Executive Summary of the Petition for State Restricted Plant Rules
November 21, 2018

When Miconia was first introduced to Hawai‘i in 1957, there were limited resources available to allow better import decision-making and no regulations existed that could restrict the importation of a plant into Hawai‘i because of its tendency to be invasive. Today, Miconia has become established on most of the main Hawaiian Islands and is recognized as one of the world’s 100 Worst Invasive Species by the International Union for the Conservation of Nature (IUCN). We now have the non-regulatory Hawai‘i-Pacific Weed Risk Assessment (HPWRA) which provides an assessment of the likelihood of a plant becoming invasive in Hawai‘i, and has been shown to be more than 95% accurate, but we still lack a regulatory pathway to identify and prevent the importation of the next Miconia—that is, the Hawai‘i Department of Agriculture (HDOA) does not have administrative rules for restricting the domestic importation of invasive plants.

To address this, the Coordinating Group on Alien Pest Species (CGAPS) will be petitioning the Board of Agriculture (BOA) to consider the addition of a new chapter in the Hawai‘i Administrative Rules to create rules regarding the listing (and de-listing) of plants to be restricted for import and sale, called the Restricted Plant Rules, which implement the Plant Import Statute, HRS § 150A-6.1. CGAPS will also be petitioning the BOA to adopt a proposed list of plants to be restricted from importation into Hawai‘i, except by permit for research or similar purposes.

There have been questions about the difference between the proposed Restricted Plant Rules and the existing State Noxious Weed Rules. The proposed Restricted Plant Rules would allow the listing of invasive or otherwise harmful plant taxa to restrict their importation into the State and the ability for HDOA to regulate or prohibit the sale of specific plants on the list. The Noxious Weed Control statutes (HRS § 152-1 to 6) govern the movement of listed noxious weeds within the state by identifying areas free or relatively free of those noxious weeds for the purpose of restricting a noxious weeds’ introduction or spread. There are 97 plant species and taxon listed as noxious weeds, but the majority are already present in Hawai‘i and well-established in some areas.

In 2008, the State Legislature amended the Plant Import Statute with the intent of clarifying that invasive plants may be restricted from importation and that the sale of specific plants on the restricted plant list may be regulated or prohibited. The same legislation also designated the list of Noxious Weeds as Restricted Plants to regulate their importation and sale under the Plant Import Statute.

In accordance to HRS § 150A-6.1, the Restricted Plants Rules require an importer to obtain a permit for the importation of a restricted plant. The draft proposed rules outline the process to obtain a permit and HDOA’s authority to oversee and enforce any violations to that permit. The proposed Restricted Plant Rules mirror the existing Animal Import Rules, and to a minor extent, the Microorganism Import Rules. Restricted plant would be defined in the rules as:

1. specific plants or plants parts that may be detrimental or potentially harmful to agriculture, horticulture, the environment, or animal or public health; or
2. that spread or may be likely to spread an infestation or infection of an insect, pest, or disease that is detrimental or potentially harmful to agriculture, horticulture, the environment, or animal or public health; and
3. plants designated by rule as noxious weeds in HAR Chapter 4-68 would be designated as restricted plants.

In addition to the proposed new rule, CGAPS is also petitioning for the addition of a list of plant species to be considered for import restriction. With funding from Hau'oli Mau Loa Foundation, CGAPS contracted Shahin Ansari (PhD botanist & former HPWRA screener) who compiled the list through a multi-step, science-based approach, including:

- gathered an initial list of plants that are on invasive or noxious weed lists of other states and several nations; then,
- assessed through online plant forums, ornamental plant trade publications, and similar sources to assess if they could be considered active in trade, thus, more likely to be moved by people; then,
- verified that each plant species was not already present in Hawai‘i, or that may be present in extremely limited numbers and locations (verified through the Bishop Museum Herbarium, other botanical records, and early detection botanists and Invasive Species Committees in each county);
- screened using the HPWRA and predicted to be high-risk for becoming invasive in Hawai‘i.

From an initial list of more than 1,000 plants, the proposed species for listing on the Restricted Plant List includes 36 plant species. See Appendix A for the proposed list of restricted plants and Appendix B for the references that were used in the listing process.

