Tackling Invasive Alien Species (IAS)

- Experience from Ireland and Europe

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Scope

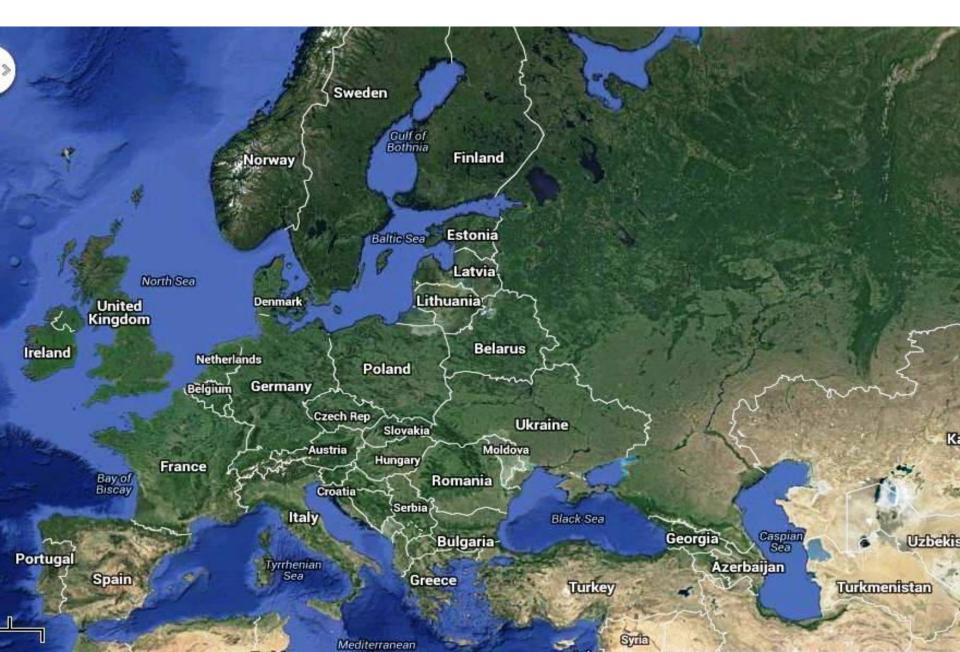
- Invasive Alien Species (IAS) in Ireland and those coming our way
- IAS in Europe
- Workshop to identify Top 20 IAS issues in Europe
- Legislation to tackle IAS in Europe
- Is the EU Regulation working and will it make a difference?







