



# Nith Catchment Invasive Non-Native Species Project

## Quarterly Progress Report November 2011

### 1 Summary

The 2011 season for controlling riparian invasive non-native species (INNS) of plants has now been completed within the Nith catchment. The following report outlines the progress made in the treatment and control of the targeted invasive species, the steps that have been taken to raise awareness and promote the project within the Nith Catchment, as well as highlighting areas for improvement and plans for the future.

### 2 Progress to date

#### 2.1 Giant Hogweed (*Heracleum mantegazzianum*)

Due to the delay in starting the project, as funding was not approved until June 2011, time was limited for dealing with both Giant hogweed (GH) and Himalayan balsam (HB) and it was agreed that the best course of action was to concentrate on the Giant hogweed initially. This was due to the risk it poses to public health and the fact that it was believed to be growing in larger densities than previously seen.

##### 2.1.1 Distribution

The upstream distribution of GH within the Nith catchment starts on the Scaur Water near Penpont and is present on both banks of the Scaur Water till it reaches the main stem River Nith. It then colonises both banks of the River Nith to the estuary. See Figure 1. This is a total distance of 26km of double bank, i.e. 52km total bank length. The density of Giant hogweed varies throughout this stretch with high densities being found at Scaurfoot, Denholm's Wood, Riley's Bank and Dalscone.

##### 2.1.2 Treatment

Giant hogweed poses a health risk so any control must be carried out using the appropriate PPE to prevent the sap, which contains photosensitizing furanocoumarins, from coming into contact with the skin/eyes. The Giant hogweed was injected, using a Stem Injection System injection gun, with two millilitres of undiluted Roundup Pro Biactive 360 into the stem of each plant and within 2 weeks of injecting taking place, the plants could be seen to be weakening and dying back. The entire length of river known to contain Giant hogweed was walked. The



Figure 1. Giant hogweed distribution

treatment of the Giant hogweed over the entire stretch was completed by early August, just before it started to go to seed.

### 2.1.3 Future control

It is recommended that future control of Giant hogweed continues using the stem injection method. It is important that now control has been initiated that the full area where Giant hogweed has been recorded is walked and every flowering plant is injected with Roundup. This will prevent seeds from being distributed and will eventually exhaust the seed bank present in the soil. This, however, could take 20-25 years to ensure control has been successful.

## 2.2 Himalayan balsam (*Impatiens glandulifera*)

### 2.2.1 Distribution

Himalayan balsam is present in high densities within the Nith catchment and has a very visual impact to catchment with acres of pink flowers blooming during August. The distribution of Himalayan balsam starts half way up the main stem of the River Nith, near Drumlanrig Castle. See Figure 2. It has colonised both banks of the river down to the Nith Estuary, a double bank length of approximately 42km. The average width of bank that has been colonisation is 5 metres. The Cairn Water and numerous small tributaries running into the River Nith also have Himalayan balsam present. It has also been observed that the amount of HB in the Nith catchment has increased dramatically this year and it is possible that this is due to the cold 2010/11 winter.

### 2.2.2 Treatment

Treatment of Himalayan balsam did not start until mid to late July due to the decision to target Giant hogweed initially. By this time, the Himalayan balsam (HB) was in full flower and in places, starting to seed. Control of Himalayan balsam consisted of pulling the balsam out by hand where possible. A volunteer day was organised in order to raise awareness of the problems posed by Himalayan balsam and to try and get members of the public to help with its control. Students taking part in Duke of Edinburgh training also carried out some HB control. In total, just over 1 hectare of HB this year has been treated.

