**Hakea salicifolia** (willow-leaved hakea)

**Evergreen shrub or small tree of linear leaves and reddish twigs.**

Scientific name: *Hakea salicifolia* (Vent.) B.L. Burtt.

Common name: willow-leaved hakea

Family: *Proteaceae*

Status in Portugal: invasive species (listed in the annex I of Decreto-Lei n° 565/99, 21 December)

Risk Assessment score: (in development)

Synonymy: *Embothryum salicifolium* Vent., *Hakea saligna* (Andrews) Knight

Last update: 01/07/2014

**How to recognise it**

Shrub or small tree up to 5 m, with reddish twigs.

Leaves: evergreen, glabrous, with a short petiole, flat, of 5-10,5 x 0,5-2 cm, lanceolate or narrowly elliptic, with reddish apexes when young; very similar tone on both surfaces of the leaf.

Flowers: white, very bland, in axillary fascicles of 4-9 flowers.

Fruits: woody follicles of 2-2,5 x 1-2 cm, ovoid, ± rough with a curved point.

Flowering: March to April.

**Similar species**

Some species of acacia (*A. longifolia* and *A. retinodes*) and willows are similar, but none presents as
**Hakea salicifolia** (willow-leaved hakea)

Follicle fruits. The acacia have yellow flowers and pods; and the willows frequently have hairs on the lower surface of the leaf, and different tones on both surfaces of the leaf. Additionally, *H. salicifolia* presents a reddish apex of the young leaves, which doesn’t happen with most similar species.

**Characteristics that aid invasion**

It reproduces by seed producing many seeds that remain on the trees for long periods of time and, once released, they germinate rapidly if they have appropriate conditions. The fire may lead to the germination of a large amount of seeds.

**ORIGIN AND DISTRIBUTION**

**Native distribution area**
Southeast Australia and Tasmania.

**Distribution in Portugal**
Mainland Portugal (Minho, Douro Litoral, Beira Baixa, Beira Litoral, Estremadura, Baixo Alentejo).

**Other places where the species is invasive**
Europe (France), South Africa, Australia (Victoria), New Zealand.

**Introduction reasons**
For ornamental purposes and for forming hedges in windy places, mainly near the littoral but also in other places.

** Preferential invasion environments**

Disturbed areas and windy, dry places, mainly near the sea and adjacent to hedges where it has been planted.

It prefers areas with light, where its establishment depends on the clearings originated by disturbances.

Adapted to soils that are poor in nutrients.

**IMPACTS**

It is sometimes confused with *Acacia longifolia* which may lead to the underestimation of the invaded area.

**Impacts on ecosystems**

It forms very dense stands inhibiting the development of native vegetation.

**Economic impacts**

Expensive control methodologies.

**Natura 2000 network habitats more subject to impacts**
- Riparian mixed forests of *Quercus robur*, *Ulmus minor* and *Fraxinus angustifolia* along the great rivers...
**Hakea salicifolia** (willow-leaved hakea)

- Fixed coastal dunes with herbaceous vegetation («grey dunes») (2130);
- Atlantic decalcified fixed dunes (*Calluno-Ulicetea*) (2150);
- Arborescent matorral with *Laurus nobilis* (5230);
- Thermo-Mediterranean and pre-desert scrub (5330).

**CONTROL**

Controlling an invasive species demands a well-planned management, which includes the determination of the invaded area, identifying the causes of invasion, assessing the impacts, defining the intervention priorities, selecting the adequate control methodologies and their application. Afterwards it is fundamental to monitor the efficiency of the methodologies and recuperation of the intervened area as to perform, whenever necessary, the follow-up control.

The control methodologies used for *Hakea salicifolia* include:

**Physical control**

**Hand pulling**: preferential methodology for seedlings and small plants. Hand pulling must be made during the rainy season as to facilitate the removal of the root system.

**Physical + chemical control**

**Cut stump method**: applied to adult plants. Cut the trunk as close to the ground as possible and immediately (in the following seconds) apply herbicide (active substance: glyphosate) to the stump surface.

**Chemical control**

**Foliar application of herbicide**: over recent sprouts (25-50 cm tall) or when high germination rates occur. Spray with herbicide (active substance: glyphosate) limiting as much as possible its application to the target species.

For additional information, visit the webpage [www.invasoras.pt](http://www.invasoras.pt) and/or contact us at [invader@uc.pt](mailto:invader@uc.pt).

**REFERENCES**