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Skills for Nature Conservation Workshop

Presented by

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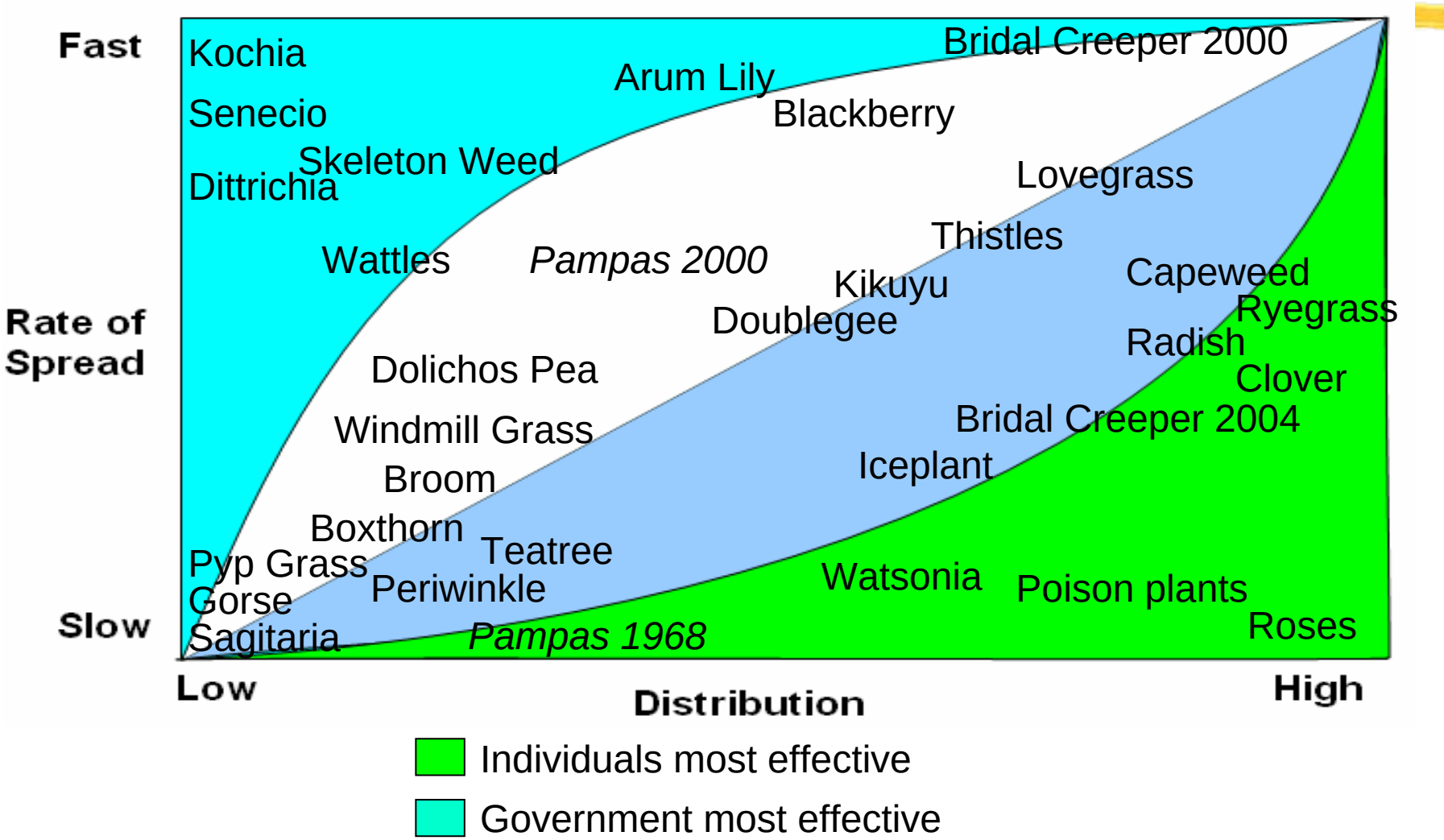
Biology and distribution determines who should be involved what action should be taken



Case Studies

Bridal Creeper - a vine of bush land with biocontrol agents

Watsonia - a bulb of roadsides

Holly-leaved Senecio - an unknown broad leaf weed of disturbed bush land

Blackberry - a WONS weed of wide distribution

Gorse - a WONS weed of limited distribution

Sydney Golden Wattle - a weedy tree.

