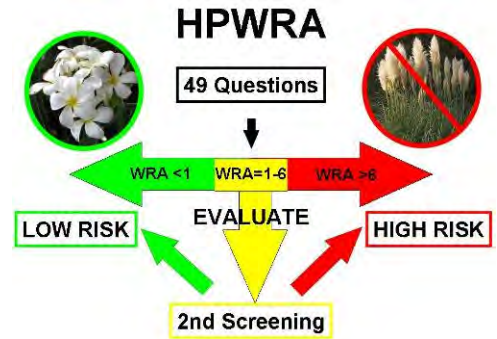


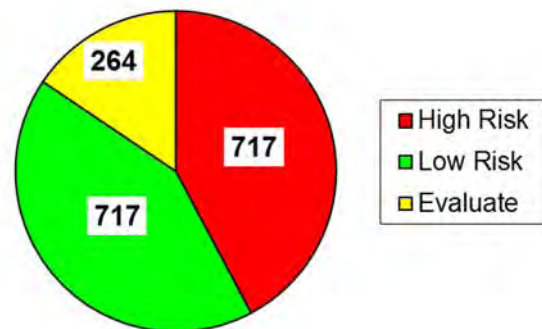
Title: Continued Support of the HPWRA
Organization: Hawaii-Pacific Weed Risk Assessment (HPWRA)
Award(s): \$77,192



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. The HPWRA aids in identification of invasive plants before they impact Hawaii’s economy, ecology or human health and supports Goal one of the Prevention working group, to “review risks of pest/invasive species entry into the state”. The HPWRA also addresses the Prevention objectives to “develop a comprehensive ‘approved planting list’ to ensure that invasive species are not being planted in State projects or by any state contractors, e.g. screened by the Weed Risk Assessment protocol” and to “develop collaborative industry guidelines and codes of conduct, which minimize or eliminate unintentional introductions.” In accordance with these objectives, a Weed Risk Assessment Specialist has been funded by the Hawaii Invasive Species Council to the amount of \$77,192 in 2015.

Achievements in 2015

[Deliverable 1] 100 New or Revised Assessments:
 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 2015, 152 assessment requests were received, and 111 assessments (94 new and 17 revised) were completed.



1,698 Risk Assessments by Category

As of December 31, 2015, 1,698 assessments have been completed and assigned to the following categories:

- High Risk (717 plants): Predicted to become invasive in Hawaii or Pacific Island ecosystems
- Low Risk (717 plants): Not predicted to become invasive
- Evaluate (264 plants): Needs further information to make a prediction of invasiveness

Assessment requests in 2015 originated from members of the general 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 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 Teams & Conservation Organizations: The HPWRA produced forty-three species assessments for Invasive Species Committees and conservation organizations to aid in early detection and prioritization for control of potential 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. The HPWRA is also utilized as a component of plant species prioritization efforts by resource managers in the islands. For example, the Office of Mauna Kea Management (OMKM) utilizes HPWRA scores and ratings to prioritize management of incipient and established non-native plants within the Mauna Kea Science Reserve. OMKM staff requested assessments for 31 plants included in their management plan that had not already been screened. To date, 19 assessments from this list have been completed. Work on their request will continue into 2016.



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, 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 such assessments were completed in 2015. Of note were the nineteen species of succulent plants screened for a Big Island nursery participating in the Plant Pono Endorsement program. 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 two for a private individual on Hawaii island interested in cultivating host plants for monarch butterflies. Both species were identified as high risk, prompting the individual to search for low risk alternatives to use in his landscape plantings.



[Deliverable 2] Quarterly and Annual Reports: Quarterly and annual reports documenting HPWRA progress and accomplishments are publicly available through the HPWRA Project website. A synopsis of daily work activity can also be viewed through a project calendar hosted at the website: (<https://sites.google.com/site/hpwraproject/>).

