



Investigate Invasives: Pond Check



Photo by F Cowling

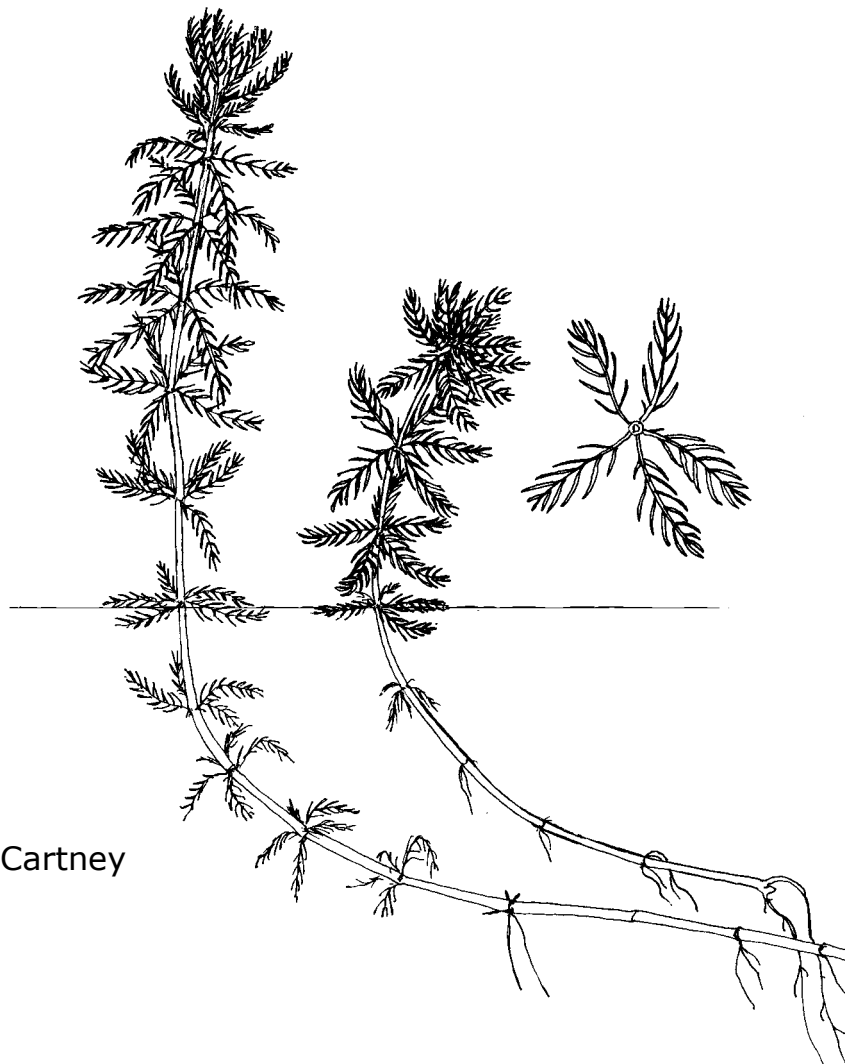
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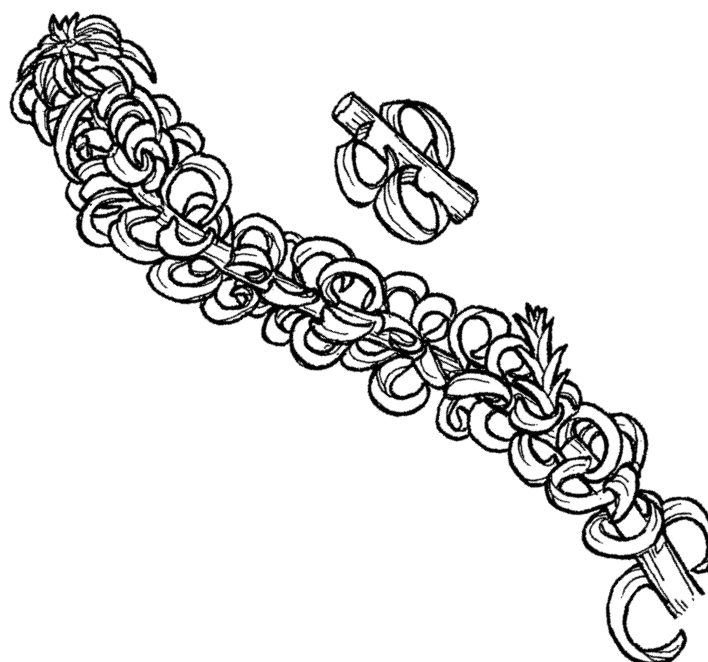
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1. Introduction

