



**COMMUNITY COUNCIL LIAISON SUB-COMMITTEE –  
1ST SEPTEMBER 2008**

**SUBJECT: INVASIVE PLANT SPECIES**

**REPORT BY: GETHIN BOWES - INVASIVE PLANTS SPECIES OFFICER**

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**1. PURPOSE OF REPORT**

1.1 To update on the progress made in the treatment of invasive plant species.

**2. SUMMARY**

- 2.1 Since October 2005 the invasive plant species project has been running throughout the county borough. Its aim is to limit the spread of invasive plants and reduce and control areas currently colonised by three of the most problematic invasive species Giant Hogweed, Himalayan Balsam and Japanese Knotweed. This project has been funded partly by CCBC and EU Objective One grant and is being implemented by the Invasive Plant Species Officer who is based in the Countryside and Landscape Section.
- 2.2 It is not illegal to have any of the above plant species present on a property however the Countryside and Wildlife Act 1981 makes it an offence to spread or cause to grow wild Japanese Knotweed and Giant Hogweed. Whilst the Environmental Protection Act and Regulations of 1990 and 1991 seek to ensure Japanese Knotweed is disposed of properly by classing it as controlled or special waste.
- 2.3 The invasive plant species project has been split into three tasks, a fine detail survey of the county borough to identify colonised areas, responding to enquiries and giving advice, and undertaking control measures. This report broadly follows these headings.
- 2.4 Giant Hogweed is the only plant from those identified above that causes harm to human health. There has been a significant increase in the amount of Giant Hogweed located on the River Ebbw catchment that was first recorded in 2007. The seed has travelled down stream from neighbouring authorities and left unmanaged will pose a significant problem in the future, similar to that currently being experienced in the River Usk catchment.
- 2.5 Himalayan Balsam is also spreading rapidly but is of less concern than the other species as it is far easier to control. With the adoption of good land management practices this spread could be reversed.
- 2.6 Japanese Knotweed is undoubtedly the most problematic of the invasive plant species. Its ability to tolerate all environmental conditions has seen its spread reach epic proportions. Japanese Knotweed was first recorded growing wild in Wales in 1886 and in a little over 120 years it has successfully colonised vast tracts of South Wales. There are no recorded examples of Japanese Knotweed spreading from seed in the UK and new growth is from plant or rhizome section only. Where Knotweed is established it can produce new shoots from any where on its extensive rhizome network that is thought to extend to a radius of seven metres and to a depth of three metres.

- 2.7 Japanese Knotweeds ability to out compete all native vegetation has seen it form large monoculture stands that threaten important habitat through out the county borough.
- 2.8 The fine detail survey of the county borough that is still ongoing has already identified in excess of half a million square metres of Japanese Knotweed. Control measures have been carried out on 100,000 sq metres and tests have shown that it seems to be most effective to spray the plant with a Glyphosphate based herbicide.
- 2.9 There are many issues that arise from this infestation e.g. a reduction in biodiversity, damage to infrastructure, increased development costs for example the estimated added cost for Knotweed eradication on the 2012 Olympic site in London is some £70million, loss of public access, increase in fly tipping due to the large dense stands which conceal waste, and trap litter. These factors combined can result in a reduction in the aesthetic appeal of an area.

### **3. THE REPORT**

#### **3.1 Survey**

- 3.1.1 The fine detail survey of the county borough has been compiled using existing data from previous surveys, utilising local knowledge in the form of community groups who have assisted in surveying their local areas and physical surveys undertaken by the Invasive Plant Species Officer. This has resulted in approx 700,000m<sup>2</sup> of Japanese Knotweed being plotted onto the GIS arcview package. This survey data gives the location, approximate area of the stand, land designation, proximity to water courses, owner data, and any recommended control measures. In addition, once control works have been completed in an area this data can also be stored and accessed for future reference.

#### **3.2 Enquiries**

- 3.2.1 To date there have been in excess of 550 enquiries regarding invasive plant species, the majority of these enquiries have been in relation to Japanese Knotweed. Over the duration of the project there has been an increasing amount of interest shown in invasive plant species from across the authority this has led to a variety of talks and presentations being given. The printing of invasive species information articles in newsletters and the attendance of the Invasive Plant Species Officer at events and community group meetings has assisted in the dissemination of information. A Japanese Knotweed information leaflet is being produced by the project and will be available from late summer 2008.
- 3.2.2 The majority of queries have come from the general public comprising of home owners/land owners, whilst the remainder have come from developers, engineers and infrastructure stakeholders such as BT, Railtrack and Welsh Water requiring site-specific advice prior to or during works.

