

HIMALAYAN BALSAM (*Impatiens glandulifera*)

Species Identification

A tall annual herb

Height: <2.5m

Stem: Hollow brittle stem: green/red early in year, turning pink/red in summer.

Leaf: Finely serrated slender to elliptical leaves, often with a reddish mid-rib. Leaves are 5 - 18cm long and 3 - 7cm wide and grow in opposite pairs or in whorls of 3 - 5 from the stem or branches.

Flower: Trumpet shaped, sweetly scented pink flowers (rarely white), with spots and markings inside. Flower measures 2.5 - 4cm long

Seed: Seeds follow flowering. 4-16 brown 'coiled spring' seeds are encased in distinctive green droplet shaped seed capsules with a point at one end. Seeds hang off of red stalks and measure c. 2.5cm in length. When ripe they 'explode' when touched, firing seeds at high speed out of cases.



Ecology

Habitat Description:

Himalayan Balsam grows in moist and semi-shaded damp places including waste ground, and thin woodlands. It commonly exploits linear corridors such as rivers or disused railway lines.

Reproduction & Life Cycle:

Seeds germinate in February-March, followed by rapid growth in spring. Plants flower from July to October setting seed from mid July. A single plant can produce 500 seeds which can remain viable for up to 2 years.

Dispersal and Spread:

Seeds are flung >7m away from parent plant with the slightest disturbance. The plant can spread rapidly along riverbanks as the seeds are carried downstream and will germinate on soft exposed, mud banks. Seeds may also be transported unintentionally by wildlife, machinery, grazing livestock and people using sites for recreation. Plants are still grown for aesthetic purposes and can be easily spread in garden waste and soil.

Impact

Native Habitats:

Himalayan Balsam can rapidly out-compete native flora due to its ability to rapidly reproduce and grow in dense stands. The plant produces a large amount of nectar which may result in less pollination of native species by bumblebees and a subsequent loss of biodiversity. Overwinter, populations along river banks die back exposing banks to erosion and providing minimal cover for native fauna. Dead plant material can impede river flow as it gets washed into the water during flooding events.

Human Health Effects:

Himalayan Balsam is not toxic to humans, although some people may be allergic to its pollen.

Economic and Societal Effects:

Dense populations of Himalayan Balsam restrict access to riverbanks and paths for anglers, bank inspection and amenity use and can cause losses in biodiversity subsequently impacting on recreational income. The plant may also invade cropped areas and restrict the availability of grazing fodder. Exacerbation of erosion can have severe impacts on fisheries due to increases in siltation of gravels etc.

Legislation

Listed under Schedule 9 of the Wildlife and Countryside Act in England and Wales (2010) as an offence to plant or otherwise cause to grow in the wild.

Management Approaches

Prevention Methods - Early detection and rapid response

1. Map the distribution of all extant populations
2. Identify areas that are 'at risk' to new invasions:
 - Within downstream flood zone of invaded watercourses
 - Wetlands connected to infested sites by public access routes
 - Water bodies close to infested sites that are used for recreational purposes
 - Garden waste sites and sites close to urban areas
3. Use GIS to map 'at risk' areas utilising land use spatial layers to improve predictability
4. Implement a management plan to prevent further spread of the plant including:
 - Restricting the sale of Himalayan balsam through garden centres, supermarkets, aquarists and other retail outlets
 - Avoiding unintentional seed transportation by:
 - Limit access to site during autumn to reduce disturbance of seedpods and the unintentional spread of seed
 - Increasing public awareness at infested sites
 - Ensuring recreational (boats, boots, angling) equipment is drained and cleaned off before leaving any infested water body
 - Prevent livestock grazing on banks of infested water bodies
 - Managing extant stands along waterways and transport corridors to prevent dispersal
 - Monitoring 'at risk' sites to enable fast eradication if invasion occurs

Eradication, Control and monitoring effects

Himalayan Balsam can be effectively controlled and/or eradicated from isolated sites within 3 years but should be monitored for at least 5 years following eradication. For populations growing along riverbanks it may be necessary to implement a bank side stabilisation programme after the invasion is eradicated. All control measures should aim to prevent flowering and subsequent seed production. **Treatment in the early stages is highly recommended.**

Method	Description	Time of Year	Limitations
Mechanical Removal	Cutting or strimming. Plants must be cut below the lowest node to avoid re-flowering	Before June and regularly for up to 3 years	Need access for machinery. Dormant seeds in soil can be transported by labour force and equipment.
Manual Removal	Pulling out stems by hand	Before June	Only suitable on small patches, however can be used after mechanical removal
Herbicides	Pesticides containing Glyphosate + Topfilm are now the only pesticides approved for approval ON or near water. These should be sprayed on actively growing plants.	Springtime	Glyphosate requires a license from the Environment Agency. It eradicates non-target species including grasses. 2, 4-D amine is no longer approved for use, and must be used within 6 months or returned to suppliers for disposal. There is no longer any herbicide legally approved for use IN water.
Grazing	Graze with cattle / sheep throughout the growing season until no new growth occurs	From April	Can cause increased erosion if population is on riverbank

References

- CEH (2004) Information Sheet 3: Himalayan Balsam. Available online at <http://www.capm.org.uk>;
- Environment Agency (2010) Managing invasive non-native plants. Available online at: <http://publications.environment-agency.gov.uk/PDF/GEHO0410BSBR-E-E.pdf>;
- NNSS (undated) Himalayan Balsam Identification Sheet. Available online at: <https://secure.fera.defra.gov.uk/.../downloadDocument.cfm?id=33>;
- SNH (undated) Invasive non-native plants associated with fresh waters: A guide to their identification. Available online at: <http://www.snh.org.uk/speciesactionframework>