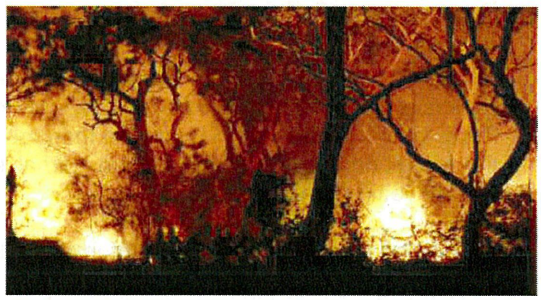


Weeds & Problem Animals on Islands in the Great Barrier Reef World Heritage Area

Malcolm Turner, Orea Anderson, Julie Fisher

Version 1 August 2001

Marine Parks

GREAT BARRIER REEF MARINE PARK AUTHORITY

Queensland Government
Queensland Parks and Wildlife Service

Weeds and Problem Animals on Islands in the Great Barrier Reef World Heritage Area.

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Introduction

Weeds, feral animals and problem native animals are a serious threat to natural values in the Great Barrier Reef Region. Resource management on National Park and Commonwealth islands within the Great Barrier Reef World Heritage Area is undertaken within the Day to day Management Program. Marine Parks staff of the Queensland Parks and Wildlife Service conduct resource management on the islands, including fire management works, and the management of problem weeds and problem animals.

Priority

The Day to day Management Program is currently determining priorities for weed control in the World Heritage Area. This document was prepared to assist in this process. The next version of this report will contain priorities. The aims of the priority setting Process is to:

- To assist managers to understand the magnitude of the natural resource issues on the islands of the Great Barrier Reef World Heritage Area.
- To summarise the location of problem weeds and animals.
- To provide information for managers that can assist in decisions on setting priorities and the allocation of resources.

Purpose of this Book

This report summarises the information on the distribution of the weeds and problem animals on National Park islands in the World Heritage Area. Information on species and locations was provided by Marine Parks rangers, and QPWS resource management staff. Distribution information provides an indication of the scale and the weed and problem animal issues in the World Heritage Area and will assists in the priority setting process.

This report provides images and information to assist staff to identify weeds. Information is provided for some species on their impact and their ability to spread.

Acknowledgements

Many people have provided advice about our priority setting process and provided information contained in this book. Thankyou to the following people:
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Problem Weeds

Problem Weeds in the Great Barrier Reef World Heritage Area

Weeds are a major threat on the islands in the Great Barrier Reef World Heritage Area (GBRWHA). Weeds can decrease the value of the area making it inhabitable to native plants and uncomfortable for visitors. Weed management is therefore essential for the prevention of environmental degradation on the islands.

Weed Management

Eradication is the preferred objective of weed management. If this is not possible control is the objective. Control aims to prevent the further spread of a weed and decrease its impact where it does occur. New problem weeds must be acted on promptly before becoming well established and already established weeds must be prevented from further spreading.

Priority

Priority for weed management should be based on actual and potential impacts of a weed on the values of the islands. Factors that influence setting priorities for species and infestations include the capacity to: out-compete native plants; invade native vegetation; spread to other locations and islands; and alter habitat of nesting fauna and inconvenience visitors.

Considerations like accessibility of infestations, remoteness and difficulty of eradication are factors that influence operational decisions rather the priority for action.

This is a summary of the problem weeds in the Great Barrier Reef World Heritage Area. The list will continue to grow as more attention is directed to islands that have recently been declared National Park. New weeds are also likely to be found during fieldwork and additional infestations will occur from seeds blown from the mainland, seeds floating ashore, seeds transported with people or cargoes and escapees from gardens. Magnetic Island has the greatest potential for new problem weeds.

For weeds the information presented generally includes:

Alternative names
Photo
Description
Method of dispersal
Spreadibility - the potential to spread.
Impact - on island ecosystems and species.
Control - recorded information on control (these notes are not comprehensive should not be viewed as recommended control measures or even the most up-to-date methods. This information was gained from books and the Internet, but should not be considered in any way complete. It is merely for a general understanding of the weeds involved.)

Agave spp. Sisal Hemp

Other common names: Agave Century Plant, Maguey, Sisal

http://ucs.byu.edu/bioag/aghort/aghort100/agave.htm

Description: These plants have rosettes of stiff fibrous spine-tipped leaves at ground level. The sizes vary from under 10 cm to over a few meters in both height and diameter. Thickets can be formed by suckering. Some species have spines on the margins of its leaves. The plants only flower once and die after flowering. Their large flowering stems grow quickly and can reach many metres high. The sap can be toxic. Garden plant.

Dispersal: They are propagated asexually through bulbils or offshoots. Profuse regeneration also occurs from the seed head.

Spreadability: Generally slow when vegetative only.

Impact: The plants compete with native vegetation when in large clumps. A threat to World Heritage Area values. Toxic species can also be dangerous to some animals especially the young.

Control: Eradication is easier to achieve before large plants become established.

Ageratum spp. Goat Weed

Other common names: Billygoat weed, Mexican Ageratum, Flossflower

http://rain-tree.com/ageratum.htm

Description: This plant is an annual herb (completes the full cycle of germination to fruiting within a single year and then dies) and can grow on average up to 50 cm. The hairy leaves are opposite and usually oval with rounded teeth. The flowers are in clusters and can be blue, pink or white and are about 2 cm diameter .

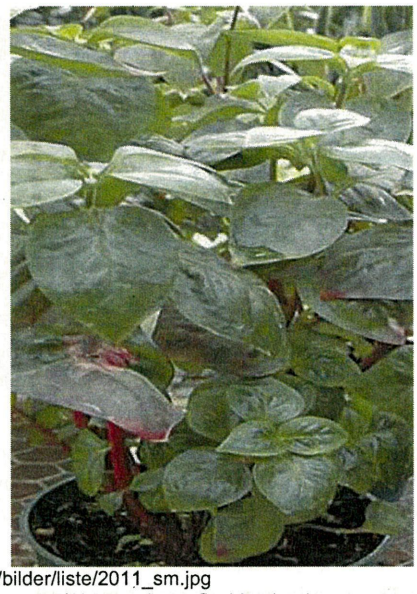
Dispersal: The seeds are dispersed by wind.

Spreadability: The plant is moderate to fast growing and spreads easily. Seeds may be transferred by visitors.

Control: The herbicides 2,4-D amine, and ametryn mixtures can either be applied to a freshly cut stump or to young, actively growing weeds. Glufosinate-ammonium will only kill the part of the plant that is contacted by spray. Continued follow-ups are required.

Alternathera bettzickiana syn. *A. ficoidea* Calico Plant

Other Common names:

http://www.pokemonvillage.de/unger/bilder/liste/2011_sm.jpg
http://www.desert-tropicals.com/Plants/Amaranthaceae/Alternanthera_ficoidea.html

Description: A perennial with multicoloured foliage of red, pink, bronze, green, and cream on a plant growing less than one foot tall.

Dispersal: Seeding.

Impact:

Control:

Alysicarpus vaginalis Buffalo Clover

Other common names: Alyce Clover, One-leaf Clover, White Moneywort


http://www.angrin.tlri.gov.tw/english/grine/farm-facee/vaginalis.html

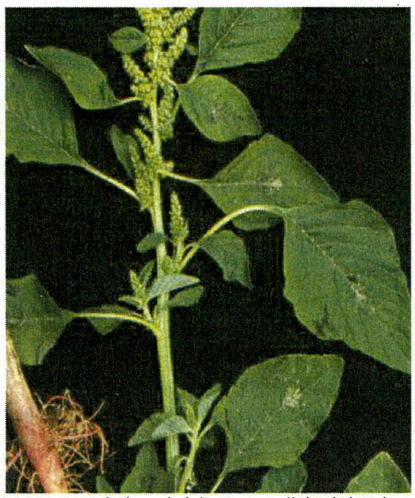
Description: Small and brown seed. Annual and erect stem. Flowers grow in axillary racemes. Single leaf. Mature pods easily broken.

Dispersal:

Impact:

Control:

Amaranthus viridis Green Amaranth



http://planeta.terra.com.br/saude/plantasmedicinais/pm/amarviri.htm

Description: Semi-erect plant usually 1m tall with red-green stems. Leaves usually egg-shaped, up to 8cm long. Red-green flowers have three parts and mainly in panicles 5-10cm long, or in a few clusters in the upper leaf forks. Terminal seed spike usually branched; seed coat rough, usually dull and leaf tip pointed or blunt but not notched. The fruiting capsules are wrinkled and up to 2mm long.

Dispersal: Reproduces by seeding only. Seedlings grow rapidly erect.

