

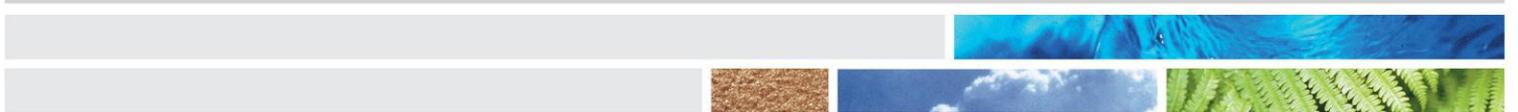


Environmental
Protection Authority
Te Mana Rauhi Taiao

Release of two weevils *Anthonomus kuscheli* and *Berberidicola exaratus*

For the biological control of the weed Darwin's barberry (*Berberis darwini*)

JUNE 2012



Under section 34 of the Hazardous Substances and New Organisms Act 1996

EPA DISCUSSION DOCUMENT

Purpose of this document

In June 2012, an application was made to the Environmental Protection Authority (EPA) seeking to release two weevils to act as biological control agents for the weed Darwin's barberry (*Berberis darwinii*).

This discussion document is produced by the EPA staff to facilitate the submission making process. We discuss the information provided in the application and other readily available sources. This document is aimed at stimulating discussion around the topic and is not intended to be the sole resource used in making a submission. The EPA staff risk assessment is not complete until all submissions have been received and can be assimilated into the risk assessment process.

We encourage all submissions, particularly in relation to matters identified in the following paragraphs. The submission period ends on 3 August 2012.

Submission Process

In a submission you can provide information, make comments and raise issues. In this way, you contribute to the EPA decision making process on specific applications. We are particularly interested in hearing from you on the following matters:

- Methodology of the host range testing;
- Adverse effects, especially adverse effects not identified in the application¹; and
- Positive effects, especially positive effects not identified in the application².

Further information on submissions can be found at:

www.epa.govt.nz/about-us/have-your-say

Application Summary

1. Environment Southland is making the application to release two weevils as biocontrol agents for Darwin's barberry (*Berberidicola exeratus*) on behalf of the National Biocontrol Collective, which comprises 13 regional councils and the Department of Conservation (DOC).
2. The applicant states that Darwin's barberry invades pasture, disturbed forest, shrub-land, tussock-land, roadsides and other scarcely vegetated sites. The seeds are spread over long distances by birds that eat the berries. It grows more rapidly than native species when suitable conditions arise, dominating sites where it establishes. It can suppress existing vegetation and prevent the establishment of desirable plants. Darwin's barberry can persist under canopy in forest and shrub-land.
3. The [Application Summary](#) and the full [Application](#) are available on our website www.epa.govt.nz.

¹ Adverse effects can include any risks and costs associated with approving the release of these organisms.

² Positive effects can include any benefits associated with approving the release of these organisms.

Background on *Anthonomus kuscheli*

4. *Anthonomus kuscheli*, or the flower bud weevil, is tiny (3mm long) and brown in colour with a striking pale stripe along its thorax and either side of its abdomen. In its native range (Chile), it has multiple generations per year, with the first adults emerging in early spring. Adults mate during flowering and larvae feed on flower buds of Darwin's barberry, preventing flower formation. There is no reason to expect its biology or behaviour to be different in New Zealand.

Background on *Berberidicola exaratus*

5. *Berberidicola exaratus* or the seed weevil is also tiny (<3mm long) but is a uniform dark brown. Adult weevils lay eggs inside the fruit of Darwin's barberry and the resulting larvae feed on and damage developing seeds. In its native range (Chile), it has one generation per year and emerges later than the flower bud weevil to attack the developing fruit. Again, there is no reason to expect its biology or behaviour to be different in New Zealand.

Adverse effects

6. We are interested in understanding all the possible adverse effects associated with the release of *Berberidicola exaratus* or *Anthonomus kuscheli*. These effects may include (but are not limited to): impacts on human health, environmental, economic, social and cultural effects.
7. Biological control agents can take many years to establish, spread and have an impact on the target species. Whether these weevils will establish and disperse successfully, and how long this will take is uncertain. If they do not establish, we assume in the risk assessment that there will be no significant effects (adverse or positive) as a result of their release. Therefore the assessment of effects from their release is based on the assumption that they will become widely established in New Zealand.

