

Mobilising volunteers to control Himalayan balsam across river catchments

A report prepared on behalf of RINSE
(Reducing the Impact of Non-native Species in Europe)



Report prepared by
Hampshire and Isle of Wight Wildlife Trust
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Hampshire & Isle of Wight
Wildlife Trust

Protecting wildlife. Inspiring people.



RINSE

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Contents	Page
Summary	2
1. Introduction	3
· The RINSE Project	3
· Hampshire and Isle of Wight Wildlife Trust	3
· The New Forest Non-Native Plants Project	4
· The New Forest	4
· What are invasive non-native species?	6
· The Invasive Non-Native Species Framework Strategy For Great Britain	6
· Himalayan balsam	7
2. The role of volunteers	9
· Why involve volunteers?	9
· The role of volunteers in mapping the distribution of Himalayan balsam in The New Forest	10
· The role of volunteers in the control of Himalayan balsam	13
· The role of volunteers as 'river champions'	14
3. Sources of volunteer help	15
· Members of Hampshire & Isle of Wight Wildlife Trust	15
· Other conservation organisations	15
· Youth organisations	16
· Local schools and colleges	16
· Local businesses	17
· Local fishing clubs	18
· Local residents	19
· Other sources	20
4. Recruiting volunteers	21
5. Practical considerations when utilising volunteers	22
· Health and safety	22
· Insurance	22
6. Motivating volunteers	23
· Results of questionnaire relating to motivation of volunteers	23
· Role of the leader	30
· Understanding the need for the work	31
· Organising a variety of tasks	31
· Motivating volunteers in challenging weather conditions	32
· Investing in volunteers	32
· Showing appreciation	33

	Page
7. Challenges	34
· The need for flexibility in planning work parties	34
· The need for flexibility in bad weather	34
8. The Beaulieu River as an example of successful control and eradication of Himalayan balsam at the catchment scale	38
· Description of the Beaulieu River and its catchment	38
· The ecological importance of the Beaulieu River	39
· Himalayan balsam within the catchment of the Beaulieu River	39
· Research needed prior to mobilising volunteers to pull Himalayan balsam in the catchment of the Beaulieu River	39
· Organising volunteer work parties to pull Himalayan balsam in the catchment of the Beaulieu River	40
· Input by volunteers to control Himalayan balsam in the catchment of the Beaulieu River	41
· The role of a 'river champion' in mobilising volunteers on the Beaulieu River	41
· Impact of volunteer activity in the catchment of the Beaulieu River since 2009	42
· Challenges to controlling Himalayan balsam within the catchment of the Beaulieu River	47
9. Conclusions	48
10. Acknowledgements	49
11. References	50

SUMMARY

The experience of The New Forest Non-Native Plants Project demonstrates that volunteers can be mobilised to contribute towards the successful control and eradication of Himalayan balsam at the catchment scale. Volunteers can play a useful role in identifying the location of Himalayan balsam and in monitoring the effect of control work. Volunteers can play an important role in controlling Himalayan balsam as the plants have shallow roots and are relatively easy to pull-up making them suitable for control by hand-pulling. Volunteers can play an important role as 'river champions' patrolling the catchment and liaising with the Project Officer and landowners/managers.

The control of Himalayan balsam appeals to a diverse variety of volunteers drawn from a wide age range. Many volunteers develop a sense of 'commitment' to a particular watercourse or catchment and are keen to participate in the control of Himalayan balsam for a number of years.

Successful control and eradication of Himalayan balsam by volunteers at the catchment scale is dependent on a number of factors. It is important to motivate volunteers and to demonstrate appreciation. A co-ordinated, strategic approach to control work is necessary to ensure that effort by volunteers is not jeopardised by seed shed from uncontrolled populations of Himalayan balsam further upstream.

Practical matters such as health and safety and insurance are important factors that need to be addressed when mobilising volunteers to control Himalayan balsam.

Case studies focussing on the Lymington River and the Beaulieu River demonstrate some of the challenges which need to be met when utilising volunteers to control and eradicate Himalayan balsam at the catchment scale.

A strong commitment to partnership working between the Project Officer, volunteers, landowners, land managers and professional contractors combined with a strategic, co-ordinated approach to control can eradicate Himalayan balsam effectively at the catchment scale.

1. INTRODUCTION

1.1 The RINSE Project

RINSE (Reducing the Impact of Non-native Species in Europe) is a European Project which focuses on ways of controlling invasive non-native species across the Two Seas Programme area. It also aims to improve awareness of the threats posed by invasive non-native species. See www.rinse-europe.eu

The Project has been funded by the European Union – Interreg IVA 2 Seas programme and has a total of nine partners from France, England, Belgium and the Netherlands.

1.2 Hampshire and Isle of Wight Wildlife Trust

Hampshire and Isle of Wight Wildlife Trust (HIWWT) is the leading nature conservation charity in the two counties of Hampshire and the Isle of Wight. With support from over 27,000 members and 900 volunteers, HIWWT works to protect wildlife and wild places, managing 48 nature reserves, running 3 education centres and offering advice to landowners and land managers. HIWWT is part of a UK-wide partnership of 47 local Wildlife Trusts, with a collective membership of more than 800,000 people working together to conserve our precious natural heritage.

HIWWT is one of the nine partners co-operating in the RINSE Project.

1.3 The New Forest Non-Native Plants Project

The New Forest Non-Native Plants Project aims to stop the spread of invasive non-native plants in The New Forest area, particularly along watercourses and in wetland habitats.

The Project started in May 2009 and is a joint partnership between Hampshire and Isle of Wight Wildlife Trust, the Environment Agency, the Forestry Commission, Natural England, The New Forest National Park Authority, The Verderers of the New Forest and Department for Environment, Food and Rural Affairs.

The objectives of The New Forest Non-Native Plants Project are to:-

- identify where non-native invasive plants are a problem, particularly within river valleys;
- arrange for control work to be undertaken by volunteers and contractors;
- commission research into control methods;
- raise awareness of the need to control invasive non-native plants and to prevent them spreading into our countryside.

The Project is hosted by HIWWT. The New Forest Non-Native Plants Officer is employed by HIWWT to work in partnership with volunteers, local landowners, naturalists and businesses to stop the spread of Himalayan balsam and other invasive non-native plants.

1.4 The New Forest

The New Forest is located in Southern England and is recognised as being of high ecological and landscape value through its designation as a National Park. The 'core' of the New Forest is the 'Crown Land' managed by the Forestry Commission. The 'Crown Land' comprises plantation woodlands and the 'Open Forest' which is characterised by lowland heathland, acid grassland and ancient woodland habitats which retain their landscape character and wildlife value through the activities of the commoners who exercise their rights to graze their animals (ponies, cattle, donkey, pigs) on the 'Open Forest'.

The 'core' area of 'Open Forest' and plantation woodlands is fringed by privately-owned land, some of which is managed by commoners to provide 'back-up' land for their animals to graze during the winter when the 'Open Forest' does not provide sufficient food to sustain the animals. Many of the privately-owned fields surrounding the Crown Land are increasingly being managed as amenity land or are used as grazing for recreational horse-keeping, with the fields fenced to separate the animals from the adjacent watercourses. Such changes in management have implications for the spread of invasive non-native plants such as Himalayan balsam.

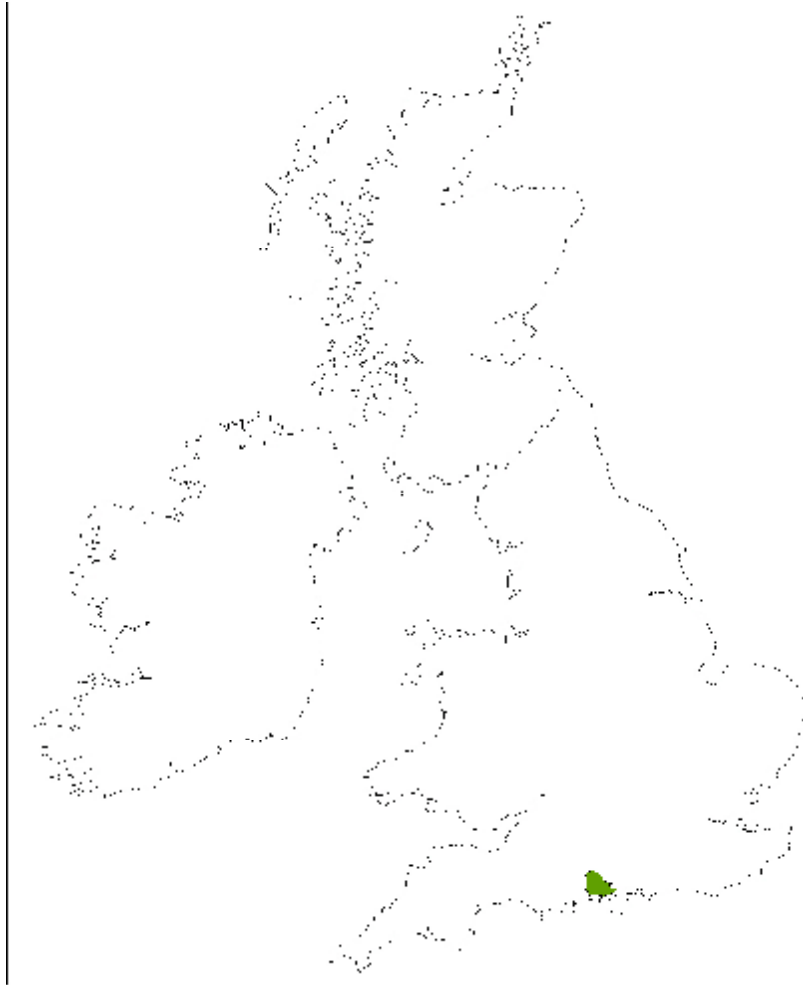


Figure 1 – Location of The New Forest

The New Forest is of high significance for the conservation of biodiversity in Britain and Europe. Much of the land within The New Forest National Park has been designated as Sites of Special Scientific Interest in accordance with the Wildlife and Countryside Act 1981 (as amended) and the National Park contains National Nature Reserves designated under the National Parks and Access to the Countryside Act 1949. The internationally important, extensive areas of lowland heath, ancient woodland, valley mires, river valleys and coastal marshes support a very high number of nationally rare (and some internationally rare) species. The majority of the New Forest National Park is contained within the Natura 2000 network of European Sites, through designation as a Special Area of Conservation (SAC) under the EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora and/or through classification as a Special Protection Area (SPA) under the Wild Birds Directive (Council Directive 79/409/EEC). Large areas are also designated as Ramsar sites (wetlands of international importance) under the terms of the Ramsar Convention held in Iran in 1971.

1.5 What are invasive non-native species?

An invasive non-native species is any non-native animal or plant that has the ability to spread causing damage to the environment, the economy, our health and the way we live. Many of these impacts are caused as invasive non-native species upset the natural balance within an ecosystem. Invasive non-native species can cause this disruption by outcompeting native species (by growing more quickly or being more aggressive), by being a vector for an exotic disease, through genetic impacts or by directly preying and grazing native species which have no defence against the new threat.

Invasive non-native species are widespread in the RINSE project area and continue to be introduced in a wide variety of ways including the horticultural and pet trade, commercial shipping and tourism. Insufficient information about the distribution and spread of invasive non-native species has historically made it difficult to prioritise and target action, leading to ad-hoc control efforts. Furthermore, insufficient sharing of information about invasive non-native species across countries has led to some duplication of effort. Poor general awareness of the threats posed by invasive non-native species means that some are still available commercially, or are released into the wild.

