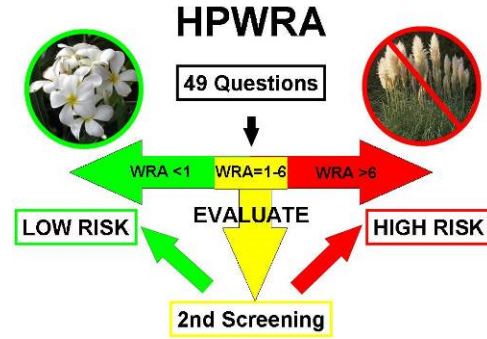


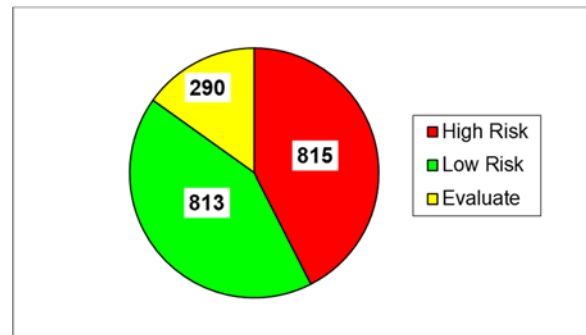
Title: Continued Support of the HPWRA
Organization: Hawaii-Pacific Weed Risk Assessment (HPWRA)
Award(s): \$92,000.00



Introduction: The Hawaii-Pacific Weed Risk Assessment (HPWRA) system is an internationally recognized screening tool that rates a plant’s potential to become invasive by answering 49 questions about its biology, ecology and history of invasiveness elsewhere. The answers generate a score that predicts a plant’s likelihood to be invasive in Hawaii or other tropical Pacific islands. For 16+ years, the HPWRA system has been an important tool for the promotion of responsible importation and planting decisions and has provided information necessary for preventing new invasive plant species from becoming unknowingly established and disseminated throughout the islands. The screening system addresses several goals and strategies developed by the 2015-2020 strategic planning process and recommendations of the Regional Biosecurity Plan for Micronesia and Hawaii and increases the capacity and collaboration within the Prevention, Established Pests, and Public Outreach Working Groups. The HPWRA program is available to international, federal, state, and county agencies and private sectors to use as a preventative measure to assess the risk of introducing or planting a species in the country, state, or county. In accordance with these objectives, a Weed Risk Assessment Specialist has been funded by the Hawaii Invasive Species Council to the amount of \$92,000 in 2017.

Achievements in 2017

[Deliverable 1] 100 New or Revised Assessments Completed and Entered into the WRA Database: The HPWRA continues to provide new and to update old assessments, both for species already present in the Hawaiian Islands, as well as for new introductions. This information is summarized and disseminated to the requesting individual or agency via direct correspondence, and to the public and land management agencies through technical and general publications, websites, public presentations, and other outreach activities. From January to December 2017, 171 assessment requests were received, and 117 assessments (101 new and 16 revised) were completed.



1,918 Risk Assessments by Category

As of December 31, 2017, 1,918 assessments have been completed and assigned to the following categories:

- High Risk (815 plants): Predicted to become invasive in Hawaii or Pacific Island ecosystems
- Low Risk (813 plants): Not predicted to become invasive
- Evaluate (290 plants): Needs more information to make a prediction of invasiveness

Assessment requests in 2017 originated from members of the public as well as individuals associated with island invasive species committees, county, state and federal government agencies, private businesses, nurseries and botanical gardens, university researchers and extension agents, and

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international invasive species organizations, among others. The following is a list of highlights and accomplishments during this time period:

Island Invasive Species Committees (ISCs), Early Detection (ED) Teams & Conservation Organizations: The HPWRA produced fifty species assessments for Invasive Species Committees and conservation organizations to aid in early detection and prioritization for control of potentially invasive plants. Assessments provide scientifically researched information on a species' potential invasiveness to Hawaii and other Pacific Islands and a concise, consolidated source of current references useful to assist in management decisions. Of note were fifteen assessments completed for the KISC Early Detection program. The assessments provided supplemental information for KISC's detailed prioritization reports and will be used as part of the process to determine which species should become future KISC targets. Of further note were two assessments provided to the Hawaii Department of Transportation (HDOT) landscape architect for proposed landscaping plants along Honolulu Authority for Rapid Transportation (HART) rail rights-of-way. Both plants were rated Low Risk and were subsequently approved as appropriate landscaping selections by HDOT and HART staff.

