on keywords for example: Baits & Lures, Non Target Species, Eradication, Monitoring, Risk Assessment, Weeds, Herbicides etc. This compilation is at present in Excel format, this will be web-enabled as a searchable database shortly. This version of the database has been developed by the IUCN SSC ISSG as part of an Overseas Territories Environmental Programme funded project XOT603 in partnership with the Cayman Islands Government - Department of Environment. The compilation is a work under progress, the ISSG will manage, maintain and enhance the database with current and newly published information, reports, journal articles etc.

General information

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