Impact: Quickly overtakes disturbed areas. Contains oxalates and nitrates and can be toxic to native animals.

Control: Is susceptible to 2,4-D amine at a strength of 0.2%. Possibly susceptible to Amaranthus mosaic (?) potyvirus, but needs further research, (See:http://biology.anu.edu.au/Groups/MES/vide/descr016.htm).

Annona glabra Pond Apple

Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.

Description: Semi-deciduous tree 12-15m tall. Young plants often have stems with swollen bases. Leaves are alternate, simple, ovate to elliptical, 7-12cm long, leathery, aromatic; bright green above, paler below. The flowers are creamy white to light yellow, rose colour at the base of each sepal, 1 inch across, solitary. The fruit are similar looking to a green apple, yellow green to yellow, 3 to 5 inches long, broadest at the base; aromatic and fleshy when mature in the fall. The bark is grey brown, developing shallow fissures with scaly tops. Reproductive maturity is attained after about 2 years.

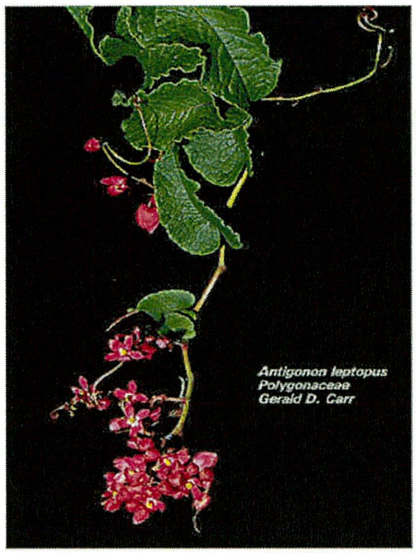
Dispersal: Fruit contain 100 or more seeds of about 1cm in length. Both fruit and seeds can float and may remain viable for many months, so have the potential to spread to other islands. Germination can occur in fresh or brackish situations, like on the drift line of beaches. Seedlings can survive high salinity levels once established. Fruit fall from March to April. Flourish where tree canopy has been cleared, but restricted growth in rainforest due to lack of light for the seedlings.

Impact: Highly invasive woody weed, threatens wetlands and riparian ecosystems. Most serious threat to melaleuca wetlands and *Heritiera littoralis* mangrove areas. Establishes in dense clumps which suppresses other growth, and can replace mature stands of paperbark with a monoculture forest. Native animals can disperse the seeds as well as water. It is an aggressive invader. Massive seed production can result in 20cm deep carpets of seeds covering the ground. Shading by these plants can lead to a monoculture which in turn can lead to environmental degradation through elimination of food plants, breeding sites and shelter for native animal species.

Control: Readily destroyed by fire and where it can be used, it is the preferred method of control. Biological control may be the best long term approach but may prove difficult as there are several species closed related which are not weeds that may also be affected. Plants are easily uprooted by mechanical methods but this is often an expensive and unsuitable method. The plant is readily susceptible to stem injection with glyphosate and with triclopyr plus picloram based herbicides. Several other herbicides are being tested for its control, by stem injection and basal bark (wet stem) application. Mechanical and chemical control measures can be effective but control is very site specific.

Antigonon leptopus Coral Vine

Other Common Names: Mexican Creeper, Mountain Rose, Confederate Vine, Chain-of-love



http://www.hear.org/pier/anlep.htm
http://www.desert-tropicals.com/Plants/Polygonaceae/Antigonon_leptopus.jpg

Description: Robust vine to 10 m long or more, leaf blades 10 cm long, angular, textured, broadly ovate, or triangular, prominently veined, the branches bearing flowers in clusters. Flowers bright pink or white, enlarging 5 cm long, sharply 3-angled above, much exceeded by the leaves. Fruiting very rarely.

Dispersal: Prolific seed producer. Seeds float on water, which helps transport them to new locations. Fruits and seeds are eaten and spread by native animals and birds.

Impact: Smothering vine, extensively invading disturbed areas and forest edges.

Control: Cutting alone is ineffective. Underground tubers must be removed or plants will re-sprout.

Asclepias curassavica L. Red Flowering Cotton Bush

Other common names: Red-Headed Cotton Bush, Blood Flower, Milky Cotton Bush, Sunset Flower, Scarlet Milkweed

http://users.wantree.com.au/~weeds/western_weeds/apoc_aral_ascl.htm

Description: Summer perennial, up to 1m high with woody base, erect purplish stems with milky sap, leaves opposite, mostly near the top of the stems, 5-15cm long, dark green, bluish beneath. Flowers in clusters at top of stem, bright red with brilliant yellow centre. Seedpods about7.5cm long and 12mm diameter, tapered at both ends. June to September flowering.

Dispersal: The seedpods are tapered at both ends and burst open on ripening to release seeds. The seeds are light and flat with tufts of long white silky hairs enabling wind dispersal. Seeds are also carried by water.

Spreadability: Can spread to other islands by wind and water.

Impact: Grows singularly amongst grassland. Poisonous to animals if eaten in large quantities.

Control: Hand pulling appears successful and the herbicide 2,4-D amine can be thoroughly applied to young, actively growing weeds. Where dense infestations occur Grazon DS spot spraying @ 0.5% or Butoxone at 1.0% is recommended. Plant is fairly resistant to phenoxy herbicides.

Bidens pilosa Cobbler's Peg

Other common names: Cobbler's Pegs, Farmer's friend, Hairy Beggar-Ticks, Spanish Needles

http://www.rain-tree.com/Plant-Images/Bidens_pilosa1_p3jpg.jpg -7

Description: This erect annual plant grows up to 1.5 m tall with angular stems. The leaves are compound, with leaflets arranged in the same way as a feather. The flowers occur in groups at the top of the plant. A cluster of dry fruits follows the flower head.

Dispersal: The seeds are covered with barbed hooks for animal dispersal. These can be carried for substantial distances until rubbing against something else pulls off the seed.

Spreadability: The plant is fast growing and fast spreading and readily takes over disturbed areas.

Impact: The weed decreases World Heritage Area values due to it's ability to cover large areas. These plants compete with native species.

Control: The plant can be removed physically by cutting the stem away from the root before flowering to decrease the seed stock. The plant is not tolerant to fires but can quickly invade burnt areas. Herbicides such as 2,4-D mixtures, glufosinate-ammonium and glyphosphate herbicide can be sprayed when actively growing. Repeat treatments may be necessary.

Bothriochloa pertusa syn. *Amphilophis pertusa* Indian Couch

Other Common Names: Seymour Grass, Hurricane Grass Indian Blue Grass, Barbados Sour Grass.

http://www.fao.org/ag/AGP/AGPC/doc/Gallery/pictures/botper.jpg

Description: Tufted perennial 30-70 cm high, rarely stoloniferous. Sessile spikelets finely hairy on the back and sides. Very close to Bothriochloa insculpta. In some specimens of B. pertusa the culms creep about the surface of the soil and root at the nodes. Roots penetrate to 55 cm with production of 6 356 kg/ha of root on alluvial soil at Varanasi, India. Rhizomes constitute 80 percent of the total below-ground dry matter. Can withstand short dry spells and is also adapted to flooding.

Dispersal: Through seeding, has a hairy spikelet that can attach to animals etc. for further dispersal.

Impact: It is a vigorous weed, invading Guinea grass, molasses grass and Bermuda grass.

Control: It can survive fire.

Brachiaria mutica Para Grass

http://jacob.bio2.edu/education/student/grasses/species.htm

Description: This is a semi-aquatic grass and can grow to a height of 1.5 m with stems up to 5 m long. It has trailing runners, up to 5m long, in the ground that root freely at the nodes, points on the stem from which leaves arise. The broad hairy leaves can be up to 30 cm in length. The inflorescence is at the stem tip with 8-20 alternate branches spreading upward with purple spikelets. Planted in wetlands as a fodder for cattle. The seeds are small, 935 000 per Kg. Adapted to wet conditions, waterlogging and prolonged flooding. Also very drought hardy and can survive long dry spells.

Dispersal: Trailing runners and seeding.

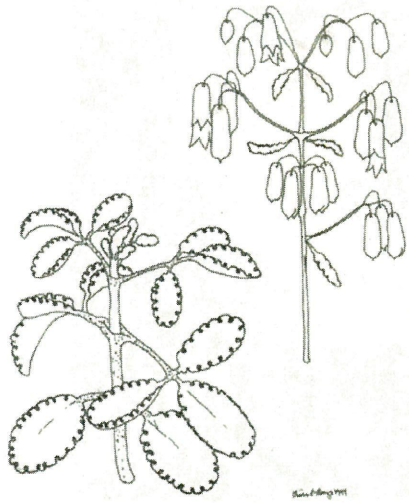
Spreadability: It is a fast growing weed. It can spread from pasture plantings. Restricted to wet areas.