Please let us know if you can identify issues with this assumption.

Adverse Effects assessment

8. Our adverse effects assessment is based on the evidence of testing provided by the applicant, and the references cited within the application. See section 6, pages 13-23 of the application, and Tables 1 to 3 for an explanation of the testing methods and the results.

Please let us know if you can identify issues with the testing methodology or the results.

Identification of Adverse Effects

9. The applicant has identified potential adverse effects associated with the release of these two weevils (see section 6 of the application). In particular, the EPA would like any information you have in relation to the effects on valued ornamental *Berberis* species.
10. The EPA is also interested in any information you may have on adverse effects resulting from the displacement of native species within their native habitat, deterioration of natural habitats and the maintenance of New Zealand's inherent genetic diversity.

Please let us know whether you consider that there are additional adverse effects that we should be aware of.

When identifying adverse effects it is important that you provide us with reasons as to:

- What other adverse effects are *likely* to be caused by the release of *Berberidicola exaratus* or *Anthonomus kuscheli*;
- How *likely* these adverse effects are and their potential scale;
- How you think the adverse effects could happen (i.e. the series of events that would have to happen for the adverse effects to occur);
- Options and proposals for managing the adverse effects; and
- Any uncertainty you have on the scope of the information used to assess the adverse effects.

Positive Effects

11. We are interested in understanding all the possible positive effects associated with the release of *Berberidicola exaratus* or *Anthonomus kuscheli*.
12. The applicant claims that release of these two weevils will limit future invasion of pastoral land, and in the long term, may reduce the financial investment currently made by DOC, regional councils and land occupiers to mitigate the effects of Darwin's barberry; restore productive values on infested pastoral land; and protect and eventually restore native vegetation and ecosystems.

Please let us know whether you consider that there are additional positive effects that we should be aware of.

When identifying positive effects, it is important that you provide us with information on:

- Other positive effects *likely* to be caused by the release of *Berberidicola exaratus* or *Anthonomus kuscheli*.
- How *likely* these positive effects are and their potential scale;
- How you think the positive effects could happen (i.e. the series of events that would have to happen for the positive effects to occur);
- Options and proposals for ensuring the positive effects occur; and
- Any uncertainty you have on the scope of the information used to assess the positive effects.

Making a submission

We encourage you to make a submission, regardless of how much detail you are able to put in to it. When the submission period closes, all submissions will be summarised and made available to the decision making committee. You can also request a hearing if you would like to strengthen your submission in person before the committee.

If you have any questions, you can contact the applicant directly, as well as the EPA. The applicant can address any questions you have about the science of the application or the information provided, and the EPA can advise you on how to prepare your submission.

- Applicant contact: Randall Milne, email Randall.Milne@es.govt.nz or phone (03) 211 5115.
- EPA contact: Kate Bromfield, email Kate.Bromfield@epa.govt.nz or phone (04) 918 4848.

Declaration

This advice was produced by Kate Bromfield, Senior EPA Advisor and Geoff Ridley, Principal Scientist. All information presented in this report is true and correct to the best of our knowledge.

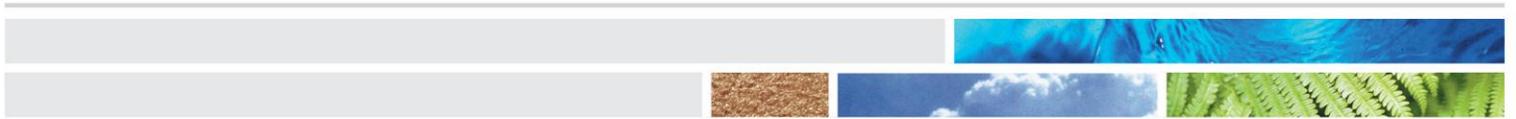
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