

Confluence 2019



Invasive Non Native Species: Developing evidence based resources and strategies to slow the spread of aquatic INNS through river catchments in Yorkshire

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Invasive Non Native Species: Developing evidence based resources and strategies to slow the spread of aquatic INNS through river catchments in Yorkshire

**University of Leeds
Leeds City Council
Barnsley Metropolitan
Borough Council**

Wakefield Council
Sheffield City Council
Sheffield City Council
Calderdale Council
Harrogate Borough Council
Scarborough BC
Rotherham MBC
Bradford MDC
Wakefield Council
East Riding of Yorkshire
Council

**Yorkshire Wildlife Trust
Environment Agency
Dales to Vale Rivers Network
Yorkshire Water
Yorkshire Invasive Species Forum**



INNS: Japanese Knotweed

Impedes construction

Mortgages unavailable

£120k to treat R. Aire & lower Don in 2018



Giant Hogweed

Threat to human health
Long term skin burns



Floating Pennywort

Blocks navigation and equipment, exacerbates flooding
Yorkshire £35K in 2018

Thames £600k in 2018

Important to prevent it from spreading in Yorkshire



What is Biosecurity?

- Any action which reduces the chance of the introduction or spread of INNS.



Human activity is the main driver of INNS introduction and spread. INNS can be spread on clothing & equipment used for construction, environment management, transport, recreation



Biosecurity- Prevention is better than cure

Biosecurity

Reduces introductions

Reduces further spread (and so limits treatment costs)

Legal obligation/liability

Reputation

Cost effective, easy to undertake for:

Landowners

Contractors

Developers

Recreational users

Spiralling annual control costs



iCASP?

- Using existing environmental science from partner universities to help catchment management by:
1. Translating existing data, models, knowledge and/or expertise into tools, solutions and approaches;
 2. Embedding new knowledge through secondments;
 3. Advancing academic outputs into commercially-viable products and services.



Existing Environmental Science: Research into Stakeholder views (barriers/opportunities) on INNS & biosecurity.

Interviews with 15 organisations

Motivations

Financial, Protect
the environment

Organisation
Image/ Reputation

Positive examples
Peer pressure

Key requirements

- Engagement
- Local policy, coordinated
 - Best practice advice
 - Cost effective practices
 - Range of activities and people
 - Staff
 - Contractors
 - Public

Existing Environmental Science: Research into Biosecurity Best Practice



Existing Environmental Science: Cost & Time effective Best Practice Biosecurity

**INNS
survive
>14 days
if no biosecurity**



HOT WATER
Soaking
equipment/clothes for
10 mins at 60°C
kills INNS



Hot pressure washers for



**Disinfectants kill
pathogens & INNS**

Shannon et al 2018, Management of Biological Invasions,
Anderson et al. 2015 Biol Invasions. Bradbeer 2018

Existing Environmental Science

Stakeholder interviews identified a need for

- Engagement
- Local policy
- Best practice advice
- Cost effective practices

Experimental research developed and tested biosecurity

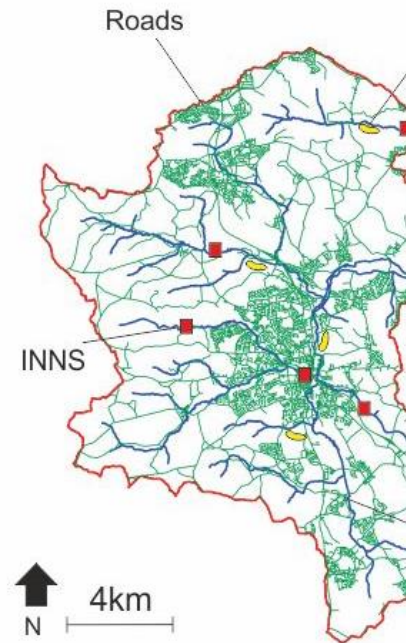
- Effective
- Cost effective (time and £)
- Easy to use for

Local Authorities
Contractors
Developers
Public



Impact: slowing the spread of INNS

- Working with Local Authorities to
 - Identify risks of INNS spread
 - Develop biosecurity protocols and resources
 - Develop biosecurity framework for LA and users of LA land
- reduced INNS spread and cost



Invasive Species inquiry



Environmental Audit Committee

Oral evidence: [Invasive Species](#), HC 2129

Tuesday 21 May 2019

Ordered by the House of Commons to be published on 21 May 2019.

