Control and management

Strategies

To prevent haas grass from becoming a serious environmental weed, new populations need to be controlled before they establish and strategic control of known populations needs to be undertaken.

Key points for management include:

- increasing awareness;
- eradicating populations at key high biodiversity value sites;
- detailed mapping;
- eradicating outlying populations;
- managing upstream and uphill source populations;
- managing human activities, such as road maintenance;
- developing partnerships between friends groups, land managers and the community;
- fostering partnership commitment — especially for long-term monitoring; and
- maintaining detection and surveillance.

Physical control

Cutting below the base of plants may be appropriate for small isolated populations but is labour-intensive, may enhance seedling emergence and is impractical on a larger scale. Care should be taken to avoid spreading seed and plant material which could produce new plants.

Herbicide control

Herbicide trials have shown success when the grass selective herbicide Fusilade® is used, particularly where haas grass grows closely among native vegetation. Young vigorously growing plants can be controlled with Fusilade® (10ml/L + Pulse 2ml/L) if applied before flowering. When the plants are old or stressed they may be controlled with stronger rates (15ml/L + Pulse 2ml/L) applied later in the season. Plants resprouting after summer fires have been effectively controlled using Roundup® (10ml/L + Pulse) or Fusilade® applied in autumn.

Note: Follow-up monitoring and spraying is required for up to 10 years and after disturbance events to achieve long-term eradication.

Additional notes

More research is required into the seed biology and dispersal of haas grass. Controlling existing populations and stopping its spread is essential, particularly by limiting fire and other disturbance in bushland. However, any unplanned fires are opportunities to effectively control mature plants and seedlings. Any control program will require follow-up work, monitoring and long-term planning.

Further reading

Brown, K. and Brooks, K. (2005). Notes on the biology and ecology of *Tribolium uniolae* (L.f.) Renvoize and its spread in south-western Australia *Plant Protection Quarterly*, 20 (2).

Linder, H.P. and Davidse, G. (1997). The systematics of *Tribolium Desv.* (Danthonieae: Poaceae), *Botanische Jahrbucher fur Systematik* 119, 445-507.

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This brochure is one of a series which provides information about management of our most serious environmental weeds where they are invading native bushland.

It is a collaboration between a Natural Heritage Trust-funded Swan Catchment Council Invasive Species Project and DEC's Urban Nature program.

Urban Nature promotes best practice bushland management and provides information and technical advice to land managers striving to protect and manage natural bushland and wetlands.

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ACT NOW FOR THE FUTURE

Department of Environment and Conservation
Our environment, our future

Bushland weeds

Haas grass
Tribolium uniolae

Summary

Scientific name: *Tribolium uniolae*
Common name: haas grass
Family: Poaceae
Origin: Cape Floristic Region, South Africa
Synonym: *Plagiochloa uniolae*

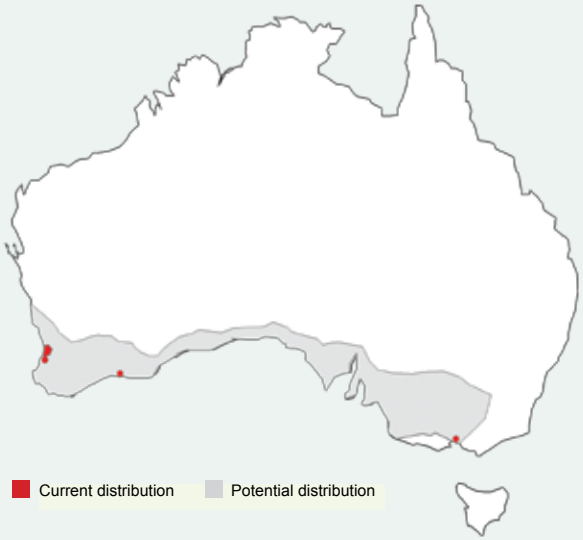
The problem

As a group, grass weeds are highly successful and present serious threats to the biodiversity of areas they invade. The South African 'hare' or 'haas' grass, like many of its African relatives, has become naturalised in the south-west of Western Australia. Fortunately it appears to be in the early stages of invasion.

However its ability to form dense clumps, increase fire intensity and displace annual and perennial herbs make haas grass a significant threat, particularly to restricted and threatened woodlands and wetlands on the eastern side of the Swan Coastal Plain.