### 2.2.3 Future control

The future control of Himalayan balsam needs careful planning as it has been found that the resources required to control HB using the methods currently being employed are enormous and

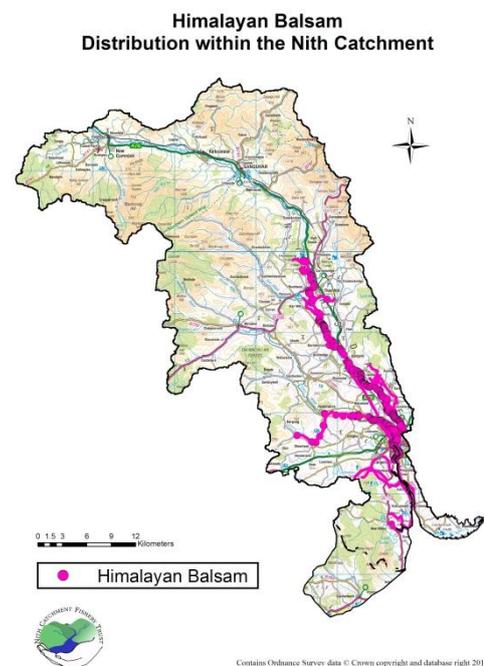


Figure 2. Himalayan balsam distribution

unsustainable. The Tweed Forum has been carrying out treatments on Himalayan balsam and has found that the application of very dilute Glyphosate onto areas of Himalayan balsam is proving effective. The benefit of using a dilute solution of glyphosate is that native plants are not affected by it, where as it kills the HB. Due to the extensive areas of Himalayan balsam found within the Nith catchment, we would like to recruit volunteers to assist with the control of Himalayan balsam. Training and equipment would be provided which would enable volunteers to carry out the control of HB throughout the catchment.

## 2.3 Japanese knotweed (*Fallopia japonica*)

### 2.3.1 Distribution

Japanese knotweed stands are located along most of the River Nith and are also found along the waters Scaur, Cairn and many other tributaries leading into them. The highest densities of stands are located on the Nith, between Thornhill and Dumfries, and on the Cairn Water between Moniaive and the river's confluence with the Nith. Stands range in size from a few metres squared to over quarter of a hectare in area. See Figure 3.

### 2.3.2 Treatment

Control of JK began late July / early August predominantly using the method of stem injection. As with the Giant hogweed, 2ml of undiluted Roundup Pro Biactive was injected directly into the stem of the JK. If the stems were too small to be injected the site was revisited at a later date, during appropriate weather conditions, and a knapsack sprayed was used. It has been found that it is necessary to revisit treated stands approximately 3 weeks after initial treatment has been carried out to re-inject any stems which have been missed or where the dose was not successful. A third and fourth re-visit are sometimes required depending on the size of the stands. Due to a late first frost, control of the JK was able to continue late into October.

JK stands previously treated in 2010 were revisited as part of on-going monitoring and the treatment has been very successful with less than 10% re-growth being observed this year. This re-growth has also been very small and weak. Out of the sites revisited 12 had re-growth treated using a knapsack sprayer containing dilute Roundup Pro Biactive.

A total of 35 stands were treated in 2011, of which 12 were revisited sites. This is a total area of 7211m<sup>2</sup> of Japanese knotweed that was treated this year. In total, 11,403m<sup>2</sup> of Japanese knotweed has been treated in the Nith catchment since the project started in 2010.