1.6 The Invasive Non-Native Species Framework Strategy for Great Britain

The work of the New Forest Non-Native Plants Project helps implement at the local level The Invasive Non-Native Species Framework Strategy for Great Britain ^{Ref 1}.

This document, published in 2008 by the Department for Environment, Food and Rural Affairs, recognises that “one of the greatest threats to biodiversity across the globe is that posed by invasive non-native species”. The Strategy provides a high-level framework and details the key actions required to address the problems caused by invasive non-native species.

The Strategy recognises the need for control at the catchment scale and acknowledges that effective partnership working is critical to the successful control and eradication of invasive non-native species.

1.7 Himalayan balsam

Himalayan balsam *Impatiens glandulifera* is an invasive non-native species in Europe. It is native to the western Himalayas and was introduced to Britain in 1839 as an ornamental garden plant. It is the tallest annual plant in Britain, capable of reaching a height of 4 metres.

Himalayan balsam thrives in damp areas and has escaped from gardens, rapidly colonising river banks. The distinctive, large pink flowers appear in early summer.



Himalayan balsam flower and seed pods

(Photo: Great Britain Non-native Species Secretariat GBNNS)

When the seed pods mature they 'explode' releasing the seed up to a distance of approximately 7 metres. If the seeds fall into a nearby watercourse they are carried in the water and can colonise suitable habitat downstream.

Himalayan balsam can grow in dense stands that suppress the growth of native wildflowers. In autumn the balsam plants die back, leaving river banks bare of vegetation and liable to erosion.



This photograph, taken on the west bank of the Lymington River in The New Forest during 2010, demonstrates that Himalayan balsam is capable of growing to a height of 4 metres and forming dense stands which suppress the native vegetation

(Photo: David Aylieff-Sansom Middle of The Road Photography)

Himalayan balsam is included in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) ^{Ref 2}. It is an offence under section 14(2) of this Act to plant Himalayan balsam in the wild or to otherwise cause it to grow in the wild.

Although the responsibility for stopping the spread of invasive non-native species such as Himalayan balsam rests with individual landowners, co-ordinated control at the catchment scale is necessary if Himalayan balsam is to be eradicated. Eradication at the catchment scale will realistically only be achieved if landowners are given encouragement and practical help. The New Forest Non-Native Plants Project plays a pivotal role in co-ordinating control at the catchment scale and giving support and assistance to riparian landowners.

2. THE ROLE OF VOLUNTEERS

2.1 Why involve volunteers?

The New Forest Non-Native Plants Project Officer would be unable to meet the challenge of stopping the spread of Himalayan balsam and other invasive non-native plants in the New Forest area without the involvement of a large number of enthusiastic volunteers:-

- practical volunteer activity is crucial to the successful control and eradication of Himalayan balsam along streams and rivers in the New Forest area;
- volunteers play a vital role surveying and monitoring Himalayan balsam and other invasive non-native plants;
- volunteers play a vital role in alerting the Project Officers to new sightings of invasive non-native plants;
- volunteers make it possible for the Project to create and 'man' awareness-raising displays at significant events, for example, the three-day New Forest and Hampshire County Show;
- volunteers provide valuable help running training events and conferences.

This report aims to demonstrate the vital role that volunteers perform in the control and eradication of Himalayan balsam at the catchment scale.



Volunteers with pile of Himalayan balsam in the New Forest

2.2 The role of volunteers in mapping the distribution of Himalayan balsam in The New Forest

When the New Forest Non-Native Plants Project was set up in 2009 it was known that Himalayan balsam had colonised many watercourses in the New Forest area but more detailed knowledge of the distribution of balsam was needed to enable the Project Officer to focus effort and resources effectively. The Project Officer encouraged volunteers to perform an important role by recording their observations and submitting their sightings to Hampshire and Isle of Wight Wildlife Trust.


Volunteers were encouraged to submit their observations in one of two ways:-

- filling in a recording card and sending it in the post;
- submitting information electronically via the New Forest Non-Native Plants Project webpage on the Hampshire and Isle of Wight Wildlife Trust web site.


The recording card designed by the New Forest Non-Native Plants Officer is shown below. The single sheet of A4 card is printed on both sides with illustrations to help volunteers identify the relevant invasive non-native species.

The New Forest Non-Native Plants Project was set up in 2009 to stop the spread of five invasive plants which threaten our important native wildlife. We need your help to find out where these plants grow in the New Forest area, particularly along river valleys and in wetlands, so we can target our efforts and resources to control them.


Japanese knotweed
Fallopia japonica




Himalayan balsam
Impatiens glandulifera




Giant hogweed
Heracleum mantegazzianum



American skunk cabbage
Lysichiton americanus



New Zealand pygmyweed
Crasula helmsii



Information about the New Forest Non-Native Plants Project can be found on the Hampshire and Isle of Wight Wildlife Trust's website at:
<http://www.hwt.org.uk/pages/new-forest-non-native-plants-project.html>

If you find any of these 5 species please complete this form, detach it and send it to Hampshire and Isle of Wight Wildlife Trust. Thank you.

This species information you send us will be entered onto our Non-Native Plants database. Your contact details will be kept on a confidential database and will not be shared with any third party.

Name.....
E-mail.....
Telephone.....
Postal address.....
.....
Species name.....
Location name.....
Location grid reference or postcode.....
Date seen.....
Number of plants seen (estimate).....
Type of habitat the plant was growing in.....
Name and contact details of landowner (if known).....
.....
Other comments.....
.....

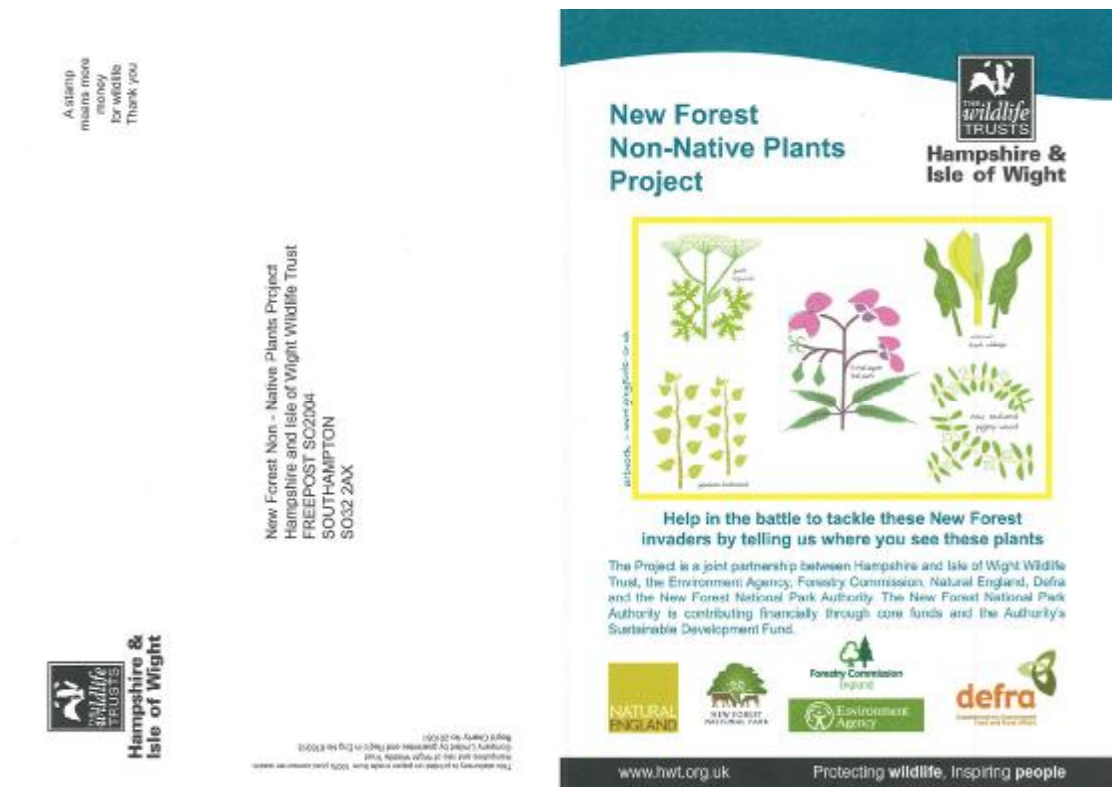
If you would prefer to submit your records electronically please follow the link to the electronic recording card from the Project web page at <http://www.hwt.org.uk/pages/new-forest-non-native-plants-project.html>

Tick here if you are interested in becoming a member of Hampshire and Isle of Wight Wildlife Trust

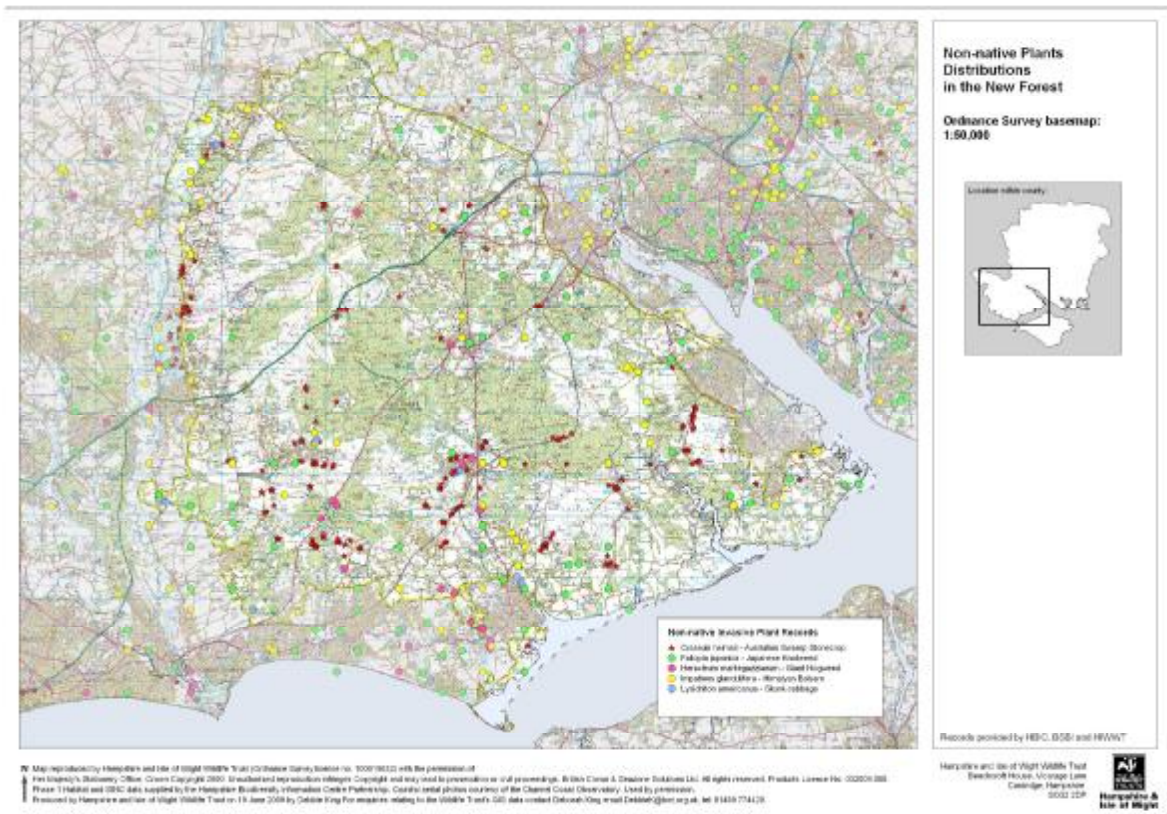
Volunteers are asked to provide the following information:-

- their name and contact details
- name of species
- location of species (including grid reference or post code)
- date of observation
- number of plants seen (estimate)
- type of habitat the plant was growing in
- name and address of landowner (if known)
- any other relevant comments

The card has been designed to be as user-friendly as possible. When the details have been filled in on the recording card, the card can be torn in half along the perforations and the information sent to Hampshire and Isle of Wight Wildlife Trust using the 'Freepost' address printed on the card.



