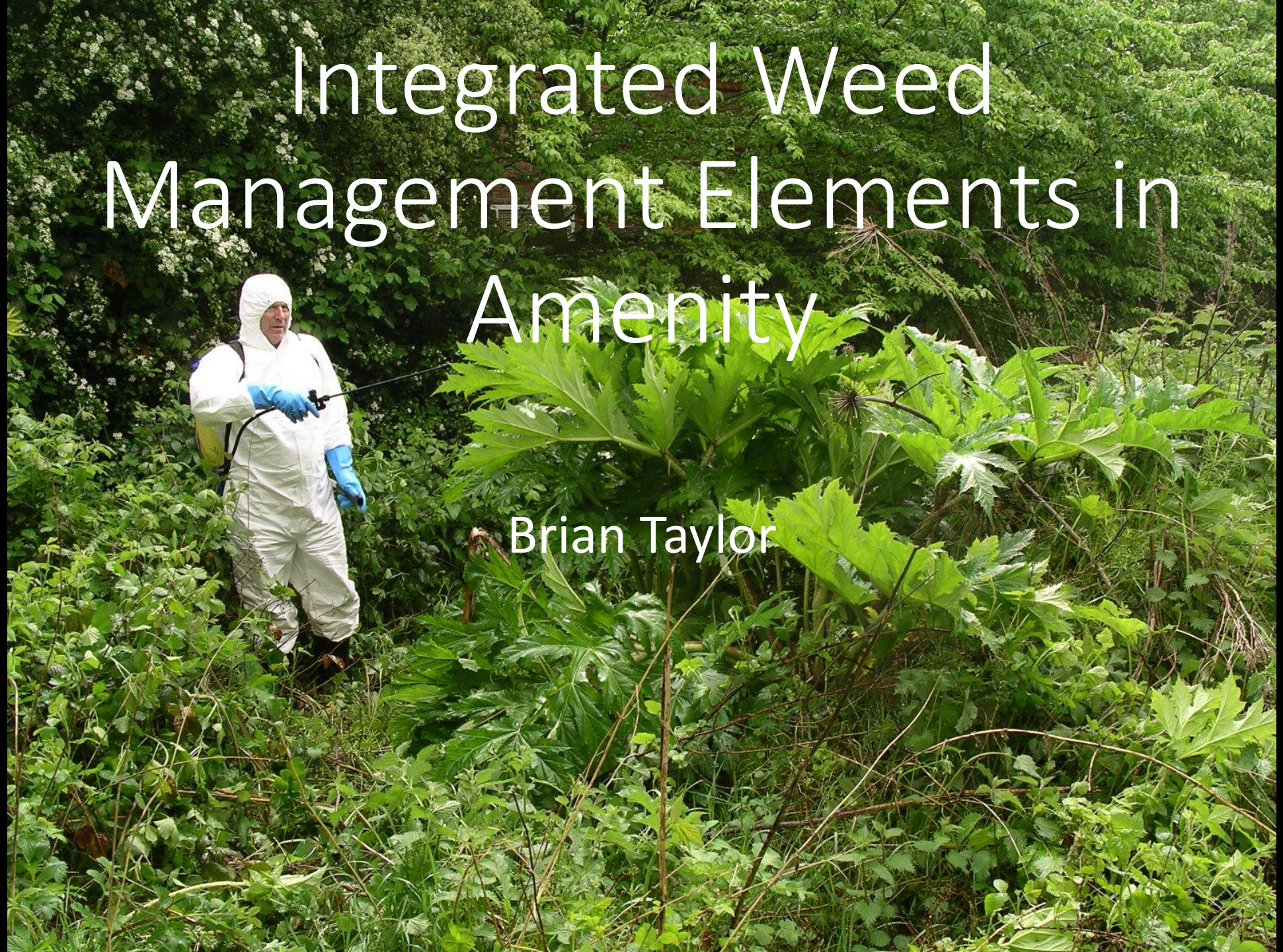
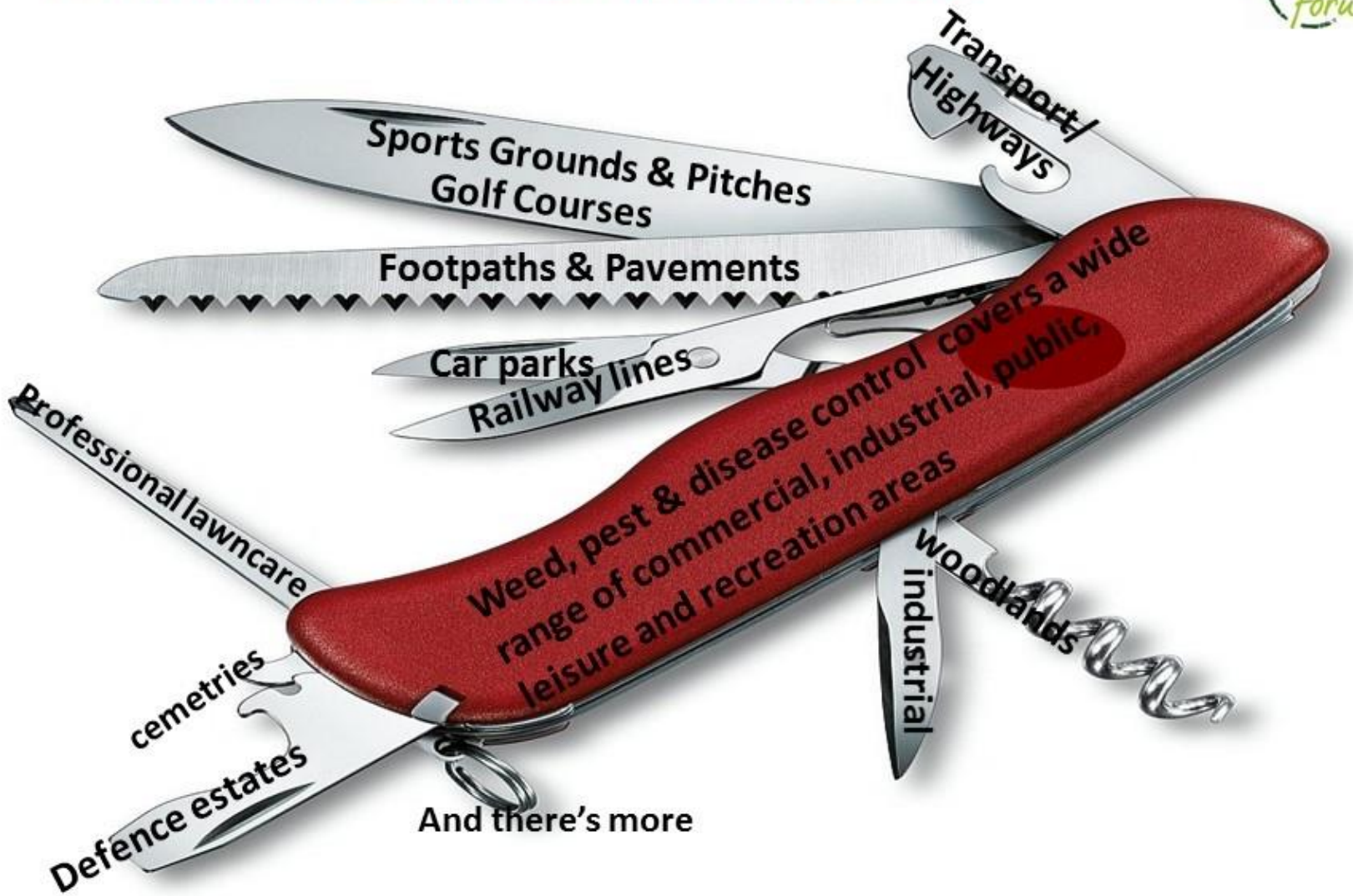
Integrated Weed Management Elements in Amenity