Ireland – a small island on the western edge of Europe



Invasive Alien Species (IAS) in Ireland & Europe

• 377 recorded non-native species; 342 potentially invasives

66% - low impact

- medium impact

- high impact or priority IAS

High and medium risk species - 67% terrestrial

- 21% freshwater

- 12% marine



High Impact Invasive Alien Plant Species

Knotweed spp (4) Fallopia / Persicaria spp

Himalayan balsam Impatiens glandulifera

Giant hogweed Heracleum mantegazzianum

Rhododendron Rhododendron ponticum

Giant/Chilean rhubarb Gunnera tinctoria

Winter heliotrope Petasites fragrans

American skunk-cabbage Lysichiton americanus

Cord-grasses Spartina spp

Hottentot-fig Carpobrotus edulis



High Impact Invasive Alien <u>Aquatic</u> Plant Species

Curly waterweed Lagarosiphon major

New Zealand pigmyweed Crassula helmsii

Nuttall's waterweed Elodea nuttallii

Parrot's feather Myriophyllum aquaticum

Fringed water lily Nymphoides peltata

Water fern Azolla filiculoides

Cape pondweed Aponogeton distachyos

Floating pennywort *Hydrocotyle ranunculoides*

Large-flowered pondweed Egeria densa

Water primrose Ludwigia spp



High Impact Invasive Alien Animal Species

American mink Neovison vison

Grey squirrel Sciurus carolinensis

Harlequin ladybird Harmonia axyridis

Muntjac deer Muntiacus reevesi

Wild boar Sus scrofa

Asian clam Corbicula fluminea

Chinese mitten crab Eriocheir sinensis

Zebra mussel Dreissena polymorpha

Bloody red shrimp Hemimysis anomala

Dace Leuciscus leuciscus

Chub Leuciscus cephalus

Freshwater crayfish all except *Austropotamobius pallipes*

Colonial sea squirt Didemnum spp



Invasive Alien Species (IAS) in Ireland & Europe

377 recorded non-native species in Ireland; 342 invasives

- low impact

21% - medium impact

- high impact or priority IAS

High and medium risk species - 67% terrestrial

- 21% freshwater

- 12% marine

12,000 non-native species in Europe; up to 15% invasive



Current State of Play in Ireland



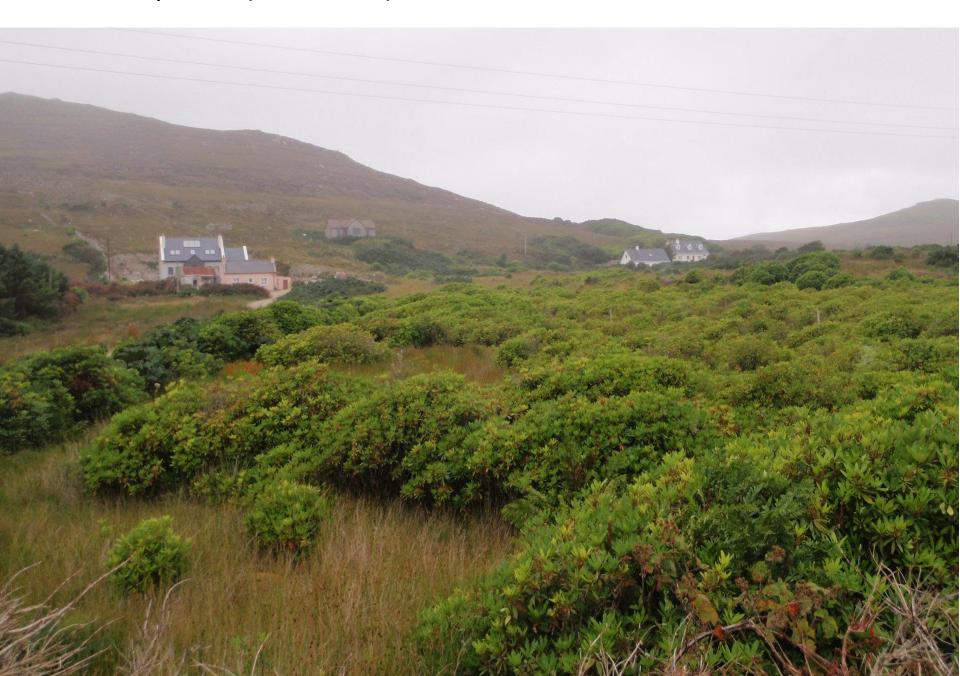




Gunnera tinctoria (Chilean rhubarb)



Rhododendron ponticum (Rhododendron)











Persicaria wallichii (Himalayan knotweed)













Dreissena polymorpha (Zebra Mussel)











Invasive species heading our way

(based on Horizon scanning, Risk Assessment, expert judgement)



A <u>very abbreviated</u> list includes:

Quagga mussel

Killer shrimp (x2 spp)

Signal crayfish and other spp

Round goby

Topmouth gudgeon

Large-flowered waterweed

Creeping water primrose

Floating pennywort

Salmon fluke

Koi Herpes Virus

Crayfish plague











Legislation To Tackle IAS in Europe

Prior to 2015, approach to IAS across EU was "uncoordinated and fragmented"

- disease agents and pests of animals & plants well covered, but not IAS

- 2009 initial discussions to establish a framework for action to tackle IAS in Europe
- 2013 EC published proposal for Directive or Regulation on IAS
- 2014 adopted by European Parliament in April, European Commission in September
- 2015 entered into force as a binding legal tool on 1st January 2015

EU Regulation on "prevention and management of the introduction and spread of Invasive Alien Species" (No. 1143/2014)

Aim: to prevent, minimise and mitigate the adverse impacts of IAS on



EU Regulation on IAS

To assist and provide direction:

- IFI hosted international workshop in April 2013
- 160 invited international delegates



- focused workshop --> Top 20 IAS issues to be addressed by Europe
- technical report (FAO), scientific paper and paper in Global fisheries publication

IFI also entered into dialogue with European Parliament, IUCN, EIFAAC, etc.



