

# **BELFAST HILLS PARTNERSHIP INVASIVE SPECIES ACTION PLAN 2017-2020**

## **Introduction**

Invasive alien species are defined by the Convention on Biological Diversity as an alien species whose introduction and/or spread threatens biodiversity (CBD Decision V1/23). Across the world, invasive alien species have created havoc with local ecosystems and agriculture. Modern travel and transport have opened the door to invasive species problems at an unprecedented scale, similar to the spread of plant, animal and human disease.

Northern Ireland has also a wide range of such problems which were addressed in the Northern Ireland Environment Agency's (NIEA's) 2013 document *An Invasive Alien Species Strategy for Northern Ireland*. Within this document NIEA outlines the threat of such invasive species:-

*“The ecological effects of invasive species are often irreversible and, once established, they can be extremely difficult and costly to control and eradicate. Significant threats are now posed by invasive species, and it is critical that Northern Ireland takes measures to address them.”*

In the Belfast Hills, we particularly have urban based issues such as Japanese Knotweed and Himalayan balsam in river valleys and roadsides, probably exacerbated by high levels of fly-tipping and dumping of garden waste. Unmanaged urban fringe sites have also seen the spread and development of major patches of these species, while adjacent building or residential areas have then had problems with the appearance of Japanese Knotweed in particular.

A further feature in our foothills is the number of old estates or large formal gardens now used for open access or abandoned. This brings its own problems such as game cover plants such as Pheasant berry or Cherry laurel.

This document is aimed at describing the current status of invasive alien species in the Belfast Hills as far as is known, recent and current measures to control and manage these, what our priorities should be and proposed partners and actions in the coming years until 2020.

## **NI Strategy**

Context and directions from above, Ireland Strategy?

## **Belfast Hills and Invasive Species**

The operational area of the Belfast Hills Partnership consists of roughly 5,600 hectares covering the escarpment and summits of the hills to the west and north of the Belfast urban area (MAP). Most of this area is a mixture of open uplands, enclosed agricultural fields, scrub, broadleaf and planted conifer woodland and parkland along the urban fringes. Approximately a third of this area is open to the

public, while most of the rest is farmland with about 10% industrial in terms of quarry or waste sites. A number of rivers and associated wooded valleys descend into the urban areas, while a number of busy roads carry high levels of traffic through these uplands. Our quarries have a number of ponds while old mill sites associated with our rivers also hold old mill dams, ponds and mill races. Much of the above explains the wide variety of alien invasive species we find within this diverse and busy landscape. Key local drivers have been fly-tipping and illegal dumping, land abandonment along the urban fringe, garden escapes, accidental and deliberate, and high levels of road and visitor traffic. Wildfires are also a factor which might facilitate rapid spread of alien invasive species, particularly if adjacent ground contains invasives. Land abandonment and under-management have also led to some native invasive species issues such as the spread of bracken and gorse on upper agricultural ground but this is not covered within this document, rather will be dealt with within future plans and proposals for farming in the Belfast Hills.

### **History of BHP and Invasives**

Since its formation in 2004, Belfast Hills Partnership has worked on specific issues and sites such as mapping, control and management of alien invasive species in the Collin Valley from 2008 to date. We have also gathered data on mapping of these on major sites such as Cave Hill, Carnmoney and Slievenacloy plus river and roadside sightings. We began to run regular public and volunteer training courses which were consistently popular, plus events to 'pull' Himalayan balsam stands in Colin Glen, Glenside Woodland and Cave Hill. This has proved successful in many sites, less so in other sites particularly where there was no access to sections either in private property or steep inaccessible slopes. To a degree our volunteer team are a victim of their own success in that finding 'good' stands of Himalayan balsam for May events is proving more difficult.

In 2016, a number of BHP staff were trained in pesticide spraying specifically to address the need for small areas of alien invasive species to be treated. We then treated areas of Japanese Knotweed on sites such as along the Farset river, Glenside and Valley Leisure Park.

As our number of partners and volunteers has risen, so has our knowledge of sites and sightings to the extent that a plan to prioritise actions within our limited resources has become essential.

### **Current Status, Maps and Trends**

We have detailed below a summary of the information we hold on each main alien invasive species up until the end of 2016.