Brian Taylor

WHAT ARE AMENITY AREAS?



What situations will an amenity weed expert encounter…

Typically the specific scenarios might include:

- Hard surfaces
- Invasive weeds
- Sports turf
- Amenity planting
- Conservation areas/nature reserves
- Amenity woodland
- Amenity grass
- Etc…

Amenity problems

- Sites are usually open access – public, pets, children.
- Multiple stakeholders/user groups.
- Working near water and environmentally sensitive areas.
- Problems (especially invasives) can be cross boundary issues.
- Very limited number of active ingredients for herbicides.
- Presence of services – gas, electric, fibre optic, water, drains – impact on alternative methods of control.
- Budget constraints…

Invasive terrestrial weeds

Schedule 9:

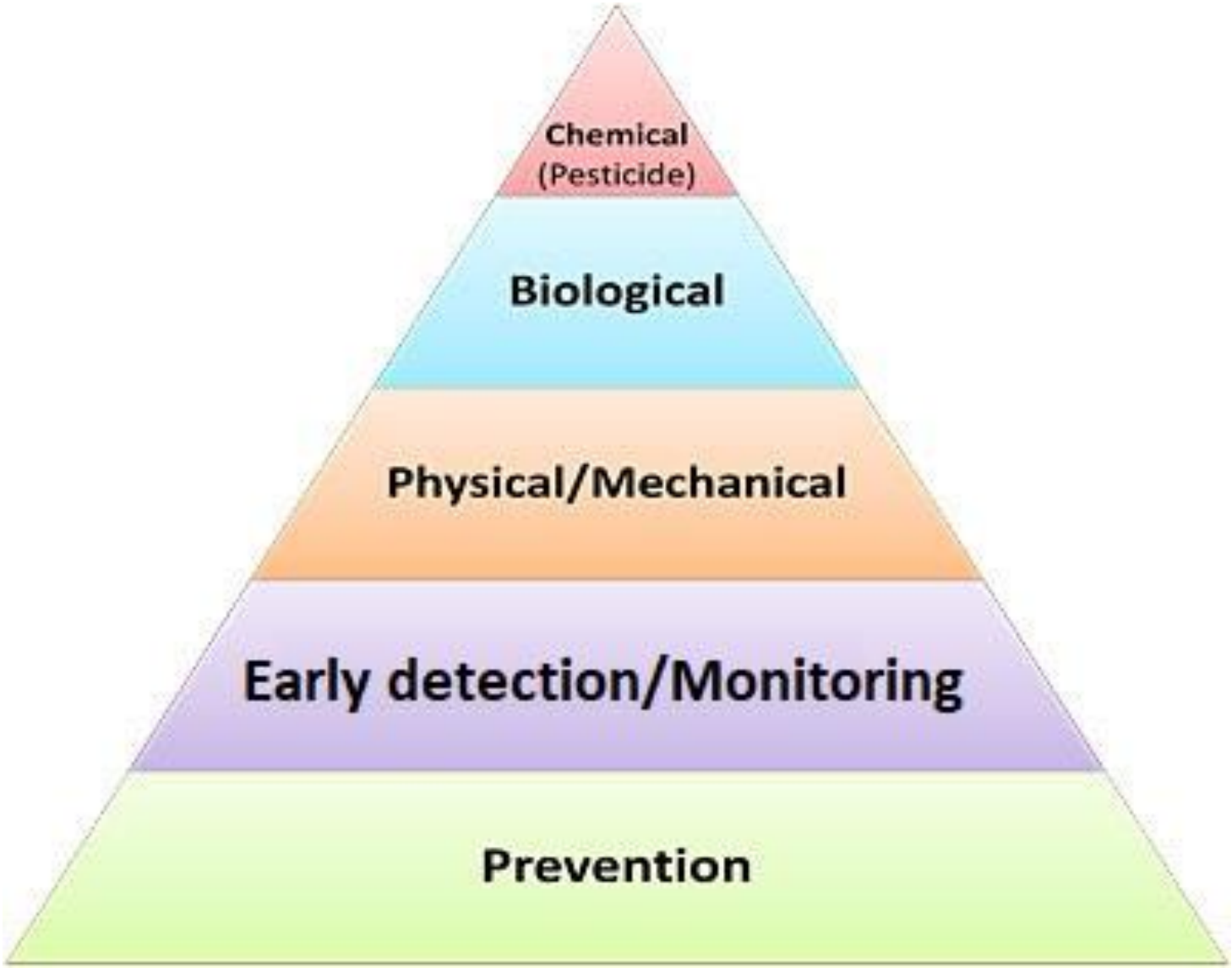
- Japanese knotweed (and hybrids), Cotoneaster, Giant hogweed,
- Hottentot Fig, Himalayan Balsam, Rhododendron, Azalea, Montbretia, Giant rhubarb, Japanese Rose, Virginia creeper, False Virginia creeper and others…

Not covered in Schedule 9:

- Bamboo, Field Horsetail, Buddleia, Giant Butterbur, Himalayan knotweed and others…