Similar information can be submitted electronically via the New Forest Non-Native Plants Project webpage. The information received from volunteers (via the recording cards or the website) is forwarded to the Project Officer so that the records can be verified. Once verified, the records are entered on to a spreadsheet and used to create maps which reveal the known distribution of Himalayan balsam (and other invasive non-native plant species) in the New Forest area.



Records of Himalayan balsam submitted by volunteers help to inform understanding of the distribution of invasive non-native plants in the New Forest area.

The records submitted by volunteers help the Project Officer to plan the Himalayan balsam control programme at the catchment scale and direct effort to those areas where Himalayan balsam needs to be controlled.

2.3 The role of volunteers in the control of Himalayan balsam

Himalayan balsam has short roots and, in most situations, is easy to pull up by hand ^{Ref 3}. It poses no hazards to human health (unlike giant hogweed which is another invasive non-native plant being eradicated by the New Forest Non-Native Plants Project) and is therefore an appropriate species to be controlled by volunteers.



Himalayan balsam has short roots and is easily pulled-up by volunteers

Many volunteers repeatedly return to participate in balsam-pulling work parties as they find it enjoyable and satisfying, particularly when dense areas of relatively tall balsam plants are tackled. Once pulled-up, the balsam plants can be piled into heaps to rot down *in situ* resulting in a sense of achievement.



Satisfied volunteers with a large pile of Himalayan balsam plants which they have pulled up along the bank of the Cadnam River in The New Forest

2.4 The role of volunteers as 'river champions'

Volunteers play an extremely important role in the control and eradication of Himalayan balsam in the New Forest area by becoming 'river champions' for a particular watercourse. River champions perform two main functions:-

- river champions patrol the river, maintaining contact with landowners and managers and acting as a link between the owner/managers and the Project Officer. This helps the Project maintain a 'presence' in a particular river valley. The river champions can inform the Project Officer of particular 'hot spots' where more work is required to control the Himalayan balsam;
- river champions can be trained with the necessary skills to enable them to lead small work parties to repeatedly patrol the river and pull any Himalayan balsam which might have been missed by earlier volunteer work parties or which have germinated later in the season.



'River champion' Ashley Basil whose enthusiasm has inspired volunteers to tackle the dense, tall growth of Himalayan balsam along the Lymington River

3. SOURCES OF VOLUNTEER HELP

The New Forest Non-Native Plants Project has attracted help from a wide range of volunteers.

3.1 Members of Hampshire and Isle of Wight Wildlife Trust

Work parties to pull Himalayan balsam have been 'advertised' in the Hampshire and Isle of Wight Wildlife Trust's 'Events Programme' which is distributed to all members (approximately 27,500) of the Wildlife Trust.

3.2 Other conservation organisations

The New Forest Non-Native Plants Officer has co-ordinated Himalayan balsam-pulling work parties hosted by a range of other conservation organisations in the New Forest area:-

- The New Forest Area Conservation Volunteers
- Hampshire Conservation Volunteers
- Forestry Commission's 'Two Trees' Conservation Team
- Natural England's National Nature Reserve volunteers



Members of the Forestry Commission's 'Two Trees' Conservation Team

3.3 Youth organisations

Participating in Himalayan balsam-pulling work parties can be enjoyed by a wide range of age groups. Children aged 6-8 from a local 'Beaver' group had great fun pulling balsam along a stream in The New Forest during their regular early evening meeting, with supervision by their leaders, the Project Officer and a few of their parents. Other related youth organisations ('Cubs', 'Brownies', 'Scouts' and 'Guides') would also be suitable sources of potential volunteers.

3.4 Local schools and colleges

The New Forest Non-Native Plants Project has sourced volunteers from local junior and secondary schools and colleges which are a) located close enough to rivers to be within walking distance of the work party sites or b) have a minibus to transport the students to the work party site. Secondary school and college tutors have been keen for their students to participate in volunteer work parties when invasive non-native species feature in their syllabus. Participation in volunteer work parties offers students valuable experience as well as benefitting the Project.



Students from the local secondary school helped to pull Himalayan balsam along the Lymington River

3.5 Local businesses

Local businesses can be a very useful source of volunteers. Some companies allow their staff to allocate a certain amount of their time to regular voluntary activity. Pulling Himalayan balsam can be attractive to those companies which organise 'corporate volunteering' sessions for their staff.

One particularly productive work party to pull Himalayan balsam in the New Forest involved 48 members of staff from the local office of a national firm of accountants, tax advisers and auditors.



Local businesses are a useful source of volunteers. Here staff from 'Arco' take a rest from pulling Himalayan balsam in the New Forest area

3.6 Local fishing clubs

Local anglers and fishermen can be mobilised to volunteer to pull Himalayan balsam, particularly on stretches of river where they fish.

For example, The New Forest Non-Native Plants Project has forged a positive relationship with the Brokenhurst Manor Fly Fishing Club whose members fish part of the Lymington River and who are actively engaged in controlling the balsam on that watercourse.



Members of Brokenhurst Manor Fly Fishing Club pulling Himalayan balsam in the New Forest

3.7 Local residents

The New Forest Non-Native Plants Officer has raised awareness about the need to control Himalayan balsam by giving talks to Parish Councils and local residents' societies. Such talks can motivate local residents to get involved and to ask the Project Officer to organise volunteer work parties for them on their local river.



Local residents pulled Himalayan balsam along the Lymington River

3.8 Other sources of volunteers

The charity 'Headway', which supports people who have suffered head injuries, has provided volunteers to help pull Himalayan balsam in the New Forest area.



Service-users of 'Headway' (a charity which supports people who are recovering from head injuries) participated in Himalayan balsam-pulling work parties in the New Forest area



Supervisor and service-user from 'Headway'

Staff employed by Hampshire and Isle of Wight Wildlife Trust lead work parties for disadvantaged people, people in minority groups and youngsters who are 'Not in Education, Employment or Training' and Himalayan balsam-pulling can be a suitable activity for these groups of volunteers.



Young volunteers helping to pull balsam on a work party led by staff from Hampshire and Isle of Wight Wildlife Trust
(Photo: Sophie Curtis, Hampshire & Isle of Wight Wildlife Trust)

4. RECRUITING VOLUNTEERS

The New Forest Non-Native Plants Project utilises a variety of techniques to recruit people to join volunteer work parties. Work parties are advertised in the 'Events Programme' which is distributed to members of Hampshire and Isle of Wight Wildlife Trust. Full details of work parties can be accessed via a link from the Project web page on the Wildlife Trust's website.

The Project Officer sends full details of work parties each Spring to people who have volunteered in previous years or who have expressed an interest in participating in a work party.

Work parties are promoted via the local media, for example newspapers and magazines and local radio.

Parish Council newsletters are useful vehicles for letting local people know about volunteer work parties in their area.

Talks to Parish Councils, local residents' societies and other organisations such as the Women's Institute can encourage people to join a volunteer work party. Posters can be displayed (for example in local shops, post offices and public houses and on community notice boards) to promote volunteer work parties in the local area.

5. PRACTICAL CONSIDERATIONS WHEN UTILISING VOLUNTEERS

5.1 Health and Safety

Health and safety is paramount when utilising volunteers in Himalayan balsam-pulling work parties especially as the majority of the work parties involve practical work near water courses.

- It is important for the work party leader to hold an up-to-date relevant first aid qualification
- It is advisable for the work party leader to have received training relating to working near water
- Prior to any practical work being undertaken it is important for the leader to undertake a reconnaissance visit to assess the suitability of a potential work site
- It is important for risk assessments to be undertaken and up-dated as new risks are identified
- It is important for the work party leader to provide first aid kit(s) and safety equipment eg emergency throw-line(s) and safety glasses for use during volunteer work parties
- Prior to any practical work being undertaken it is important for the work party leader to record relevant details of volunteers ie contact details of next-of-kin and medical information such as any known allergies
- At the start of a volunteer work party it is important for the leader to give a health and safety briefing and demonstrate the use of emergency throw-lines
- When advertising balsam-pulling work parties it is important to advise volunteers to bring food and plenty to drink
- It is advisable for the work party leader to take a supply of biscuits and water or soft drinks for the volunteers
- When advertising balsam-pulling work parties it is important to advise volunteers to wear long trousers, wellingtons or boots (depending on the conditions underfoot) and long-sleeved shirts. It is wise to advise volunteers to wear a sun hat and sun-protection cream if it is a sunny day.
- It is important to ensure that 'river champions' receive appropriate training (eg first aid), have the necessary equipment (first aid kits, safety glasses, emergency throw-lines) and do not work alone by water.

5.2 Insurance

It is important to ensure that volunteers are covered by appropriate insurance.

6. MOTIVATING VOLUNTEERS

6.1 Results of questionnaire relating to motivation of volunteers

During January 2013 The New Forest Non-Native Plants Officer prepared a questionnaire and sent it to fifty volunteers who had participated in Himalayan balsam-pulling work parties to discover what had prompted them to join a work party and what motivates them to participate in balsam pulls. The questionnaire also asked what they most enjoyed about balsam pulls and what they least enjoyed.

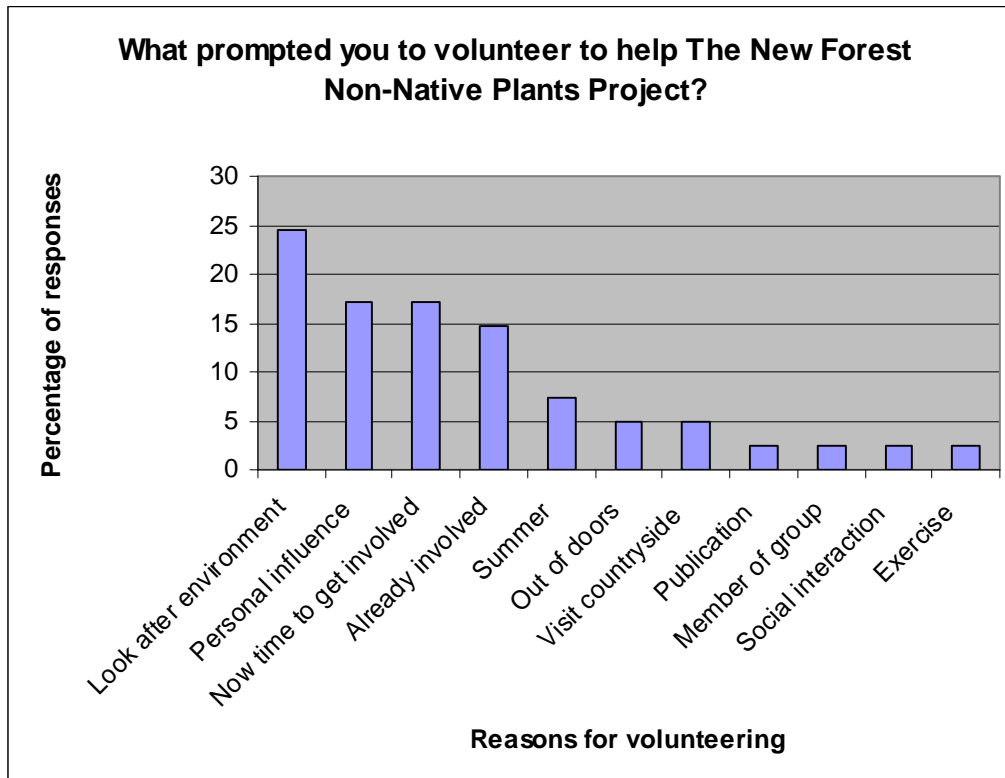
The questionnaire was designed to capture people's personal responses as the Project Officer considered that a 'tick box' approach would be too biased towards her own pre-conceived ideas and not allow people the freedom to satisfactorily express their own opinions.

