Dispersal and growth

Golden crownbeard is a disturbance specialist. Any activity that disturbs the soil, such as road maintenance or even seabirds digging to construct burrow nests, creates ideal conditions for its establishment. Significant spread has been associated with roads and there is a high potential that areas such as the Houtman Abrolhos, where significant seabird burrowing occurs, could become highly degraded by the establishment of a monoculture of the weed.

Impacts

The species is toxic and posses a threat to animals that eat the plant. Livestock deaths have been attributed to it. Through exuding chemicals from its roots, golden crownbeard is also able to displace native vegetation and prevent native species from reestablishing following disturbance.

Implications for management and control

Soil disturbance in or around golden crownbeard populations should be kept to a minimum.

With several germination events possible each year, populations of the weed need to be revisited throughout the growing season and seedlings controlled as they germinate.

New and isolated populations should be controlled as a priority before they have the opportunity to flower and set seed.

Any control program will need to be followed up for several years to make sure no seeds remain in the soil.

Control techniques

Efforts to control golden crownbeard in Australia use chemical and physical methods.

Physical control

Cutting off at the base or hand pulling is effective. If the plant has seeds, tie it securely in a bag and bin or burn it. However, physical control can be time consuming.

Chemical control

For larger infestations, chemical control is recommended. Glyphosate has been found to provide effective control. Spot spraying with one litre of glyphosate (450g/L) plus 250 millilitres of Pulse Penetrant® in 100 litres of water before seed set provides control of existing plants but needs to be repeated as new plants emerge.

If you find plants outside the known distribution area please phone DEC to report the infestation. It is important to revisit the site – keep checking and remove seedlings before they set seed.

Contact

For more information and to report an infestation of golden crownbeard contact:

Department of Environment and Conservation
Midwest Regional Office
PO Box 72, Geraldton WA 6531