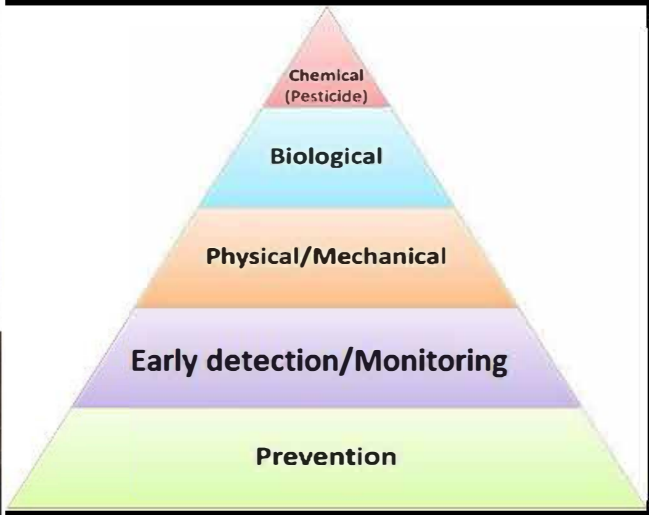
Both Schedule 9 and non-Schedule 9 invasive plants are commonly sold and planted in the UK…

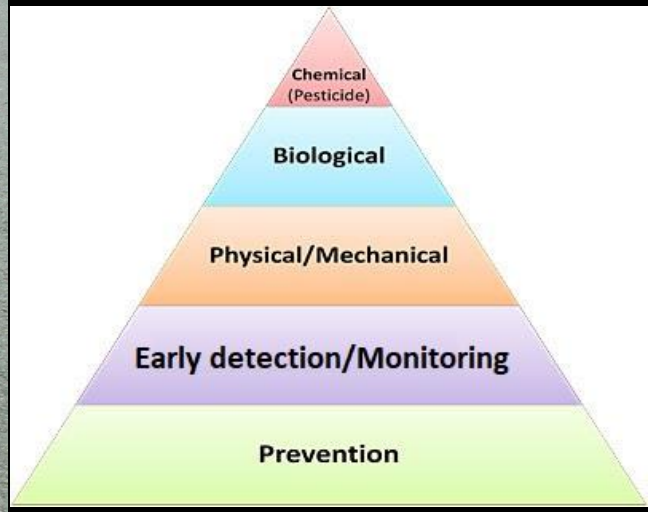
Integrated Weed Management for Invasive Weeds



Japanese knotweed

- Perennial
- Forms large monocultures/colonies
- Readily spreads by propagules
- Deep rhizomatous networks – typically 2m depth
- Grows in any soil type, any situation
- Environmentally damaging
- Damaging to hard surfaces, walls, structures and even buildings
- Hybrids now commonly found on site


Chemical
(Pesticide)
Biological
Physical/Mechanical
Early detection/Monitoring
Prevention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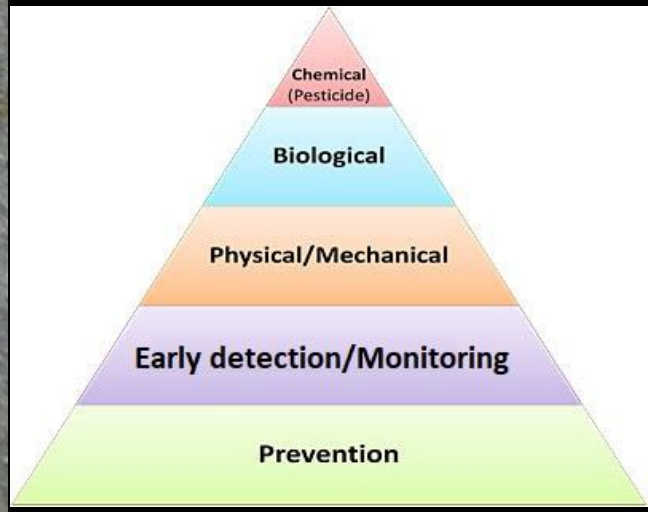
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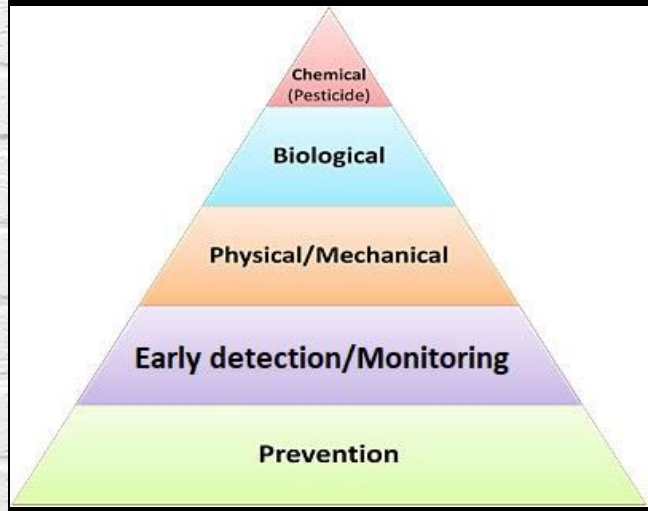
P2 NJF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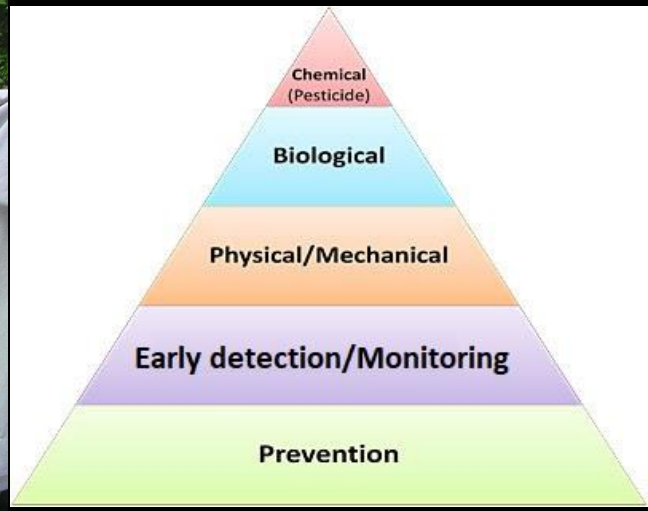
Cars