Impact: Covers large areas replacing native vegetation. Spreads through wetlands destroying waterbird breeding habitats and choking streams.

Control: It is difficult to eradicate, but is susceptible to fire as a hot fire can make it vulnerable to drought or flooding. Regeneration is very slow after a hot fire.

Bryophyllum spp. Mother-of-Millions

Other common names: Piggyback Plant, Mother of Thousands



Bryophyllum Pinnatum

Bryophyllum daigremontinum

http://www.honeylocust.com/limon/23/index.html
http://www.geocities.com/RainForest/Canopy/6400/kalanchoe/kdaigrem.html

Description: This is a perennial plant and a succulent that can form large clumps growing up to 1 metre high. It has fleshy green leaves with purple markings arranged around the stem. The straight stem can grow up to a meter high. The clusters of orange bell-shaped flowers are formed on spikes. Garden plant. As it is a succulent it is well adapted to dry areas. *Bryophyllum tubifloram* has grey-brown fleshy, tubular-like leaves with up to 7 projections at the tip of each leaf. The flowers are orange-red and occur in a cluster at the top of a single stem. Seeds can germinate for some years.

Dispersal: Seeds are produced but the main reproductive method is by plantlets formed in the grooves on leaf edges. As the plantlets form new roots they drop off the leaf onto the ground where they take root and start a new plant. Water can spread the plantlets further. Plants flower from May to October during the drier months.

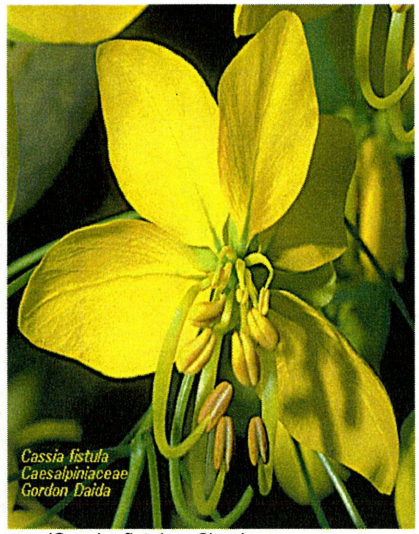
Spreadability: The spread is very fast as one plant can produce many plantlets and each can readily form new colonies. The plant is thus hard to eradicate, making follow up controls essential.

Impact: The plants are toxic therefore a danger to animals. The spread of the weeds devastates native plants out-competing them.

Control: Immediate action is necessary when an infestation is first detected. Hand weeding is the most common method of removal followed by burning of the waste. Burning infestations reduces the weed problem making only spot spraying with selective herbicides necessary in the follow ups. The herbicides 2,4-D acid and picloram+triclopyr mixtures can be used to spray the plant thoroughly. Spraying is easiest done in winter when flowering occurs making weeds easy to pick out as well as preventing new seeds from developing. Also foliar application of 1.2% fluroxypr as a low pressure high volume spray, appears to have a fast kill effect on this species. Treat all stages before flowering by directly spraying from above and the side of wet stems.

Cassia fistula Golden Rain Tree

Other Common Names: Golden Shower Tree, Indian Laburnum, Purging Fistula.



http://www.rain-tree.com/Plant-Images/Cassia_fistula_p2jpg.jpg

Desription: Deciduous tree about 10 m tall. The leaves are alternate, pinnate, 30-40 cm long, with 4-8 pairs of ovate leaflets, 7.5-15 cm long, 2-5 cm broad, entire, the petiolules 2-6 mm long. Flowers yellow, in long drooping terminal clusters (racemes); petals 5, yellow; sepals 5, green, the individual flower stalks 3-6 cm long. Stamens 10, three with longer stalks. Fruits pendulous, cylindrical, brown becoming blackish with maturity, septate, 25-50 cm long, 1.5-3 cm in diameter, with 25-100 seeds. Seeds lenticular, light brown, lustrous.

Dispersal: Dispersed by fruit and seeds.

Impact: Growth in thickets and can exclude native vegetation when in large numbers.

Control:

Catharanthus roseus Pink Periwinkle

Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.

Description: Small erect or sprawling shrub up to 60cm high. Leaves opposite, shining, dark green above, pale green beneath, leaf veins conspicuous, tip rounded with a small point, tapering at base to a short leaf-stalk, usually about 5cm long and 2.5cm wide. Flowers are bright rose-pink, often with a darker eye, or white about 2.5cm across with a very slender tube about 2.5cm long, resembling a phlox flower, carried singly in the leaf joints. Seed pods slender, spindle shaped, about 2.5cm long and 3mm wide, two produced by each flower, splitting open to show a row of small dark bead-like seeds on each side of the split pod.

Dispersal: Seeds dispersed from seed pod. Plant is fast growing and capable of taking over large areas.

Impact: Rapidly invades disturbed areas. It contains powerful anticancer alkaloids which may produce serious side effects, if ingested by humans or animals.

Control: Susceptible to the soil-borne fungus *Phytophthora parasitica*, so a possible biological control method may be available. Further research needs to be done on this.

Cenchrus echinatus Mossman River Grass

Other common names: Sand Burr, Southern Gandbur, Hedgehog Grass, Bur Grass, Cadillo .

http://users.wantree.com.au/~weeds/western_weeds/poaceae_three.htm

Description: The plant is an annual grass with erect stems up to 1m tall. The leaves are flat and tapered up to 25 cm long and 1 cm wide. Clusters of spiny burr-like fruits are formed on the end of the stem. grows on sandy soils and beaches. Seedlings are erect, robust, hairless and with bright mid-green leaves. The leaf sheaths are purplish-red, especially in the older seedlings. Mature plants form prostrate or ascending tufts with stout stems, up to 90cm but mostly to 60cm. The ligule is a rim of short hairs with a few scattered hairs on the leaf margin at the leaf base. The joints along the stems are hairless.

Dispersal: Each burr encloses at least one seed. The toughened spines around the burr provide an effective means of dispersal as the burrs are readily picked up animal fur and feathers as well as people. The burrs are carried and dispersed when the burrs are knocked off.

Spreadability: Spread is fast as the burrs are easily transported on peoples clothing and has therefore been transported to many islands and bays. Grows particularly well in sandy soils and at the beach, hence is a major problem for many islands.

Impact: The plant competes with the native plants and the spreading will continue with increased visitation. Burrs decrease visitor comfort and therefore the value of area. It often colonises sites popular for visitors such as beaches and sandy picnic areas

Control: Young plants must be killed before they seed. Hand removal, fire and herbicides are effective. Glyphosphate and 2,2-DPA can be sprayed thoroughly onto the plants. Dichlobenil is a pre-emergent control and can be spread as granules on soil after existing weeds have been removed. Further information on herbicide methods of control can be gained from local DPI offices.

Chamaesyce hirta syn. Euphorbia hirta Asthma Plant

Other common names: Dudhi

Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.

Description: An annual herb about 15 cm high, usually sprawling but sometimes erect, with a few reddish branches. Stems and leaves are hairy; leaves opposite, red-brown in colour, 2-5 cm long with distinctly saw-toothed margins. Flowers occur as dense axillary inflorescences; seeds are red-brown. Seeds are oblong, pale brown and acutely angled. Fruit, usually a 3-lobed, 3-chambered capsule, with one seed in each chamber. Flowers and fruits throughout the year.

Dispersal: By seeding.

Impact: Coloniser of bare areas and disturbed ground.

Control: Fairly resistant to phenoxy herbicides but good results have been reported after using 2,4,5-T amine at 0.2% as an overall spray. 2,4-D, MCPA, or MCPB at 1 Kg/ha in 700 litres of water will also kill these weeds.

Chamaesyce prostata syn. *Euphorbia prostata*
Red Caustic Creeper

Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.

Description: Prostrate plant with small oval, opposite leaves, about 6mm long, margins minutely saw-toothed. Flowers are found in the leaf joints and are small and inconspicuous. Fruits are three-lobed and hairy. The plant has distinctive red stems and sometimes the leaves are also red.

Dispersal: By seeding.

Impact: Coloniser of bare areas and disturbed ground.

Control: Fairly resistant to phenoxy herbicides but good results have been reported after using 2,4,5-T amine at 0.2% as an overall spray.

Chloris barbata Purple-top Chloris

Other Common Names: Swollen Fingergrass

http://www.hear.org/pier/chbarp.htm

Description: Perennial grass up to1m tall, tufted with creeping stems. Leaves up to 20cm long but often only half this, 5mm wide tapered to a fine point; seeds-heads usually of 10 to 15 spikes about 6.5cm long, clustered at the top of an upright stalk. 'Seeds' characteristically purple in colour, usually with 3 fine, hair-like projections, giving the spike a shaggy look. Resembles Rhodes Grass but is readily identifies by its purple-coloured seed-head and hairy-looking spikes.