The proposed Restricted Plant Rules and List are the culmination of more than a decade of work by CGAPS and its partners. Part of the work included meeting with participants of nursery and other plant industry associations statewide, biofuel and forestry researchers, conservation organizations, and relevant state and federal agencies. CGAPS is aiming to submit a petition package to the Board of Agriculture by December 15th to meet requirements for being placed on the agenda for the BOA meeting on January 22, 2018. Here are three ways that you or your organization could be involved:

- if you support the idea of being able to restrict the importation of certain invasive or harmful plants, and the initial proposed list, we could add your organization to the CGAPS petition letter (contact us by 12/5/18); or,
- send us a letter of support to submit with our packet (we must receive by 12/5/18); or,
- once the petition has been scheduled and the BOA meeting agenda is available (usually one week prior to the meeting date, monitor this page for the agenda http://hdoa.hawaii.gov/meetings-reports/), you can submit written testimony and oral testimony according to the instructions on the agenda.

The petition process is one of the most transparent ways to engage in the rule-making process, allowing ample opportunity for public comment throughout the process. For more information or to ask questions about this project, please feel free to call or email CGAPS staff: CGAPS Planner Chelsea Arnott, carnott@hawaii.edu, or CGAPS Program Manager/PIO Christy Martin, (808) 722-0995, christym@rocketmail.com.
Proposed list of plants to be restricted from importation into Hawai'i (except by permit)

The Coordinating Group on Alien Pest Species (CGAPS) has compiled a list of plant species proposed for domestic import restriction into Hawai'i. These species are considered pests and are regulated in other states or countries, they are not documented or known to occur in Hawai'i, and are considered high-risk (scored 6 or above) by the Hawai'i-Pacific Weed Risk Assessment (HPWRA - see score in red).

**Barleria prionotis**  
**Procupine flower [15]**  
Procupine flower is a fast-growing perennial plant native to India. It thrives in open, disturbed areas like pastures and along roads. It can spread through seeds and vegetatively, forming thickets that can impede movement of stock, restrict waterways, and suppress native plants. It is on the alert list for environmental weeds in Australia.

**Berberis buxifolia**  
**Magellan Barberry [7.5]**  
Magellan Barberry is an evergreen shrub native to South America. *Berberis buxifolia* and *B. darwinii* are among the top twelve invasive plants on the Falkland Islands. Risk assessments scored them as high-risk because of their ability to out-compete native flora, reduce agricultural productivity and the potential to cause land management problems.

**Bomarea multiflora**  
**Trailing lily [10]**  
Trailing lily is a vine native to Colombia and Ecuador. It has naturalized in New Zealand where it is reported to be invasive because of the potential to suppress growth and smother vegetation. It can spread by seeds and also vegetatively by suckering. The fruit is fleshy and can be dispersed by birds. It is also difficult to control with herbicides.

**Brachiara paspaloides**  
**Thurston grass [14.5]**  
Thurston grass is used as a lawn or turf grass. It is considered a weed in disturbed areas and is listed as invasive in Fiji, New Caledonia and as a weed of vegetable crops in the Pacific. A fodder grass, but when ingested over several days it is known to cause severe intoxication in cows.

**Brillantasia lamium**  
**Tropical giant salvia [16]**  
Tropical giant salvia is native to central and western Africa. It is a large branching herbaceous plant. The seeds easily attach themselves to animals and vehicles to be dispersed. It can form large, monotypic stands and has become problematic in Australia where it has been targeted for eradication.

**Carex flagellifera**  
**Weeping brown sedge [6]**  
Native to New Zealand, weeping brown sedge, is regarded as an environmental weed in Tasmania because it has the capacity to invade pastures, native grasslands and woodlands. Within its native range in New Zealand, it is also regarded as a significant weed of pastures. It is tolerant of shade and is not known to be grazed on by livestock.

**Calicotome spinose**  
**Spiny broom [15]**  
Spiny broom is a woody shrub in the Fabaceae family. It is native to the western Mediterranean and has been introduced to both Australia and New Zealand where it can form dense thickets, crowding out native vegetation. It is also nitrogen fixing so it can change nutrient levels in the soil.

