**Species Identification**

**Height:** A tall, annual herb growing up to 2.5m

**Stem:** Hollow brittle stems which are light green/red early in the 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 bright pink flowers (sometimes light pink or white), with spots and markings inside. Flowers measure 2.5 - 4cm long

**Seed:** Seed pods grow following flowering. 4-16 green/brown ‘coiled spring’ shaped seeds are encased in distinctive green droplet shaped seed pods with a point at one end. Seeds hang off red stalks and measure 2.5cm in length. When ripe they ‘explode’ when touched, firing seeds at high speed in all directions.

**Ecology**

**Habitat Description:**
Himalayan Balsam grows in moist and semi-shaded damp places including waste ground, and thin woodlands. It commonly grows along linear corridors which facilitate its spread such as rivers or disused railway lines.

**Reproduction & Life Cycle:**
Seeds germinate in February-March, followed by rapid growth of leaf rosettes in spring. Plants flower from June to October setting seed from mid July. One plant can produce 500+ seeds which can remain viable for up to 2 years.

**Dispersal and Spread:**
Seeds can be flung up to 7m away from the parent plant with the slightest disturbance. The plant can spread rapidly along riverbanks as seeds are carried downstream where they 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 ornamental purposes and can be easily spread in garden waste and soil.
Impact

Native Habitats:
Himalayan Balsam can rapidly out-compete native plants 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. Populations along river banks die back in winter, exposing banks to erosion and providing minimal cover for native fauna. Invasion of Himalayan Balsam into rare natural habitats such as fens can severely impact their ecology. The plant can grow in dense woodland which may have severe effects on (ancient) woodland flora.

Human Health Effects:
Himalayan Balsam is not toxic to humans, although some people may be allergic to its pollen. Some parts of Himalayan Balsam are edible, and the flowers can be used to make ‘champagne’ similar to that which is made with elderflowers.

Economic and Societal Effects:
Dense populations of Himalayan Balsam restrict access to riverbanks and paths for anglers and other amenity users, for health and safety checks and they can cause losses in biodiversity which can impact on recreational income. Dense areas of dead Himalayan Balsam can impede river flow as it gets washed into the water during flood events. The plant can 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 (W&CA) in England and Wales (as amended) and stated as unlawful to plant or otherwise cause it to grow in the wild in Section 14 of the W&CA. There are also restrictions on moving soil which is contaminated with Himalayan Balsam seed.

When dense infestations of Himalayan Balsam die back during winter, large areas of river bank can be exposed to erosion © C Chatters
Management Approaches

Prevention Methods - Early detection and rapid response

1. Map the distribution of all known populations
2. Identify areas that are 'at risk' to new infestations
   ⇒ Within downstream and adjacent flood zones of infested watercourses
   ⇒ (Wetland) Sites 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 and local knowledge to map 'at risk' areas
4. Implement a management plan to prevent further spread of the plant including:
   ⇒ Restricting the sale of Himalayan Balsam through garden centres, supermarkets, aquanists and other retail outlets and removing seed populations from formal gardens.
   ⇒ Avoiding unintentional seed transportation by:
     • Limiting access to sites during autumn to reduce disturbance of seedpods and the unintentional spread of seed
     • Increasing public awareness at infested sites ensuring (boats, boots, angling) equipment is drained and cleaned before leaving any infested water body
     • Encourage cattle grazing but discourage other forms of livestock grazing on infested river banks / sites
     • Managing extant stands along waterways and transport corridors to prevent dispersal, starting in headstreams to remove seed sources
     • Monitoring 'at risk' and vulnerable 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.

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Time of Year</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Removal</td>
<td>Cutting or strimming. Plants must be cut below the lowest node to avoid re-flowering</td>
<td>Before June and regularly for up to 3 years</td>
<td>Requires access for machinery. Dormant seeds can be transported by labour force and on equipment.</td>
</tr>
<tr>
<td>Manual Removal</td>
<td>Pulling out stems by hand</td>
<td>As above. Before seed pods appear</td>
<td>Only suitable on small patches, however can be used to compliment mechanical removal</td>
</tr>
<tr>
<td>Herbicides</td>
<td>Pesticides containing Glyphosate + Topfilm are now the only pesticides approved for use ON or near water. These should be sprayed on actively growing plants. No pesticides are approved for use IN water.</td>
<td>Springtime</td>
<td>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.</td>
</tr>
<tr>
<td>Grazing</td>
<td>Graze with cattle throughout the growing season until no new growth occurs</td>
<td>From April</td>
<td>Can cause increased erosion if population is on riverbank.</td>
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</tbody>
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Himalayan Balsam (Impatiens Glandulifera)

Sussex Wildlife Trust
(Wetlands Project)
www.sussexwt.org.uk
01273 497555

Environment Agency
Ask for Fisheries & Biodiversity or
Land Drainage consent teams
03708 506506
www.environment-agency.gov.uk

Sussex Biodiversity Record Centre
01273 497521
www.sxbrc.org.uk

Non Native Species Secretariat
www.nonnativespecies.org

Natural England
0845 600 3078
enquiries.southeast@naturalengland.org.uk
www.naturalengland.org.uk/regions/southeast/
contacts.

Centre for Aquatic Plant Management
www.nerc-wallingford.ac.uk/research/capm/
index.htm


NNSS (undated) Himalayan Balsam Identification Sheet. Available online at: https://secure.fera.defra.gov.uk/

SNH (undated) Invasive non-native plants associated with fresh waters: A guide to their identification. Available online at: www.snh.org.uk/speciesactionframework

Sussex wetlands project promotes the sustainable management of rivers and the restoration of wetland habitats for people and wildlife

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