Twenty-nine completed questionnaires were returned (a return rate of nearly 60%). Some questionnaires had been completed by one person on behalf of themselves and their spouse. The responses were collated by the Project Officer.

The first question asked people 'what prompted you to volunteer to help the New Forest Non-Native Plants Project?' A total of 41 separate responses were given to this question. The responses were analysed by the Project Officer and grouped into 11 categories as follows:-

Question 1: What prompted you to volunteer to help the New Forest Non-Native Plants Project?		
Total number of responses = 41		
	Number of responses	Percentage
Desire to look after the environment	10	24.39
Personal influence ie influenced by project officer or an existing volunteer	7	17.07
Now have the time to get involved	7	17.07
Member of a group that is already involved with balsam-pulling	6	14.63
Work parties occur during the summer months	3	7.31
Desire to do something out of doors	2	4.87
Opportunity to visit certain areas of countryside	2	4.87
Influenced by a local publication	1	2.43
Member of a group encouraged to get involved with balsam-pulling	1	2.43
Social interaction	1	2.43
Exercise	1	2.43

The responses to the first question are shown graphically below:-



The most frequent reason given for volunteering to help the New Forest Non-Native Plants Project related to a desire to look after the environment. People expressed this in a variety of ways including:-

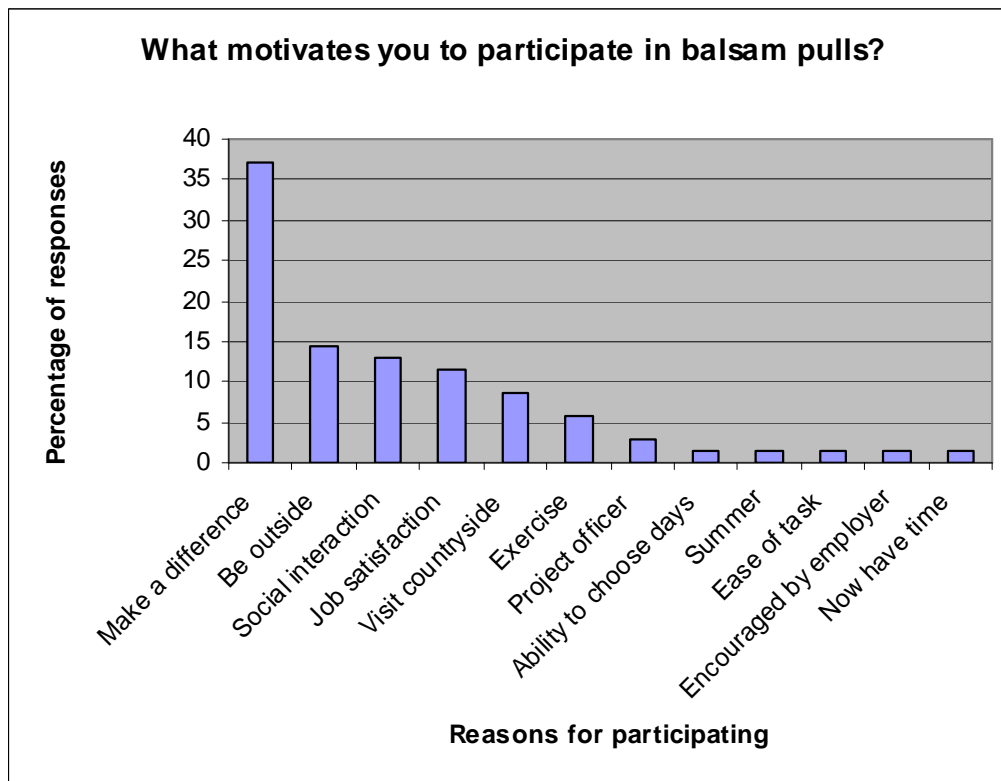
- Benefitting the local area / local environment (2 responses)
- Benefitting wildlife (2 responses)
- Love of the New Forest (2 responses)
- Putting something back in the New Forest area (1 response)
- Making a difference to the environment (1 response)
- An interest in conservation (1 response)
- Interest in protecting the Lymington River (1 response)

The second most frequent reason for volunteering to help the New Forest Non-Native Plants Project was 'personal influence'. One respondent had been influenced by an existing balsam-pulling volunteer. Six other responses related to the influence of the project officer; people had volunteered because they had heard a talk given by the project officer, or knew the project officer personally or had met the project officer whilst leading a volunteer work party and had been persuaded to get involved.

The second question asked people 'what motivates you to participate in Himalayan balsam pulls?' A total of 70 separate responses were given to this question. The responses were analysed by the Project Officer and grouped into 12 categories as follows:-

Question 2: What motivates you to participate in Himalayan balsam pulls?		
Total number of responses = 70		
	Number of responses	Percentage
Opportunity to do something useful/worthwhile/benefit the local environment/make a difference	26	37.14
Desire to be outside and to do something different	10	14.28
Social interaction	9	12.85
Job satisfaction	8	11.42
Opportunity to visit certain areas of countryside	6	8.57
Exercise	4	5.71
The project officer	2	2.85
Ability to choose which days to participate	1	1.43
Work parties occur during the summer months	1	1.43
Ease of the task	1	1.43
Encouraged by employer to participate in a voluntary capacity	1	1.43
Now have the time to get involved	1	1.43

The responses to the second question are shown graphically below:-



The most frequent reason given for being motivated related to an opportunity to do something useful / worthwhile / benefit the local environment / make a difference. People expressed this in a variety of ways including:-

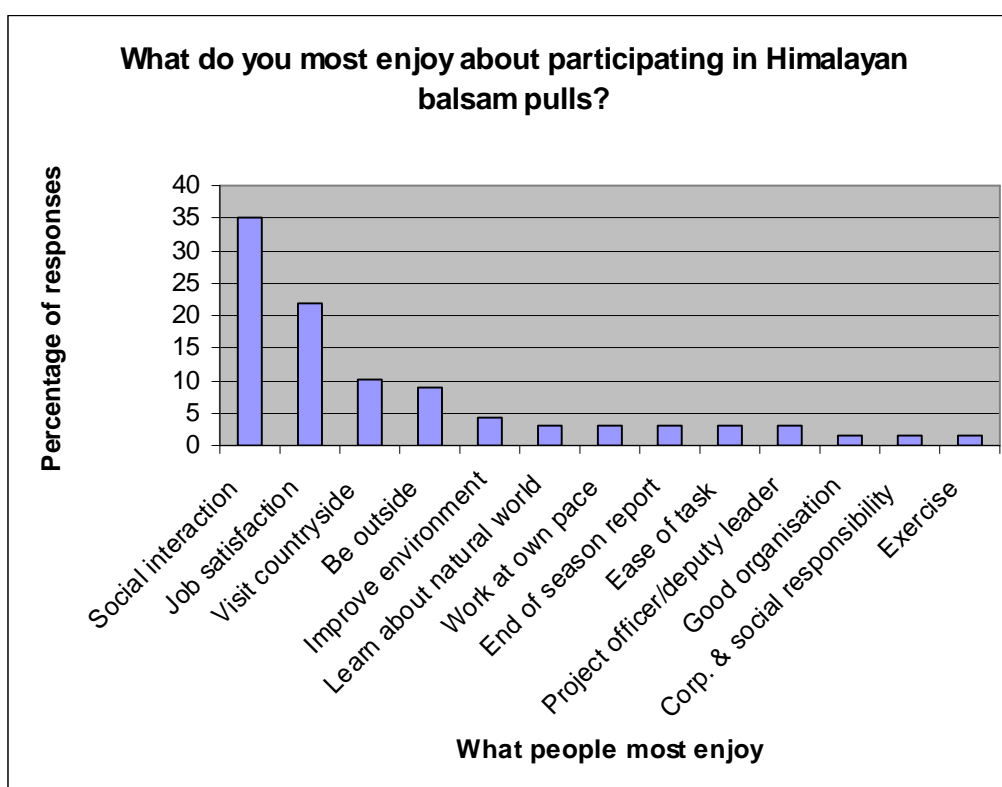
- Being involved in a worthwhile project (3 responses)
- Knowing that my contribution is making a difference to the local environment (2 responses)
- Being of benefit to the local natural environment (1 response)
- Keen to get rid of invasive non-native plants (1 response)
- I have the thought of our native wildlife being overrun by invasive species (1 response)
- Like to help in eradicating Himalayan balsam from the New Forest stream and rivers (1 response)
- Lively interest in protecting the Lymington River (1 response)
- Concern for the Cadnam River (1 response)
- Actions speak louder than words and can make a difference (1 response)
- I'd not like to see native plants crowded out of their habitats (1 response)
- Helping the environment (1 response)
- Interest in conservation and preserving the natural British flora and fauna (1 response)

- Opportunity to put something back into the local community (1 response)
- Sense of making a difference in a small way (1 response)
- I feel that my contribution makes a difference and is valued (1 response)
- I want to do something useful with my time (1 response)
- Being involved and feeling I am doing something useful (1 response)
- Opportunity to give something back to an area I love (1 response)
- The more we pull the more our native plants survive (1 response)
- I love the variety and complexity of native plant communities and I think it's worth working to maintain them (1 response)
- Eradicating a non-native plant from a sensitive landscape which already finds itself under huge pressures (1 response)
- To make a contribution to eliminating an environmental problem for the local area (1 response)
- Can make a one-off contribution as part of a bigger project (1 response)

The third question asked people 'what do you most enjoy about participating in Himalayan balsam pulls?' A total of 68 separate responses were given to this question. The responses were analysed by the Project Officer and grouped into 13 categories as follows:-

Question 3: What do you most enjoy about participating in Himalayan balsam pulls?		
Total number of responses = 68		
	Number of responses	Percentage
Social interaction	24	35.2
Job satisfaction	15	22
Opportunity to visit certain parts of the countryside especially those with no public access	7	10.2
Opportunity to be outside and do something different	6	8.82
Opportunity to improve the environment	3	4.4
Learning about the natural world	2	2.94
Ability to work at your own pace	2	2.94
The progress report at the end of the season	2	2.94
Ease of the task	2	2.94
Project Officer / deputy leader	2	2.94
Good organisation	1	1.47
Opportunity to highlight corporate and social responsibility of employer	1	1.47
Exercise	1	1.47