Chemical
(Pesticide)
Biological
Physical/Mechanical
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Prevention

Excavation options

Very expensive

Not possible to do near existing buildings

Access for machinery needed

Controlled waste – use of scarce landfill space

Carbon footprint

Cross boundary issues

Burial on site

Typically cell is created 4-5m in depth.

Tanked with root barrier

2m of clean fill on top

Problems:

Uses a lot of space on site

Carbon footprint

Cost

Practicalities

Can’t build houses or structures on cell

Integrated Weed Management Solutions for Japanese knotweed.

Alternatives to herbicides…

There are few effective alternatives. Some techniques have been tried, some can reduce the amount of herbicide, but are typically costly and carbon usage is very high. This rules out their use on many sites.

Soil screening…

Limitations:

Will only work when soil is dry

Will only work on some soil types

Will not remove knotweed 100%

Screened soils will still contain knotweed

Expensive

Carbon footprint…

Unapproved use of herbicide has been reported on screened soils…

Screened soils?

Typically used to form a bund.

Residual knotweed can be spot treated with herbicide.

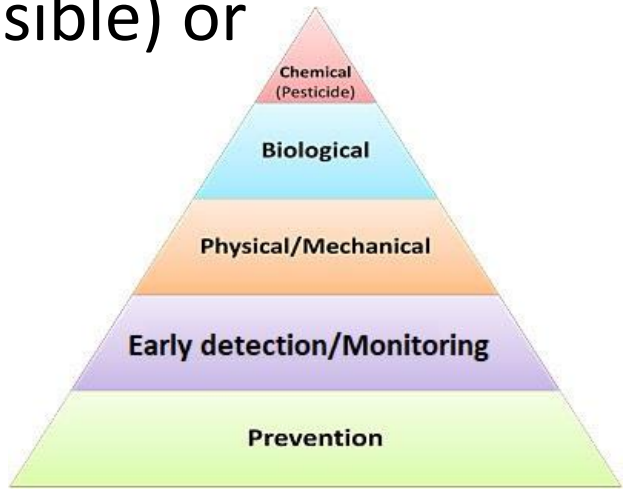
Root barrier needed under bund

Carbon footprint

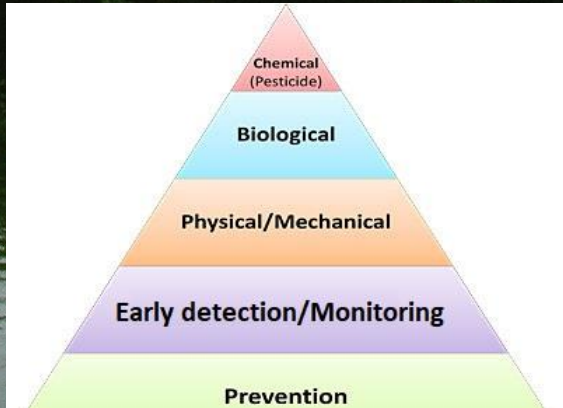
Electric weed control for Japanese knotweed?