#### **3.3 Control Measures**

- 3.3.1 The third area of the project has seen approx 100,000m<sup>2</sup> of invasive plant species receive treatment, of this area 95,000m<sup>2</sup> of Japanese Knotweed and 3,000m<sup>2</sup> of Giant Hogweed have received herbicide treatment during the growing seasons 06, 07 and 08. To give an idea of the scale of the areas treated this equates to approximately 20 rugby pitches. It is envisaged that the current growing season will see a similar area to previous seasons fall under treatment resulting in excess 150,000m<sup>2</sup> of invasive plant species being subject to herbicide application.
- 3.3.2 Treatment has been carried out nearly exclusively on land in CCBC ownership. Works that have been carried out on privately owned land have been completed to allow a strategic approach with stands straddling boundaries treated in their entirety, herbicide application is only undertaken with prior permission of the land owner. It should be noted by members that

whilst advice on invasive plant species can be readily given it is very much the exception to undertake treatment on private land as the project concentrates on areas in public ownership.

- 3.3.3 Whilst some 100,000m<sup>2</sup> is the approx area treated directly by the project as a result of advice given invasive plant species treatment is being undertaken throughout the County Borough by a variety of parties from suitably qualified contractors to domestic homeowners. The areas on which treatment advice has been given are included in the site survey of the county borough but not added to the totals for areas treated as there is no way of ensuring that treatment has been carried out correctly.

### **3.4 Himalayan Balsam**

- 3.4.1 The area of Himalayan balsam that has received treatment amounts to approx 2000m<sup>2</sup> this has been completed with out the use of herbicide as cutting or pulling provides effective control. Himalayan Balsam is an annual plant that completes its life cycle in one year and provided it can be stopped from setting seed year on year the reserve of viable seed should be reduced so that within approximately five years control is achieved. Often a change in management practice can be implemented which can incorporate Himalayan Balsam control, for example the mowing of an area could be moved forward or backward on the work programme to cut at the optimum time to prevent seed setting.

### **3.5 Giant Hogweed**

- 3.5.1 Giant Hogweed is the only invasive plant species with an impact on human health, the sap is toxic and any contact with it will result in severe blistering and skin irritation. Giant Hogweed, which can achieve a height of over 4 metres, is normally a biennial but can exist as a perennial plant some times taking up to four years to reach its flowering stage. Once flowering is complete the plant dies, however one plant is capable of producing in excess of 50,000 seeds, which are viable for up to 15 years. By their nature these seeds are easily blown or transported in water this can have serious consequences for the surrounding environment.
- 3.5.2 A fine detail survey of sections of the River Ebbw catchment in spring 2008 has revealed a significant Giant Hogweed problem, there are numerous plants at both biennial and flowering stages. Permission to treat these plants has been sought from the Environment Agency.
- 3.5.3 Herbicide treatment of Giant Hogweed is an effective form of control but must be completed before the plants flowering cycle begins. An application of Glyphosate based herbicide when the plant has reached approx one metre in height has produced satisfactory results, however on going monitoring will be required due to the potentially extensive and replenishing seed bank. Following successful treatment it is advisable to encourage re colonisation of vegetation as a grass sward is normally sufficient to act as a barrier to seed germination.

### **3.6 Japanese Knotweed**

- 3.6.1 Japanese Knotweed control contracts have been undertaken at various sites through out the county borough prior to the invasive plant species project commencing. Several of these projects have been successful in controlling Japanese Knotweed re growth and spread. However infrastructure works (water main repair, cable laying etc) in close proximity to these dormant stands of knotweed has seen significant amounts of new growth stimulated. It is vital if Japanese Knotweed control is to be achieved that all works within a seven-metre radius of the original infestation take into account any re treatment that may be necessary.
- 3.6.2 Because of the scale of the infestation Japanese Knotweed has been the main focus of the herbicide control programme to date. From the outset the aim of the control element of the project has been to refine existing methods of control and develop a methodology that was not only effective in terms of cost but also as environmentally sustainable as possible. Three differing types of herbicide have been trialled as part of the project each with its own environmental considerations. These are Picloram (Tordon 22K), a Triclopyr mixture

containing Dicamba and 24D (Greengard) and Glyphosate (Roundup pro bioactive). To date areas treated with Glyphosate appear to show best results, this product is not only the safest in terms of environmental considerations but also the most cost effective. It is considered vital that whatever form of herbicide treatment is decided upon ongoing monitoring is completed to ensure no Knotweed remains, as even small shoots can reinvigorate into a stand within 5 years. This problem has been experienced when utilising external control companies.