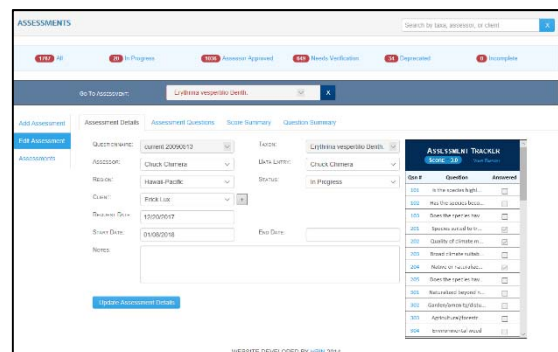


50 Assessments requested in 2016 for ISCs, ED Teams, & Conservation Organizations

Other Public and Private Organizations, Individual Plant Growers, and Landscape Professionals: The HPWRA program receives screening requests from plant growers, landscape professionals, and both public and private individuals and institutions including the National Tropical Botanical Garden (NTBG), Honolulu Botanical Garden, University of Hawaii faculty and students, and others. Assessments are also provided for plants submitted to the Plant Pono liaison on behalf of the landscaping and nursery industries. Sixty-seven such assessments were completed in 2017. Of note were fifteen species of ornamental plants screened for nurseries participating in the Plant Pono Endorsement program, including ten from Sustainable Bioresources, LLC, a small nursery conducting research and development of plant cultivars for use in sustainable agriculture and new, science based applications for materials derived from these plants. As part of this program, nurseries agree to request a risk assessment when introducing a new plant species, and to discontinue or avoid using plants identified as having a high risk of becoming invasive. Other assessments of interest include twenty-eight rare or novel plants introduced for cultivation and conservation purposes at the National Tropical Botanical Gardens on Kauai. NTBG has been submitting plants for screening prior to cultivation since 2013.



[Deliverable 2] HPWRA Database Updates and Modifications: Since August 2017, Brylian Foronda, HBIN Database Programmer, has been updating the



HPWRA Database Interface

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code base to the most recent versions of Bootstrap (the open-source front-end web framework for designing websites and web applications). Specifically, the Bootstrap codebase has been overhauled from v 2.0 to v 3.0, and some minor bugs have been fixed. In general, work has focused primarily on the user interface. In addition, a beta query system using Kohz EasyQuery is being developed and may be available for testing in the first quarter of 2018.

[Deliverable 3] Public presentations and Outreach

(A minimum of two public presentations promoting and explaining the WRA system & process given during FY17): To promote awareness and encourage use of the HPWRA system, the WRA Specialist is involved in additional outreach activities with partner agencies and interested parties. The following highlights outreach activities and efforts from January – December 2017:

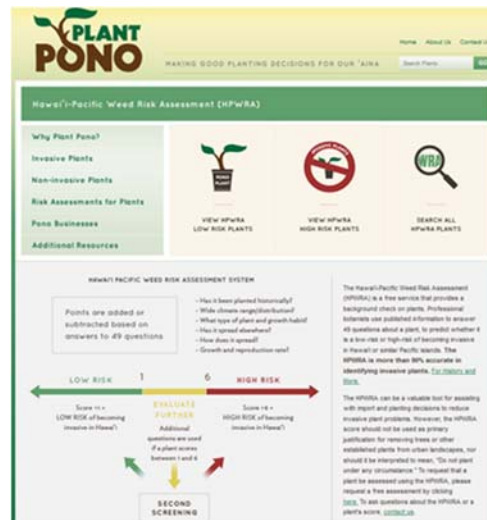
- 19 Jan: HISC Brown Bag series presentation: Getting Reacquainted with the HPWRA: An Overview of Recent Applications & Accomplishments
- 31 Jan: Two presentations to the West Hawai'i Master Gardeners 2017 class:
 - Weed Risk Assessment. What to Look for & Avoid When Selecting Non-Invasive Plants for Forestry, Gardening & Landscaping (25 attendees)
 - A whirlwind review of Hawaii's native plant taxa from A (*Abutilon*) to Z (*Zanthoxylum*) (25 attendees)
- 29 Mar: Presentation to Maui Master Gardeners 2017 class: A whirlwind review of Hawaii's native plant taxa from A (*Abutilon*) to Z (*Zanthoxylum*) (20 attendees)
- 31 Aug: Native garden activity with Kamehameha School students
- 23 Sep: WRA presentation to Hoike Teacher Workshop (8 participants)