**Cassinia arcuata**  
**Biddy Bush [7]**  
Biddy bush is a shrub in the Asteraceae family. It is endemic to southern Australia though it is considered a noxious weed in certain provinces. It can take over open and disturbed areas and the seeds are wind dispersed. It may also be toxic to sheep.
**Cecropia schreberiana**  
Trumpet tree [9]  
Trumpet tree is native to the Antilles and northern South America. It is considered a pioneer species that is able to come in after large disturbances and outcompete native species. It can form monotypic stands in areas outside of its native range.

**Gomphocarpus frutescens**  
Swan Milkweed [27]  
Swan Milkweed is native to Africa and the Arabian Peninsula. This species reproduces by seed and suckers. Seeds are most commonly spread by wind and water. Widely naturalised in Australia, it is considered a weed. It has also naturalized overseas in many other parts of the world (e.g. New Zealand, the Azores, India and Mauritius).

**Chrysanthemoides monilifera**  
Boneseed [14.5]  
Boneseed is native to South Africa and eastern Zimbabwe. It’s a serious weed in Australia and New Zealand where it grows in a variety of ecosystems, even rocky outcrops. Fast growing and maturing, it quickly forms dense cover that shades out everything. Each plant can produce thousands of seeds each year which form a persistent seedbank.

**Clematis flammula**  
Sweet virgin’s bower [8]  
Native to the Mediterranean, *C. flammula* is a temperate liana. It is a weed of natural areas in New Zealand where it is reported to smother and kill all plants to medium canopy height and prevent native species from establishing. Stems take root where they touch the ground and seeds are dispersed by wind and water.

**Cotoneaster glaucophyllus**  
Gray leaf cotoneaster [12]  
Gray leaf cotoneaster is native to eastern Asia. It is invasive in New Zealand and Australia. It invades variety of ecosystem types forming thickets, shading out native vegetation and impeding the regeneration of overstorey plants. It is also reported to be invasive in South Africa. Plants set seed without pollination and the seeds are spread by birds. Fruits are poisonous to humans.

**Cotoneaster salicifolius**  
Spreading willow-leaf cotoneaster [9]  
Native to China, spreading willow leaf cotoneaster is a ornamental ground cover. It is naturalized in Europe and also in cultivation in New Zealand, Australia (listed as a weed), and California. They can be poisonous to animals and are also toxic to humans. In Netherlands, it is prohibited to plant *C. salicifolius* because they are host plants for fireblight, a bacterial disease in fruit trees.

**Festuca gautieri**  
Bearskin festuca [13]  
Bearskin festuca, native to the Mediterranean, is a perennial tussock grass. Introduced to Australia as an ornamental, it has not yet escaped cultivation, but is banned from sale and distribution because of its low palatability to livestock and is likely dominate pastures. Bear-skin can spread vegetatively or by seed.

**Glossostigma diandrum**  
Mudmats [8]  
Mudmats is an aquatic plant that can form dense mats in waterbodies. It can grow attached to rocky substrates along lakes, ponds, streams, and rivers. It's self-compatible and seeds spread by water and wind, also spreads vegetatively. Regulated in Washington state as an invasive plant.

**Gunnera manicata**  
Brazilian giant rhubarb [8]  
*G. manicata* is native to Brazil. Its large size and distinctive leaves make it a popular ornamental. While the invasiveness of *G. manicata* is in unknown in many regions, its similarity in weediness to *G. tinctoria* has caused both species to be considered for management control in New Zealand.

**Kennedia rubicunda**  
Dusky coral pea [8]  
Native to eastern Australia, dusky coral pea is regarded as an environmental weed in Tasmania and parts of Victoria outside its native range. Its seeds spread by birds, water, and also vegetatively. It can form a persistent seed bank and the seeds are reported to survive fire. Roots can contain nitrogen fixing bacteria that can alter soil.
**Lachenalia reflexa**  
Yellow soldier [7]  
Yellow soldier is native to the South Africa. It has escaped cultivation and naturalized in Australia where it is a problem weed. Negative impacts include loss of plant biodiversity, destruction of habitat and damaging resources for native animals and reduction in recreational enjoyment.

