GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Rhamnus alaternus***

Rhamnus alaternus 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Rhamnales	Rhamnaceae

Common name evergreen buckthorn (English), alaterne (English), Italian buckthorn (English)

Synonym

Similar species

Summary Rhamnus alaternus is an evergreen tree native to the Mediterranean. It was introduced to many areas of the Australasian-Pacific region as an ornamental plant in the 1900s where it became an invasive tree along coastlines and forests because of its ability to form dense stands that eventually exclude all other types of vegetation.

view this species on IUCN Red List

Species Description
Rhamnus alaternus is an evergreen dioecious tree that grows up to 10 metres in height. Its stout stems have dark brown, thick, furrowed bark when old, but on younger plants it is pale (often purplish) and thin. It has glossy green, leathery, oval-shaped leaves that often have serrated or toothed edges and prominent veins. The pentamerous flowers are inconspicuous, pale green, fragrant, and 3-4mm in diameter. The abaxial surface of the calyx lobes of the flowers are usually red-edged. The fruit is a glossy, dark red, egg-shaped drupe that reaches lengths of 7mm and turns black when ripe, containing pale white seeds. *R. alaternus* is generally dioecious (Rottenberg 2000). However, there have been some reports of monoecy and hermaphroditism on individual trees in conspecific populations (Aronne and Wilcock 1995; Rottenberg 2000). *R. alaternus* is able to establish under light shade or in full sun. The taxon enters its reproductive phase in three years and has a fast growth rate (height increase of up to 800mm per year) (Auckland Regional Council 1999; Wotherspoon and Wotherspoon 2002; RNZIH 2004). Male plants were found to have greater growth rates than females in southern Italy (Aronne and Wilcock 1995).

Uses
Rhamnus alaternus is commonly used in reforestation programs in the Mediterranean, due to its fecundity and ability to survive in xeric environments (Gulias *et al.* 2004). *R. alaternus* was introduced to many areas of the Australasian-Pacific region as an ornamental plant (Auckland Regional Council, 1999). It has also been evaluated for use as an ornamental plant (Floyd 1974) and for windbreaks in citrus groves (Platt 1966) in the United States. The species was also used in ancient Mediterranean cultures for medicinal purposes (Dafni and Lev 2002; Stocker *et al.* 2004).

Habitat Description
Rhamnus alaternus is a sclerophyllous shrub that generally grows in areas with a Mediterranean-type climate (summer drought and intermittent winter rain), particularly coastal areas and bare rock. It can also grow beside streams, on forest margins, islands, and shrublands (Auckland Regional Council 1999). *R. alaternus* can also be found in the following habitat types: scrub, forest margins and plantations, hedges, woodlands, sunny edges, dappled shaded areas, and shady edges (RNZIH 2004; Plants for a Future 2002). In New Zealand, it is a weed of coastal areas and especially exposed cliff faces on offshore islands (PIER 2002).

Reproduction
Rhamnus alaternus flowers during early winter and early spring and produces fruits that ripen in late spring and early summer (Gulias *et al.* 2004). Although largely pollinated by insects, the dry pollen of *R. alaternus* suggests it is also transported by wind (Aronne and Wilcock 1995). The fruits consist of two to three seeds surrounded by an endocarp that opens when the fruit pulp is removed (Gulias *et al.* 2004). The seeds explosively eject from the endocarps upon ripening (Aronne and Wilcock 1995). In southern Italy, male plants were found in greater abundance than females, had a greater density of flowers, and flowered regularly every year (Aronne and Wilcock 1995). Female plants were found to produce fruit every other year (Aronne and Wilcock 1995).\r\nGermination of seeds of *R. alaternus* was unaffected when seeds were exposed to temperatures as low as 5 °C on the island of Mallorca, which is within its native range (Gulias *et al.* 2004). Seedling survival and post-dispersal seed predation, as opposed to seed viability, were considered to be the most limiting factors in the recruitment process of *Rhamnus alaternus* (Gulias *et al.* 2004).

General Impacts
Rhamnus alaternus is an invasive tree along coastlines and forests that forms dense stands, causing the exclusion of all other vegetation (Northland Regional Council Undated). \"Because its growth rate is faster than most native shrub and tree species, *R. alaternus* quickly dominates and extends islands of young vegetation out competing subcanopy species in all forest types, and infiltrating the canopy of lower scrubby vegetation types\" (Wotherspoon and Wotherspoon 2002).

Management Info
Physical: *Rhamnus alaternus* can be controlled physically by pulling out the smaller plants and seedlings - making sure the tap root is removed. The vegetation can then be composted or mulched.
Chemical: Larger plants can be controlled by cutting down the tree and treating the stump with herbicide, or applying herbicide around the base of the trunk from ground level to a height of approximately 60cm. Herbicides that can be used include: Escort, Grazon, and Grazon Knapsacking (Auckland Regional Council 1999). The Auckland Regional Council (2005) uses basal treatment at or close to sensitive areas. This involves either cutting the tree down and treating the stump or frilling the bark and applying herbicide to the trunk. Foliar spray can be used on heavy infestations of seedlings where there is minimal risk of damage to other plants.

Pathway
Rhamnus alaternus was introduced to many areas of the Australasian-Pacific region as an ornamental plant (Auckland Regional Council, 1999).

Principal source:

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ALIEN RANGE

[2] AUSTRALIA

[14] NEW ZEALAND

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