Dispersal: seeds attack to animals fur and clothing by the spikelets.

Impact: This grass is common in disturbed dry and mesic areas.

Control: It is tolerant of fire, rapidly resprouting from its base. It has not been considered for biological control.

Chloris inflata Swollen Fingergrass

http://www.weedscience.org/usa/State.asp?StateID=12

Description: A tufted annual grass up to 90 cm tall; culms and sheaths strongly compressed; blades long and lax, 10-30 cm long and up to 6 mm wide. Nodes often purplish, as are the basal sheaths. Ligule membranaceous, jagged. Spikes 2-11, usually 10, fertile lemma obovate, about 3 mm long, slightly hairy on the keel, long-hairy on the upper margins, awned, the awn about 4-6 mm long. Two rudimentary lemmas borne beyond the fertile lemma.

Dispersal: By seeding.

Impact:

Control:

Cocos nucifera Coconut Palm

Other common names: Coconut Tree

http://www.pacsoa.org.au/palms/Cocos/nucifera.html

Description: The fibrous trunk can grow up to 25 m in height. Long green feathery leaves crown the top of the tree. They can produce branched inflorescences of male and female flowers. The male flowers die before the female flowers mature, thus assuring cross-pollination. The edible fruits called coconuts follows. There is a great variety of shape, size and colouration of both plant and fruit. Appears to have established on Queensland coast after European settlement. Planted around resorts.

Dispersal: Coconuts are water dispersed and can remain afloat for many days.

Spreadability: Slow expansion on land, as coconut cannot travel far. Can travel long distances by water allowing spread between islands by sea.

Impact: Public safety from falling coconuts is the main issue at popular sites. Small thickets of young coconuts can develop, excluding native vegetation.

Control: Prevention of spreading. Picking up coconuts and careful disposal combined with cutting young seedlings will keep the numbers from significantly increasing. Removal of coconuts from the tree before they mature will also increase public safety.

Commelina benghalensis Hairy Wandering Jew

http://members.iinet.net.au/~weeds/western_weeds/can_col_comm.htm

Description: Mature plant is a succulent, climbing and sprawling, softly-hairy annual with stems 15-40cm long, which often root at the nodes. Leaves are alternate, elliptic to oval, 3-9cm long and 1-3 cm wide, tapering to a blunt point at the tip and tapered at the base into a short, narrow leaf stalk, which is then expanded into a membranous stem-enclosing sheath. This sheath is often fringed with red-brown hairs. The flowers are purplish-blue and have three clawed petals, 3-4mm long, carried in the leaf forks. The plant also has white burrowing stems which produce underground flowers and seeds. The seedlings are grass-like in appearance, however the leaves are broader. The leaves are also fleshy, 8-11mm wide at the three-leaf stage, hairy and have five prominent ribs.

Dispersal: Reproduce by seeds and also through vegetative stages, from pieces of mature plant. These shoots may appear to be seedlings but will be attached to a plant piece.

Impact:

Control: Caution should be taken when removing these weeds as some native species of Wandering Jew do occur. Reports indicate Hairy Wandering Jew is controllable using Fluroxypyr 6 g/L, for best results. But that at 3 g/L, applied as a thorough wetting foliage spray, a mean regrowth suppression of 96% was attained. At this rate it is also selective to grasses etc. when stem and foliage contact was kept to a minimum. Fluroxypyr 3 g/L is perhaps the preferred rate based on cost-efficacy and better selectivity to non-target broadleaf plants than the higher rate of 6 g/L. (Murphy, 1993). Small patches can be hand removed. The stems are very brittle and need to be pulled carefully as any fragments left will re-shoot. Large areas can be raked. After raking pick up any broken fragments and then repeat weeding when new shoots form. Follow up weeding is necessary to control Wandering Jew.

Convolvulus arvensis Field Bind Weed

Other common names: Cornbine, Field Bindweed, Bindweed, Wild Morning Glory.

http://www.weedscience.org/photos/Photodisplayall.asp

Description: Prostrate trailing perennial herb, reproducing by seed and from roots. Stems up to 2m long, longitudinally ribbed, much branched, often with a spiral twist towards the tip. Leaves alternate, 2-5cm long, arrowhead-shaped with lobes at right angles to or bending backwards from the midrib. Flower has petals white to pink, sometimes streaked with darker pink; funnel-shaped, occurring singly or up to 4 in leaf axils. The fruit is a smooth, globular or ovoid and slightly pointed capsule containing 1 to 4 seeds.

Dispersal: Spread by seed and roots. Patches increase in size as a result of prolific root development. 80% of seeds have a hard impenetrable coat which allows them to remain dormant for at least 20 years.

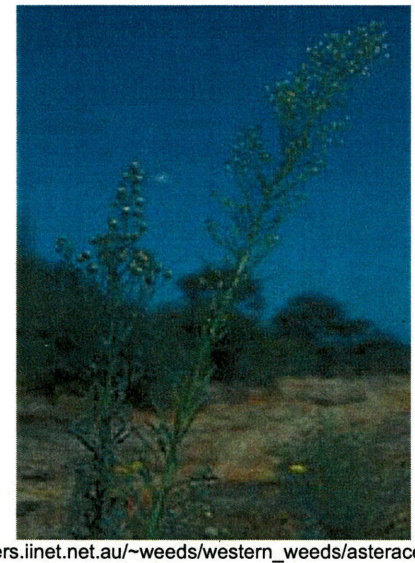
Spreadability: Is often ingested by animals and birds and so can be dispersed widely, and to other islands. Up to 500 seeds produced per plant and the seed bank in dense stands is estimated at 20 million seeds per hectare. This large seed production coupled with the nature in which they are distributed, means that it is a wide ranging and fast spreading weed.

Impact: It is particularly well adapted to overtaking disturbed land. It flourishes under a wide range of conditions and so is very successful. Root growth is prolific and can force out native species. Can in patches increase the root radius by 10m per year. It is also strongly allelopathic to certain plants, and can in part explain why it is such a competitive weed. Heavy infestations smother native vegetation.

Control: Seedlings and first-year plants are fairly readily controlled with herbicides, however older plants are much more resistant due to their ability to regrow from the extensive root system. If chemicals alone are used, as many as five annual applications may be required. The most effective herbicide is picloram applied at the budding stage. Dicamba, dicamba + MCPA, 2,4-D and glyphosate are also recommended. Biological control has not been extensively investigated, however recent Canadian studies suggest that the fungus *Phomopsis convolvulus* could have potential as a mycoherbicide.

Conyza parva a Fleebane

Other Common Names:



http://members.iinet.net.au/~weeds/western_weeds/asteraceae_three.htm

Description: Annual herb up to about 2m high, but often much less. Light yellow-green plant, with an open, branching inflorescence. Usually coarsely-toothed leaves up to 15cm long and 3cm wide. Leaves practically hairless. Flowering stems much branched at the top, flower heads pale green, about 5mm long, forming at maturity.

Dispersal:

Impact: A weed of disturbed areas.

Control: Susceptible to MCPA and 2,4-D amine at 0.2% strength.

Crotalaria goreensis Gambia Pea

Other Common Names:

No Picture

Description: Upright, somewhat woody, well-branched, short-lived perennial growing about 1.5m tall. Leaves alternate, composed of 3 leaflets carried on stalks up to 8cm long. Leaflets elliptic, up to 8cm long and 2.5cm wide. Characteristic rabbit's-ear-shaped outgrowths (stipules), 1 to 2cm long, growing from the junction of leaf stalks and stem. Flowers yellow, about 1cm long, pea-shaped, carried on short spikes at the ends of the branches. Pods inflated, about 2cm long and 1cm across.

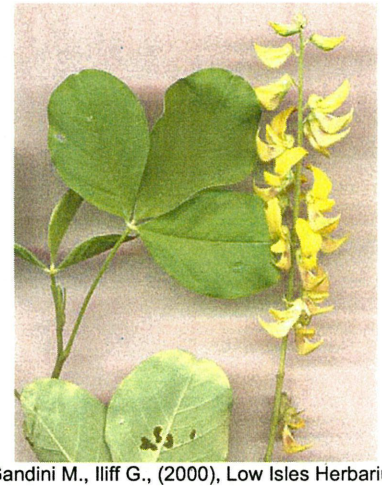
Dispersal: seeds dispersed from seed pods which burst open when ripe to release seeds.

Impact: Ability to takeover large areas out competing native plants.