- 3.6.3 Through experimentation and in line with best practice the project has found that an application of Glyphosate based herbicide when the plant has reached its full height is most effective. Control rates of between 80% and 90% are achievable in one growing season provided good coverage of the plant is attained during treatment. The majority of sites treated during the 06-growing season following this methodology have provided satisfactory results, this has been the standard method of treatment through out 2007 and 2008. The efficacy of the 2006 and 2007 treatments is now apparent and initial assessments show good results. Ongoing monitoring is a fundamental part of the project as with the suggested viability of rhizome extending for a period in excess of ten years new growth could appear at any point and reinfestation would then occur.
- 3.6.4 Treatment of Japanese Knotweed can begin in June and continue into late October/ early November with senescence (the yellowing of leaves and eventual leaf fall) ending effective herbicide application.
- 3.6.5 Weather conditions both pre and post treatment are a vital factor in success and a dry plant with at least twelve but preferably twenty-four hours dry weather following application dramatically increase efficacy.
- 3.6.6 Glyphosate based herbicides are considered to be one of the safest by the Pesticide Safety Directorate, they are licensed for use directly on to watercourses providing prior Environment Agency permission has been sought.
- 3.6.7 Bi-active formulations of Glyphosate carry no statutory hazard warning symbols, i.e. for toxicity, skin irritation etc and have no exclusion times for people or pets/animals.
- 3.6.8 Glyphosate degrades rapidly in the environment and is suitable for use on a large scale as required by this project.
- 3.6.9 In addition to herbicide treatment the project has also researched alternative methods of control, these include the use of root barriers and membranes and a variety of on site treatments ranging from bunding and treating, to the screening of soil to remove rhizome material thus limiting disposal / back filling costs. It is essential to the success of future projects that new methods are continually researched and practical solutions developed in order to make dealing with Knotweed contaminated areas as cost effective as possible.

### **3.7 Cost of Treatment**

- 3.7.1 From involvement in a variety of ongoing development projects within the County Borough it has been seen that there can be staggering financial implications to encountering Japanese Knotweed within a project. It is vital that not only best practice and relevant laws are complied with but practical solutions are identified to keep costs to a minimum. Current information suggests worst-case scenario costs of in excess of £50,000 to excavate 1 cubic metre of Japanese Knotweed contaminated material and cart away to an approved tip, of which there are a limited number.
- 3.7.2 Herbicide treatment to provide complete control may take between three and five years and contractor costs can range from between £3.50 and £9 per square metre. These costs are largely made up of man hours and travelling time but in the case of all contractors obviously include a significant element of profit. In addition to these direct costs are the hidden costs of officers preparing work schedules, tenders and monitoring.

- 3.7.3 At present the cost for invasive plant species officer undertaking treatment, as part of this project is 0.70p per metre<sup>2</sup>. This cost covers the advisory element of the project and includes vehicles, materials etc. and can be seen to offer exceptionally good value.
- 3.7.4 The areas of invasive plant species that are currently receiving treatment will require on going monitoring for at least five years following control, as any re growth left unchecked will quickly re establish itself. With the suggested long-term viability of both Knotweed and Giant Hogweed it is vital that all areas are re treated as necessary.
- 3.7.5 With the river corridors of south Wales having severe infestations of invasive plant species it would appear logical to begin treatment from the top of the river catchments. To this end the Council is involved in a joint project with Blaenau Gwent County Borough Council to control knotweed in the Upper Sirhowy Valley.
- 3.7.6 The authority has also been chosen to lead on a combined Heads of the Valleys project tackling invasive weeds. This will allow a strategic approach to be adopted with all authorities agreeing to a combined methodology for treatment, surveying and accessing efficacy of works.
- 3.7.7 Early indications are that if this initial project proves successful there may be additional funding available to extend the time frame and area covered by the project.

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