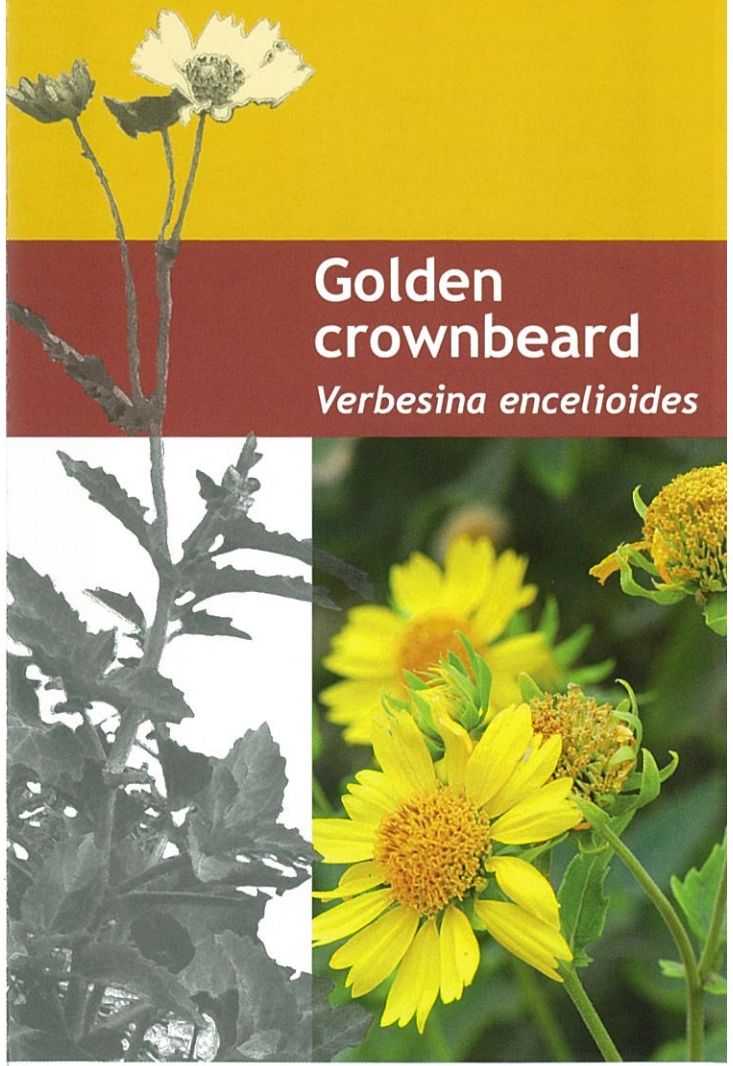
Ph: (08) 9921 5955

Fax: (08) 9921 5713

Web: www.dec.wa.gov.au

2007358-0608-20M

Bushland weeds



Golden crownbeard

Verbesina encelioides

ACT NOW FOR THE FUTURE

Government of Western Australia

Department of Environment and Conservation

Our environment, our future

Golden crownbeard (*Verbesina encelioides*) is a weed native to America. Its earliest herbarium record in Western Australia was made in 1984 in the Perth suburb of Craigie. Four years later, in 1988, it was first recorded in Geraldton.

The species is now abundant around Geraldton on sandy roadsides and vacant lots and is common in similar sites south to Dongara. There are continuing scattered records around Perth and the species has been recorded north of Mandurah, suggesting that it is mainly spread by soil movement along roads.

Golden crownbeard displaces native vegetation and is toxic to stock and humans. To avoid damage to agriculture and the environment, the further spread of the species needs to be prevented.

Achieving this is still possible if current infestations are controlled and new outbreaks attacked. The distribution of golden crownbeard is limited so we can make a difference.

Current known distribution

Other common names include crownbeard, wild sunflower, girasolcito, yellowtop and anil del muerto.

Description

Golden crownbeard is a short-lived annual herb growing 0.3 metres to 1.5 metres in height with yellow flowers in spring and summer.

Its leaves are toothed or lobed and have two distinct growth patterns: the lower leaves are opposite and triangular, while the upper leaves are alternate and lance-shaped. Both upper and lower leaves feature fine white hairs on the underside. These fine white hairs are also present on the stem of the species, which grows from a taproot system.

Golden crownbeard flower heads are found on elongated stalks, resemble small sunflowers and are 2.5 centimetres to five centimetres in length. They can either be solitary or in clusters of up to three heads.

The single 'flower' is more accurately referred to as a 'head' and is composed of two different types of flower structures: the ray-florets, which appear as the petals, and the disc-floret, which is in the centre of the flower head. The ray-florets surrounding the centre are about 1.25 centimetres long, yellow to bright yellow in colour and number 12 to 15 on each head. The centre disc-floret, the site of eventual seed formation, is also yellow and is comprised of many tubular structures.

Seeds are grayish-brown, flat and winged along the margins. Seed size ranges from 5.4 millimetres to 6.7 millimetres long by 3.1 millimetres to 3.66 millimetres wide. As with the leaves and stalk, the seeds are covered with fine hairs.

Interesting biology

The golden crownbeard can live in a variety of habitats, temperatures and elevations. It is considered a drought tolerant plant and once established requires water only once a month.

The species propagates by seeds and these can survive under a wide range of climatic conditions, including droughts and high temperatures. The plant is efficient at both self and cross-pollination. Its seeds are able to germinate in soil up to 2.5 centimetres deep.

The golden crownbeard's ideal growing conditions are open sand dune areas with an optimal soil moisture of 21 per cent.

The species' peak flowering time is spring and summer, but it may also flower lightly during winter.

While seeds are easily dispersed by light winds, a large portion of the seeds will generally remain under or near the parent plant. Once in the soil, the seeds typically take 14 to 30 days to germinate. A flush germination follows winter rains and any other heavy rain throughout the year. For more than five years the Department of Environment and Conservation (DEC) has controlled an infestation of golden crownbeard at the Houtman Abrolhos. In this time no seed has set, however new seedlings are still emerging from seed more than five years old.

Seedlings can mature within a few months, small plants flower and set seed anytime following rain.