A living landscape wouldn't be complete without water!

Our rivers, streams, lakes and ponds are an integral part of a living landscape. They support and connect valuable habitats, attracting a wealth of wildlife; they also provide flood protection, and offer fabulous recreational opportunities.

Work continues to improve and restore our wetlands; to improve water quality, to protect from pollution and to enhance their collection and storage capacities.

However, they are also at risk from a different form of pollution - the introduction of invasive non native species.

The introduction of invasive non native aquatic plants into the countryside can have a substantial ecological and economic impact. Significant amounts of money are spent annually in an attempt to reduce their impact on our diverse and celebrated Cornish countryside. They have become such a widespread problem that an additional 12 aquatic plant species now join the likes of Japanese knotweed on Schedule 9 of the Wildlife and Countryside Act, making it an offence to cause them to grow in the wild.

In an attempt to prevent them escaping from garden ponds and into the countryside, an innovative new project was launched by the Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS) in November 2009 with the help of Water Framework Directive funding from DEFRA and the Environment Agency. This report details the activities of the project.



Parrot's Feather choking a community pond. Photo by Lisa Rennocks

2. Background

Non-native species are those that have established themselves outside their natural range either past or present, with the assistance of man either intentionally or unintentionally. Not all non-native aquatic plants are harmful, but some can cause serious problems if they escape into the wider environment.

They are often more vigorous and persistent than native species, lacking the natural pests and diseases to keep them in check. Plant fragments, the size of a five pence piece, can cause an invasion. They can be inadvertently spread from garden ponds into the countryside by wildlife or domesticated animals. Contaminated angling and boating equipment are also potential sources of invasion. Some plants, regrettably, also find their way into the countryside as a result of inappropriate disposal of garden and pond waste.

Some non native aquatic plants form dense mats which choke up water bodies and block drainage systems, exacerbating the risk of flood and reducing their amenity value. Heavy infestations can reduce the quality of habitat for wildlife, preventing light penetration and reducing oxygen levels. Due to the increasing threat, there are now a large number of international, national and local agreements, conventions, legislation and strategies pertaining to invasive non native species. Defra launched The Invasive Non-Native Species Framework Strategy for Great Britain in May 2008.



Livestock can mistake thick mats of Floating Pennywort for solid land. Photo by Trevor Renals

3. The Project

Pond Check seeks to raise awareness of the threats invasive species pose to both biodiversity and the economy by helping the public to identify and manage some of the most invasive aquatic plants. Pond Check is a free service, providing pond owners with information on which plants to avoid, how to dispose of them and advice on alternative native plants.

Pond-keepers can email or text a photograph of their troublesome plants for identification, with each enquiry receiving a tailored information pack containing expert advice on how first to manage and then prevent invasive plants from entering the wider environment. In return, the records we receive from the public at ERCCIS provide valuable information on abundance and distribution of invasive non native species in Cornwall, all with the potential to escape to the wider environment.

4. Project objectives

- Establish the extent of invasive non native pond plants in Cornwall
- Raise public awareness of which plants are harmful and how to prevent their spread.
- Encourage garden centres to stock native plant species.

5. Text POND! Mobile technology for recording



Unique methods of recording were explored to facilitate communication between the the public and the ERCCIS.

