

**INVASIVE SPECIES CONTROL PROJECTS (R1 SMALL GRANTS)
CY 2014 FINAL REPORT**

Project Title: Control of English Holly

Station: Hakalau Forest National Wildlife Refuge

Contact Person: Steve Kendall, Wildlife Biologist

Project Description: Hakalau Forest NWR (Hakalau) was established to conserve endangered forest birds and their habitats. Since establishment of the refuge there has been significant progress in forest restoration leading to increasing populations of native forest birds. However, these gains are threatened by invasion of exotic plants, animals and disease. English holly (*Ilex aquafolia*) was identified as a highest priority target invasive plant species in Hakalau Forest NWR's 2010 Comprehensive Conservation Plan (CCP). It is a tall shrub or small tree that can spread via seeds or vegetatively and can out-compete native species. Holly was originally planted around ranch buildings located in this area prior to establishment of the refuge. Currently it is mostly confined to the southwest portions of the refuge, but is spreading to other areas. English holly produces berry which are eaten by native and non-native birds, leading to dispersal of seeds into previously non-invaded areas. Hakalau Forest NWR is one of few places where English holly is found in Hawaii, so eradication here is crucial not only for the refuge, but for other native ecosystems in the state.

Invasive Species Targeted: English holly (*Ilex aquafolia*)

Project Completion Date or Estimated Completion Date: 8/5/2015

Project Results: We added funds from the Invasive Species Small grant to an existing contract for Florida blackberry and English holly control, supported with U.S. Forest Service Forest Health funds. The contractors split control efforts between English holly and blackberry. Most of the holly control thus far this year has focused in the area of highest concentration in the Pua Akala management unit of the refuge (see map). This year methods were modified requiring 100% removal of all plants, i.e. no foliar herbicide treatment. Younger seedlings were pulled out. Larger plants, tree form or too large to pull out by roots, were cut and stumps were treated with Garlon 3A. If possible roots are dug up and treated as well. This intensive treatment increases the amount of labor required, but is expected to significantly increase the effectiveness of eradication efforts. Work is ongoing, but will be completed in 2015. Thus far approximately 300 acres have been treated.

Number of Acres Treated: 300

Number of Acres Inventoried and/or Mapped: N/A

Number of Acres Restored: N/A

Total Grant Amount: \$37,000

Breakdown of Expenditures:

Category	Total \$ Spent	% of Total Grant
Equipment/Supplies		
Chemical		
Biocontrol Agents		
Travel		
Biotech/Contractor Salary	\$37,000	100
Restoration Materials		
Other (Describe)		
TOTAL		