**Melianthus comosus**  
Tufted honey flower [8]  
Tufted honey flower is native to South Africa. Originally promoted as an ornamental species, it has naturalized in Australia where it is a weed of pasture-land and can also invade waterways. All parts of the plant are toxic to animals and can cause death within hours of ingestion. It is also known to be toxic to people.

**Moraea ochroleuca**  
Cape tulip [9]  
Cape tulip is native to South Africa. Five species of the Moraea genus are considered possible invasive pests and are currently listed as federal noxious weeds by the U.S. but not M. ochroleuca. This species possesses an unpleasant smell, and is poisonous to mammals, and also extremely toxic or causes allergies to humans.

**Nymphoides geminata**  
Yellow water snowflake [12]  
Yellow Water Snowflake is an aquatic plant native to Australia. It is listed as a prohibited species in South Africa and New Zealand. The leaves prevent sunlight from reaching other plants, inhibiting photosynthesis. It is known to grow very quickly, forming dense mats that fill waterways altering ecosystems and blocking access.

**Nypa fruticans**  
Nipa palm [9]  
Nipa palm is mainly found in the equatorial zone. *N. fruticans* displaces native mangrove vegetation throughout the Niger Delta and in Cameroon and forms dense monospecific stands that out-compete native species. Areas that are invaded by nipa palm are more at risk of erosion. Dense mats also impede fishing, thus having economic impacts.

**Onopordum acaulon**  
Stemless thistle [13.5]  
Native to Africa and Europe, stemless thistle is naturalized in Australia and is a prohibited species in New Zealand where it is recognized as an agricultural weed. It is rarely eaten by stock, but when they do, they suffer from impaction causing liver and kidney damage. In Australia it is also listed as a significant environmental weed.

**Opuntia robusta**  
Silver dollar plant [8]  
Native to Mexico, silver dollar plant has sharp spines up to 5 cm long. It is a weed in south-western Australia. It most commonly infests pastures, granite outcrops and open woodlands and is listed as a priority environmental weed in four Natural Resource Management regions in Australia. The fruit are bird dispersed and can also spread vegetatively.

**Pelargonium alchemilloides**  
Garden geranium [7.5]  
Native to eastern and southern Africa, *P. alchemilloides* is a low-growing, long-lived, herbaceous plant and considered an environmental weed in Western Australia. It is on the Alert List for Environmental Weeds, a list of non-native plants that threaten biodiversity and cause other environmental damage. It has the potential to seriously degrade native ecosystems.

**Plectranthus ciliatus**  
Speckled spur flower [8]  
Speckled spur flower is an evergreen perennial ground cover. Native to Africa, it prefers damp and shady environments. It is invasive in New Zealand where it spreads vigorously via runners under the canopy forming thick mats that smother small plants and suppress seedling growth.

**Psoralea pinnata**  
Daily pine [9]  
*P. pinnata* is a shrub occurring in riparian habitats. It is native to South Africa and has been introduced to Australia where it is reported to be highly invasive. Any disturbance can trigger mass germination. It is fast growing and forms dense thickets that can shade out other species; it is a nitrogen fixer and can alter soil nutrient status.
**Drymaria arenarioides**

**Lightning weed [7]**

Lightning weed is a spreading perennial herb native to Mexico. It is on the prohibited and noxious weed lists of many U.S. states because of its propensity to invade rangelands displacing desirable vegetation and being toxic to stock. Saponins in this plant are highly toxic to cattle, sheep, and goats, resulting in major cattle losses in Mexico.

---

**Senecio angulatus**

**Creeping groudsel [7]**

Creeping groudsel is a prolific vine that has the ability to form thickets that can cover and smother native flora. Native to South Africa, it has been introduced as an ornamental plant to several locations. It is reported as being invasive in New Zealand and Australia.

---

**Asystasia gangetica**

**ssp. Micrantha**

**Chinese violet [12]**

Chinese violet is an aggressive growing herb or groundcover native to sub-Saharan Africa. It has naturalized in the America and is listed on the National Environmental Alert list in Australia. It can reproduce both by seed and vegetatively. It forms long-lived mats that suppress any other vegetation.