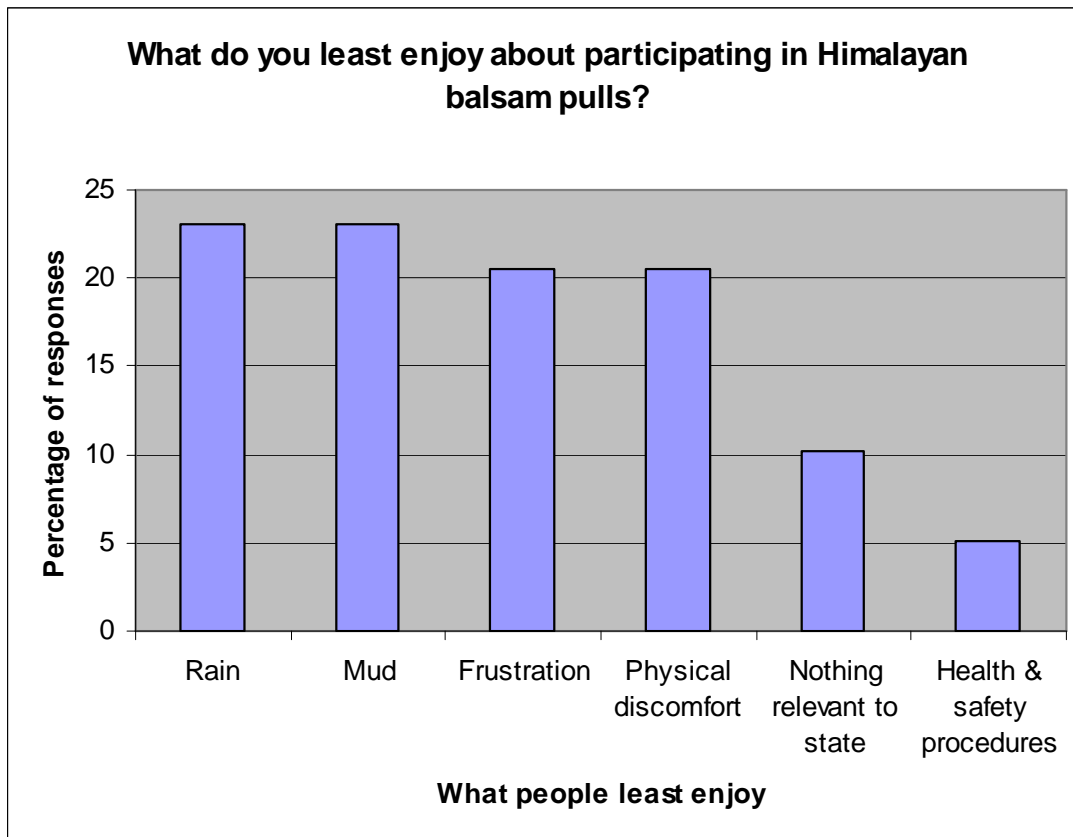
The responses to the third question are shown graphically below:-



The fourth question asked people 'what do you least enjoy about participating in Himalayan balsam pulls?' A total of 39 separate responses were given to this question. The responses were analysed by the Project Officer and grouped into 6 categories as follows:-

Question 4: What do you least enjoy about participating in Himalayan balsam pulls?		
Total number of responses = 39		
	Number of responses	Percentage
Rain	9	23
Mud	9	23
Frustration	8	20.5
Physical discomfort	7	17.9
Nothing relevant to state in response to this question	4	10.2
Health and safety procedures	2	5.1

The responses to the fourth question are shown graphically below:-



The high number of responses relating to rain and mud probably reflect the fact that the previous balsam-pulling season (2012) was characterised by a period of very high and prolonged rainfall in the UK.

However many balsam work party sites are intrinsically wet and muddy, regardless of the weather conditions of that particular year.

People's responses relating to rain and mud include the following comments:-

- Rain! Nothing like as enjoyable when it's wet
- Working in heavy rain
- On your knees in the rain for hours!!!!
- Falling over in the mud!
- Some of the areas are quite wet and muddy but that's where the plants are (!) and any risks/issues are well explained and understood
- Getting stuck in mud
- Slipping over in mud

The responses grouped in to the 'frustration' category include:-

- Not being able to reach balsam growing in inaccessible places (2 responses)
- Not being able to pull balsam growing on land not currently included in the project (1 response)
- Returning to areas where balsam was not pulled properly or where re-growth has occurred from heaps left on the ground (1 response)
- Not finding any balsam on sites which were cleared in previous year (1 response)
- Some of the areas (in 2012) were too wet to venture in and perhaps the event should have been cancelled (1 response)
- As a new volunteer finding the work sites (1 response)
- Need to ensure you don't miss event the smallest shoot (1 response)

Responses falling into the 'physical discomfort' category include getting tired, aching muscles from bending over, insect bites and nettle stings.

It is interesting to note that whilst some people find it frustrating to return to a work site and find no balsam to pull, other volunteers consider this to be a source of satisfaction.

It is also interesting to note that 4 of the 29 completed questionnaires, had nothing relevant to state in response to this question.

The results of this survey can be used to maximise motivation of volunteers in a number of ways.

6.2 Role of the leader

Many people who have volunteered to pull Himalayan balsam in the New Forest area have returned repeatedly to participate in work parties, indicating that they find it enjoyable and rewarding. However sometimes balsam-pulling can feel like a rather daunting task, so it is important for the work party leader to be enthusiastic and friendly towards the volunteers.

Little things can make a big difference. For example it is a good idea for the work party leader to carry biscuits and cartons of soft drinks for a mid-morning rest.

It is helpful at the beginning of a work party for the leader to give the volunteers an indication when there will be a mid-morning break and when everyone will stop for a picnic lunch. Many volunteers find the camaraderie during the lunch break particularly enjoyable although it is important for the leader to be sensitive to, and respectful towards, those volunteers who prefer to sit quietly during the breaks.



Volunteers remaining enthusiastic even when they have to contend with Himalayan balsam plants that are 4 metres tall!
(Photo: Ashley Basil)

6.3 Understanding the need for the work

Volunteers feel motivated when they know the reason for the work party and how their work fits into the 'bigger picture'. It is therefore important at the start of the work party for the leader to explain why the work is needed and how it contributes to the overall programme of Himalayan balsam control in that particular river catchment.

6.4 Organising a variety of tasks

Some volunteers feel most enthusiastic when they can tackle the challenge of an extensive, dense area of Himalayan balsam plants but do not feel so keen when they are having to search for the occasional balsam plant in an area where work parties have been held in previous years and where the balsam population has been significantly reduced. Conversely other volunteers are delighted when they find very few plants, in the knowledge that their hard work in previous years has been successful.

Some volunteers enjoy going to different locations to pull Himalayan balsam on a variety of watercourses with different groups of people. Conversely other people find satisfaction in returning regularly to the same stream or river with the same small team of volunteers and seeing the gradual eradication of the balsam population along a single watercourse.

It is therefore important for the leader to organise a variety of tasks to provide satisfaction for the volunteers.

6.5 Motivating volunteers in challenging weather conditions

Extreme weather conditions can affect volunteers' enthusiasm and it is important for the work party leader to be aware of the impact of cold, wet weather or particularly hot conditions. If necessary, agreement should be reached at the start of the event to work for a shorter period than usual, perhaps finishing at lunchtime. It is important to advise volunteers to bring appropriate food, drink and clothing to suit the weather conditions likely to be encountered.



Volunteers will continue to feel motivated, even in challenging weather conditions, if they act on advice to bring suitable clothing, food and drink

6.6 Investing in volunteers

Investing in volunteers helps people feel valued, and hence more motivated. The New Forest Non-Native Plants Project has invested in volunteers by providing first aid training for the 'river champions' who lead small teams to patrol the rivers. The Project Officer has lent equipment such as hand-held GPS devices to volunteers who undertake surveys on behalf of the Project.

6.7 Showing appreciation

Volunteers feel motivated when they know that their work has been appreciated by the work party leader. It is a good idea for the leader to take photographs of the volunteers during the work party and to send them the photographs with a short 'thank you' message via e-mail as soon as possible after the work party.

Volunteers feel motivated when they know that their participation is appreciated by the landowners whom they are helping. A number of landowners in the New Forest wanted to show their appreciation for the hard work undertaken by volunteers and offered to provide afternoon tea at the end of the balsam-pulling work parties on their land.



Volunteers enjoying afternoon tea provided by a landowner following a balsam-pull in the New Forest. Gestures like this really help volunteers feel valued and appreciated.

The volunteers who helped to pull Himalayan balsam in the New Forest during 2011 developed a real sense of commitment to particular rivers and a genuine 'community spirit' amongst the volunteers was evident. They requested a barbeque to celebrate the end of the balsam-pulling season and the Project Officer arranged for this to be held at a local pub.

The following year the Project Officer invited the volunteers to a bring-and-share supper in a village hall at the end of the season and used the occasion as an opportunity to give a short presentation about the work of the New Forest Non-Native Plants Project, to up-date the volunteers on the success achieved and to look ahead to the following season. Feedback after this event indicated that volunteers appreciated the opportunity to hear how their hard work had contributed to the overall success of the Project.

7. CHALLENGES

7.1 The need for flexibility in planning work parties

At the start of a balsam-eradication project it is relatively easy to identify areas for volunteers to pull Himalayan balsam and to plan and advertise events well in advance of the balsam-pulling season. However, after a few years of balsam-pulling at a particular location it becomes increasingly difficult to predict how many balsam plants will germinate. The situation might arise where a balsam-pull has been planned but there are insufficient balsam plants there the following summer to justify a volunteer work party. It is therefore necessary for the work party leader to check the site a few days in advance and, if necessary, find an alternative site. If the volunteers can not be contacted prior to the task (to inform them of the new location), it is necessary to identify an alternative work site relatively close to the original site so that volunteers can meet up at the original location and then drive a short distance to the alternative site.

7.2 The need for flexibility in wet weather

The total rainfall for the UK during 2012 was 1,330.7mm, just 6.6mm short of the record set in 2000, making 2012 the UK's second wettest year since records began in 1910. Twice the average amount of rain fell in the UK during June 2012, making it the wettest June on record.

The uncharacteristically wet summer of 2012 was a challenge to The New Forest Non-Native Plants Project. River levels rose significantly and on some days the heavy rain resulted in flooding which made it impossible for work parties to be held at the scheduled locations.



The flooding here along the Lymington River forced the Project Officer to cancel the work party scheduled for students during June 2012 as no suitable alternative site could be identified within walking distance of their College.



The Lymington River before the heavy rains during Summer 2012.....



.....and the same location a few days later when the flooding forced the Project Officer to find an alternative, drier, location for the volunteer work party at short notice.



Flooding can disrupt volunteers' plans for travelling to the scheduled work site



Flexibility is needed when flooding prevents volunteers reaching the work site



High water levels in the Lymington River disrupted plans for balsam-pulling in 2012 at this location



The Project Officer identified an alternative work site at short notice for the volunteers away from this flooded river bank along the Lymington River

8. THE BEAULIEU RIVER AS AN EXAMPLE OF SUCCESSFUL CONTROL AND ERADICATION OF HIMALAYAN BALSAM AT THE CATCHMENT SCALE

8.1 Description of the Beaulieu River and its catchment

The Beaulieu River rises at Lyndhurst and flows through 'Crown Land' (the land managed by the Forestry Commission) across heathland, grassland and woodland habitats on the 'Open Forest' ie the area grazed by New Forest commoners' cattle and ponies. In places the Beaulieu River flows through privately-owned fields before resuming its course across the 'Open Forest'. It then flows through the privately-owned Beaulieu Estate before entering the Beaulieu Estuary.