Pampas Grass - A grass of patchy distribution

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Bridal Creeper - Biology

- Spreads very quickly by birds.
- Bio control essential to reduce the rate of spread.
- Sensitive to grazing - none in paddocks
- Grows intimately amongst trees and scrub so very selective control methods required
- Large tuberous root system, small regenerative stock
- Forms monocultures excluding recruitment of native species.

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Bridal Creeper - Control

- Biocontrol - rust is good, leafhopper is good for student training and public relations, leaf beetle has established at some sites.
- Herbicides - Low rates of Brush Off are effective. High rates of herbicides damage the surrounding plants allowing greater infestations to develop.
- Manual control is difficult because of tubers and vine like nature.
- Use an integrated approach - Release rust, spray with a low rate of Brush Off, hand weed the remainder.

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Bridal Creeper - Cases

- Great community interest including schools
- Schools map and release leafhoppers TV
- Wildflower Society is very active
- Biocontrol rust spreading days
- Farmers spraying roadsides
- Some CALM rangers quietly active

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Watsonia - Biology

- Bulb and bulbils - short lived
- Spread by water and people
- Forms monocultures but is often scattered amongst natives at the edges of the infestation
- Sensitive to grazing

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Watsonia - Control

- Single plants can be hand weeded but it is difficult to get all the bulbils. Swards are very difficult to hand weed.
- Roundup provides good control of growing plants but is too damaging for overall spraying of scattered plants. Overall spraying often leads to colonization by other weeds. Wipe leaves of single plants.
- 2,2-DPA provides fairly selective control in roadside vegetation as an overall spray. It also has some residual to control bulbils in the following season and reduces grass growth.
- Improve Council work practices

Watsonia - Cases

- Mt Barker shire sprayed hundreds of kilometres of roadside with 10 kg/ha 2,2-DPA plus wetter about 10 years ago and most areas are still relatively free of Watsonia.
- Torbay catchment group sprayed a kilometre in 2001 then applied for funds to do the rest of their area this year.
- Start at the top of the catchment. Good for groups because minimum reinfestation

Holly-leaved Senecio

- “Unknown” invasive Daisy or Asteraceae of limited distribution
- Wind spread, perennial garden plant
- Invades after fire or disturbance
- Survives in fairly dense bush
- Very visible
- Short lived seed bank?
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Holly-leaved Senecio - Control

- Hand pull isolated plants
- Convince gardeners they need to get rid of it to stop spread to the bush
- Lontrel provides fairly selective control
- Misting is very efficient for dense bush and for getting the seedlings
- Follow up with hand pulling
- Publicity

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Holly-leaved Senecio - Cases

- Friends of the mountains and Wildflower Society in Albany
- Busy bees, hand pulling - disposal problems
- Some in Prickly Acacia swards
- Weed of state significance. Funding and council bartering
- Bushcare assistants misting Lontrel. Wildflower Soc members knapsack spraying
- Pamphlets, letter drops, awareness campaigns