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Viewpoint

Tackling Invasive Alien Species in Europe: the Top 20 Issues

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Outputs from FINS Workshop (2013)

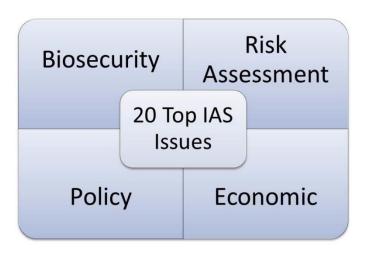
Top 20 IAS issues (principle threats posed by IAS)

- relevant also to marine and terrestrial IAS

- Identified nature of threats
- Offered recommendations to tackle issues
- Support for policy makers (in prep of EU IAS Regulation)
- Tool for IAS managers



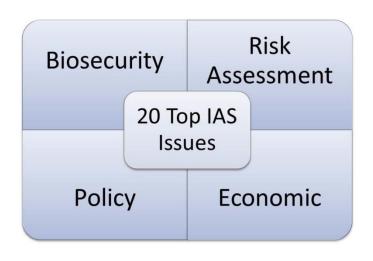
FINS Workshop – Four Pillar Themes to Derive Top 20 IAS Issues





Issue	Threat	Local /National /International	Recommendations
Biosecurity awareness	Lack of prevention will facilitate ready introduction of IAS	L/N/I	Raise biosecurity awareness from government level to individuals
Coherent EU legislation for effective biosecurity	Majority of IAS are only covered by peripherally relevant legislation (e.g. WFD and Habitats Directives)	I	EU must legislate for a unified EU strategic approach to biosecurity
International biosecurity best practice	There is no consistency of approach or coordination between MS and others	I	Share best practices in Europe and farther afield through established forum
Regulatory framework to prevent introduction of IAS	Substantial gap in international trade rules to prevent spread of IAS	I	An organisation responsible for developing standards to prevent the introduction of IAS is needed
Dedicated and appropriate resources for IAS	Current lack of funding, specialist staff and appropriate equipment	N/I	Centralised funding source at EU level is needed
New technologies for early detection	Ability to detect IAS at early stage of infestation is poorly developed	N/I	Disseminate advantages of new technologies and share equipment and specialist personnel across MS
Early warning mechanisms	No formal national or international system of warning in most MS	I	Communicate and process early warning/ species alert information using agreed mechanisms
Rapid risk assessment methods to prioritise future invasion events	Risk assessment methods can be slow and cumbersome	N/I	Develop a preliminary rapid risk assessment to highlight priority IAS
Standardise pan-European risk assessment to underpin EU IAS black list	Risk assessment methods are not standardised across EU	I	Establish expert panels across EU to develop and conduct risk assessments
Knowledge gaps in risk assessment	Few general models or rules of thumb exist to steer risk assessments	I	Target the R&D needed to increase the confidence levels in risk assessment methods
The importance of economic analysis in risk assessment	Not all IAS pose the same risk or cost; most costly need to be prioritised	N	Increase the level of communication between IAS scientists and economists
Rapid response - a vital tool in IAS management	Many countries have not yet developed rapid response protocol	N/I	A lead agency to coordinate rapid response is required in each MS
Emergency powers to manage IAS	Once an IAS becomes established it is virtually impossible to eradicate	N	Provide derogations from EU and national legislation that restricts speedy IAS control
Novel control in IAS management	Traditional control methods can be relatively ineffective and costly	N/I	Provide funding for research and development of novel control methods e.g. biocontrol
Knowledge transfer to improve IAS management	Currently, there is a lack of communication between scientists, practitioners and policy makers	N/I	Encourage cooperation and knowledge exchange between scientists, practitioners and policy makers
Outreach to foster improved IAS management	Most IAS are spread inadvertently due to ignorance	N	Provide European funding for public engagement, awareness raising and establishment of local action groups
Effective communication to raise awareness of IAS	Awareness of problems associated with IAS among public and others is lacking	N	There is a requirement for IAS awareness raising in EU legislation
Non-market valuation in IAS economic assessment	Non-market values (e.g. recreation) are rarely considered	N	Educate policy makers about existence of non-market costs and ensure their inclusion in IAS management evaluations
Cost analysis in IAS management	Commonly, cost analysis for IAS management does not include loss of benefits caused	N	Costs associated with IAS management must include both cost benefit and cost effectiveness analysis
Single responsible agency - the answer to national IAS management	Responsibility for IAS management nationally is often fragmented	N	Clear lines of responsibility between national agencies and government departments are needed at a national level