#### **1. Japanese Knotweed *Fallopia japonica***

This is by far the most visible and extensive alien invasive species present in the hills. Major stands have existed for many years in a variety of waste, quarry and public access sites, as well as on old building sites and river valleys in urban fringe areas. It

is also found in many roadside sites, introduced either by flytipping or vegetative spread by traffic. It depends on such vegetative spread as only the female is present here.

Treatment is usually chemical, although complete removal of soil to a depth of 5 metres is another option, albeit very expensive.

In the Collin valley, some of these stands have been treated for a number of years via contractors. Many of these show a characteristic substantial initial drop in cover followed by a persistent reappearance of a small number of new shoots for a few years followed by eradication if treatment has been consistent. There is however an ongoing risk of reintroduction e.g. by fly-tipping of landscaping or garden waste, specifically for roadside areas.

## 2. Himalayan Balsam *Impatiens glandulifera*

In terms of local extent, Japanese Knotweed is followed closely by Himalayan Balsam. This is particularly common in river valleys, with its explosive seed pods well adapted to spread and float downstream. Large stands can also be found away from rivers nevertheless.

Although Himalayan Balsam can have a similar effect in terms of shading out native plants, it is more easily controlled by mechanical pulling before flowering and is therefore a favourite activity for volunteer field parties. This type of control can be effective but must be applied consistently and over all the stand. The plants need to be tall enough to be able to spot virtually all of them but not yet in flower. All vegetative material must be kept on site and prevented from re-rooting or setting seed, whether by bagging or piling onto impermeable substrate. Any refuge left, whether due to slope, access or accident, will lead to fairly rapid recolonisation. The potential for total removal therefore needs to be assessed, in which case a second year resprout of roughly 5 % can be expected and total eradication by year 3 to 4 if removal is consistent.

## 3. Rhododendron *Rhododendron ponticum* & 4. Cherry Laurel *Prunus laurocerasus*

Rhododendron is a large evergreen shrub (growing up to 8m tall) that was introduced to Ireland as an ornamental plant in the 18th Century from Asia and north-west China. Cherry laurel is a dense thicket forming invasive ever-green shrub of gardens, parks and woodlands from South West Asia. Rhododendron thrives on peaty, sandy and acidic soils and is extremely hardy. It is a very popular garden ornamental plant and has been extensively planted as game cover along the edges of fields and within woodlands. Its popularity, adaptability to Irish climate and soils, along with its highly successful and multiple methods of reproduction and dispersal, means that it has become naturalised and widespread. As Rhododendron is very shade tolerant, it has become widely established in several habitats, notably heathlands and woodlands from adjacent gardens.

The high number of old private parks and townhouse gardens across the hills means that we have a good number of sites where these are present and a problem. We have sites managed for game in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries with large swathes of cherry laurel. Their tendency to smother all other plants out means that these plants can have a major important negative impacts, in our case in broadleaf woodlands. They are also difficult to eradicate and require both mechanical removal

and chemical treatment of stumps with the need for follow up spot check treatments.

#### 5. Himalayan Knotweed *Persicaria wallichii*

Himalayan Knotweed is a shrubby perennial herb up to 180 cm tall that originates from the temperate, western regions of Asia and the Indian subcontinent. Somewhat similar to Japanese Knotweed, it grows vigorously and creates large and dense stands that exclude native vegetation and prevent tree seedlings from growing. *P. wallichii* can greatly alter natural ecosystems and lead to the erosion of river banks. Himalayan Knotweed has been found in a couple of sites including Collin House Wood and Ligoniel Park.

#### 6. Salmonberry *Rubus spectabilis*

Introduced into cultivation in Britain in 1827, this species is planted in gardens for ornament and as game cover in estate woodland. A deciduous, vigorous, suckering shrub with pretty flowers and some resemblance to raspberry, it is thoroughly naturalised in woods and hedges, often forming large thickets. We have a number of well established stands in sites such as Slievenacloy, probably introduced as a garden or farmyard hedge plant. While not as fast spreading plant as other invasives, it is stubborn and difficult to eradicate, having been regularly controlled at Slievenacloy by Ulster Wildlife.

#### 6. Piri-piri Burr *Acaena novae-zelandiae*

Originating from Australia and New Zealand, this short, creeping plant has long been readily available from garden centres and is popular in rock gardens. It forms dense mats of lobed leaves and ball-like heads of hooked seeds (burrs) which often cause problems in dog coats.