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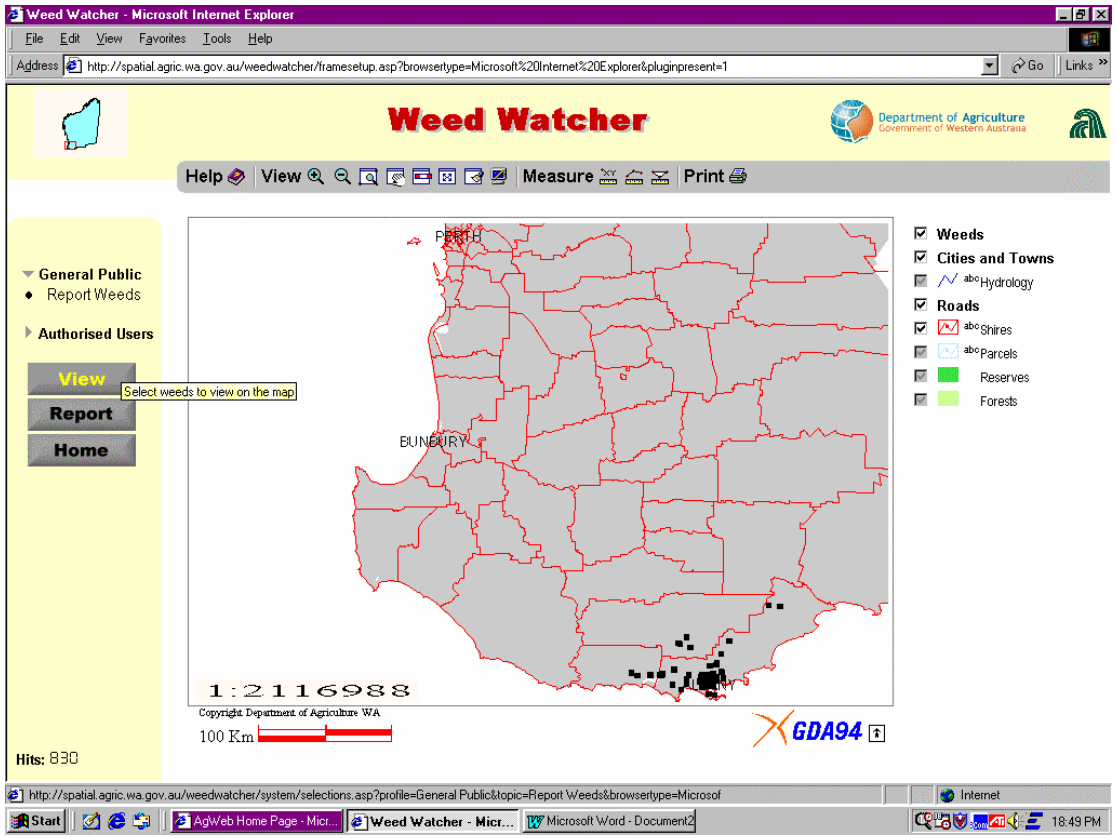
Blackberry and Gorse

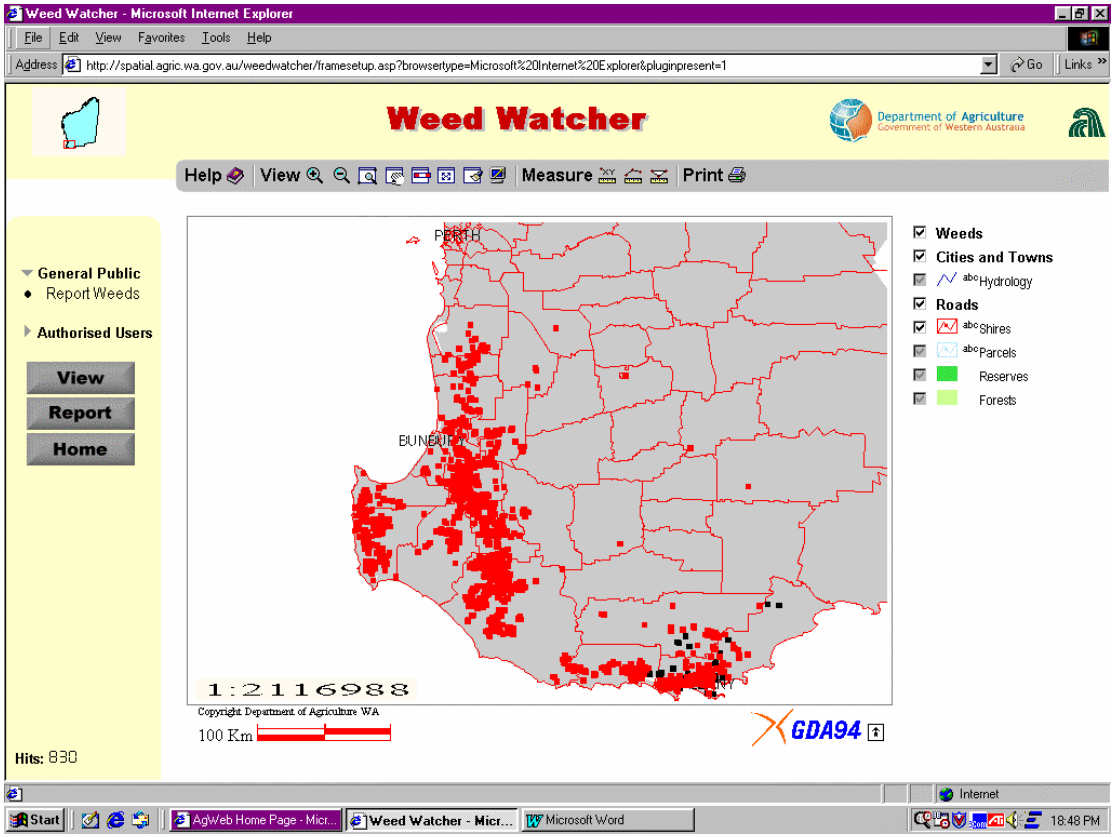
- Prickly WONS, declared weeds - funding available
- Blackberry - fast spread by birds, slow vegetative spread, extensive infestations, perennial, short lived seed bank
- Gorse - slow spread, limited infestation, perennial, long lived seed bank