HISC Brown Bag Presentation, Jan 19

[Deliverable 4] hpwra.org & Partner Website Updates

(100 newly completed or revised assessments, and accompanying images will be uploaded to the HPWRA and Plant Pono websites): All new and previously completed assessments continue to be posted at hpwra.org. This site allows users to download individual assessments, as well as a regularly updated list of all assessments completed to date. From January 1, 2017 to December 31, 2017, the website received 1,852 visits and 4,424 page views, demonstrating continued interest and need for risk assessment predictions to make informed planting decisions. In addition, all 1918+ assessments to date have been uploaded and posted to the Plant Pono website, a more user-friendly, non-academic planting site with HPWRA-generated content.



WRA Page (www.plantpono.org)

Summary of website developments (January 2017 – December 2017):

- 1,918 assessments posted to hpwra.org (<https://sites.google.com/site/weedriskassessment/home>)
- 1,918 assessments posted to Plant Pono (www.plantpono.org/)
- 108 plant images uploaded to Plant Pono website
- HPWRA Project website (<https://sites.google.com/site/hpwraproject/>) provides access to the work calendar, quarterly and annual reports, and other HPWRA-related documentation.

[Deliverable 5] Documentation of all WRA Specialist responses to public inquiries about the invasiveness of plants, plant identifications, and plant assessment results: The WRA Specialist, stationed on Maui, responded to 35 plant-related calls, providing information on identification, impacts and control of invasive, non-native plants.

Other Activities in 2017

The WRA Specialist has participated in or contributed to a number of activities pertaining to invasive species and conservation in the Hawaiian Islands. A complete list of such activities is itemized in the HPWRA quarterly reports, and is available at the HPWRA Project website ([Project Documents and Links](https://sites.google.com/site/hpwraproject/)). A few highlights from 2017 are as follows:



LICH Landscape Hawaii Jan-Feb 2017

- 05 Jan: Wrote article for LICH Landscape Hawaii Jan-Feb 2017 edition: “Introduced Plants in the Hawaiian Islands - Some Pros and Cons of Dynamic Diversity”
- 06 Jan: Met with Hōkū Nui Maui land management group about native plantings on property
- 06 Mar: HISC newsletter submission (HPWRA update)
- 03 Apr: Provided input on low-risk pollinator-friendly plants for CTAHR program
- 24 Apr: Met with Jennifer Suzuki & Waena Intermediate School students about ROD video project
- 05 May: Peer review for Plant Ecology journal
- 08 Aug: Attended presentation on rat lungworm disease
- 30 Aug: Received & screened submissions for East Maui Watershed Partnership art show
- 05-06 Sep: Assisted with *Dubautia* pollination study with UH Botany staff
- 27 Sep: Assisted PEPP & NHPS staff with *Scaevola coriacea* weed assessment & control
- 13 Nov: Organized and led meeting of Maui Nui ROD Working Group
- 29 Nov: Participated in ROD seed banking workshop
- 01 Dec: Attended Maui Nui Natural Area Weed Management Forum
- 04 Dec: Attended Hawaiian Islands Climate Synthesis Contributors Webinar
- 07 Dec: Judged Iao Science Fair



Dubautia pollination study, Sep 5-6