

Workshop Summary: Biological Control of Fireweed: Past, Present, and Future Directions

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Workshop proposal

Fireweed (common name in Australia and Hawaii) is in the genus *Senecio* (Asteraceae) from KwaZulu-Natal in South Africa. Two very closely related almost indistinguishable species are serious invasive and toxic weeds affecting livestock in grazing lands; *Senecio madagascariensis* Poir. is the weed in Australia, Hawaiian Islands, Argentina, Colombia, Brazil, Venezuela, Uruguay, and Japan, while *Senecio inaequidens* DC. (1837) is the species very widely distributed in Europe. Chemical and mechanical control measures are not effective or economically viable, and in Australia and Hawaii classical biocontrol is thought to be the only long-term solution. The workshop will address the weed status in various countries, review biocontrol efforts, and finding ways to enhance collaboration between researchers.

Workshop summary

This workshop was targeted around the attendance of affected ranchers from Hawaii so they would have an opportunity to understand the state of fireweed biological control in Hawaii and globally. It was attended by ranchers, state pest control officers, scientists from the Hawaiian Department of Agriculture working on fireweed biocontrol, other US biocontrol scientists and International scientists with experience in fireweed management. This included Terry Olckers (University of KwaZulu-Natal) who works on fireweed in its native range in KwaZulu-Natal in South Africa. About 25 people attended.

In the first section of the workshop three ranchers presented the problems that they are having with fireweed on Hawaii. This included the extent of the spread, the difficulties of control and the economic loss to their businesses. They fully supported the

development of biological control for fireweed in Hawaii. A lively debate about the fireweed problem in Hawaii ensued.

In the second section Mohsen Ramadan (HDA) presented the state of his research into potential biological control agents for fireweed in Hawaii. This included an overview of where fireweed comes from, a summary of his various exploratory trips to look for fireweed biological control agents and a presentation of all the species of interest he has found to date. He finished by presenting the risk assessment and host specificity testing work he has recently completed on the arctiid moth *Secusio extensa* (Butler), which has led to an application for release of this agent being submitted to APHIS. The ranchers were very pleased to meet Mohsen and asked him several questions about his work.

The third section was a lively debate about the likelihood of success of biological control of fireweed with many in attendance highly supportive of it as a

target based on past successes against similar weeds. This debate was led by George Markin (retired, ex-USFS) and Rachel McFadyen (retired, ex-DEEDI Australia) as staunch supporters. It finished with some discussion of existing work underway as part of the Australian fireweed biological control program presented by Andy Sheppard and Terry Olckers.

The final section of the workshop considered the process around the approval and release permit

application of *Secusio extensa* in Hawaii. Neil Reimer (HDA) presented where the regulatory process was with APIS and that, while there had been delays, a decision about the release permit was expected soon. Neil and Darcy Oishi (HDA) then led a discussion around how the ranchers might work with HDA and assist in lobbying indirectly USDA should this be necessary if the decision to release be delayed further.