Colleagues at the Biological Records Centre, Oxon, were invaluable in helping to navigate through the various options to find a service appropriate for Pond Check, having recently launched a remote mobile recording scheme for the UK Ladybird Survey. A shared text code proved to be the most cost effective way to allow individuals to text brief details (name, postcode) and a picture for identification. Texts were delivered to a designated email address costing the sender the standard rate agreed by their network provider. The use of mobile phone technology for biological recording is a first for ERCCIS and Cornwall Wildlife Trust.

6. Information pack

Promotional literature and information pack materials were written and designed in-house. These included an information leaflet detailing the target species, why they are a problem and how to avoid spreading them; identification and management information sheets for each species; recording postcards for pond owners to use as identification aids, and tick which species they saw in their ponds for onward return to ERCCIS. Detailed recording forms were also available for download or online. All resoruces were made available via purpose-built web pages hosted by ERCCIS.

7. Key message

Leaflets carried the following information for pond owners.

Why are these plants a problem?

Not all non-native species are harmful, but some can have a detrimental effect if they escape into the countryside. They are often more vigorous than native species and lack natural pests and diseases to keep them in check. They can out-compete native plants to form dense mats choking up natural water bodies, deoxygenating water and limiting access. Their rapid growth can block watercourses and increase the risk of flooding. Substantial amounts of money are spent annually managing non-native invasive species on waterways, ponds and lakes. The smallest fragment, inadvertently spread, can cause an invasion.

What action can you take?

CHECK YOUR POND. If you think you have these plants in your pond or any others that are invading send us a photo of your whole pond and a clear image of each of the plants you are concerned about.

Email pondcheck@cornwt.demon.co.uk or text POND to 60300 followed by your name postcode and image. Alternatively fill out the online survey form at www.ercis.co.uk/projects/investigate_invasives/pondcheck/

- Please **DO NOT BUY THESE SPECIES**. They may be sold under different names so check with the supplier if you are not sure. Use native plants. For a list of good plants for garden ponds see our website
- Please dispose of these plants by composting or burning.
- **DO NOT** let them escape from your garden and don't dump them in the wild.
- **DO NOT** transfer any plants or animals including frogspawn between ponds as this can spread invasive species.
- Please do not give surplus pond plants away to friends

For more information on these species and how to identify them visit
www.ercis.co.uk/pondcheck/

8.Target species



Name: Curly Waterweed
Scientific name: *Lagorasiphon major*
Native to: Southern Africa
Threat: Chokes waterways and outcompetes other vegetation



Name: Large-flowered Waterweed
Scientific name: *Egeria densa*
Native to: South America
Threat: Chokes waterways and outcompetes other vegetation



Name: New Zealand Pygmyweed
Scientific name: *Crassula helmsii*
Native to: New Zealand, Australia, Tasmania
Threat: Forms dense mats outcompeting all other vegetation



Name: Creeping Water Primrose
Scientific name: *Ludwigia sps.*
Native to: South America
Threat: Chokes waterways and outcompetes other vegetation



Name: Floating Pennywort
Scientific name: *Hydrocotyle ranunculoides*
Native to: North America
Threat: Forms dense mats impeding water flow and amenity