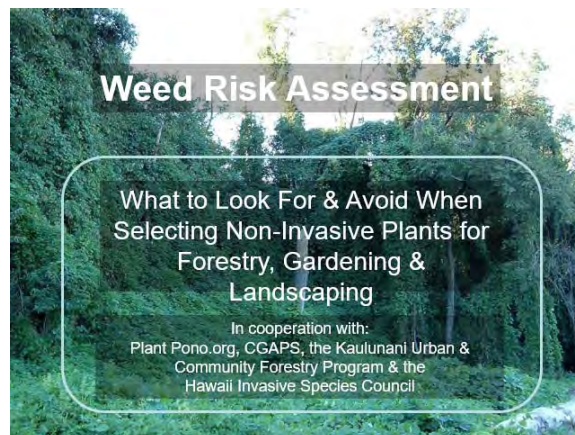
[Deliverable 3] Continued testing & transition to the new web-based WRA database: In collaboration with staff of the Hawaii Biodiversity Information Network (HBIN), the web-based weed risk assessment database was fully implemented and integrated into the HPWRA program in 2015. The database provides an improved interface for data entry and generates more professional reports of the completed assessments. A meeting with HBIN staff in January discussed a plan and priorities for further development of an enhanced query feature. Although testing was expected to begin in 2015, HBIN staff

were unable to devote any additional time on development of the query tool during the calendar year. Development of such a tool continues to be a priority for the HPWRA program to increase the utility and accessibility of information entered into the database.

[Deliverable 4] Public presentations and Outreach:

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 2015:

- 02 Feb: Native plant presentation to Kona Master Gardeners class, Kona, HI (20 attendees)
- 02 Feb: WRA & invasive plant presentation to Kona Master Gardeners class, Kona, HI (20 attendees)
- 12 Aug: WRA Workshop for HDOA staff, Honolulu (25 attendees)
- 18 Sep: WRA updates and accomplishments, presented at MISC meeting, Maui (15 attendees)
- 15 Oct: “*Bocconia frutescens*: Biology, Ecology & History of Invasion in the Hawaiian Islands” given at Maui Natural Areas Weed Forum, Kahului, Maui



Kona Master Gardeners Presentation, Feb 2

One outreach activity of note was the WRA workshop conducted at the Plant Quarantine Branch of the Hawaii Department of Agriculture, Honolulu, on August 12. Participants from Oahu-based HDOA staff were instructed in the background, history and utilization of the weed risk assessment system so that they might better understand how the HPWRA can complement and facilitate their work in PPQ. In addition, the presentation detailed how the HPWRA will be utilized in the development of a list of offshore and incipient plants proposed for possible future restriction of sale or entry into the islands.

[Deliverable 5] hpwra.org & Partner Website Updates:

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, 2015 to December 31, 2015, the website received 2,442 visits and 5,090 page views, demonstrating continued interest and need for risk assessment predictions to make informed planting decisions. In addition, all 1698+ 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 2015 – December 2015):

- 1,698 assessments posted to hpwra.org (<https://sites.google.com/site/weedriskassessment/home>)
- 1,698 assessments posted to Plant Pono (www.plantpono.org/)
- 139 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 6] Respond to public inquiries directed to Maui Invasive Species Committee (MISC) about invasiveness of plants: The WRA Specialist, stationed on Maui, responded to 25 plant-related calls, providing information on identification, impacts and control of invasive, non-native plants.

Other Activities in 2015

The WRA Specialist has participated in or contributed to a number of activities pertaining to invasive species and conservation in the Hawaiian Islands, including the following:

- 02 Jan: Meeting with HBIN staff to discuss plans for query features to be developed for the HPWRA database
- 27 Jan: Participated in on-line webinar: "Pathway Risk Assessment: Stopping Invasions Before They Start" hosted by the Environmental Law Institute (ELI) and the National Invasive Species Council (NISC)
- 03 Feb: Meeting with Plant Extinction Protection Program staff to discuss status of *Mucuna* discovery in Haiku, Maui
- 12 Feb: Conducted plant survey in Hana Miconia core in preparation for boomspray herbicide trials
- 13 Feb: Wrote article on invasive aquatic plants for LICH Landscape Hawaii magazine (March-April edition)
- 25 Feb: Participated in on-line webinar: "Invasive Plant Listing: Taking It Up a Notch with a National Standard" hosted by ELI and NISC
- 26 Feb: Participated in on-line webinar: "Invasive Species and Climate Change: Addressing the Intersecting Drivers of Ecosystem Transformation" hosted by ELI and NISC
- 20 Mar: Attended MISC strategic planning meeting
- 27 Mar: Discussion of weed management strategies with Ian Davidson, Agronomy Manager of Hana Ranch
- 27 Mar: Provided comments on Honolulu Botanical Gardens draft plan for Invasive Species Policy and Management Practices
- 20 Apr: Attended meeting on the offshore/incipient plant list project supported by CGAPS
- 21 Apr: Met with Shahin Ansari to go over the WRA procedures & protocols as they will be applied to the Offshore/Incipient plant project
- 28 Apr: Managed heli-ops for MISC field crew returning from backcountry day trip. Provided plant identification and answered invasive plant questions directed to MISC PR personnel



**INVASIVE AQUATICS
GONE WILD**

BY CHUCK CHIMERA

For those of you who are fans of the right movie "Invasion!" you know that there are important rules to follow when taking care of the Miconia, a rare tree of Maui. Here, the creators kept as much of the movie's spirit as possible to give you a sense of how to best care for the Miconia and what to do if you see one growing in the wild. The original movie of this invasion and the sequel are both available on DVD. If you have not seen the movie, stop reading.

the article, and what it means to be a member of the Maui Invasive Species Council. The article, "Invasive Aquatics Gone Wild" is a special feature in the March-April edition of LICH Landscape Hawaii magazine. The article, "Invasive Aquatics Gone Wild" is a special feature in the March-April edition of LICH Landscape Hawaii magazine. The article, "Invasive Aquatics Gone Wild" is a special feature in the March-April edition of LICH Landscape Hawaii magazine.

It's not just that the mosquitoes of Maui are getting wilder into the air, mosquitoes, etc. to get it really, how these insects.

So what does a good night's sleep mean? A good night's sleep means that you have to be with you in a quiet place. It's not just that the mosquitoes of Maui are getting wilder into the air, mosquitoes, etc. to get it really, how these insects.

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**LICH Landscape Hawaii Magazine
– March/April 2015**

- 06 May: On-line attendance of CGAPS Rapid 'Ōhi'a Death meeting/presentation
- 19 May: Met & discussed weed control priorities & options with Hana Ranch operations manager
- 20 May: Follow-up correspondence & weed information provided to Hana Ranch
- 21-22 May: Preparation of datasheet on *Heterotheca grandiflora* for CABI Invasive Species Compendium
- 28 May: Preparation of datasheet on *Neonotonia wightii* for CABI Invasive Species Compendium
- 29 May: Preparation of datasheet on *Pluchea carolinensis* for CABI Invasive Species Compendium
- 29 June: On-line attendance of HISC resource working group meeting
- 05 June: Correspond with Mike Donoho, Director of Natural Resources of Pulama Lanai, regarding biofuel crop selection
- 30 June: Hana Ranch *Solanum torvum* herbicide trials with James Leary & Ian Davidson
- 21 Jul: Provided comments on potential invasiveness of plants highlighted in lei making book; provided information on invasiveness of *Santalum album*
- 22 Jul: Provided comments for Office of Maua Kea Management weed management list
- 05 Aug: Attended Hawaii Conservation Conference in Hilo
- 18 Sep: Attended MISC early detection meeting
- 15 Oct: Attended & presented at Maui Natural Areas Weed Forum in Kahului, Maui
- 11 Nov: Participated in silversword monitoring at Haleakala National Park with UH Botany staff
- 03 Dec: Participated as a judge at the Iao Elementary School Science Fair
- 04 Dec: Peer-reviewed manuscript submitted to Biotropica on Lantana invasion
- 11 Dec: Attended meeting on Rapid 'Ōhi'a Death



**Presentation at Maui Natural Areas
Weed Forum, Oct 15**



***Solanum torvum* herbicide trials, June 30**

For more information, please contact: hpwra@yahoo.com or visit hpwra.org