

Biocontrol of barberry (*Berberis* spp.)





Background

- 12 adventive *Berberis* spp. in NZ.
- Darwin's barberry (*B. darwinii*) and barberry (*B. glaucocarpa*) are weedy species.
- Produce large crops of fruit dispersed by birds and possums.
- No indigenous, economically or culturally important close relatives here.
- Some *Berberis* still sold which have potential to become invasive e.g. *B. thunbergii*.



Darwin's barberry

Occurs between:

33°25'S - 46°40'S

150 -1300 m

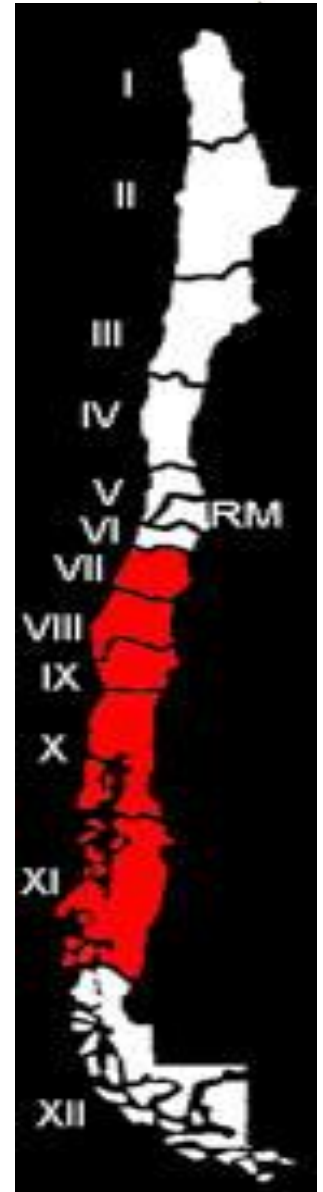


Darwin's barberry

Occurs between:

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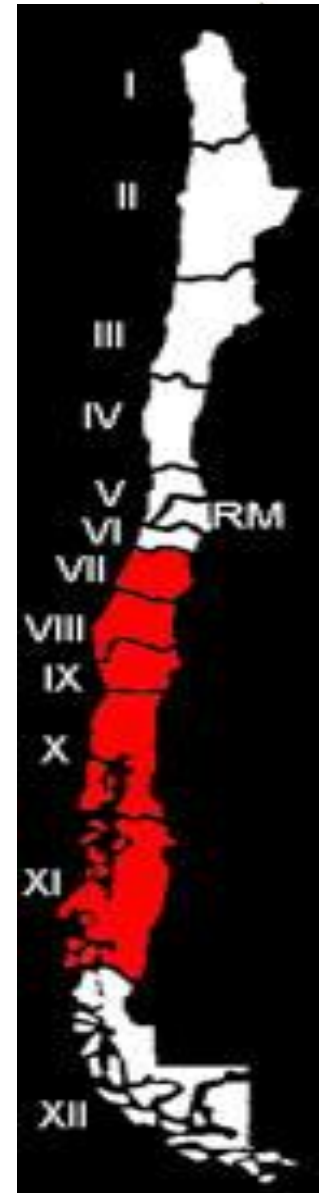


Darwin's barberry

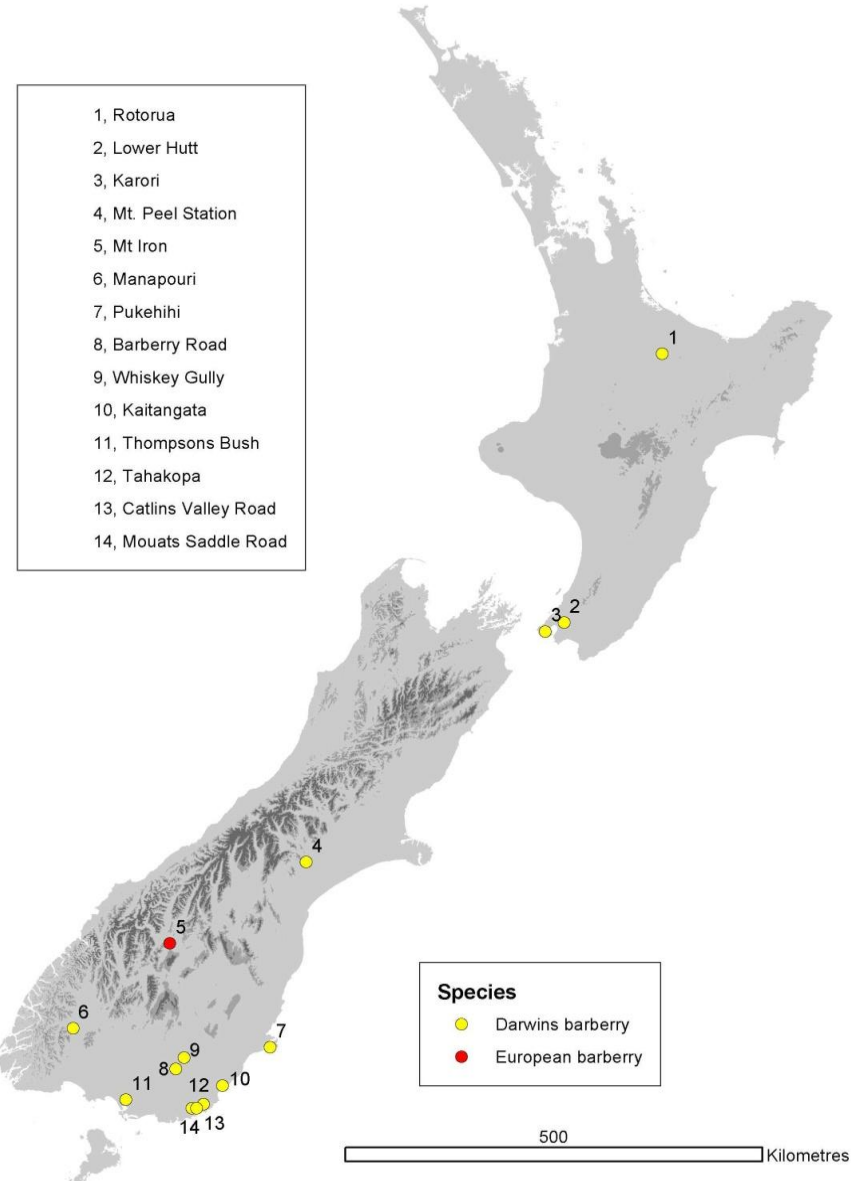
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Darwin's barberry in New Zealand