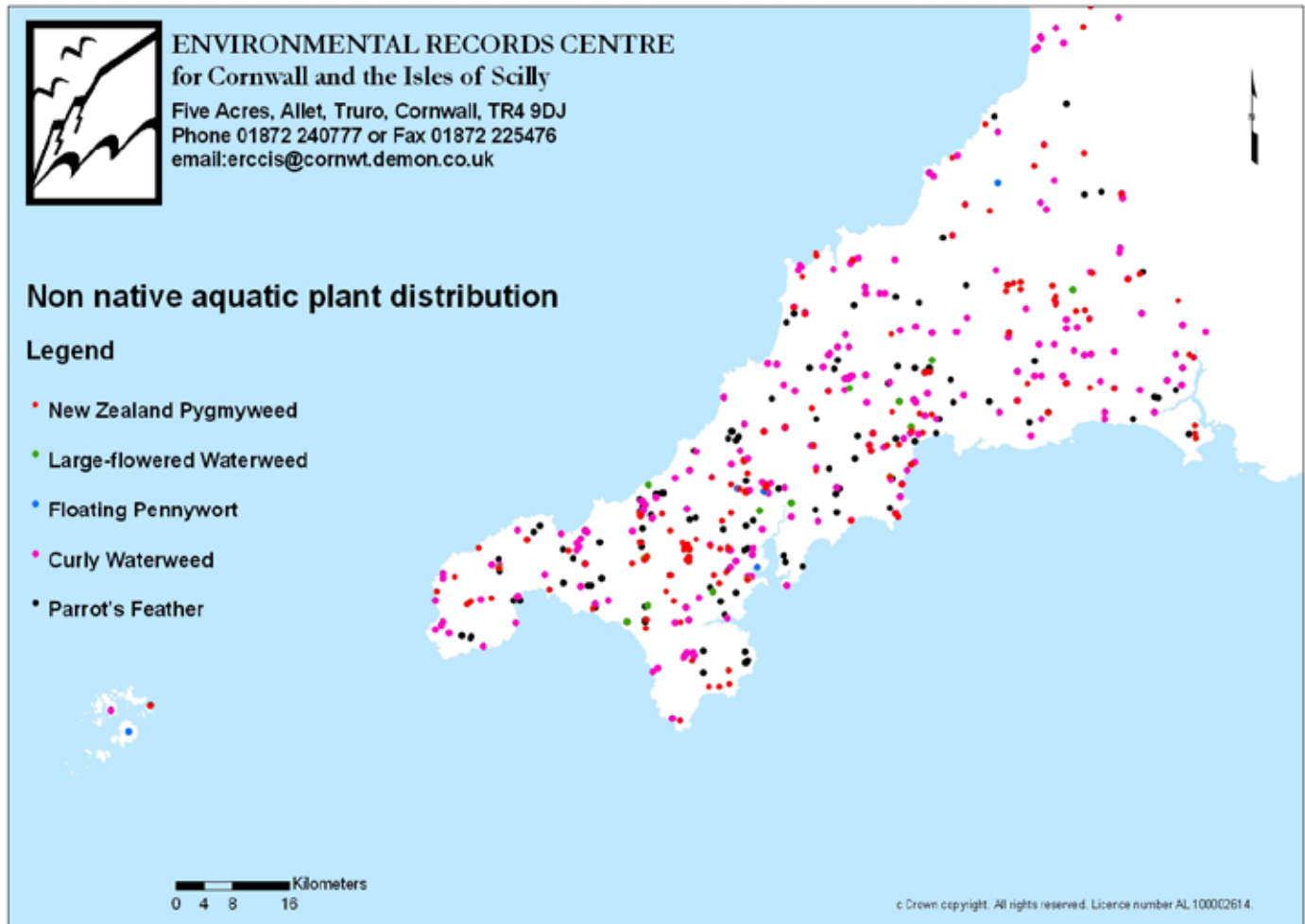


Name: Parrot's Feather
Scientific name: *Myriophyllum aquaticum*
Native to: Central and South America
Threat: Displaces native species, causes flooding by blocking watercourses

9. Recording and GIS mapping

Information gathered on species distribution via the Pond Check service, together with records obtained from other sources, are used to populate a GIS layer for each species.

Over 300 target species records have been gathered since the project began. These include records of target species in garden ponds, and further afield in the countryside, indicating the propensity for invasive species to spread and degrade vital habitat.



Map detailing records of invasive aquatic plants in Cornwall

As suspected, New Zealand Pygmyweed, Parrot's Feather and Curly Waterweed are abundant and widespread in Cornwall in both garden ponds and in the countryside. This is probably indicative of the readiness with which these species have been available from garden centres in previous years. Records of Large-flowered Waterweed becoming established in the countryside are on the increase. The first record dates back to 2004. This species is sold predominantly by aquatic retailers for aquariums and was thought not to be hardy enough to survive our winters, however there are now 23 records of which eight are infestations in countryside ponds. No validated records have been received for Creeping Water Primrose either in garden ponds or in the wider countryside. It would appear that so far Cornwall is free of this particularly vigorous plant.

