GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Erodium cicutarium***

Erodium cicutarium 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Geraniales	Geraniaceae

Common name cutleaf filaree (English), redstem filaree (English), tachuela (Spanish, Chile), relojito (Spanish, Chile), pin-weed (English), pin-grass (English), alfilerillo (Spanish, Chile), filaree (English), heronsbill (English), redstem stork's bill (English), California filaree (English), stork's bill (English), loiquilahuen (Spanish, Chile), alfilaria (English), alfilaree (English), redstem (English)

Synonym

Similar species *Erodium moschatum*

Summary Erodium cicutarium is an annual, winter annual or biennial that is a pioneer on disturbed and arid sites. It can cause yield reductions of crops and the seed is very difficult to clean out of small seeded crops. Erodium cicutarium is considered a noxious weed as it crowds out or outcompetes crops and native plant species. Erodium cicutarium provides forage for rodents, desert tortoise, big game animals, livestock and also upland game birds and songbirds. Prevention may be the best method for controlling Erodium cicutarium, however, it may be impossible to actually prevent this species from colonising, or to eradicate it, once present. There are few known chemical control methods for Erodium cicutarium besides, general herbicide controls.

view this species on IUCN Red List

Species Description

Erodium cicutarium is described as an annual, winter annual or biennial. It has a prostrate basal rosette and upright, often leafy flowering stalks. The stalks range from < 10cm to about 50cm high, and originate in the axils of the leaves. The leaves are divided into fine leaflets (or lobes) and are finely dissected, similar to those of a carrot. The flowers are about 1cm across, pink or lavender, and borne on stalks in clusters of 2-12. The sepals of the flowers are somewhat pointed and hairy. The fruiting structure (consisting of the seeds, persistent bristly styles, and central placental axis) is 2-5cm long and resembles a stork's bill. At maturity, the developing fruit splits into 5 segments, each with a long, spirally twisting style with a seed attached at the base. The style twists hygroscopically, drilling the seed into the soil (The Manitoba Agriculture, Food and Rural Initiatives, 2001; Hickman, 1993).

Notes

Blackshaw *et al*. (2000) report that, \"In Canada, *Erodium cicutarium* has been present as a weed in farmyards and along roadsides for many years. Recent weed surveys indicate that it is increasing in occurrence and abundance on cropland (Anonymous, 1992; Thomas et al., 1995).\" Blackshaw and Harker (1998) state that, \"*E. cicutarium* may be expected to be less prevalent and competitive with crops in very arid environments.\"

Lifecycle Stages
Griffith (1998) states that, \"*Erodium cicutarium* germinates early spring through late summer and flowers in early spring or early summer.\" Fedorenko *et al.* (1996) report that in Argentina, \"*E. cicutarium* can hasten their reproductive phase at the end of the growing season, a time when maximum air temperatures are high (35 °C) and soil water availability is reduced (e.g. precipitation during October and November was only 17% of that in July and September. This could be an important strategy in these species, allowing them to persist as seeds, and produce a new generation under favourable environmental conditions.\"

Uses
Howard (1992) reports that, \"*Erodium cicutarium* provides seasonal forage for rodents, desert tortoise, big game animals, and livestock. The seeds are eaten by upland game birds, songbirds, and rodents.\" Howard (1992) states that, \"The presence or absence of *E. cicutarium* pollen in fossil records, sediment lakebeds, and artifacts has been used as a dating technique in paleobotany and archeology.\"