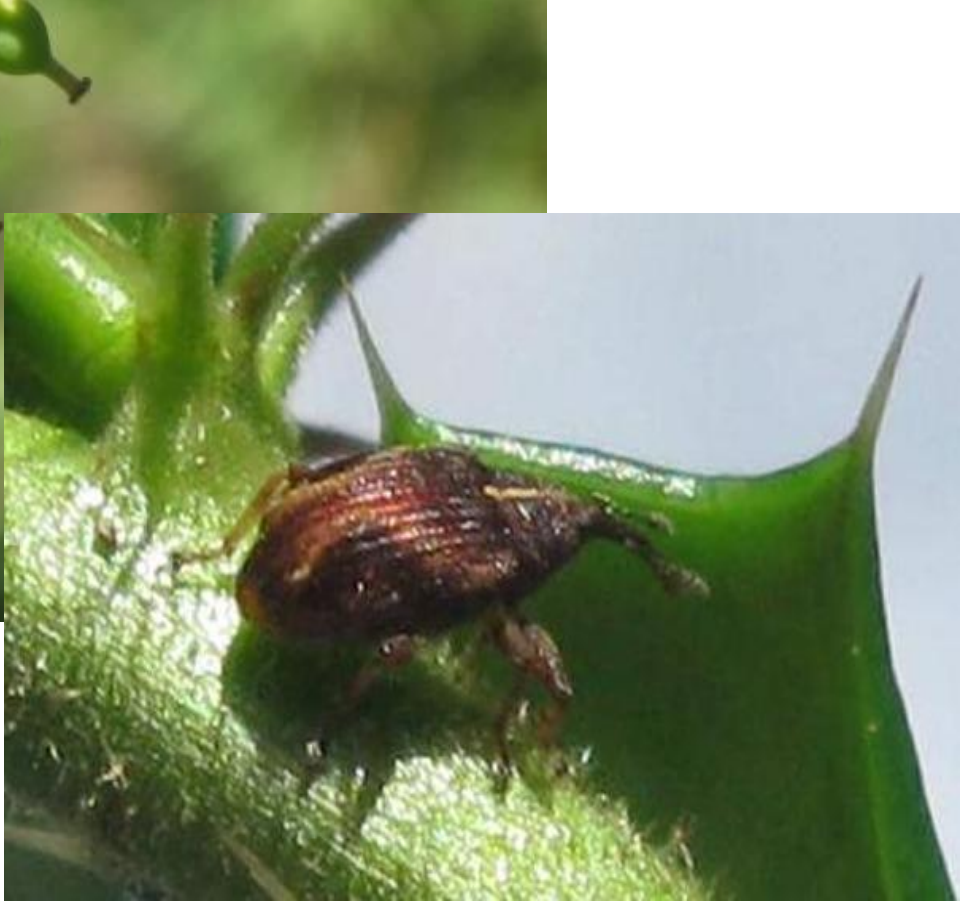


Potential agents for Darwin's barberry



- Flower bud feeder (*Anthonomus kuscheli*)
- Seed feeder (*Berberidicola exaratus*)
- Two rust fungi (*Puccinia berberidis-darwinii*, *Puccinia meyeri-alberti*)
- Unidentified pathogen





Flower bud weevil
(Curculionidae: *Anthonomus kuscheli*)



Seed feeding weevil
(Curculionidae: *Berberidicola exaratus*)

Host specificity testing in Chile



Dr. Hernán Norambuena M.

Field trials in Chile





EPA application

- Application to release both weevil species from containment made by Environment Southland June 2012
- Approval granted October 2012
- Weevil shipment received October 2012
- Small populations held in containment for release 2013-14



Puccinia berberidis-darwinii

causes premature defoliation and leaf death



Puccinia meyeri-alberti impact unknown.



Unidentified pathogen causes shoot die back, premature defoliation, kills branches and potentially entire plants. Most damaging observed to date.



Future work



- In New Zealand
 - 2013-2014
First field release of both weevil species
 - 2014-??
Mass rear and distribute both weevil species
Revisit pathogens?





Acknowledgements

- National Biocontrol Collective
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