Control: Young plant can be controlled by spraying with 2,4,5-T at 550g per ha. Susceptible to the biological agent: Centrosema mosaic (?) potexvirus.

Crotalaria pallida Streaked Rattlepod

Other common names: Smooth Rattlebox, Pikakani, Kolomona.



Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.

Description: An erect annual herb with branched, stiff stems 60-120cm tall. Leaves consist of three leaflets, are dull green and oblong, becoming yellowish with age, blunt at the tip but with a tiny point. Leaflets up to 8cm long and 4cm wide. Flowers in long unbranched sprays ranging in length from15-30cm, held stiffly from the ends of the branches. Individual flowers are about 12mm long, pea-shaped, petals bright yellow streaked with dark lines. Pods are 5cm long, narrow and straight, dark brown when ripe and turn downward. The seeds, when ripe, rattle inside them, seeds 30-40 in pod, light straw-coloured to pale brown. Flowers in Nov/Dec and fruits in Jan/Feb.

Dispersal: Dispersed by seeds, which have 30-40 in a pod.

Impact: The plant is poisonous to animals, but appears to be very unpalatable and deaths of animals are rare. This plant has the ability to take over large areas, out competing native plants.

Control: Controlled with Starane spot sprayed at 0.4% or 300 l/ha. Large infestations can be handled by slashing before seeding, and normally hoe-cutting below the surface of the soil will keep the plant in check. It is susceptible to phenoxy herbicides at 0.2%. In its young stages 2,4-D amine is effective but as the plant matures it is necessary to use 2,4,5-T.

Crotalaria sp. (some species) Rattlepod

Other common name: Rattlebox

http://cyber.acomp.usf.edu/~isb/projects/atlas/images/Crotalaria_pallida2.jpg

Description: This plant is a slightly hairy annual with stiff stems that reach over a metre high and supports leaflets. It can grow up to a few metres tall. They have terminal sprays of yellow pea-shaped flowers that are concentrated on the end of branches.

Reproduction: Pea shape seed pods form high on the plants. When the pod dries out it splits releasing the seeds.

Spreadability: Seeds do not have long distance dispersal mechanisms.

Impact: This plant has the ability to take over large areas, out competing native plants.

Control: Responds well to hand pulling but is labour intensive. Herbicides such as ametryn and its mixtures can be applied as a pre- or post-emergent that should not exceed the 3-4 leaf stage.

Cryptostogia grandiflora Rubber Vine

http://users.wantree.com.au/~weeds/western_weeds/apoc_aral_ascl.htm

Description: The plant is an invasive woody weed and a climber with a thorny nature. Can grow unsupported up to 2 m high and has a milky sap. The dark green glossy leaves are in opposite pairs and are 6-10cm long and 3-5cm wide. The funnel-shaped flowers are large and vary from white to pale purple in colour. Seed pods are rigid and grow in pairs at the end of a short stalk. The pods are 10-12cm long, 3-4cm wide.

Dispersal: Seedpods form containing over 400 seeds. When the pod dries out the plod splits releasing the seeds. Each seed has a tuft of long white silky hair enabling wind dispersal. Seeds are also carried by water. The seeds establish in susceptible areas. Seed pod formation occurs from spring to late autumn, with peak seed production corresponding to maximum flowering. Pods spilt approx. 200 days after formation.

Spreadability: Seeds are scattered by wind but also carried by water so can spread to other islands. Approx. 95% of seeds are viable. Well adapted to monsoonal climate.

Impact: Can cover large areas forming very dense thickets smothering native vegetation and shading the ground. Potential to drastically reduce the natural values of infected and surrounding islands. Severe impact on World Heritage Area values. The plant is poisonous therefore a danger to young animals.

Control: Two biological agents, *Maravalia cryptostegiae* a rust disease and the moth *Euclasta whalleyi* are successful at causing the seed production to decrease. A high temperature fire can control infestations with herbicides controlling any survivors. Slashing the plant to ground level controls scattered plants. Herbicides containing triclopyr can be sprayed or painted on to the stems, or to cut stumps. Dicamba, Metsulfuron methyl, picloram mixtures can be applied to actively growing plants. 2,4-D amine alone and in mixtures can be applied in either way and imazapyr can be applied when flowering. Areas treated must be periodically checked and any regrowth treated immediately. Further information on methods of controlling Rubber Vine can be gained from Dept. of Natural Resources.

Cyperus rotundus Nut Grass

Other common names: Purple Nutsedge, Nutsedge, Cocograss.

http://www.agf.gov.bc.ca/croplive/cropprot/weedguid/purplent.htm

Description: A smooth, erect, perennial sedge with a fibrous root system which is extensively branched. The plant spreads by means of slender rhizomes. Its tubers are white and succulent when young, turning brown or black and fibrous with age. The erect, simple culms are smooth, solid and triangular in cross section. The culms are frequently up to 36-40 cm tall, occasionally to 70 cm, and have been found to reach 100 cm on moist fertile soils. The leaves originate from the base of the plant. They are linear with sharp tips and may be much shorter than, or as long as, the culm is tall, and are usually not more than 5 mm wide. The leaves are smooth, shiny, dark green and grooved on the upper surface. The seedhead consists of 3-8 unequal, slender, three-sided stalks. The red to purplish brown spikelets are up to 3.5 cm long and 2 mm wide and are clustered at the ends of the stalks. Each spikelet is made up of from 10-40 individual flowers. The fruit is 1.5-2 mm long, 1.5 mm wide, triangular in cross section, greyish brown and dull. Both the apex and the base of the fruit are rounded. The seedhead is subtended by 2-4 leaf-like bracts, about as long as, or shorter than, the seedhead.

Dispersal: Most of the success of this troublesome weed is due to its ability to survive and reproduce from tubers during adverse conditions. It grows well in almost every soil type, over a wide range of soil moisture, pH and elevation, and can survive the highest temperatures encountered in agriculture. It does not tolerate shaded areas. Temperature and shade seem to be the most important factors in natural control of this weed. The plants also reproduce by seeds but this is negligible since seed germination seldom averages more than 1-5%.

Impact: Grows well in disturbed areas.

Control: The combination of bromacil applied pre-emergence followed by glyphosate at close up provided a satisfactory control of nut grass. With a follow up program of spot spraying, it may be possible to reduce the weed infestation to low levels. Susceptible also to fumigants, including methyl bromide, DD and chloropicrin at standard concentrations. Susceptible to residual herbicides such as EPTC, hexazinone, terbacil, pebulate and vernolate at standard rates. Finally to translocated herbicides, including glyphosate, amitrole, DSMA, MSMA and 2,4-D, although control is often disappointing. Many attempts have been made at biological control, but no significant improvement appears to have resulted.

Dactyloctenium aegypticum Coast Button Grass

Other Common Names: Crowfootgrass, Turfgrass.

http://www.floridaturf.com/weeds/weidcrow.htm

Description:

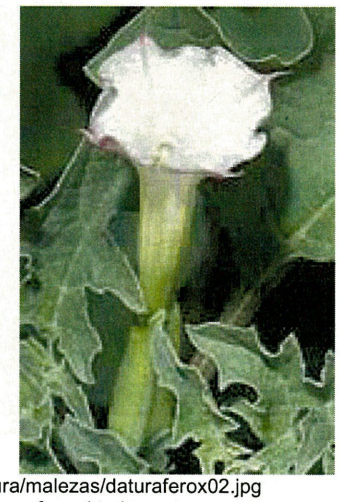
Dispersal:

Impact:

Control:

Datura ferox Fierce Thornapple

Other Common Names: Chinese Datura, Chamico, Oakleaf Datura.



http://www.viarural.com.ar/viarural.com.ar/agricultura/malezas/daturaferox02.jpg
http://www.alchemy-works.com/datura_ferox.html

Description: The Thornapple is a large and coarse herb, though an annual, branching somewhat freely, giving a bushy look to the plant which is usually about 1m high. The root is very long - thick and whitish, giving off many fibres. The stem is stout, erect and leafy, smooth, a pale yellowish/green in colour, branching repeatedly in a forked manner. In the forks of the branches a leaf and a single, erect flower is produced. The leaves are large and angular, 4 to 6 inches long, uneven at the base, with a wavy and coarsely-toothed margin, and have the strong, branching veins very plainly developed. The upper surface is dark and greyish-green, generally smooth, the under surface paler, and when dry, minutely wrinkled.

The plant flowers nearly all the summer. The flowers smaller than of Datura Stramonium and usually have a lavender tint to the edges. The flowers are succeeded by large, egg-shaped seed capsules of a green colour, about the size of a large walnut and covered with numerous sharp spines, hence the name of the plant. The spines on top of the seed pod are much larger than those on the bottom, almost the length of the pod itself. When ripe, this seed-vessel opens at the top, throwing back four valve-like forms, leaving a long, central structure upon which are numerous rough, dark-brown seeds.