- P158, 162

Weed Map Gorse



Weed Map Blackberry



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Blackberry and Gorse - Control

- Blackberry - control satellite infestations, extra help for public in these areas. Herbicide, advice, training, group funds. Government lobbying
- Gorse - control whole infestation. Landholder letters.
- Mainly chemical control
- Pamphlets
- WONS funding
- Declared status - letters, enforcement

Sydney Golden Wattle - Biology

- Eastern States native Acacia tree
- Slow spread by birds
- Produces large amounts of seed that germinates and establishes after burning or where there is direct sunlight
- Seed lasts for many years
- About 3 years old before seed produced.
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Sydney Golden Wattle - Control

- Manual removal tends to open up the bush and allows many seedlings to germinate
- Spray paint trunk with Access + Diesel - selective, slow death, bush covers hole left by tree.
- Saplings can be sprayed with Roundup or Lontrel before they are 3 years old
- Watch for re-infestation after fire

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Sydney Golden Wattle - Cases

- Several groups - most want to chain saw and mulch in busy bees especially on roadsides
- Several residents want to keep them on their own property - need to provide alternative (native) shade, windbreak, aesthetic replacement
- Good project for lone rangers. At least 6 in Albany

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Pampas Grass

- Originally only female plants in WA and only spread by dividing and transplanting
- Hermaphrodite plants introduced in the 70's?
- Females now produce seed that is spread by wind
- Leaf edges are sharp
- Very flammable.
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Pampas Grass - Control

- Target isolated mother plants so they don't become a source of seed.
- Remove large plants with a backhoe
- Spray large plants with Roundup then carefully burn if possible then respray regrowth
- Spray seedlings amongst dryland bush with high rates of a grass selective herbicide such as Verdict or Fusilade. Seek advice for wetlands.
- Break off seed heads

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Pampas Grass - Cases

- Council declared it as a pest plant in late 80's
- Roundup "give aways" - diluted product
- Halved the infestation
- Lost interest - pest plant status removed
- But still many people control odd plants and are embarrassed with infestations

Indirect Toxicity

Affects all control methods

- De-oxygenation of water - Roundup vs Spray.Seed, Strip treatment
- Loss of food supply
- Change in ecological balance e.g. competitive relationships, water relations, light etc.
- Changes in disease susceptibility
- Changes in habitat stability e.g. erosion, turbidity, breeding sites etc.
- Look and learn

Breakdown and persistence

- **Glyphosate** - Roundup
- Loss from the environment is mainly due to irreversible attachment to clay.
- It can persist in clean water
- Microflora degrade it slowly in aerobic and anaerobic conditions with a half life of a few days to over a year.
- Some degradation in light in water.

Breakdown and persistence

- **Metsulfuron** - Ally, Brush Off
- Hydrolyses in water -
- In soils - pH dependent and quicker in acid soils. Half life a week to a month. (6.2-144 days have been recorded)check if water
- Microbes also break it down
- Mobile in the soil profile

Breakdown and persistence

- **Atrazine and simazine**
- Attaches to clay
- Broken down in aerobic environments by microbes
- Persistent in anaerobic environments
- Low solubility but continual leaching may lead to water table contamination
- Half life in soil a month to a year
- Decomposes slowly in saline water

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Selectivity