This is a low growing ground hugging plant which is therefore usually found growing amongst other natives herbaceous plants rather than aggressively competing with them. Nevertheless it has a strong spreading tendency as can be seen in its extensive distribution across Cave Hill - seeds will often be found on socks and boots. It is present within the Zoo which is of course a possible source.

Treatment would be difficult without substantially impacting on native species, nevertheless vigilance and early treatment if found early in new sites would be sensible.

#### 7. Gunnera / Giant rhubarb / Chilean Rhubarb *Gunnera tinctoria*

This is a spectacularly large and impressive garden ornamental often grown on wet sites. It has been known to spread and can shade out native plants and then lead to bare riverbanks liable to winter erosion. Gunnera has become a major problem in parts of western Ireland but is only present in the Belfast Hills at Valley Leisure Park pond

#### 8. Winter Heliotrope *Petasites fragrans*

Found on both waste and cultivated ground, it carpets damp places, embankments and shady roadsides, flowering from November to March. When in flower it is

unmistakeable but when in leaf only it can be superficially confused with natives such as butterbur or coltsfoot. A popular garden plant, it can become vigorous with pure stands found in several sites and roadsides in the hills from Colin valley to Throne Wood. In the latter, a similar species White Butterbur *Petasites albus* has been recorded during Heliotrope mapping.

#### 9. Pheasant berry *Leycesteria formosa*

Another cover plant which indicates the widespread use of the hills for game, Pheasant berry is very obvious when flowering or carrying its deep red berries. Often in hedges or overgrowth as single plants, it can establish larger stands in favourable conditions and then require management. Such stands have been controlled at Carnmoney Hill but it is also present at Cave Hill, Colin Glen and Colin Wood. Not as fast spreading as other species, regular physical control can be effective.

#### 10. Snowberry *Symphoricarpos albus*

This was a popular farm garden and hedge plant in the 19<sup>th</sup> century. A hedge of white berries will often mark the site of a long disappeared farmhouse but can also spread to form large uniform stands. While very tolerant of conditions it is not an overly vigorous coloniser.

#### 11. Spanish Heath *Gaultheria mucronata*

Very much a garden centre favourite, this has been identified on one site on Collin Mountain. This can be spread by birds but is not a vigorous invasive.

#### 12. N.B. Giant Hogweed is not yet recorded in the Belfast Hills

#### 13. Aquatic non-native invasive species

As with most of Northern Ireland's waterways and ponds, Belfast Hills has a variety of non-native aquatic species found across the many mill dams and quarry ponds. Often spread by wildfowl or dumping by aquarium owners, many of these are now well established and very difficult to manage. While we have so far identified the following species, we have not as yet found those of particular concern but realise that these can appear at any time.

- Nuttall's Waterweed (*Elodea nuttallii*) was found at 2 sites: the Ligoniel Dams complex, and Mila's Lake complex.
- The related Canadian Waterweed (*Elodea canadensis*) was also found, at low density, at the Ligoniel Dams.
- Least Duckweed (*Lemna minuta*) was found at 2 sites: Half Moon Lake and the Mullaghglass newt ponds.

#### 14. Red-necked Terrapins *Trachemys scripta elegans*

There have been reports of terrapins found in ponds at Colin Glen Forest Park in the recent past, probably red-necked terrapins which are known as popular pets which prove more difficult to keep than many owners anticipate, who then release on sites such as Colin Glen. Another closely related potential invasive species is the yellow-bellied slider *Trachemys scripta scripta* which has become established in England.

Our climate is thought to preclude their establishment but this should not be taken as a given.

#### 15. Grey Squirrel *Sciurus carolinensis*

One of our more infamous invasive non-native species, this is seen as very much the reason for the sharp decline in our native population of red squirrel *Sciurus vulgaris*. There is some hope that the rapid increase in our once rare Pine marten *Martes martes* could mark a re-balance of these populations (pine martens appear to predate greys much more) but in the meantime greys are now ubiquitous in the Belfast Hills whereas red squirrel sightings have all but ceased in recent years, the last ones being at Upper Collin Glen and Colin Wood.

#### 16. Others

When surveying in the hills, in particular during fly tipping surveys, we come across a variety of garden species. Some have become established such as Crocosmia or Tutsan, while others disappear relatively rapidly. All of these sightings highlight the need to monitor carefully as well as minimise fly-tipping and illegal dumping as a steady source of non-native introductions.