Floating Pennywort—a plant which is having huge economic impact in other counties, especially those with slow flowing waters—was originally reported on the River Inney in 2003. This infestation was successfully eradicated. Since then the project has

identified two situations of Floating Pennywort growing in garden ponds. Both populations have now been removed by the pond owners, however, one unverified record exists for Cornwall and one on St Marys.

10. Most common aquatic invader

The project has collected more **Curly Waterweed** records than any other aquatic invasive.

This may reflect the fact that this species is favoured by, and readily available from, aquatic retailers and garden centres.

Case study Curly Waterweed

A member of the public visited the Pond Check display at the Royal Cornwall Show requiring advice on how to manage Curly Waterweed. Already aware of its invasive nature, they were currently employing a contractor to eradicate it but suspected it was actually being harvested for resale. Pond Check provided the pond owner with management advice including details of its recent inclusion to Schedule 9 of the Wildlife and Countryside Act, making it an offence to cause it to spread in the wild. Realising the potential harm it can cause and not wanting to promote the sale of Curly Waterweed, the pond owners stopped using this particular contractor.



*Curly Waterweed being harvested for resale
Photo by Lisa Rennocks*

11. Sharing information

Other organisations have supported the project by submitting records to Pond Check. South West Lakes Trust are among these, having surveyed their lakes and reservoirs for invasive non native species and submitted their findings. They are also helping to stop the spread by displaying Check-Clean-Dry Posters.

12. Spreading the word

Pond Check has encouraged the support of others in its endeavour to raise awareness in Cornwall. The Eden Project helped by featuring invasive non native species as part of their Freaky Nature display using exhibits and information provided by Pond Check. Students from Newquay College implemented a research project with the help and training from Pond Check project staff. Their research focused on ponds in north Cornwall. Thirty ponds were surveyed for invasive species with only five ponds found to contain three of the target non native species.

13. Weeding out invaders



*National Trust and Wild Penwith volunteers removing invasive plants at Botallack
Photo by Lisa Rennocks*

The project has brought together groups of volunteers to improve local amenity ponds by clearing out non native plants and breathing new life into previously choked ponds. Fostering ownership amongst community members ensures that ponds are maintained, wildlife protected and invasive species are not at risk of spreading. Over two hundred and fifty volunteer hours have been spent removing invasive pond plants from community ponds through the Pond Check scheme this excludes the number of hours spent by members of the public encouraged to remove these plants from their own ponds. In addition to working with local community groups, the project has proved to be an excellent example of multi-agency collaboration, bringing together volunteers from other Cornwall Wildlife Trust initiatives and external conservation organisations including the National Trust to weed out invaders.



*Volunteers removing invasive plants at Breney Common
Photo by T Renals*

Surprisingly, the number of community ponds recorded as being in need of attention were not as many as anticipated, with most infested ponds being held in private ownership. This may be due to a lack of reporting/recording; a lack of community involvement in local amenities; the loss of pond habitat, or more perhaps optimistically due to a lack of invasive species. To establish which factor(s) are ultimately responsible would require an element of ground-truthing, and could provide a basis for future work.

14. Training

To maximise recording effort and ensure that coverage is as wide reaching and comprehensive as possible, the help and involvement of as many individuals and organisations was needed. Identification workshops and training events were organised for enthusiasts and professionals to ensure accurate, reliable data was collected. These sessions were well attended by recorders, ecologists, conservationists and gardeners alike. For most attendees it was the first time they had seen Creeping Water Primrose, since there are no reports for this species in Cornwall to date.



Aquatic plant identification workshop. Photo by Lisa Rennocks

A number of site visits have been made to individual pond owners, businesses and parish councils in order to provide identification and management advice, including training for gardeners at the Lost Gardens of Heligan.

Presentations, talks and walks aimed at a variety of interest groups were also delivered with the intention of increasing recording effort.