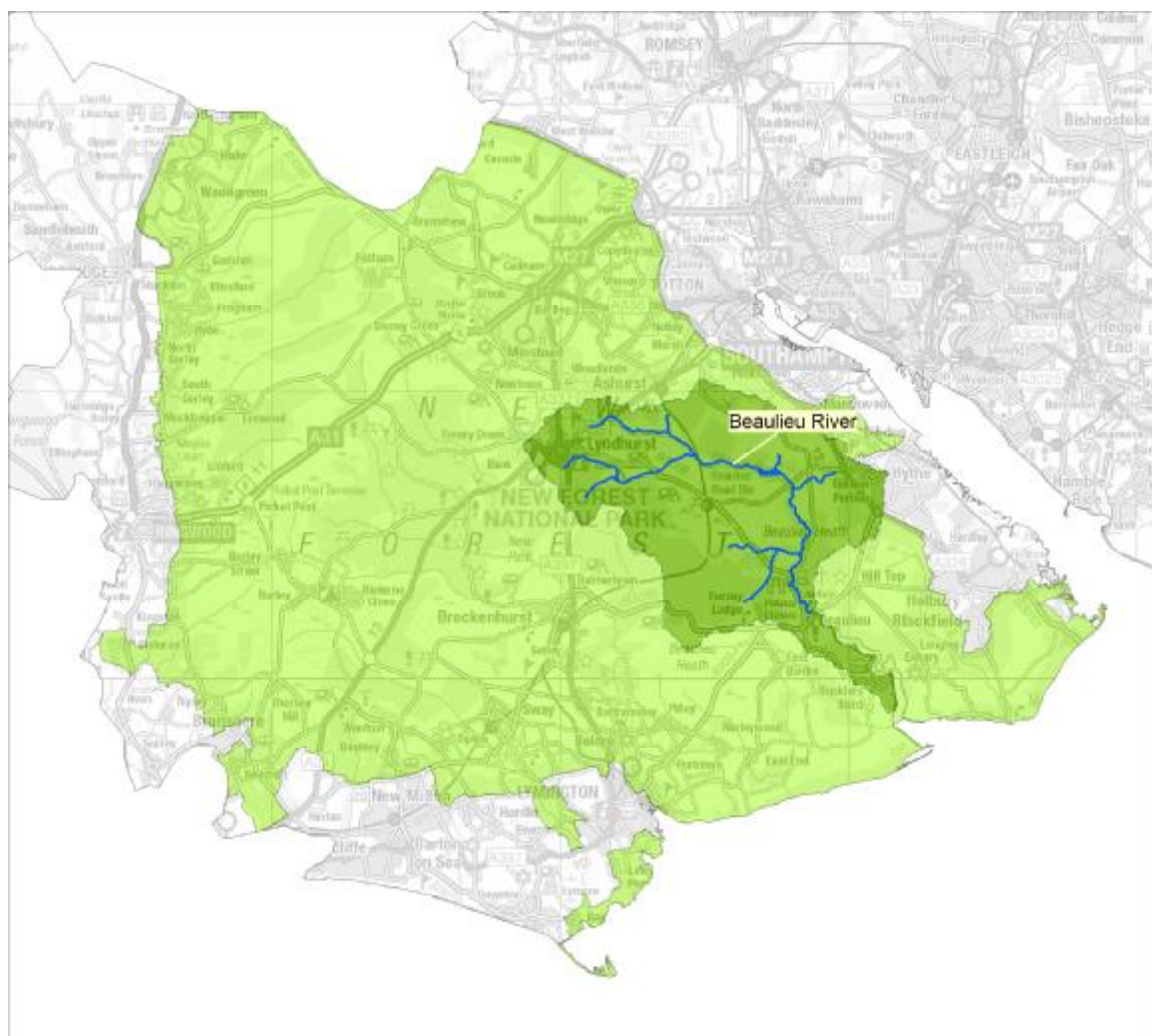


Figure 2 - The location of the Beaulieu River and its catchment in the New Forest

8.2 The ecological importance of the Beaulieu River

The Beaulieu River is recognised as being of high ecological quality and has a number of statutory nature conservation designations.

The Beaulieu River flows through the New Forest Site of Special Scientific Interest (SSSI) designated in accordance with the Wildlife and Countryside Act 1981 (as amended).

The lower part of The Beaulieu River flows through the North Solent SSSI and the North Solent National Nature Reserve (NNR).

The catchment of the Beaulieu River includes land within:-

- The New Forest Special Area of Conservation (SAC) designated under the Habitats Directive (Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora)
- The New Forest Special Protection Area (SPA) designated under the Birds Directive (Directive 79/409/EEC on the Conservation of Wild Birds)
- The New Forest Ramsar Site (an international designation denoting wetlands of international importance).

8.3 Himalayan balsam within the catchment of the Beaulieu River

Himalayan balsam is known to have been present within the catchment of the Beaulieu River since 1986.

By the time the New Forest Non-Native Plants Project started in May 2009, Himalayan balsam was known to occur at Lyndhurst in the vicinity of the source of the Beaulieu River; on privately-owned land in the grounds of Ipley Manor; on the 'Open Forest' on Crown Land downstream of Ipley; on the privately-owned land within the Beaulieu Estate.

Himalayan balsam occurred in significant quantities on the Open Forest of the Crown Land downstream of Ipley, despite this area being theoretically accessible to Commoners' grazing animals, because the woodland fringing this section of the Beaulieu River is extremely wet in places and very difficult for ponies and cattle to access.

8.4 Research needed prior to mobilising volunteers to pull Himalayan balsam in the catchment of the Beaulieu River

Prior to mobilising volunteers to control Himalayan balsam in the catchment of the Beaulieu River, it was necessary for the Project Officer to ascertain where the balsam occurred and who owned/managed the land. During 2009 Simon Kain and Phil Latto (graduates of Southampton University) volunteered, on behalf of the New Forest Non-Native Plants Project, to survey some sections of the Beaulieu River that flow across Crown Land and the results of their research are contained in the un-published report titled 'Non-native invasive plant species in the New Forest National Park' Simon Kain and Phil Latto, March 2010 ^{Ref 4}.

The results of their survey helped the New Forest Non-Native Plants Officer direct the majority of the volunteer effort during 2010 and subsequent years to the lower reaches of the Beaulieu River downstream of Ipley.

The landowner of Ipley Manor informed the Project Officer that he had utilised a range of techniques to control Himalayan balsam on his land (including hand-pulling, grazing, cutting, herbicide treatment) and was confident that he would be able to eradicate Himalayan balsam from his property. There was therefore no need to direct volunteer effort to the privately-owned land at Ipley Manor. This landowner informed the Project Officer that no balsam occurred in the privately-owned land at Decoy Pond Farm, upstream from Ipley Manor.

The Project Officer contacted other land owners and ascertained that the balsam population on the Beaulieu River did not extend downstream of the village of Beaulieu, probably as a result of the saline influence downstream of Beaulieu Mill Pond.

By summer 2010 the Project Officer was able to direct volunteer effort to control the Himalayan balsam a) in the vicinity of the source of the Beaulieu River in the village of Lyndhurst and b) downstream of Ipley on Crown Land and on the privately-owned Beaulieu Estate.

8.5 Organising volunteer work parties to pull Himalayan balsam in the catchment of the Beaulieu River

The New Forest Non-Native Plants Officer liaised with the Forestry Commission and Natural England to organise volunteer work parties on the Beaulieu River. These two statutory organisations have their own volunteer work force; the Forestry Commission hosts the 'Two Trees Conservation Team' and a team of Voluntary Rangers who usually undertake conservation activities on 'Crown Land' whilst Natural England's volunteers undertake conservation tasks within the North Solent National Nature Reserve (NNR).

Prior to the start of The New Forest Non-Native Plants Project, the Forestry Commission organised volunteer work parties to hand-pull the Himalayan balsam at Lyndhurst near the source of the Beaulieu River. Since then, the New Forest Non-Native Plants Officer has led or assisted with volunteer work parties involving the Two Trees Conservation Team and / or Voluntary Rangers. These work parties have been 'advertised' by the Forestry Commission to members of the Two Trees Conservation Team and Voluntary Rangers have been allocated to these tasks by the Forestry Commission.

Natural England's manager of the North Solent NNR hosted a number of work parties on the Beaulieu Estate; some of the volunteers were regular volunteers on the NNR but a significant number of tasks were undertaken by the Forestry Commission's Two Trees Conservation Team despite this section of the river being outside the Crown Land. This demonstrates the statutory organisations' commitment to sharing resources and working together to eradicate invasive non-native species in the New Forest area.

8.6 Input by volunteers to control Himalayan balsam in the catchment of the Beaulieu River

Prior to the start of the New Forest Non-Native Plants Project, the Forestry Commission organised work parties for Voluntary Rangers and the 'Two Trees Conservation Team' to pull Himalayan balsam near the source of the Beaulieu River at Lyndhurst and along the Beaulieu River downstream of Ipley.

Since the start of the Project in May 2009, these work parties have continued at Lyndhurst and on the 'Crown Land' and within the North Solent NNR on the Beaulieu Estate where Natural England's NNR volunteers and the New Forest Area Conservation Volunteers have also participated.

8.7 The role of a 'river champion' in mobilising volunteers on the Beaulieu River

The benefits of a 'river champion' on the Lymington River prompted the New Forest Non-Native Plants Officer to identify a river champion(s) for the Beaulieu River. During autumn 2011 the Project Officer convened a meeting between the Forestry Commission and Natural England to co-ordinate balsam-pulling in summer 2012.

During this meeting the Project Officer emphasised the benefit of having a river champion to lead small groups of volunteers to 'patrol' the Beaulieu River in late summer/autumn to pull any balsam plants which might have been missed during volunteer work parties earlier in the season. Following a request for a river champion, two people volunteered to fulfil this role.

It was necessary to ascertain which organisation would be responsible for health and safety and insurance. The Forestry Commission were unable to insure the river champions unless they were volunteering on Crown Land during an 'official' Two Trees Conservation Team event.

The most appropriate solution was for Hampshire and Isle of Wight Wildlife Trust to assume responsibility for health and safety and insurance cover for the river champions and the people who would be volunteering with them. The Wildlife Trust therefore paid for the two river champions to undertake training in outdoor first aid and lent them first aid kits and emergency throw-lines.

The two river champions attracted a keen group of people who volunteered to 'patrol' the Beaulieu River with them in small teams during the summer and autumn of 2012. Although some 'patrolling' was undertaken on the Crown Land, the majority of the activity by the river champions has been focussed on the Beaulieu Estate as, by 2012, this is where the majority of balsam plants needed to be controlled.