Integrated Weed Management for Japanese knotweed.

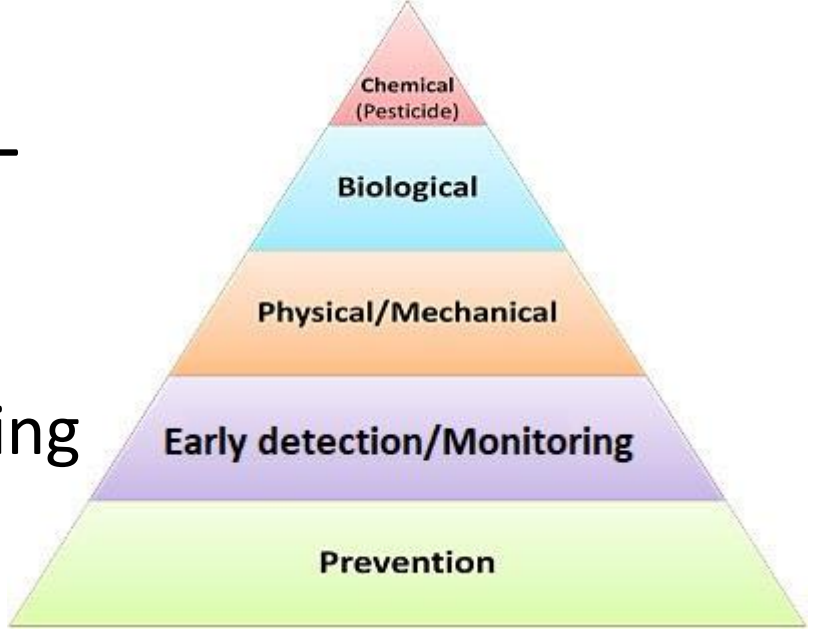
- Possible to prevent from arriving on site in first place – limit opportunities for fly tipping, biosecurity, etc.
- Early detection/monitoring can isolate young plants and effectively treat them at an early stage.
- Knotweed may be excavated either fully or partly (if feasible) or treated under a physical process (screening, heat, etc.) again if feasible. Root barrier, etc.
- No effective biological control available.
- Limited herbicides available and take many years of treatment to achieve control/eradication.



- Himalayan Balsam
- Annual plant spread by seeds.
- No overwintering stage other than seeds.
- May be controlled/eradicated by several means.