[Watch the meeting](#)

Members present: Mary Creagh (Chair); Geraint Davies; Mr Philip Dunne; Ruth Jones; Caroline Lucas; Kerry McCarthy; John McNally; Dr Matthew Offord.

Questions 1 - 84

Witnesses

Professor Helen Roy MBE, Ecologist, Centre for Ecology and Hydrology, Kathryn Brown, Head of Adaptation, Committee on Climate Change Adaptation Sub-Committee, Dr Paul Walton, Wildlife and Countryside Link, Chair of the Invasive Non-Native Species Working Group, Dr Peter Robertson, Professor of Practice – Wildlife Management, University of Newcastle

Professor Chris Thomas FRS, Director of the transdisciplinary Leverhulme Centre for Anthropocene Biodiversity, University of York, Professor Elizabeth Cottier-Cook, Marine Biologist, University of the Highlands and Islands and Scottish Association for Marine Science (SAMS), Dr Wayne Dawson, Assistant Professor in Department of Bioscience, Durham University, Dr Alison Dunn, Reader in Evolutionary Ecology, University of Leeds

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<http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/environmental-audit-committee/invasive-species/oral/102471.html>

Invasive Species inquiry

Biosecurity was identified as a key measure to slow the introduction and spread of INNS

Oral Evidence: Centre for Ecology & Hydrology, Wildlife and Countryside Link, University of Newcastle, Scottish Marine Biological Association, University of Durham, iCASP University of Leeds

Written Evidence: multiple organisations including Yorkshire Water, Environment Agency, GB Non Native Species Secretariat, Yorkshire Invasive Species Forum

LAs key environmental managers

Yorkshire LAs and iCASP developing strategies, protocols and resources to ensure good biosecurity and slow the spread of INNS into and within the region

iCASP Project Invasive Non Native Species: Developing evidence based resources and strategies to slow the spread of aquatic INNS through river catchments in Yorkshire

WP1. Deliver evidence for the socioeconomic costs of INNS and benefits of biosecurity to prevent the spread of INNS. This evidence will assist LAs in resource decisions and leveraging funds to develop a pro-active approach to INNS and thus reduce escalating costs of INNS infestation.