8.8 Impact of volunteer activity in the catchment of the Beaulieu River since 2009

Example – Crown Land downstream of Ipley

During 2009 Southampton University graduates, Simon Kain and Phil Latto, volunteered to map the distribution of Himalayan balsam on the Open Forest downstream of Ipley to the boundary between the Crown Land and the Beaulieu Estate at 'North Gate' as indicated below:-

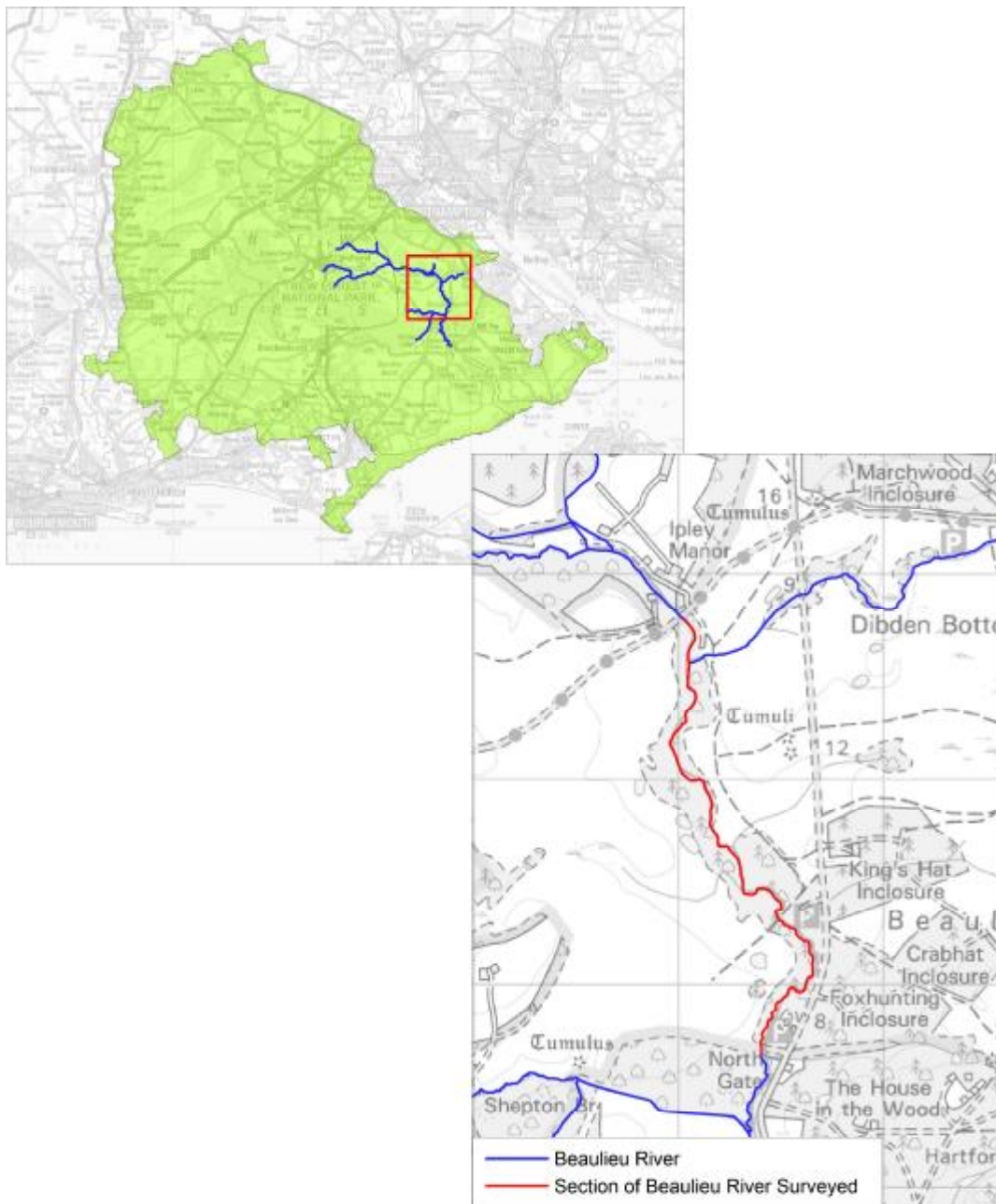


Figure 3 - Section of Beaulieu River surveyed by Simon Kain and Phil Latto (graduates of Southampton University) during 2009

Simon Kain and Phil Latto found a 'very large amount' of Himalayan balsam at a total of 31 sites. Seven of these sites were groups of 5 or fewer balsam plants; the remaining stands ranged widely in size "in some cases containing an estimated 3,000 individual plants. Six stands were estimated to contain over 1,000 individuals, while some patches were estimated to be hundreds of square metres in size. Himalayan balsam dominated the majority of the river corridor, with some individuals measuring over 3.5 metres in height" (Kain & Latto, 2009)

During 2010 Southampton University graduates Athene Gadsby and Thomas Fox volunteered to help the New Forest Non-Native Plants Project and surveyed a number of watercourses on 'Crown Land' in the New Forest, including the equivalent section of the Beaulieu River that was surveyed by Simon Kain and Phil Latto in 2009. The results of Tom and Athene's research is contained in the un-published report titled 'Non-native invasive plant species in the New Forest National Park 2010 report' Athene Gadsby and Thomas Fox dated September 2010 ^{Ref 5}.

On 11 August 2010 Athene Gadsby and Thomas Fox surveyed the Beaulieu River. They recorded Himalayan balsam at nine sites, four of which contained fewer than 21 plants. There were two large sites, one containing upwards of 100 plants and the other containing more than 400 plants. The balsam plants in the smaller sites were pulled-up by the surveyors and some plants in the larger patches were also pulled by Tom and Athene. The large area of over 400 plants contained many small plants; most were smaller than 1 metre and few of them were flowering. The plants in smaller stands were upwards of 2 metres in height and flowering, often located on islands in the river or growing amongst fallen trees.

Tom and Athene observed 'extensive management has taken place on this river. Plenty of evidence of pulling was seen across the southern section of the Beaulieu River. Regardless of this management, Himalayan balsam was recorded in this 2010 survey along almost exactly the same length of river as the previous year. In 2009 however a far, far larger number of (balsam) was recorded, showing that management has had a positive effect".

On 20 September 2012 volunteer John Moore accompanied the Project Officer to undertake a survey of the Himalayan balsam remaining along this section of the Beaulieu River following the volunteer work parties to pull balsam during summer 2012. A total of 198 plants were recorded. The largest stands contained 55 and 51 plants respectively; three stands contained between 10 and 20 plants; the majority of stands (16 stands) contained fewer than 10 plants. This survey undertaken on 20 September 2012 revealed that the time spent by volunteers pulling balsam during summer 2011 and the 90 hours of balsam-pulling by volunteers during summer 2012 along this section of the Beaulieu River had a very noticeable impact on the Himalayan balsam population since the previous survey undertaken on 11 August 2010.

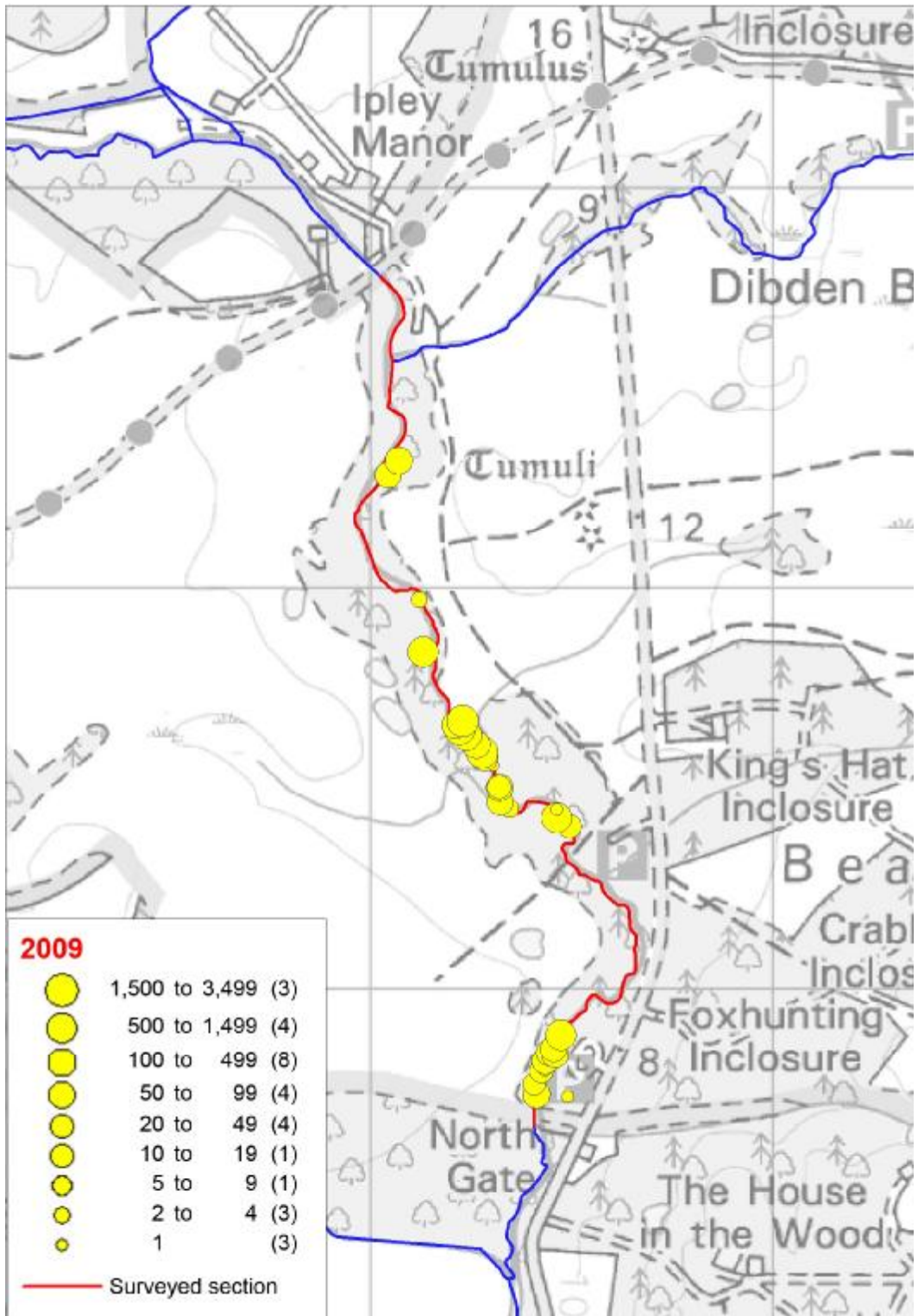


Figure 4 - Himalayan balsam plants recorded along a section of the Beaulieu River by volunteers Simon Kain and Phil Latto during 2009