The plant is smooth, except for a slight downiness on the younger parts, which are covered with short, curved hairs, which fall off as growth proceeds. It exhales a rank, very heavy and somewhat nauseating narcotic odour. This foetid odour arises from the leaves, especially when they are bruised, but the flowers are sweet-scented, though producing stupor if their exhalations are breathed for any length of time.

Dispersal: Seed pods containing a number of seeds and fruit.

Impact: The plant is highly toxic, the seeds are the most active; neither drying nor boiling destroys the poisonous properties. The usual consequences of the poison when taken in sufficient quantity are dimness of sight, dilation of the pupil, giddiness and delirium, sometimes amounting to mania, but its action varies greatly on different persons. The seeds have in several instances caused death. However browsing animals as a rule refuse to eat Thornapple, being repelled by its disagreeable odour and nauseous taste, so that its presence is not really dangerous to native fauna. Among human beings the greater number of accidents have occurred among children, who have eaten the half ripe seeds which have a sweetish taste.

Control: Can be controlled be hand pulling, though not for dense infestations. Young plants are susceptible to 2,4-D amine. A mixture of picloram and 2,4-D amine has been used successfully also. Known to be susceptible to Datura distortionmosaic virus, however the possibility of this to be used as a means of biological control is unknown.

Desmodium scorpiurus Scorpion Tick Trefoil

Other common names: Beggar Weed

Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.

Description: A straggling, climbing or procumbent herb with small blue flowers. Terminal leaflet about 2 cm long and 1 cm broad, rounded at each end, thinly pubescent. Racemes up to 10 cm long, few-flowered. Flowers 4 mm long. Pod five- to eight-seeded, segments twice as long as broad, not deeply indented.

Dispersal: Spreads quickly because its pods adhere to animals.

Impact:

Control:

Desmodium tortuosum Florida Beggarweed

Other Common Names: Spanish Clover, Dixie Ticktrefoil.

http://www.hear.org/pier/detorp.htm

Description: Erect herbs or subshrubs 5-20m tall; stems hooked pubescent. Leaves trifoliolate, leaflets elliptic to ovate, terminal one 3-10 cm long, 1.5-5 cm wide. Flowers numerous in open inflorescences 3-8 cm long, occasionally these grouped into diffuse, paniculate inflorescences up to 25 cm long. Corolla pink to bluish purple, 5-6 mm long. Pods stipitate, (3-) 5-7-jointed, (1.5-) 2-3 cm long, pubescent with hooked hairs, articles usually orbicular to broadly elliptic, 3-4.5 mm long, 3-3.5 mm wide.

Dispersal: Seeding. Pods break apart and stick to clothes, fur, etc.

Impact: Takes over and out competes native vegetation, particularly in disturbed areas.

Control: Chemical methods of control: Glyphosate and paraquat, at concentrations as low as 25% by vol. have shown to effectively controlled Florida Beggarweed. The only benefits from late-season Florida Beggarweed control from herbicides applied with a wick-bar appear to be improved fungicide deposition and more efficient mechanical harvest, which is not consistently achievable with current herbicides.

Desmodium torvum

Other common names:


Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.

Description: This erect herb has fine pea-type seed pods which are sticky/hairy to touch. The flowers are small pink pea flowers.

Dispersal:

Impact:

Control:

Dioscorea alata Greater Yam

Other common names: Water Yam, Winged Yam, Ten-months Yam

http://alaike.lcc.hawaii.edu/millen/bot130/learning_objectives/lo03/list/uhi.html

Description: The plant is a herbaceous vine with opposite heart shaped leaves and can grow up to 10 m long. Underground there are thick starchy tubers, enlarged stems; that are full of nutrients that provide energy for the plant. The stems are square and often have ridges in them giving a winged appearance. The leaves and aboveground portions die back each year but the tubers can lie dormant. The leaves are long, opposite (often with only 1 leaf persistent) blades up to 20cm or more long, narrowly heart shaped, with basal lobes often angular. Flowers small, occasional, male and female arising from leaf axils on separate plants (ie. a dioecious species), male flowers in panicles to 30cm long, female flowers in smaller spikes. Normally grows for 8-10 months, then goes dormant for 3-4 months, with aerial stems dying back during dormancy.

Dispersal: The fruit is a 3-part capsule of winged seeds but not many seeds are produced. Those seeds which are produced are winged. Tubers also propagate the plant.

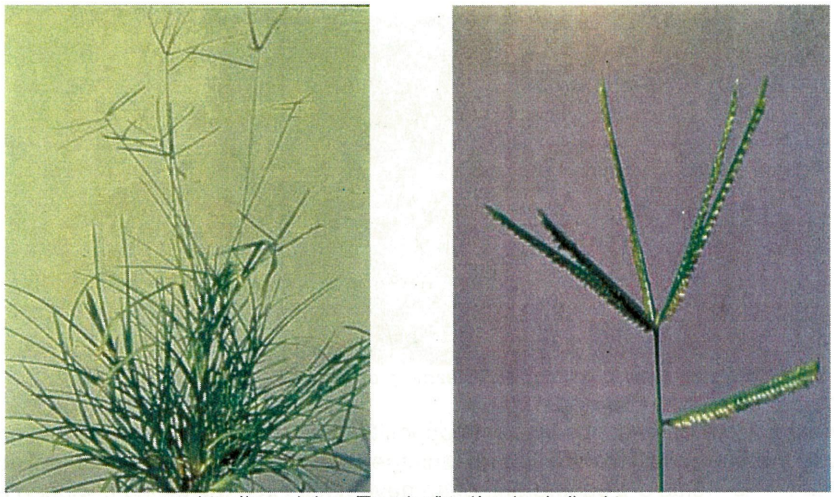
Spreadability: It can quickly grow into the tops of tall trees.

Impact: The plant disrupts native plant communities smothering them.

Control: This species is extremely susceptible to anthracnose, (fungi), however it is not known if this is a viable control method.

Eleusine indica Crow's Foot Grass

Other Common Names: Goose Grass, Wire Grass, Goose Foot, Bull Grass.



http://www.irri.org/Troprice/html/w-eleu-indica.htm

Description: Annual or short-lived perennial, clump-forming, branching from the base, culms flattened, up to 90 cm long; leaf blades flat or sometimes folded, 15-30 cm long, 4-6 cm wide. Spikes usually 5 (4 digitate and 1 arising slightly below the apex of the peduncle), 4-10 cm long; spikelets 4.5-5.5 mm long, the florets closely imbricated, dark green, disarticulating at maturity, leaving glumes overlapping in 2 rows on one side of the flattened rachis. Seeds ridged and striated. Fiborous roots and numerous juicy but tough stems forming a low open tussock.

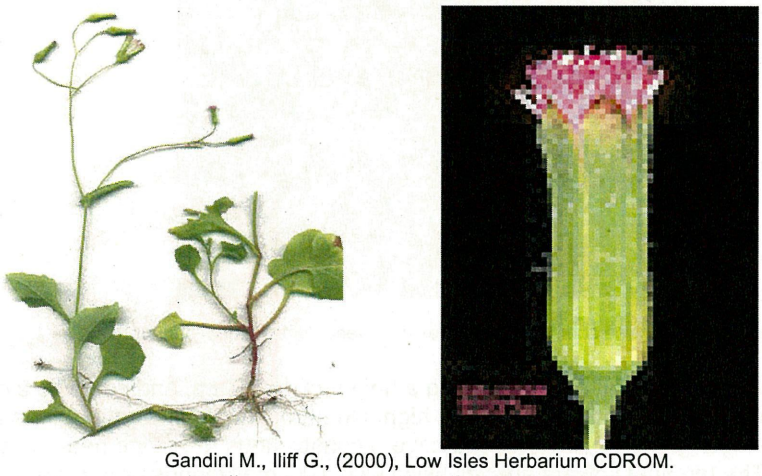
Dispersal: Prolific seed producer.

Impact: Grows in disturbed areas, especially in sandy soil. Quick-growing, long-lived, partial to wetter locations. Can take over areas quickly because it is so fast growing. Difficult to eradicate.

Control: Treatment in the young stages with PCP is usually effective. Oil emulsions fortified with PCP will kill or reduce the vitality of older plants. It can also be killed by spot spraying with diesel distillate, 2,2-DPA, sodium chlorate, or TCA.

Emilia sonchifolia Red Tasselflower

Other common names: Floras Paintbrush, Consumption Weed, Cupids Paint, Shaving Brush.



Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.
http://www.botany.hawaii.edu/faculty/carr/page9.htm

Description: An erect herb with long white hairs, especially on petioles and young leaves. Leaves alternate, variable in shape, often spatulate. Leaves hairy and very coarsely serrate. Flowers all disc flowers; pappus of hairs; corolla a narrow tube with 5 lobes, whitish and light violet; stamens 5; anthers introrse; connective with apical appendage; base not sagittate; ovary inferior, cylindrical, angled, with 5 longitudinal rows of glandular hairs; style filiform; stigma with 2 lobes. Pink-purple composite flowers, diameter about 1.5 cm . Fur is found near ovary when flower is torn apart. Very hairy stem, taprooted. Flower colour is white. Flowers in Aug/ Oct and fruits in Mar/ April.

Dispersal: Produces seeds.

Impact:

Control:

Euphorbia cyathophora Painted Spurge

Other common names: Dwarf Poinsettia, Mexican Fire-plant, Pretty boy

http://users.wantree.com.au/~weeds/western_weeds/dipsa_erica_euphor.htm

Description: The plant is a small herb, reaching a height of 15-70 cm, and contains a corrosive milky sap. Dense thickets may be formed up to 1.5 m high. Numerous male flowers and one female flower are enclosed in a cup-like organ. The floral leaves have a conspicuous red stripe near the base. They flower most of the year. The terminal flowers are yellowish with 1-2 small glands or nectaries. Similar to the Milkweed, but has more pronouncedly lobed leaves and the bracts are bright red.

Reproduction: From seed.

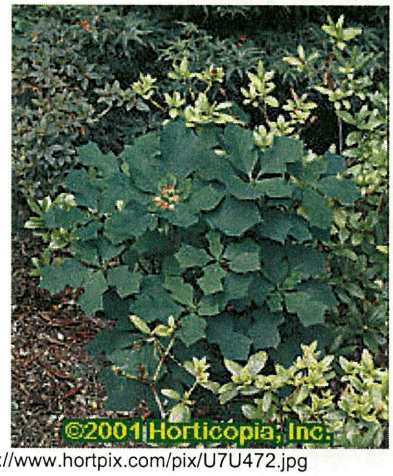
Spreadability:

Effect: Can form dense thickets preventing native plants from establishing.

Control: The herbicide ametryn controls the weed but mostly only in crop situations.

Euphorbia heterophylla Milkweed

Other common names: Wild Poinsettia, Japanese Poinsettia, Painted-leaf, Catalina.



http://www.hortpix.com/pix/U7U472.jpg


http://www.ces.uga.edu/pubcd/C855.htm

Description: An erect annual herb, 20-80cm tall, branching towards the top of the stem. The stems and leaf stalks have a reddish tinge, particularly in the leaf forks. The plant exudes a white milky sap when broken. The leaves are both opposite and alternate on different parts of the plant. They are elliptic with pointed tips and smooth or shallowly toothed margins, 2-12cm long by 1-5cm wide. Stalks 0.5-4cm long. The flower heads are irregularly clustered at the tops of the stems and branches and are greenish-yellow and nondescript, surrounded by large leaf-like bracts, which tend to be pale-green to white near the base. The fruits are 3-4mm by 5-6mm. Painted spurge is a similar plant, but has bright red bracts surrounding the flowers and the mature leaves are markedly lobed. The seed leaves are elliptic, about 22mm long by 8mm wide, on stalks 5mm long at the two true-leaf stage. The first true leaves taper more towards the tip, making them egg-shaped. Later leaves are elliptic and usually toothed. When broken, the seedling exudes a white, milky sap as does the mature plant.

Dispersal: Plants produce an average of 520 seeds per plant and seeds are able to adapt to a wide range of pH, temperature and moisture conditions so have the potential to spread rapidly.

Impact:

Control: Pursuit (imazethapyr) and Strongarm (diclosulam) are the only two soil-applied herbicides labeled at this time that have good- to-excellent activity on the plant. Spartan (sulfentrazone) and Valor (flumioxazin), also provide good-to-excellent control of Milkweed.

Gomphocarpus fruticosus Narrow Leaf Cotton Bush

Other common names: Swan Plant, Balloon-cotton, Cape-cotton, Duck Bush.

http://www.fotodisardegna.it/flora/f/falsocot.htm

Description: This is a perennial herb with white flowers, which grows up to 2m tall.

Dispersal:

Impact:

Control: Glyphosate can be used as a herbicide on this weed. Wetting agent and/or summer spraying oil may be beneficial. Advisable to spray when actively growing and optimally in the months September to December, before fruit forms. This is effective on mature bushes, regrowth and seedlings, provided good coverage is achieved. Slash established bushes during winter, and burn, cultivate or grub seedlings and regrowth. Roundup Biactive® is the preferred treatment in wet areas or along water courses. Triclopyr can also be used in place of glyphosate to avoid damage to native grasses.

Gomphrena celosioides Soft Khaki Weed

Other Common Names: Gomphrena Weed.

http://members.iinet.net.au/~weeds/western_weeds/ph_images/gomphrena_celosioides.jpg

Desciption: Annual sprawling herb, with greenish flowering spikes in summer. Stems, hairy, decumbent, 30-50 cm tall. Leaves, simple, opposite, narrow elliptic, pubescent. Inflorescence, terminal sessile spike, white in colour, lengthened as new flowers develop, 2-3 cm long.

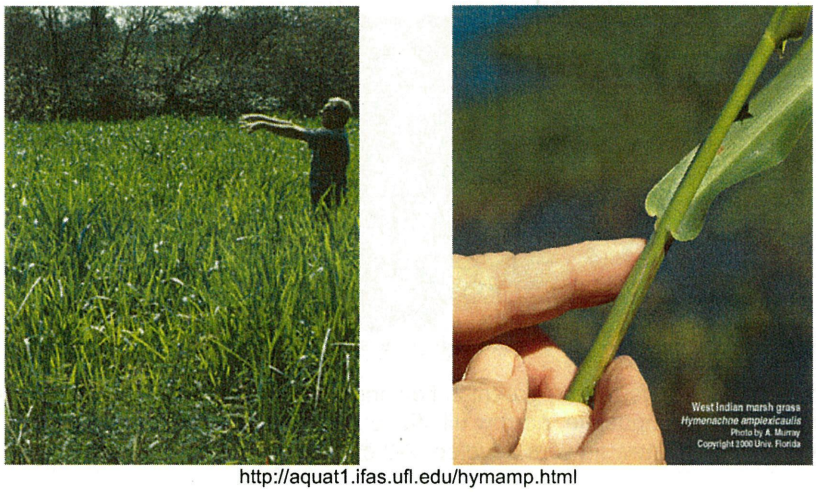
Dispersal: Reproduced by seeds

Impact: A weed of disturbed areas.

Control: There are numerous native species in this genus: if the plant is not growing in a lawn, a specialist botanical text should be consulted for confirmation of identity.

Hymenachne amplexicaulis Hymenachne

Other Common Names: (Rudge) Nees, Trompetilla, West Indian Marsh Grass.



http://aquat1.ifas.ufl.edu/hymamp.html

Description: A robust, rhizomatous perennial grass which can grow up through water 2.5m deep with stems floating out into even deeper water. The weed is commonly from 1 to 2.5m tall, erect, or ascending from a prostrate base, creeping or floating on water. On land erect stems stand to 1.5m, often rising from stems scrambling along the ground. These stems can take root at lower nodes and stems buried by silt soon reshoot. The leaves, similar to maize, are bright green with prominent light coloured veins and hair margins, 10-45cm long, 3-6cm wide, with finger-like extensions (auricles) clasping around the stem. Culms are filled with a white pith, often trailing and stoloniferous at the base and rooting at the nodes. Flower heads are spike-like, 20-40cm long, sometimes with 2-3 branches, and can occur almost all year, but mainly during April/May and September/October.

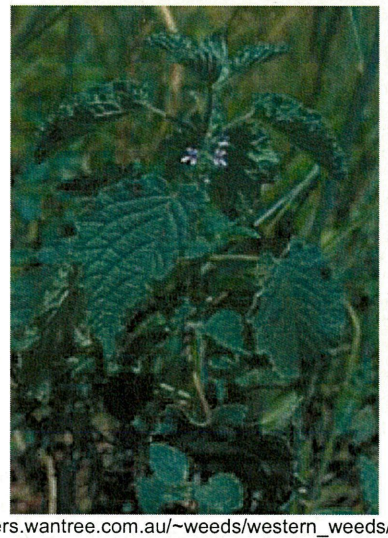
Dispersal: Spreading on moist soil or floating in water. Pieces of plants can also be carried to new locations. a single flower head producing in excess of 4000 seeds

Impact: In bad outbreaks the weed chokes off water systems and prevents any light reaching down into the water beneath, preventing any other native water plants from growing. Also reduces oxygen levels thus reducing native fauna as well. Infestations can also reduce access to waterways for recreation and wildlife, and displace native vegetation. However it does not grow in permanent water and requires alternating periods of flooding and dryness to establish and survive.