---

**Rubus alceifolius**

**Giant bramble [28]**

*R. alceifolius* is a robust, aggressive perennial scrambling shrub, spreading by spiny stems, rooting at their tips, as well as by bird-dispersed seeds. It can form dense thickets. It is native to tropical SE Asia but has been introduced to a number of other territories, most notably the Indian Ocean island of La Réunion, where it is one of the eight most threatening plant invaders.

---

**Rubus fruticosus**

**European blackberry [19]**

European blackberry is a prickly, scrambling, woody shrub. Generally a temperate species, it can grow in a range of conditions. It is invasive and reported as a significant problem weed in Australia. In Australia and New Zealand, large infestations threaten agriculture and natural areas. The economic costs are reported to far outweigh the benefits of this species.

---

**Senecio glastifolius**

**Large senecio [8.5]**

Large senecio is native to South Africa. It is invasive in Australia and New Zealand, driving out native plants with its ability to spread and thrive on disturbed ground. In Australia it is spreading aggressively into Banksia woodland and coastal shrubland. It is regarded as potentially a very serious weed in the higher rainfall (1000-1400 mm) areas of Western Australia.

---

**Rhamnus alaternus**

**Italian buckhorn [2]**

Native to the Mediterranean, Italian Buckthorn, was introduced to many areas of the Australasian-Pacific region as an ornamental plant and is considered invasive. It can form dense stands that exclude all other types of vegetation. Birds and other animals eat the berries, disbursing the seeds.

---

**Rhododendron ponticum**

**Rhododendron [13.5]**

Rhododendron is native to the western and eastern Mediterranean. It has spread to other parts of Europe and become invasive, particularly in the U.K. where it is responsible for the destruction of many native habitats and the abandonment of land. The flower head produces thousands of viable, wind-dispersed seeds.
References:

http://web2.nmns.edu.tw/PubLib/Library/research/200512-33.pdf
http://www.hear.org/pier/species/urochloa_glumaris.htm
http://www.hear.org/wra/tnclfwa/pdfs/tnclfwa_urochloa_subquadripara_ispm.pdf
http://web2.nmns.edu.tw/PubLib/Library/research/200512-33.pdf
http://www.hear.org/pier/species/urochloa_glumaris.htm

http://davesgarden.com/guides/pf/go/117327/
https://www.shootgardening.co.uk/plant/bomarea-multiflora
http://www.strangewonderfulthings.com/tips172.htm
http://worldoffloweringplants.com/bomarea-multiflora-vine-astroemeria-trailing-lily/
http://plantlust.com/plants/35121/bomarea-multiflora/
http://pacificbulbsociety.org/pbswiki/index.php/Bomarea
http://www.ingentaconnect.com/content/aspt/sb/2008/00000033/00000004/art00006
http://www.cloudforest.com/cafe/forum/58486.html

https://www.bluestem.ca/carex-flagellifera.htm
https://keyservers.lucidcentral.org/weeds/data/media/Html/carex_flagellifera.htm
https://www.rhs.uk.Plants/3082/Carex-flagellifera/Details
http://davesgarden.com/guides/pf/go/69051/#b
http://www.perennials.com/plants/carex-flagellifera.html
https://books.google.com/books?id=sRCoNQAQrpwC&pg=PA51&lpg=PA51&dq=Carex+buchananii+%2B+australia&source=bl&ots=0R8NyI97vq&sig=7T4R8ijKCPFKLi+t4rDuK1Ke5ZF8gQ&hl=en&sa=X&ved=0ahUKEwi7-e7czNHRAhVS32MKHc8cC4Q6AEIMTAH#v=onepage&q=Carex%20buchananii%20%2B%20australia&f=false
https://www.gardenia.net/plant/carex-flagellifera-weeping-brown-sedge

http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6489/Cereus_hildmannianus
http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=759
http://ac.els-cdn.com/S0022461816300080/1-s2.0-S0022461816300080-main.pdf?_tid=cdd3ec64-e346-11e6-b3a4-00000aab0f26&acdnat=1485380572_743a56039265d19f54a67877f1e9205d
http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6489/Cereus_hildmannianus
http://invasives.org.za/news-prevIEWS/item/408-cactus-working-group-established
http://www.learn2grow.com/plants/cereus-hildmannianus/
https://issuu.com/ysamyn/docs/abctaxa_vol11_with_covers_lr/115