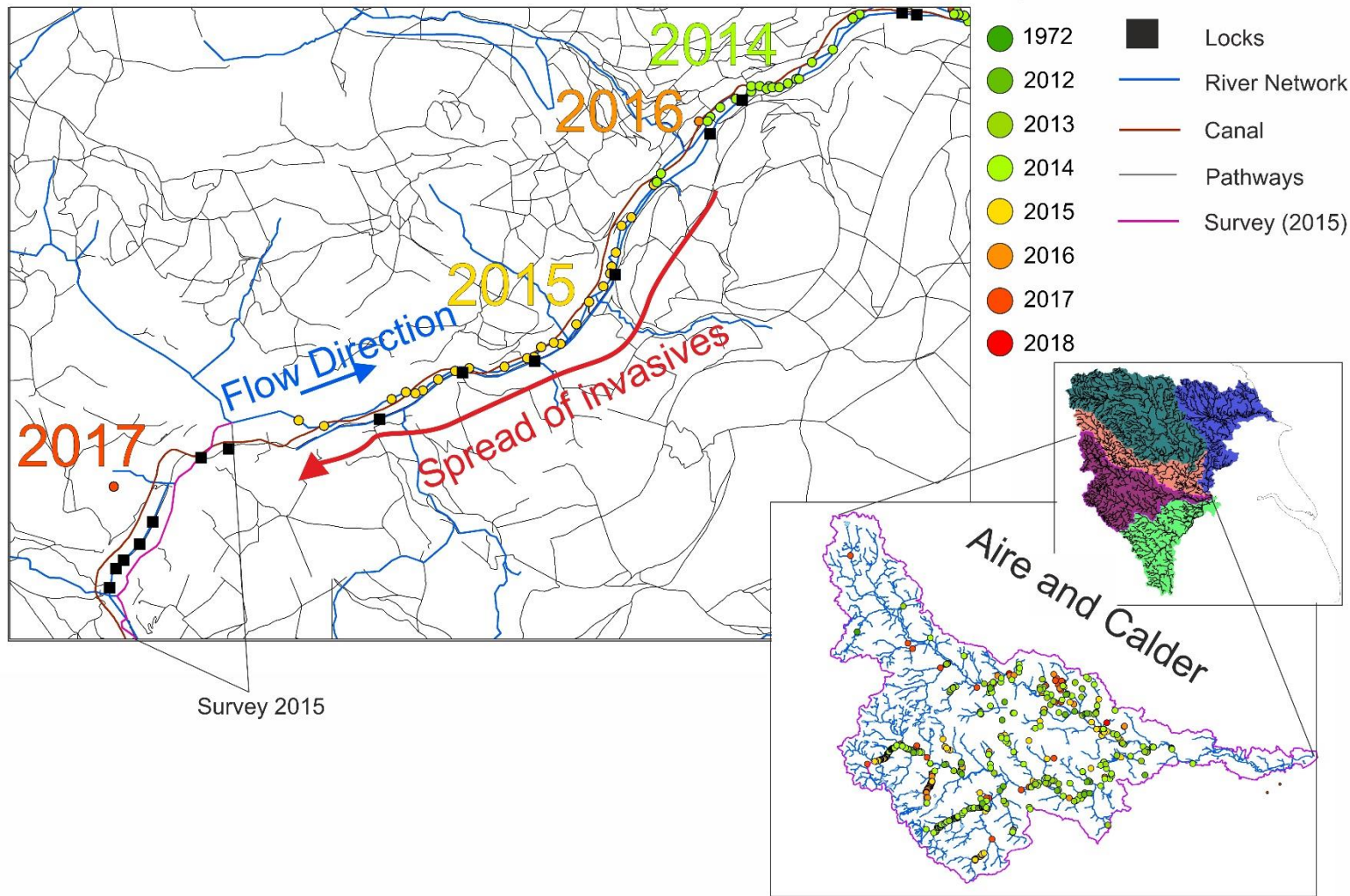
WP2. Identify high risk activities on LA land and potential pathways of spread of INNS. The results from this will assist LAs to identify high risk uses of their land and activities on their land and to target biosecurity

WP3. Deliver easy-to-use, evidence-based biosecurity guidance and materials tailored to LAs and users of their land

WP 4. Help LAs to develop and embed a standardised biosecurity framework for LAs and contractors to slow the spread of INNS.