FINS Conference – Four Pillar Themes to Derive Top 20 IAS Issues



Issues

Communication (4) Biosecurity (3)

Economics (3) Risk assessment (3)

Legislation (2) Early detection (1)

Rapid response (1) Resources (1)

Management (1) Single agency (1)



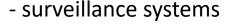
EU Regulation on Invasive Alien Species – 01/01/2015

Basic Structure (6 Chapters)

- 1. General provisions: intro to Reg and tools to prioritise 'IAS of Union concern'
 - definitions, scope and obligations
 - list of IAS of Union concern (to be decided....)

Restrictions / obligations relate only to listed IAS of Union concern

- 2. Prevention: measures to prevent introduction and release of IAS (of Union concern)
 - restrictions, permits, authorisations
 - lists of IAS of Regional and MS concern
 - action plans on pathways
- 3. ED & RE: tools to ensure early detection and control of detected IAS (of Union concern)



- early detection
- rapid eradication, at early stage
- derogations from rapid eradication





EU Regulation on Invasive Alien Species

Basic Structure

- **4. Management for widely spread IAS:** obligations to tackle IAS (of Union concern) already widespread in MS or EU
 - measures for eradication, population control or containment
 - restoration of damaged ecosystems
- **5. Horizontal Provisions:** cost recovery
 - cooperation and coordination between MS
- **6. Final Provisions:** reporting obligations and legal tools re implementation, enforcement and review of Regulation
 - reporting and review
 - information support
 - committee and scientific forum
 - penalties





EU Regulation on Invasive Alien Species

What is an **IAS of Union concern**?

Must be alien to the territory of the Union (28 MS Brexit?)

Must be capable of establishing viable populations and spreading

Has demonstrable adverse effect on biodiversity or related ecosystem services

Risk Assessments must rate them as priority species

Inclusion on the list will prevent, minimise or mitigate their adverse impacts

Lists submitted by each MS

Ultimate list of IAS of Union concern (37) decided by Scientific Committee

List adopted by EC on 03/07/2016 and entered into force on 03/08/2016

Now clock can start ticking (20 months later)



List of IAS of Union Concern (37) - 23 Animal

Amur sleeper (*Perccottus glenii*) Red swamp crayfish *Procambarus clarkii*

Asian hornet (Vespa velutina) Red-eared slider (Trachemys scripta elegans)

Chinese mitten crab (*Eriocheir sinensis***)** Ruddy duck (*Oxyura jamaicensis*)

Coypu (Myocastor coypus)Sacred ibis (*Threskiornis aethiopicus*)

Fox squirrel (*Sciurus niger*) Siberian chipmunk (*Tamias sibiricus*)

Grey squirrel (*Sciurus carolinensis*) Signal crayfish (*Pacifastacus leniusculus*)

Indian house crow (Corvus splendens)

Small Asian mongoose (Herpestes javanicus)

Marbled crayfish (*Procambarus spp.*) South American coati (*Nasua nasua*)

Muntjac deer (Muntiacus reevesii) Spiny-cheek crayfish (Orconectes limosus)

North American bullfrog (Lithobates catesbeianus) Topmouth gudgeon (Pseudorasbora parva)

Virile crayfish (Orconectes virilis)

Raccoon (Procyon lotor)

Pallas's squirrel (Callosciurus erythraeus)