Habitat Description
Howard (1992) reports that, *E. cicutarium* besides being a pioneer on disturbed sites, is also a residual or secondary colonizer. Seedlings can either establish from on-site seed or from seed carried in by animals. In annual grassland communities, *E. cicutarium* a persistent ruderal can be intolerant of the mulch layer that builds up in some areas. *E. cicutarium* will tolerate partial shade, but vigor is reduced. Griffith (1998) adds that, \"*E. cicutarium* prefers dry, sandy soil, and is found in many perennial horticultural crops, turfgrass, and landscapes.\" It also grows readily on soils of less sandy texture. It occurs in great abundance throughout arid parts of California, including the Mojave Desert. According to Mensing and Byrne (1998), *E. cicutarium* was among the first invasive Eurasian plants to become naturalized in California. Blackshaw *et al.,* (2000) report that in Canada, \"Weed surveys indicate that *E. cicutarium* has recently increased in distribution and abundance on cropland, especially in areas where conservation tillage has been adopted (Anonymous 1992 ; Thomas *et al.,* 1995, in Blackshaw *et al.,* 2000).\"

Reproduction
Howard (1992) states that, \"*Erodium cicutarium* reproduces sexually. Seasonal rains and soil temperatures trigger germination. Light rains result in lower germination rates than heavier rains. Plants are sexually mature 2 to 4 months following germination. Seed either falls beneath the parent plant or is disseminated by animals. Rodents frequently bury *E. cicutarium* seed in a food cache where unconsumed seed later germinates. Seed also catches on animal fur and is disseminated in that manner. Seeds of *E. cicutarium* can remain viable for many years, and form extensive seed banks.\" Blackshaw and Harker (1998) state that, \"*E. cicutarium* germinates readily at soil temperatures of 5-20 °C (Blackshaw, 1992) and optimum growth occurs at 15-25 °C (Blackshaw & Entz, 1995).\"

Nutrition
Blackshaw and Harker (1998) state that, \"Increased competitive ability of *Erodium cicutarium* appeared to be related to increased rainfall during the growing season. Weed surveys in western Canada indicate that *E. cicutarium* occurs more frequently on irrigated cropland and in areas receiving greater than 500mm precipitation annually (Anonymous, 1992, in Blackshaw and Harker 1998). Palaez et al. (1995, in Blackshaw and Harker 1998)) found that *E. cicutarium* exhibited more vigorous and productive growth under wet than dry conditions but that it could persist under drought stress.\" In one arid California grassland, *Erodium cicutarium* cover averaged 30-85% in growing seasons when precipitation totaled only 13.1-17.7cm (Kimball and Schiffman 2003).

General Impacts
E. cicutarium has the potential to become a serious competitor of early planted spring crops on the Canadian prairies, it has been recognised as a problem weed capable of causing economic losses in pasture and forage crops (such as *Medicago sativa*), and in arid wildlands. This is facilitated by its ability to emerge and thrive under cool to moderate temperatures (Blackshaw and Harker, 1998).
Kimball and Schiffman (2003) discuss the characteristics of *E. cicutarium* that make it such a problem weed: \"*E. cicutarium* germinates and flowers early and continues to flower throughout the growing season, giving it a longer inductive time period than many later-maturing annual species; \" *E. cicutarium* is a fierce competitor, producing many seeds that germinate early, developing a deep tap root quickly, depleting soil water, and preventing sunlight from reaching seedlings of other species that germinate later and it may prevent establishment of perennial grasses by blocking access to light.
Brooks *et al.* (2003) report that increased density and biomass of *E. cicutarium* created in response to increased soil nitrogen may heighten competition for soil moisture, potentially decreasing density, biomass and diversity of native annual plants.

Management Info
An integrated approach to the management of *Erodium cicutarium* is important, especially since herbicides for in-crop control of *E. cicutarium* are limited and control is often unsatisfactory. For details on management options, please see *management information*.

Principal source: *Erodium cicutarium* (Howard, 1992)
Pest Management - Weeds - Stork's Bill (Manitoba Agriculture, Food and Rural Initiatives, 2001)

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

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ALIEN RANGE

[2] AUSTRALIA
[1] FALKLAND ISLANDS (MALVINAS)
[1] NEW ZEALAND
[6] CANADA
[1] GEORGIA
[48] UNITED STATES

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