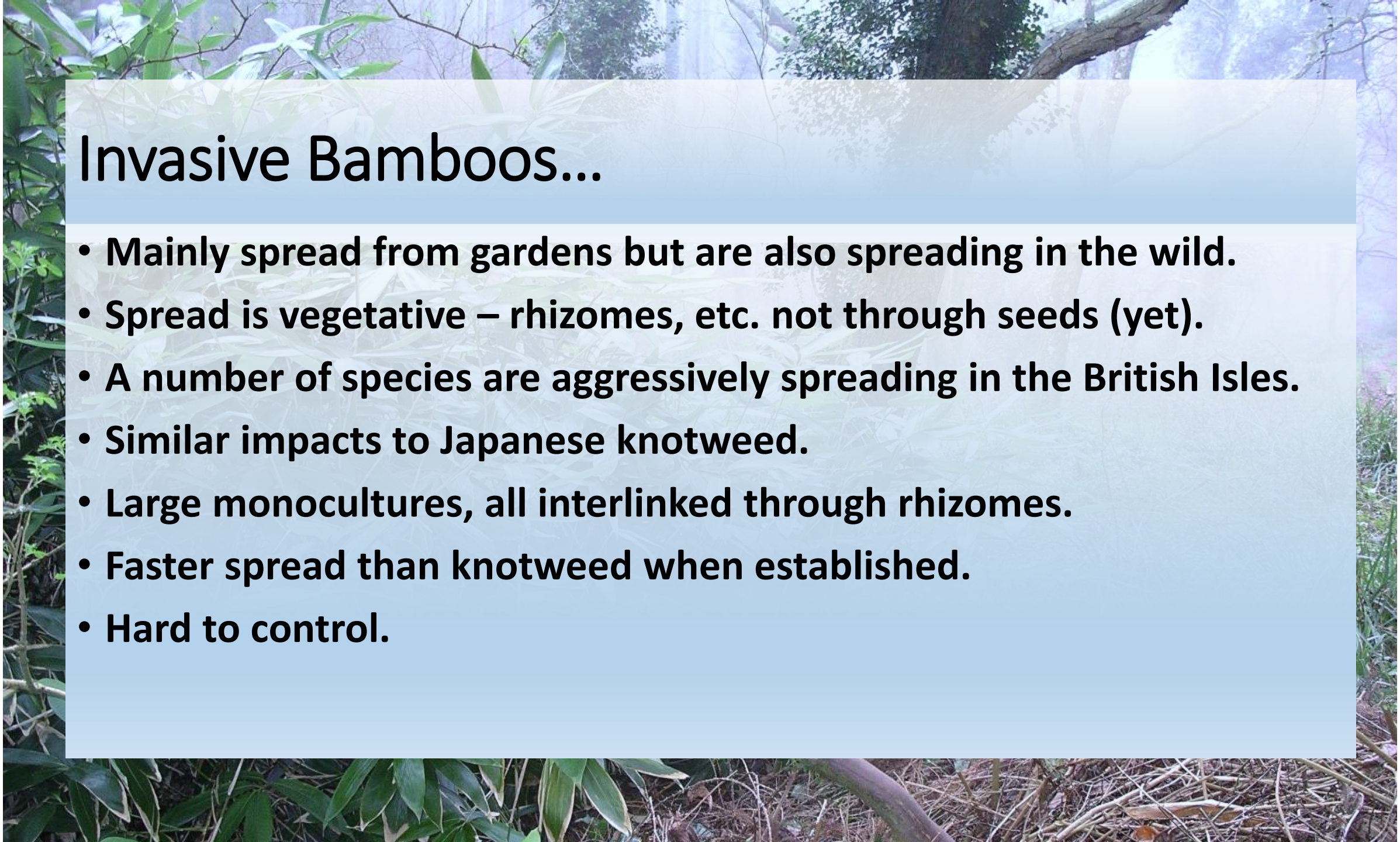


Integrated Weed Management – Himalayan Balsam



- Prevention – seeds are often spread from adjoining properties or via watercourses.
- Early detection/Monitoring.
- Physical/mechanical – mowing can be an effective control as can hand pulling, brush cutting or balsam bashing…
- Biological control – CABI are developing a rust suitable for balsam.
- Chemical – can be used, but other alternatives should be considered first.


Invasive bamboos



Invasive Bamboos…

- **Mainly spread from gardens but are also spreading in the wild.**
- **Spread is vegetative – rhizomes, etc. not through seeds (yet).**
- **A number of species are aggressively spreading in the British Isles.**
- **Similar impacts to Japanese knotweed.**
- **Large monocultures, all interlinked through rhizomes.**
- **Faster spread than knotweed when established.**
- **Hard to control.**

Bamboo

Bamboo has seen its popularity as a garden plant rise since the 1990s.

The Knotweed Company Ltd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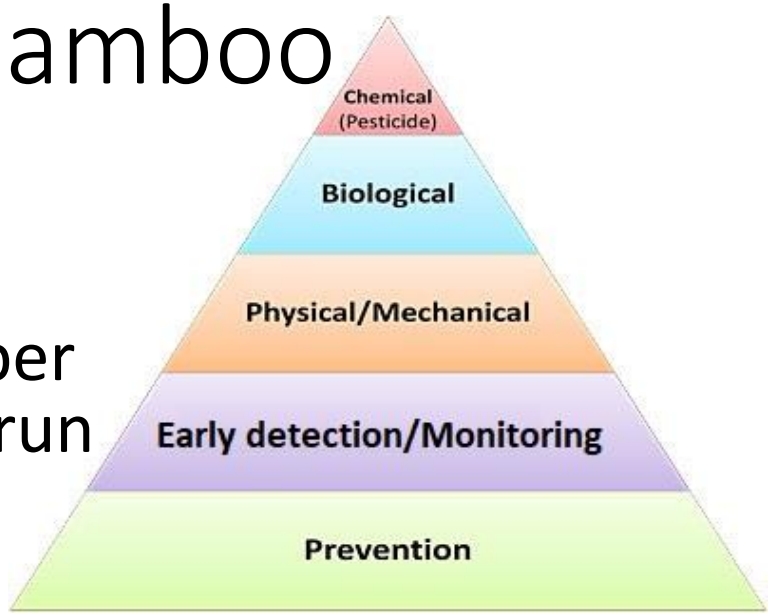
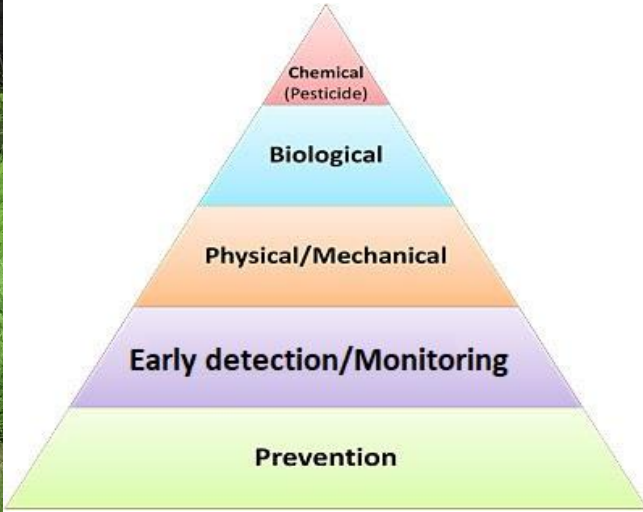
Integrated Weed Management - Bamboo