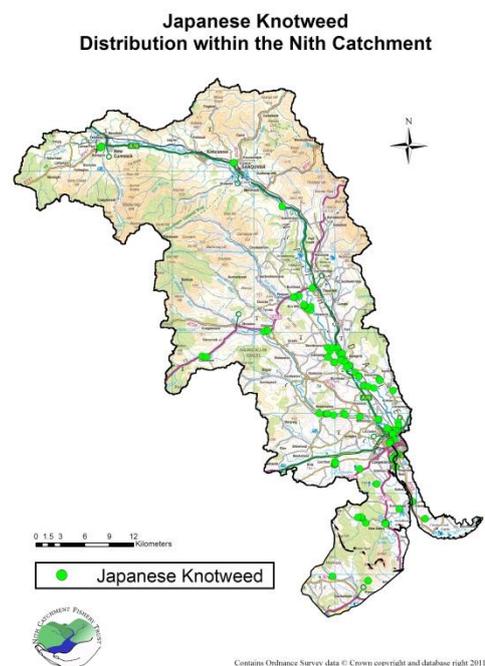


Figure 3. Japanese knotweed distribution

The Trust has worked hard at raising the public's awareness of the issue of INNS throughout the Nith Catchment and this has been very successful as a number of new, previously unrecorded stands have been reported this year. Some of these stands were very large, over 2000m<sup>2</sup> and as such were dealt with this season. In total, an additional 6284m<sup>2</sup> of JK was recorded in 2011 but this is estimated to increase in 2012 as it has been decided to re-survey two watercourses that appear to contain more JK than originally believed.

### 2.3.3 Future control

The treatment of Japanese knotweed using a combination of stem injection and knapsack spraying will continue in 2012. Stands that have been previously treated will be monitored and re-treated as required. These stands, even if they show no re-growth, will need to be monitored for at least a further five to seven years on an annual basis as it has been shown that JK can lay dormant for long periods of time before becoming active again. The initial control of untreated Japanese knotweed stands will continue in 2012 using the down-catchment strategy currently being utilised.

## 3 Awareness raising

Numerous events have been attended throughout 2011 to increase the public awareness of Invasive Non-Native Species in general and more specifically those being tackled by this project. With the advent of the Wildlife and Natural Environment (Scotland) Act 2011 being brought in this year, there have been a number of conferences and seminars run to enable the flow of information and ideas between organisations currently dealing with INNS.

Table 1. Events attended in 2011 where INNS project promoted

Event	Date	Target Audience
Burgh Anglers AGM	6 <sup>th</sup> Feb 2011	Anglers
D&G Environmental Day	4 <sup>th</sup> March 2011	General public
D&G Community Day	5 <sup>th</sup> March 2011	General public
Sanquhar Academy River survey	24 <sup>th</sup> March 2011	School pupils
Wallace Hall Academy River Survey	1 <sup>st</sup> April 2011	School pupils
Wildlife Festival	13 <sup>th</sup> April 2011	General public
River Nith Society – presentation re Trust's work	14 <sup>th</sup> April 2011	General public
Loreburn Primary River survey	9 <sup>th</sup> May 2011	School pupils
Sanquhar Primary river survey	10 <sup>th</sup> May 2011	School pupils
NDSFB meeting	31 <sup>st</sup> May 2011	Board members
Himalayan balsam Awareness Day	14 <sup>th</sup> August 2011	General public
Galloway Country Fair	20 <sup>th</sup> & 21 <sup>st</sup> August 2011	General public
Wallace Hall Climate Change Pond Dip Sessions	20 <sup>th</sup> & 21 <sup>st</sup> September 2011	School pupils
River Nith Society – public meeting re HB	6 <sup>th</sup> October 2011	General public

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There has been a large amount of interest by the public for the Trust to run a series of talks to local organisations and groups over the winter period, followed up by field trips and HB pulling days in the spring/summer of 2012.

#### **4 Problems/Issues Encountered**

There have been reliability issues with the Stem Injection System guns that we have been using and two have been sent back to the manufacturer and replaced. The replacement guns have been more consistent in the dose of Roundup delivered but we are still experiencing problems with the gun sticking or not delivering the Roundup correctly. A new gun has been launched by a different manufacturer and has been tested by other Fishery Trusts in Scotland. We may look at replacing one of the malfunctioning guns next year with one of these as a lot of time and mileage is spent re-visiting sites.

There has been a significant increase in the amount of Himalayan balsam present in the catchment and this has sparked public concern in the matter. The Trust recognises that in 2012 efforts to control the Himalayan balsam have to be increased to even prevent the further spread of the weed and it is believed that the only realistically achievable way of doing this is to increase the size and effectiveness of the equipment being used and to engage a larger body of volunteers to assist with the areas that cannot be accessed by machinery.

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