Local wildlife group learn about ponds and invasive species. Photo by Lisa Rennocks

15. Aiding Government delivery

The Government launched a national campaign in Spring 2010 entitled 'Be Plant Wise'. Pond Check was able to aid delivery by promoting it at a local level, providing point of sale materials, leaflets and offering general advice and support to local garden centres and aquarists retailers. The campaign focused on plants which should be avoided and how to dispose of them responsibly, complimenting the Pond Check message. A number of garden centres participated by displaying campaign materials and distributing leaflets to their customers. Educational materials were supplied to employees in order to enable them to provide a knowledgeable and accurate customer service whilst enhancing their 'green credentials'. Feedback from participating stores was mixed, with some increasing their range of native alternative species. Most were however reluctant to stop selling non native species while demand continues,



Composting POS material displayed in garden centre. Photo by Lisa Rennocks indicating the importance of public awareness to drive the process forward and highlighting the need to keep the campaign in the public eye. In the absence of a government Ban of Sale, only by the public creating a demand for native plants will the sale of invasive non natives species stop.



Be Plant Wise campaign materials distributed to garden centres. Photo by Lisa Rennocks

16. Winning display with a serious message

Pond Check's public awareness events held around Cornwall, have proven extremely successful in attracting many visitors. These included displays at various spring flower shows, Cornwall Wildlife Trust's Wildlife Celebration events and at the county agricultural show. Interpretation boards, together with examples of problem plants are displayed to help the public identify which nuisance plants they have in their

ponds, and representatives are on hand to offer general pond advice and provide information on native alternatives. All display material incorporates the "Be Plant Wise" campaign logo including polo shirts, a five panel information display and giveaway 'bags for life'. Finding novel ways to engage with the public over time



*Good Pond Bad Pond at the Royal Cornwall Show in 2010.
Photo by Lisa Rennocks*

is always challenging, but the team's

creativity and efforts have been recognised and rewarded, not just reflected in the number of records received, but especially by judges at the Royal Cornwall Show with Pond Check winning awards for their display two years in succession. Each year the stand, situated in the Flower Arena, has caught the attention of both the public and fellow exhibitors at one of the largest agricultural shows in the country attracting in excess of 14,000 visitors. Two ponds were created for the first year display; one totally overgrown with invasive non native plants, and the other with native plants. Specimen jars allowed the public to take a closer look at the invasive plants and recording postcards were made available for people to either take home or fill in at the show detailing which invasive species they had seen and where. The following year focused on prevention of spread and had a 'Loch Ness' style monster leaping from the garden pond into the countryside with a mouth full of Parrot's Feather and other undesirables. Again specimens of invasive plants were displayed and native marginal plants were also available for the public to buy.



*Merchandise produced to promote both Pond Check and Be Plant Wise.
Photo by Lisa Rennocks*



Award winning display featuring a monster spreading invasive pond plants into the countryside from the garden pond. Photo by Lisa Rennocks

17. Summary

Pond Check has raised awareness of the threats posed by invasive non native species in particular aquatic non native plants through regular media coverage and events around Cornwall, It has succeeded in gaining the attention of landowners, specialist interest groups, ecologists and most importantly the general public.

Generally, a greater appreciation of the potential damage caused by the introduction of invasive species into the wider environment has been sufficient to encourage people to adopt responsible methods to prevent further spread. The project has prompted people to take action in their own ponds whom, in turn are then advising their neighbours. This offers lasting benefits; helping to protect biodiversity and improve the condition of our waterbodies and rivers, all actions that help locally but also contribute towards achieving Water Frame Work Directive objectives at a national level.

A comprehensive evidence-based map of target species distribution continues to be populated as records are gathered. This information is used to inform future policy and management strategies.

Pond Check has delivered identification and management training not only through workshops but also through practical conservation involving volunteers whom in turn have increased their knowledge base and appreciation of the diversity that ponds can support, some of whom have been sufficiently inspired to get involved in local conservation groups to protect pond habitat for local amenity enjoyment, and hopefully some have gone on to create ponds in their gardens.