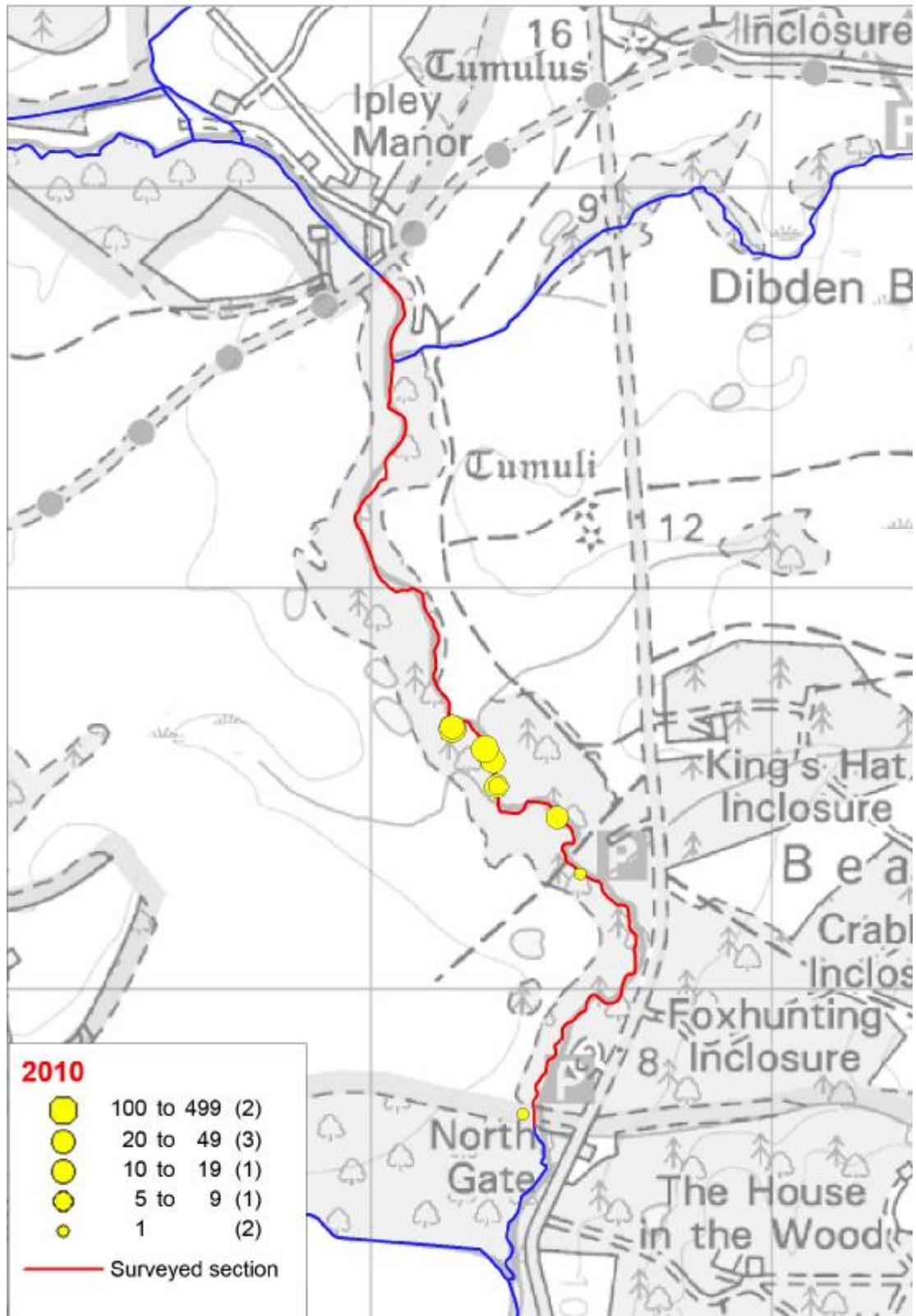


Figure 5 - Himalayan balsam plants recorded along the Beaulieu River by volunteers Athene Gadsby and Tom Fox during August 2010

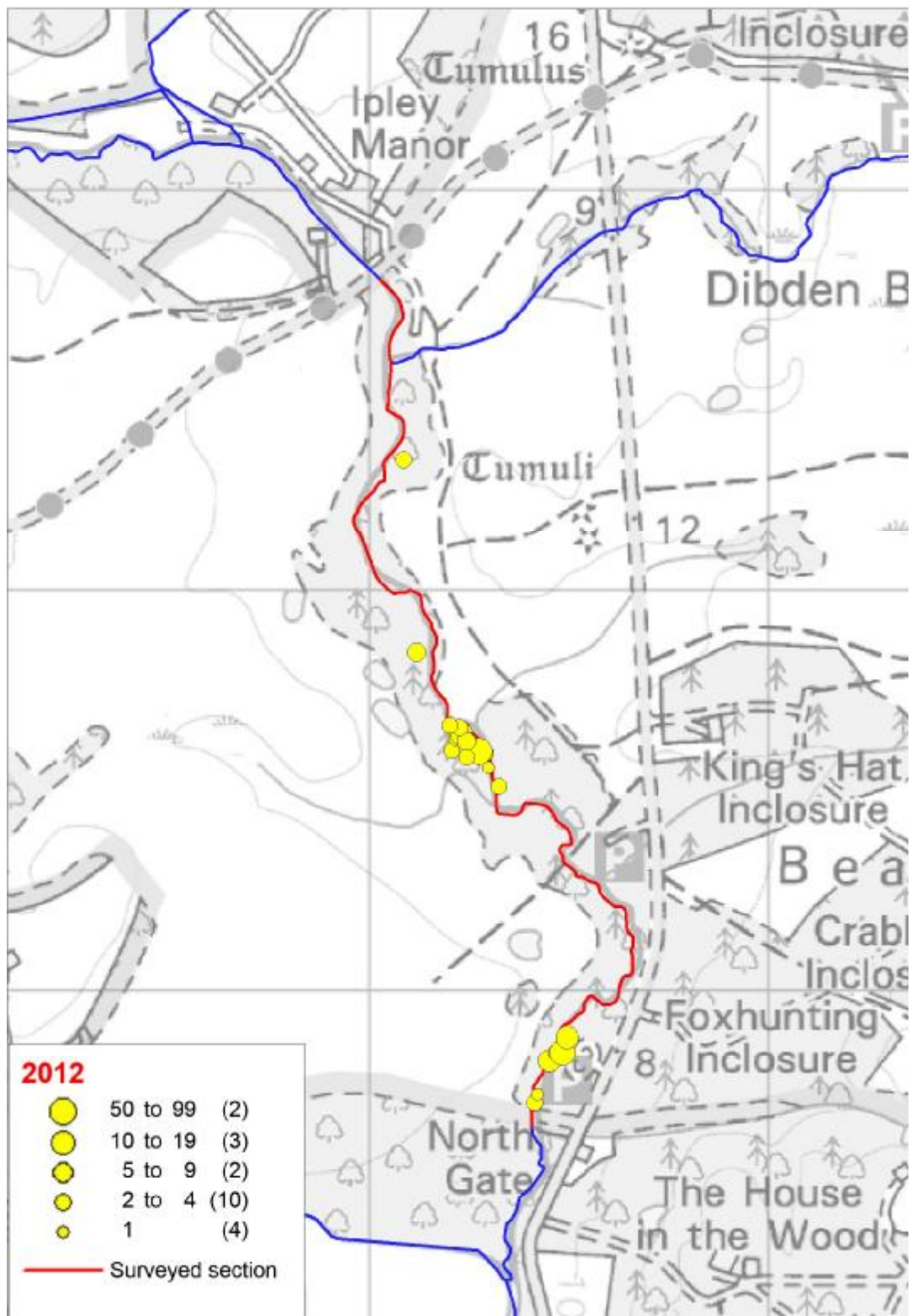


Figure 6 - Himalayan balsam plants recorded along the Beaulieu River by volunteer John Moore and the New Forest Non-Native Plants Officer during September 2012

Further hand-pulling of Himalayan balsam is scheduled to occur along this section of the Beaulieu River during summer 2013. However as there has been such a substantial decrease in the balsam population, the Project Officer has agreed with the Forestry Commission that it would be inappropriate to organise groups of 'Two Trees Conservation Team' volunteers as there are likely to be insufficient plants during 2013 to justify a group of that size. Instead, the Project Officer has agreed to lead a very small work party comprising two Voluntary Rangers on a couple of occasions during 2013.

8.9 Challenges to controlling Himalayan balsam within the catchment of the Beaulieu River

Wet conditions underfoot

The survey work undertaken by volunteers Simon Kain and Phil Latto during 2009 revealed large numbers of Himalayan balsam plants growing on Crown Land along the Beaulieu River, despite the presence of New Forest commoners' grazing animals. The majority of the Himalayan balsam plants mapped by Simon and Phil coincide with extremely wet conditions under riparian woodland. Such areas are inhospitable to the commoners' grazing animals. The New Forest ponies and cattle therefore avoid such wet areas and the balsam plants can flower and shed seed in the absence of grazing pressure.

Such wet woodlands are also inhospitable to humans; therefore volunteer work parties to pull Himalayan balsam along the Beaulieu River can be quite challenging!

Wellingtons are absolutely essential to working in such wet woodlands and it is important for the work party leader to ensure that the volunteers wear suitable footwear. A certain level of fitness and agility is required to negotiate unpredictable, wet, muddy conditions, often involving clambering over or crawling under fallen branches. It may be necessary to 'hand-pick' volunteers to ensure that they are physically capable of coping with such challenging situations, rather than 'advertising' a work party more widely.

Adverse weather conditions

During the Summer of 2012 uncharacteristically heavy and prolonged periods of rain were experienced in the UK. This exacerbated the wet ground conditions typical of the Beaulieu River and increased the difficulties experienced by volunteers during balsam-pulling work parties. Furthermore the Forestry Commission took the decision to cancel one of the work parties due to a weather forecast which predicted strong winds; the Beaulieu River is fringed by ancient woodland and it was considered too dangerous to hold a work party beneath the tree canopy.

9. CONCLUSIONS

The experience of The New Forest Non-Native Plants Project demonstrates that volunteers drawn from a wide variety of sources and ages can be effectively mobilised to contribute towards the successful control and eradication of Himalayan balsam at the catchment scale.

Volunteers play an important role in a) surveying populations of Himalayan balsam and monitoring the effectiveness of control measures and b) undertaking practical control.

Volunteers can play an important role as 'river champions', patrolling a watercourse and liaising with landowners and Project Officer.

Successful eradication is dependent on a co-ordinated and strategic approach to ensure that areas controlled by volunteers are not contaminated by seed shed from plants growing further upstream.

To achieve eradication at the catchment scale, control work by volunteers might need to be combined with input from landowners/land managers and professional contractors.

Practical considerations including health and safety and insurance need to be addressed when mobilising volunteers and the Project Officer's role is critical in keeping volunteers well motivated, especially on challenging terrain or in wet weather conditions. A flexible approach is required by the volunteers and the Project Officer.

A strong commitment to partnership working between the Project Officer, volunteers, landowners, land managers and professional contractors combined with a strategic, co-ordinated approach to control can eradicate Himalayan balsam effectively at the catchment scale.

10. ACKNOWLEDGEMENTS

The New Forest Non-Native Plants Officer acknowledges the help given by so many volunteers who have worked enthusiastically to eradicate Himalayan balsam from the New Forest area.

Thanks to the volunteers who completed the questionnaires.

Grateful thanks to Ashley Basil, 'river champion' for the Lymington River who tirelessly patrolled the Lymington River as a volunteer during 2010 and whose enthusiasm has inspired so many people to tackle the balsam in this catchment.

Grateful thanks to 'river champions' Bob and Jean Annell who have enthusiastically led teams of volunteers to patrol the Beaulieu River.

Many thanks to Simon Kain, Phil Latto, Athene Gadsby, Thomas Fox and John Moore who volunteered to undertake survey work to map Himalayan balsam on behalf of The New Forest Non-Native Plants Project.

Thanks to Martin Rand, Botanical Society of the British Isles (BSBI) Vice County Recorder (VC 11 – South Hampshire) for providing information on the earliest records for Himalayan balsam in the catchments of the Lymington River and the Beaulieu River.

Grateful thanks to those people who have agreed to their photographs being reproduced in this report. The name of the relevant photographer or the source of the photograph is acknowledged beneath each picture. All other photographs have been taken by Catherine Chatters (New Forest Non-Native Plants Officer).

The New Forest Non-Native Plants Project wishes to acknowledge the co-operation from the many landowners and land managers and the support that they have given to the Project Officer.

Thanks to Debbie Whitfield and Ruth Kernohan (Hampshire and Isle of Wight Wildlife Trust) for preparing maps used in this report.

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11. REFERENCES

- Ref 1 The Invasive Non-Native Species Framework Strategy for Great Britain. Department for Environment, Food and Rural Affairs, 2008
- Ref 2 Wildlife and Countryside Act 1981 (as amended). In accordance with Section 14 (2) of the Wildlife and Countryside Act 1981 (as amended) it is unlawful to plant in the wild, or otherwise cause to grow in the wild, those species listed in Schedule 9, Part II.
- Ref 3 'Managing invasive non-native plants in or near fresh water' published by Environment Agency. Revised version April 2010
- Ref 4 'Non-native invasive plant species in the New Forest National Park' Simon Kain and Phil Latto, March 2010
- Ref 5 'Non-native invasive plant species in the New Forest National Park 2010 report' Athene Gadsby and Thomas Fox, September 2010

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'River Champion' for the Lymington River on 5 September 2012 enthusiastically viewing the results of Himalayan balsam-pulling by volunteers (Photo: David Aylieff-Sansom Middle of The Road Photography)