Recognising its potential to spread and impact on local native flora, fauna and plant communities, haas grass was one of a suite of environmental weeds listed in the *Candidate Species for Preventative Control* published in January 1998.

Recent survey efforts have given a clearer picture of its current distribution. Analysis using climate data has shown that it has the potential to spread throughout the south-west of WA, South Australia and part of Victoria.



The *Tribolium* genus

Haas grass belongs to the genus *Tribolium*. The genus is made up of 10 species occurring in open habitats in the Fynbos and Karoo communities of South Africa.

Description

Haas grass is unique from other *Tribolium* species in that it has single distichous spikelets, similar to wheat. It is a variable taxa in its native range, with different forms associated with varied soil types and altitude.

Haas grass:

- is densely tufted and grows occasionally by short rhizomes (underground stems);
- is mostly glabrous (non-hairy) and upright;
- is perennial C_3 (summer dormant);
- grows about 0.3 to 0.6 metres high;
- has inflorescences up to seven centimetres long, made up of two rows of opposite spikelets, each of which contains three to 14 fertile florets (flowers);
- has green to purple flowers; and
- has leaf blades to about three millimetres wide and up to 20 centimetres long.

History — how was it introduced?

Haas grass was most likely introduced into WA in the south-east of Perth during the 1940s for trialing as a pasture grass. From here it escaped and gradually radiated outward. Collections have since been made in areas such as Brixton Street Wetlands, Forrestfield, Parkerville, Darlington, Lesmurdie and Harvey.

Habitat and distribution

Native range — South Africa

Haas grass originates in the Cape Floristic Region of South Africa, up to 1000 metres above sea level. It prefers richer well-drained soils derived from granite, sandstone, shales or limestone and is common in both disturbed and undisturbed areas. It is often found in long extensive linear populations along roadsides where it spreads aggressively by seed. It is common after scrub fires, but does not appear to tolerate grazing.

South-western Australia

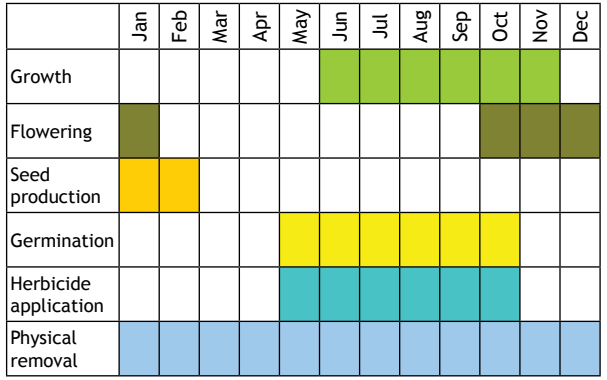
In the south-west of WA, haas grass is found on sand, sandy clay, loams and gravelly laterite on road verges and in jarrah forest and wandoo woodlands along the Darling Plateau and Darling Range. Recent survey efforts have confirmed the grass is common and expanding in these areas.

Other isolated populations occur on the eastern side of the Swan Coastal Plain, in threatened ecological communities including herb-rich clay-based wetlands and marri/kingia woodlands. Outlying populations occasionally occur including one 200 kilometres south of Perth near Harvey.

Reproductive biology, dispersal and growth

Haas grass:

- may reproduce from material which clones and breaks off from the base;
- reproduces and spreads mainly by small lightweight seed, one to two millimetres long;
- houses its seeds in fruits free from the lemma and palea (outer structures) of the floret (individual flower); and
- has highest seedling survival in wetter habitats such as creek lines.



Seed

Little is known of the viability, longevity and seed bank of *Tribolium* species. Grass seed in general is not known for its longevity — most are not viable beyond several years. Germination seems to be highest in disturbed soil and following fire, as this helps break any seed dormancy and creates optimum temperature, moisture and light conditions.

Dispersal

Any soil movement can rapidly disperse the seed. Seed can then be carried into undisturbed bushland through water flow and, to a lesser extent, by wind. Ants may also play a role in spreading seed, with recruitment observed around a number of ant nests and termite mounds.

Fire

Fire plays a significant role in the movement of haas grass into bushland. Although it can kill more than 70 per cent of adult plants, fire can cause massive seedling recruitment, creating conditions that allow seedlings to establish early and displace regenerating native species.