#### Local Scoring criteria

Scoring has been used nationally to prioritise action when faced with the wide variety of non-native invasive species we have. In addition to this, we have attempted to mirror this by applying our own local Belfast Hills criteria, namely:-

- Local extent
- Potential impact on local native biodiversity including rate of spread
- Potential impact on other (e.g. planning)
- Ease of Control
- Potential negative impact of control
- Accessibility

When we have assessed these, the main species are ranked as below:-

#### Belfast Hills Invasive Species Scoring and Management Level

Invasive Species	Rank Average	Management Level
Japanese Knotweed	1	6
Himalayan Balsam	1.3	6
Himalayan Knotweed	2.7	6
Rhododendron	5.3	5
Laurel	5.3	5
Gunnera	6.3	5
Terrapins	8	4
Salmonberry	8.5	4
Pheasant Berry	8.3	4

<b>Snowberry</b>	<b>8.3</b>	<b>3</b>
<b>Aquatics</b>	<b>9</b>	<b>3</b>
<b>Grey Squirrel</b>	<b>9.5</b>	<b>2-3</b>
<b>Spanish Heath</b>	<b>10</b>	<b>2</b>
<b>Tutsan</b>	<b>11.3</b>	<b>1</b>
<b>Winter Heliotrope</b>	<b>13</b>	<b>1</b>
<b>Piri-piri Burr</b>	<b>13</b>	<b>1</b>

The 'management level' refers to the following range of management activities:-

#### **ALIEN INVASIVE SPECIES – BELFAST HILLS PARTNERSHIP LEVELS OF MANAGEMENT**

1. Awareness     Able to identify and record any reported / chance sightings
2. Alert             Staff /volunteers trained to ID and keep a look out for species
3. Survey            Regular Survey key sites every (3?) years
4. Monitor           Monitor distribution and spread every year
5. Selective  
Treatment         Monitor as above and treat key high risk sites
6. Treatment        Monitor and treat as many sites as possible
7. Eradication      Attempt to treat and eliminate or remove all patches.

#### **Partners**

We have a range of community, commercial, farming and environmental partners who face their own alien invasive species issues. The Colin Glen Trust and National Trust share large stretches of the Collin river, while Belfast City Council, Antrim and Newtownabbey Borough Council and a number of community organisations such as Ligoniel Improvement Association all have sites with alien invasive species problems. Commercial partners in the quarry and waste sectors also have ongoing issues with established or emerging stands. All are keen to limit these issues and to identify best methods of managing and controlling their alien invasive species within their limited resources. While we are not managing these areas, we are keen to support and

assist in whatever way possible to ensure the best options for sites are identified and followed.

## **Action Plan**

“Find, assess, treat, prevent, educate”

This Action Plan has been created within the framework of the NIEA Objectives outlined below:-

1. Prevention and exclusion – Prevent fly-tipping via exclusion
2. Early detection, surveillance and rapid response
3. Monitoring, recording and reporting
4. Eradication, control and containment
5. Management, mitigation and restoration
6. Governance and co-ordination
7. Communications, awareness raising and capacity building

### **1. Prevention and Exclusion**

Biosecurity, pond dipping, introduction of plants/trees  
Prevent fly-tipping via exclusion e.g close to waterbodies.

### **2. Early detection, surveillance and rapid response**

Reporting, site surveying, early response via known contacts, publicity and training  
Early detection and clear up of fly-tipping. Regular monitoring of working and abandoned commercial sites. Early alerts to potentially problematic development proposals.

### **3. Monitoring, recording and reporting**

Monitoring of known sites, mapping, liaison with site owners and NIEA

### **4. Eradication, control and containment**

Identification and updating of best practice in treatment, control and eradication, use of volunteers.

Control of key high risk sites.

Control of small areas on private ground – discretionary

Biosecurity procedures and training.

### **5. Management, mitigation and restoration**

Manage in accordance with NIEA and Invasive Species Ireland guidelines and species action plans.

Investigate planting out of key native species post treatment or control.

### **6. Governance and co-ordination**

Work closely with NIEA staff, communicate with partners via meetings and training events. Annual work plan. Site managers Meeting. Best practice from other areas.

Review in 2019.

**7. Communications, awareness raising and capacity building**

Regularly feature alien invasive species in publicity.

Liaise with NIEA to pass on latest information on threats.

Run regular volunteer and public events featuring alien invasive species removal

Run regular training events for staff, volunteer wardens and members of the public

Distribute other publicity materials e.g. Invasive Species Ireland, NIEA

The above actions are outlined in more detail in Appendix 1.

