

## Blackberry invasion

The five species of blackberry (local name: mora) are aggressive, invasive species that have had a negative impact on several Galapagos Islands. They compete with native and endemic species for light, water, and nutrients, and affect local agriculture. Eradication of blackberry is a major focus for the Charles Darwin Foundation (CDF) and the Galapagos National Park Service (GNPS).

### *Arrival in Galapagos*

Five species of Blackberry have been introduced to Galapagos over the last 40 years:

- *Rubus niveus*
- *Rubus glaucus*
- *Rubus ulmifolius*
- *Rubus adenotrichos*
- *Rubus megalococcus*

Hill Blackberry (*R. niveus*) was introduced for agricultural purposes to San Cristóbal in the 1970's and has spread to Santiago, Santa Cruz, and Isabela Islands.

Many bird species feed on the fruit and are responsible for localized spread. Most cases of dispersal between islands are thought to be due to deliberate introductions by people.

The other blackberry species have been introduced more recently and are restricted to relatively small areas at present.

### *Impact on Galapagos*

*R. niveus* is one of the worst weeds threatening the Galapagos National Park. It has invaded open vegetation, shrubland and forest alike. It forms dense thickets up to 4 meters high, replacing native vegetation, and threatening many rare endemic plants.

On farmland, *R. niveus* renders farmland useless and is difficult and expensive to control.

Although only found over localised areas at present, there is concern that the other four species of blackberry could become a significant problem too if they are not controlled.

### *CDRS research activities*

To help design an effective control strategy, CDRS have studied the biology of *R. niveus*, including flower and seed production, seed bank dormancy and longevity, and seed germination. Scientists have also

#### **CDF FOCUS: RESTORATION**



#### **Key Facts**

**Family:** Rosaceae

**Species:** *Rubus niveus*,  
*R. glaucus*, *R. ulmifolius*,  
*R. adenotrichos*, *R.*  
*megalococcus*

**Common name:**  
Blackberry, Mora

**Class:** Invasive

**Impact:** Replacing  
native and endemic  
vegetation, invading  
farmland

**Origin:** Asia (*R. Niveus*),  
Central to South  
America (*R. glaucus*, *R.*  
*adenotrichos*, *R.*  
*megalococcus*), Africa &  
Europe (*R. ulmifolius*)

**Description:** dense  
thickets up to 4m high

**Range:** San Cristóbal,  
Santiago, Santa Cruz,  
Isabela

**Action:** Eradication

researched the most effective method of controlling the plants.

The results indicate that *R. niveus* can produce fruit within three months of germination, and sets thousands of seeds per bush per year. Fresh seeds are dormant and do not germinate until after being buried in the soil for at least three months. They can remain viable for many years in the soil, making eradication a long-term project.

Under the right conditions of light and water, germination rate is high, and after encouraging the seeds to germinate, the seedlings can be sprayed with herbicide as part of an effective management program.

An information package aimed at local farmers and park staff has been prepared and distributed to give advice on control methods.

### *For the future*

CDRS scientists and field workers have joined forces with Galapagos National Park Service (GNPS) teams to eradicate four species of Blackberry from Galapagos, and to eradicate *R. niveus* from individual islands.

On going projects include:

- Eradicating *R. ulmifolius* and *R. glaucus* from Santa Cruz
- Eradicating *R. adenotrichos* from Isabela
- Eradicating *R. niveus* from Santiago.

The work doesn't finish when a species has been eradicated – the areas need to be monitored regularly to ensure the seed bank is also empty and that there is no reintroduction by birds or people.

Monitoring projects include:

- Monitoring the areas on Santa Cruz where *R. adenotrichos* and *R. megalococcus* have been eradicated.

Such projects highlight the importance of working together with local communities and the GNPS. Doing so will pave the way towards eradicating some of the islands' worst invasive plant species, as well as re-establishing the balance in favour of a harmonious relationship between local communities and the sensitive ecology of Galapagos.