The project has been invaluable in facilitating the promotion of the Government's Be Plant Wise campaign. Having people with local knowledge and ideally placed to support local retailers has greatly aided the national campaign to reach a wider audience in terms of the number of garden centres/employees promoting the campaign and also the public it reaches.

Maintaining momentum by message reinforcement will not only reduce the spread of invasive non native species but will help to shift demand and influence suppliers to stock native species.

Finally, the Pond Check 'model' has been successfully regarded nationally and is currently being adopted by other counties in the UK as a tool to prevent the spread of invasive non native species.

18. Acknowledgements

The project would like to thank Defra and the Environment Agency for their funding to run the project and all of the organisations and volunteers which have supported Pond Check.

19. Appendices

Pond Check public awareness events

Royal Cornwall Show, Wadebridge

Spring Flower Show, Boconnoc

Penzance Spring Flower Show

Falmouth Spring Flower Show

Launceston Area Parish Wildlife Group Pond Event Winsford Farm

Cornwall Wildlife Trust Summer Fete, Heligan Gardens

Insect Week Wyevale garden centre, Hayle

RLNI Lifeboat day Newquay

Combined pond event with Natural England held on the Lizard

ERCCIS Bioblitz, Allet nature reserve

New Forest non native plants conference

Identification workshops

Pond Check Media Coverage includes:

- West Briton *Growing Threat of non native plants invading our waterways*
- West Briton *Moving frog spawn could be bad news for frogs and ponds*
- BBC Cornwall Article and Radio interview, *Moving Frogspawn you could be spreading more than you think*
- West Briton *Award for Trusts display on invasive pond plants*
- West Briton *Ever more vital role conserving Britain's wildlife*
- The Packet *Show's a right success*
- Cornwall Today *Root out Pond invaders*
- Cornwall Today *Pond Check a new service*
- Wild Cornwall issue 111 *Invaders in Your Pond?*
- Wild Cornwall issue 112 *Composting Pond Invaders*
- Wild Cornwall issue 114 *Tracking Down Invaders*
- Kovadha Kernow ERCCIS Newsletter
- The Landsman Devon and Cornwall *Pond invaders are they in your pond?*
- Cornwall Community News *Hand in Hand in their Pond Life*
- Camelford Today *Pond Check helps team root out pond invaders in Camelford*
- Delabole Today *Pond Check helps team root out pond invaders in Camelford*
- Cornish Guardian *Team Clears pond of invasive plants*
- The Cornishman *Trusts team up to clear nuisance plants*
- The Plymouth Herald *Pond owners warned of Invasive plants*
- BBC Radio Cornwall interview

Appendices

Management advice

A number of site-visits have been made to individual pond owners/businesses to provide management advice.

Wyevale garden centre

Helsbury Park

St Maybyn

Treluswell

Drill Services Ltd, Roscroggan

Tehidy Park, Cornwall Council

Lost Gardens of Heligan

Enfield Park, Camelford

Hayle, millpool

King Georges Walk, Hayle

Duchy College, Rosewarne

Heaven Scent

Tehidy Woods

Consol Pond St Ives

Ruan Lanihorn Parish Council

Millvale Farm, Wedron

Website coverage

- www.cornwallwildlifetrust.org.uk
- www.erccis/pondcheck/
- UCF Jornal
- Swell Uk
- Silo breaker
- <http://www.rosewarnegardensociety.com/news.html>
- <http://www.launcestonparishwildlife.org.uk>

Pond Check Supporters

In addition, relationships with a wide range of organisations have been developed, with the following agreeing to promote and distribute Pond Check material:

Cornwall Wildlife Trust and Wildlife Information service

Eden Project

Heligan Gardens

Potager Gardens

National Trust

Cornwall Council

Roskilys Farm attraction

IoS Wildlife Trust

South West Lakes Trust

West Country Rivers Trust

South West Water

Coastline Housing

Trebah gardens

Newquay Zoo

Wyevale garden centre, Hayle

Natural England.

University of Exeter, Cornwall Campus

Cornwall College, Newquay Campus

Local suppliers of native species Heaven Scent

Biological Records Centre, Oxon

Appendices