Belfast Hills Partnership Alien Invasive Species Action Plan 2017-19

Action	Detail	Main Lead	Partners	Outcomes	Date
<p><b>1. Prevention and Exclusion</b>                      Biosecurity, pond dipping, introduction of plants/trees.</p> <p>Prevent fly-tipping via exclusion e.g close to waterbodies.</p>	<p>Review work practices for potential biosecurity issues e.g pond dipping, bringing in new plant/animal material</p> <p>Train BHP and partner staff in the above to raise awareness of biosecurity issues</p> <p>Survey fly-tipping sites based on previous data.                      Identify key high risk sites e.g. close to watercourses.                      Assess viability of exclusion or these sites and carry out site works</p>				
<p><b>2. Early detection, surveillance and rapid response</b>                      Reporting, site surveying, early response via known contacts, publicity and training.</p>	<p>Train staff/partners/volunteers on recognition of key alien invasive species.                      Survey key sites on a planned</p>				

<p>Early detection and clear up of fly-tipping.</p> <p>Regular monitoring of working and abandoned commercial sites.</p> <p>Early alerts to potentially problematic development proposals.</p>	<p>basis. Have key contacts database. Publicise potential threats and raise awareness via publicity outlets.</p> <p>Regular formal and informal monitoring of flytipping. Have key contacts database for clear up. Push for Public Nuisance clear up Notices on private sites.</p> <p>Agree monitoring regime for working and abandoned quarry and waste sites.</p> <p>Planning proposals checked against mapping database. Potential problems and conditions raised at proposal stage.</p> <p>Monitoring of development as far as practical.</p>				
<p><b>3. Monitoring, recording and reporting</b> Monitoring of known sites, mapping, liaison</p>	<p>Key sites monitored regularly on an agreed basis for</p>				

with site owners and NIEA	distribution and spread. All reports passed on to NIEA.				
<p><b>4. Eradication, control and containment</b></p> <p>Identification and updating of best practice in treatment, control and eradication.</p> <p>Use of volunteers.</p> <p>Control of key high risk sites.</p> <p>Control of small areas on private ground – discretionary</p> <p>Biosecurity procedures and training</p>	<p>Annual meeting with NIEA staff to ensure update of latest threats and management guidelines.</p> <p>Site visits and update training to ensure best practice</p> <p>Use volunteers for non-chemical treatment e.g. Himalayan Balsam pulling.</p> <p>Ongoing treatment of key sites to minimise spread and damage.</p> <p>A level of treatment on private ground on a discretionary basis to encourage site survey permissions and reporting.</p> <p>Adopt good biosecurity procedures for all BHP operations with regard to invasive species and plant diseases</p> <p>Train all staff and volunteers</p>				

<p><b>5. Management, mitigation and restoration</b>  Manage in accordance with NIEA and Invasive Species Ireland guidelines and species action plans.</p> <p>Investigate planting out of key native species post treatment or control.</p>	<p>Annual meeting with NIEA staff to ensure update of latest threats and management guidelines. Annual meeting with site managers to ensure updates.</p> <p>Research and pilot re-establishment of native species on ground post treatment / control.</p>				
<p><b>6. Governance and co-ordination</b>  Work closely with NIEA staff, communicate with partners via meetings and training events. Annual work plan.  Site Managers Meeting. Best practice from other areas.  Review in 2019.</p>	<p>Establish initial meetings and group to initiate these actions. Annual work plan and update/training event.</p> <p>Regular seasonal update for Site managers and visits to local best practice.  Carry out review of Action Plan in early 2019.</p>				
<p><b>7. Communications, awareness raising and</b></p>					

<p><b>capacity building</b></p> <p>Regularly feature alien invasive species in publicity.</p> <p>Liaise with NIEA to pass on latest information on threats.</p> <p>Run regular volunteer and public events featuring alien invasive species removal</p> <p>Run regular training events for staff, volunteer wardens and members of the public</p> <p>Distribute other publicity materials e.g. Invasive Species Ireland, NIEA</p>	<p>Feature key species at early times of season in facebook, website and publicity materials.</p> <p>Set up easy reporting mechanisms to NIEA and other agencies.</p> <p>Run at least two alien invasive species events each year.</p> <p>In addition to the above consider more major training and publicity event for public and media.</p> <p>Source and distribute relevant external publicity materials at events, talks and meetings.</p>				
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