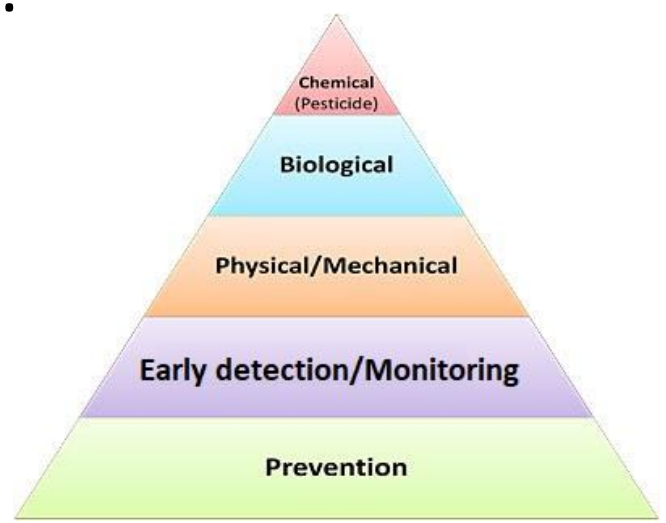
- Prevention – don't plant invasive bamboos!
- Early detection/monitoring – typically takes a number of years (5-10 years) to establish before starting to run
- Physical/Mechanical –Bamboo is tough, excavators struggle with it and hand digging is only possible for small areas. Root barriers and rhizome pruning are possible controls.
- Biological control – none commercially available.
- Chemical – reasonable control levels can be achieved using glyphosate, typically takes several years of treatment.

Field Horsetail


Chemical
(Pesticide)
Biological
Physical/Mechanical
Early detection/Monitoring
Prevention

IWM for Field Horsetail

- Prevention – root barrier if required for new hard surfaces
- Early identification
- Physical/mechanical – excavation, pH, rhizome cultivation, root barrier, drainage, site maintenance changes.
- Biological
- Chemical



Integrated Weed Management - Summary

- Control of invasive weeds/plants is a complex and changing area.
- There are no effective controls on introducing new plant species to the UK.
- Plant biology is not well understood by many in the industry - leading to sub-optimal management techniques.
- Few herbicides available – **Resistance!**
- Biological controls are few and (generally) ineffective.
- Invasive weed management is often underfunded or even not funded at all by large land owners.
- Industry is reactive not proactive – but difficult to see how this will change.
- Cost effective solutions are generally herbicide based, with other solutions being very expensive and carbon use intensive by comparison.
- More research to develop reliable IWM techniques is necessary for invasive weeds.

INVASIVE BAMBOOS

A practical guide to their impact and management in Great Britain and Ireland

Brian Taylor Jim Glaister Max Wade

Bamboo has become a popular planting choice among designers and landscapers, gardeners and the general public. Many bamboos can be highly invasive and can impact negatively on the built environment and local habitats (see above – running bamboo rhizomes under paving close to a house). This book aims to outline the darker side of bamboo's nature and offers practical advice on how to deal with it. The book provides an overview of bamboo history, biology and ecology, and highlights why planting some species of bamboo can be particularly problematic. It supplies useful guidance for those who have planted, or wish to plant, bamboo, as well as giving practical advice for those wishing to rid themselves of the plant. Many people who buy (and sell) bamboo are not aware of how invasive and destructive many bamboos can be. This book seeks to raise the profile of these plants, constructively and helpfully.

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Japanese knotweed for sale (with land)

Thank you for listening.