List of IAS of Union Concern (37) – 14 Plant

American skunk cabbage (Lysichiton americanus)

Kudzu vine (*Pueraria lobata*)

Asiatic tearthumb (Persicaria perfoliata)

Parrot's feather (Myriophyllum aquaticum)

Curly waterweed (Lagarosiphon major)

Persian hogweed (Heracleum persicum)

Eastern baccharis (Baccharis halimifolia)

Sosnowski's hogweed (Heracleum sosnowskyi)

Floating pennywort (Hydrocotyle ranunculoides)

Water hyacinth (Eichhornia crassipes)

Floating primrose willow (Ludwigia peploides)

Water primrose (Ludwigia grandiflora)

Green cabomba (Cabomba caroliniana)

Whitetop weed (Parthenium hysterophorus)









IAS of Union Concern

All 37 species now subject to restrictions on:

keeping
importing
transporting
selling
exchanging
breeding
growing
releasing





Selected Articles from the Regulation

Article 13 Action plan on the pathways of IAS

Within 18 months....*

- conduct comprehensive analysis of pathways

- identify priority pathways

Within 3 years....**

- establish action plans to address priority pathways, to include <u>timetables</u> for action and <u>measures</u> to be adopted

Article 14 Surveillance system

Within 18 months....

- establish a surveillance system to record data on IAS

Within 3 years....

 determine the presence and distribution of new and established IAS of Union concern



^{* 03/02/2018}

^{** 03/08/2019}

Article 16 Early detection notification

Commission must be notified without delay, in writing, of any early detection

Article 17 Rapid Eradication at early stage of invasion

Within 3 months of notifying EC.... MS will apply eradication measures

Control methods must be specifically reported to EU

Control methods must achieve complete and permanent removal of population

MS must monitor effectiveness and report to EU in timely manner

(No other control measures may be applied without notification to EU)



Specific Obligations imposed by the new Regulation on MS

Article 19 Management of IAS that are Widely Spread

Within 18 months... MS must have in place effective management measures

These must aim at eradication, population control or containment

Effectiveness must be monitored and reported

Article 20 Restoration of the damaged ecosystem

MS must carry out restoration to assist recovery of damaged ecosystems

Article 21 Costs recovery

MS will recover costs of measures needed to restore ecosystems (polluter pays)



Is it working?

Two new incursions of IAS of Union concern already tackled in Ireland

Coypu (Myocastor coypus)

- first recorded in wild Ireland in 2010 (1)
- increased numbers in southern Ireland in 2016 (4)



Rapid eradication at early stage of invasion

- within 3 months NPWS implemented Article 17



Is it working?

Curly waterweed (Lagarosiphon major)

- first recorded in wild Ireland in 2005 (1 lake)
- second sighting in wild in 2016 (1 lake)

Rapid eradication at early stage of invasion

- within 1 month NPWS commissioned INVAS to implement Article 17











Jute / burlap laying is shallow (< 2m) water

December 2016











Laying Jute Matting in Deeper Water (to 7 metres) December 2016





Is it working?

Curly waterweed

- first recorded in wild Ireland in 2005 (1 lake)
- second sighting in wild in 2016 (1 lake)

Rapid eradication at early stage of invasion

- within 1 month NPWS commissioned INVAS to implement Article 17

To date, no indications that it is operating with same urgency elsewhere in Europe



EU Regulation and (FINS) Top 20 Issues

Regulation addresses many Top 20 issues

- surveillance
- early detection and rapid reaction
- management
- biosecurity (though not mentioned by name)
- risk assessment (for IAS of Union concern)
- communications



Regulation does not adequately address some Top 20 issues

- funding
- resources
- single agency
- derogations





Will the EU Regulation Work for Europe?

- Is good and timely legislation
- Has embraced ideas from FINS and elsewhere
- Has serious weaknesses funding
 - must achieve complete and permanent removal of population (Article 17)
- List of Union concern too few
 - regularity of review?
- Strict timelines provided
- Penalties
- Positive reaction in Ireland welcomed
- Too early to see how 27 MS will interact / cooperate

Go Raibh Maith Agaibh

Thank You for your Attention