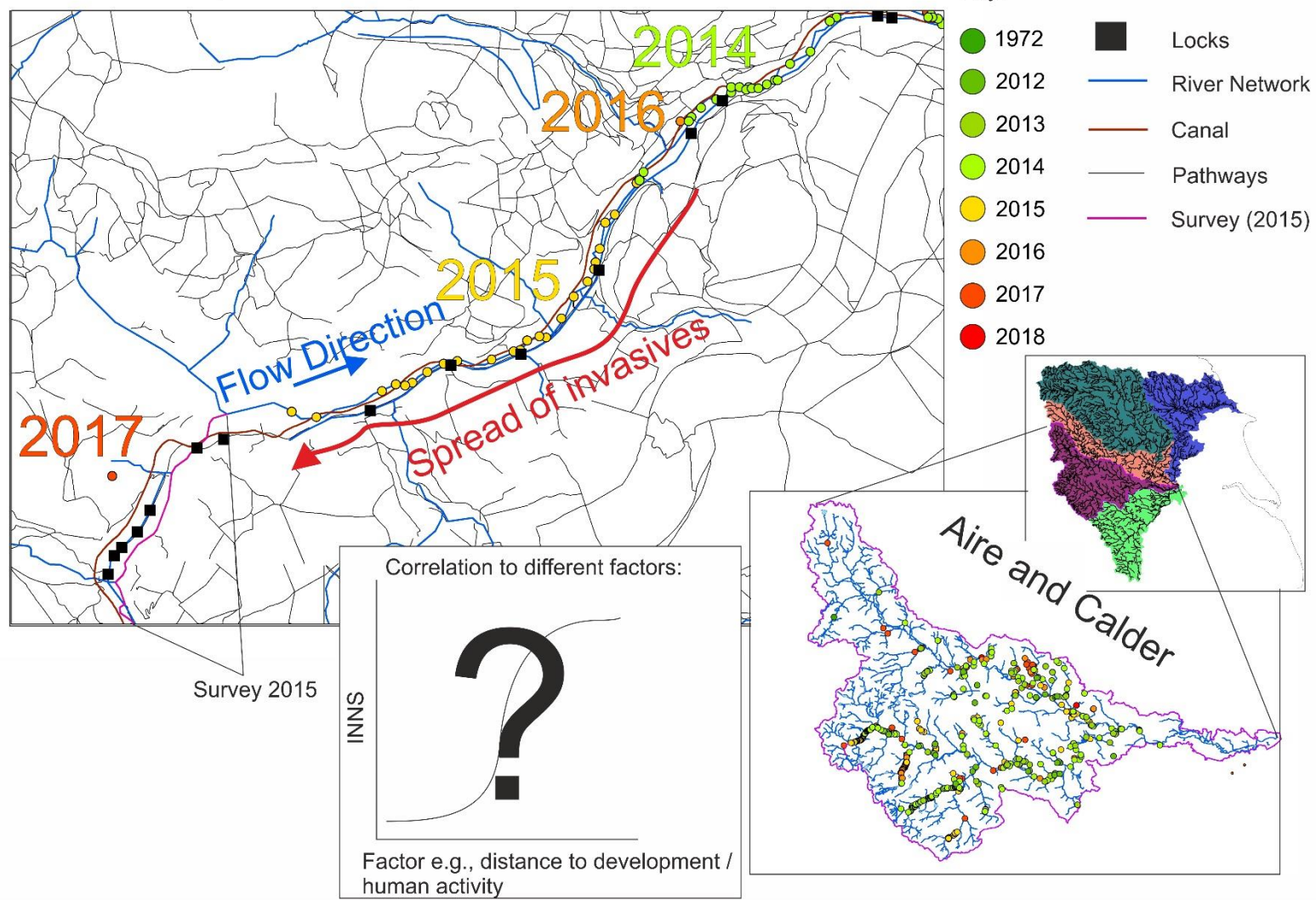
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Spread of Japanese Knotweed



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Research

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- Best practice advice
- Cost effective practices

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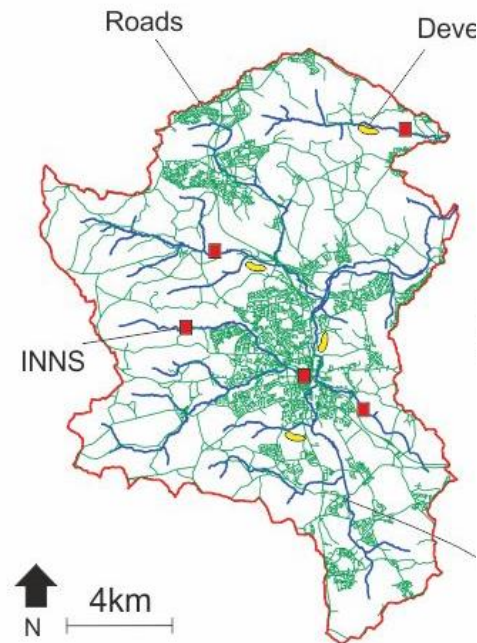
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Impact: iCASP slowing the spread of INNS

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- Develop biosecurity protocols and resources
- Develop biosecurity framework for LA and users of LA land
- → reduced INNS spread



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