Control: Timing control options from September to March may reduce the number of new seeds entering the seed bank. Control of Hymenachne is known to be very difficult once the plant becomes established in an area. Various tests are under way to discover suitable control methods for this weed. Hand pulling is an option for small infestations.

Hyptis suavelouns Hyptis

Other common names: Mintweed



http://users.wantree.com.au/~weeds/western_weeds/lamiaceae.htm

Description: A perennial herb found in dense clumps with branched, semi-woody stems up to 2m tall. The broad leaves are in opposite pairs up the stems which are hairy. Ovate to obovate leaves 3-5 cm long and 2-4 cm wide, the margins serrulate, lower surface densely hairy; petioles up to 3 cm long. Small mauve flowers in clusters in the upper leaf axils. It flowers and fruits in autumn and winter.

Dispersal: The spiny calyx, the outermost floral whorl, which encloses the seeds, assists with their dispersal by attaching to animals and people.

Spreadability: It is fast growing.

Impact: The dense clumps exclude the native vegetation.

Control: Grub and burn small infestations. For chemical control, use an overall spray of amine or ester 2,4-D, spotspraying where applicable. All sprays should be applied before flowering begins. Other herbicides such as dicamba, clopyralid and picloram based mixtures also are effective but more expensive.

Indigofera suffruticosa Indigo

http://www.hear.org/pier/insuf.htm

Description: Erect branching shrub up to 1 m tall. Younger parts pubescent; leaves pinnate, 7-13 cm long; leaflets mostly 9 or 11 (but to 17), dark green, lanceolate-oblong or slightly obovate, 1.5-3 cm long, about 4-12 mm wide; rachis reddish-bristly; flowers in slender racemes to 9 cm long; pedicels scarcely 1 mm long; flowers about 3 mm long; corolla pinkish-red; standard obovate; pods curved, reflexed, mostly 1-2.5 cm long, 3-8 seeded, terete, borne packed in cluster.

Dispersal: By seeding.

Impact: Invades disturbed areas.

Control:

Ipomoea indica Morning Glory

Other Common Names: Evergreen Morning Glory, Blue Dawn Flower.

http://www.support.net/Medit-Plants/photos/Ipomoea.indica.MBN3.gif
http://www.support.net/Medit-Plants/plants/Ipomoea.indica.html

Description: Rapid and tall perennial or evergreen twiner, sometimes forming a woody base. The stems and undersides of leaves finely pubescent. Leaves 3-8in long, heart-shaped to 3-lobed. Flowers are borne in clusters of five, opening to bright blue-violet 3-5in Morning Glories which fade to a rose or soft red-violet, creating an overall two-tone effect in heavy bloom. Often admired for its beauty and dramatic display.

Dispersal: Seeds are rarely produced, but as the vine grows very rapidly, often sending runners along the ground to new areas, it is often thought to be 'self-seeding'. Seeds which are produced can be dispersed in water.

Impact: This weed smothers native trees and therefore interferes with the growth of native plants. Spreads along the ground and upwards through other foliage, taking over and destroying other plants. Can cover large areas in a short time. Below is an example of an escaped *Ipomoea indica* covering a wild landscape.

http://www.support.net/Medit-Plants/plants/Ipomoea.indica.html

Control: Hand-pull or treat with herbicide. Glyphosate can be used for the stem scraping method of chemical control or for stump painting.

Ipomoea quamoclit Star of Bethlehem

Other Common Names: Cypress Vine, Cardinal Climber.

http://131.103.216.128/dulley/plant/a063.jpg

Description: Cypress-vine Morning-glory is an annual, smooth, twining vine up to 6m tall. The leaves are ovate in general outline but deeply divided into many linear segments or lobes. Each segment is about 1 mm or less in width. The entire leaf may be up to 7.5 cm long and 4.5 cm wide. The flower stalks may be shorter than, or about as long as, the leaf blade underneath. Each flower stalk bears from 1-3 flowers on stalks which may be up to 2.5 cm long. The individual flower stalks are gradually enlarged from the base toward the flower. The sepals (outer layer) are from 5-7 mm long and oblong shaped. They have a short, sharp, flexible point at the apex and overlap. The joined petals are usually crimson or occasionally may be white. They may be from 2.7-4 cm long and about 2 cm broad at the top. The stamens and the stigma are slightly longer than the flower tube. The fruit is a round-ovoid capsule, 5-8 mm long, usually containing four seeds. Seedling: stems below the cotyledons (hypocotyls) are stout. Cotyledons very deeply indented and long, with an angle between the cotyledons greater than 90°.

Dispersal: Seeds (will often self seed).

Impact:

Control: Hand-pull or treat with herbicide.

Jatropha gossypiifolia Bellyache Bush

http://www.desert-tropicals.com/en_francais/Plants/Euphorbiaceae/Jatropha_gossypiifolia.html

Description: This shrub can grow up to 4 m tall and has a shallow root system. The thick stem is hairy and the leaves are divided into three segments. Young leaves are purple and older ones are green. The edges of the leaves are also covered in hairs. The small flowers are red and appear in clusters throughout the upper plant.

Dispersal: Seedpods are smooth and oval and contain about four seeds.

Impact: The bush out competes native vegetation and the fruits are poisonous to animals and people.

Control: Pulling the plant out or repeated slashing for larger infestations will reduce the numbers. Fire will also reduce but not eradicate the plant. The herbicides Metsulfuron and fluroxpyr can be thoroughly applied to actively growing plants for best results.

Lantana camara L. Lantana

Other common names: Common Lantana, Wild Sage

http://www.geocities.com/indyclaire/Lantana_webpage.html

Description: Grows in single shrubs or in compact clumps. The plant has spreading branches that can form dense tangled masses over 3 m high and wide. The stems have recurved spines and the serrated leaves are opposite and green. The plants have deep and large root systems. The flowers are arranged in flat heads, and the colour can be associated with toxicity of the plant.

Dispersal: The fruit is a green berry and hangs in clusters and changes to black when ripe.
The fruits are edible and the seeds are dispersed by birds. The plant also spreads by vegetative means. Any damaged or broken roots will send out suckers. Maturing and spreading suckers on the edge of the thicket also increases the size of the clumps.

Spreadability: Can spread quickly. Can spread to other islands.

Impact: The weed occurs in numerous places and the areas covered are often large. The plant is virtually considered a permanent inhabitant. Other vegetation is totally excluded, as the thickets are impenetrable to both native plants and animals. As it is toxic, poisoning is a risk to animals especially the young.

Control: There are a few insects that control the plant. *Hypena jussatis*, has been found to feed on lantana leaves and this may be combined with the moth, *rocidosem lantana*, which destroys the seeds, thereby disrupting the normal growth of the seed. Stickracing will remove standing plants but as regrowth occurs repeat action is necessary. Fire will reduce the numbers but not eradicate due to their large root system and vegetative spreading. Fire is often used as a pre-treatment to herbicides. Many herbicides are effective in eradicating the weed. Glyphosate, fluroxpyr, 2,4-D amine and metsulfuron methyl mixtures can be thoroughly applied to the weed when actively growing. Triclopyr can be sprayed or painted on to stems or cut stumps.

Lantana montevidensis Creeping Lantana

Other Common Names: Weeping Lantana

http://www.desert-tropicals.com/Plants/Verbenaceae/Lantana_montevidensis.jpg
http://www.floridata.com/ref/L/images/lant2.jpg

Description: A ground cover that grows to a height of 0.5 m with a spread of 3 m. Leaves are 8-22 mm long, dull green and are rough to touch. A strong aroma is exuded when the leaf is crushed. Flowers all year with purple small purple verbena-like heads.

Dispersal:

Impact:

Control:

Leucaena leucocephala Leucaena

Other common names: Lead Tree, Leucas, Haole Koa

http://www.hear.org/pier/leleup.htm

Description: This plant is a leguminous shrub or small tree. They can grow up to 12 m tall. The alternate light green compound leaves have leaflets arranged as feathers on both sides. It has a very deep taproot The flowering heads are in clusters on the end of branches. They are produced during May and June and are green, yellow or white. It forms dense thickets and was planted commercially, for instance as a crop or to stabilise sloping soils.

Dispersal: The pods, the legume fruit, are flat but raised over the seeds and can be up to 25 cm long. They turn from green to brown when mature. The seeds are flat and oval and can lie dormant. Prolific seed producer. It grows easily from seeds. The seeds are dispersed by rodents and granivorous birds.

Impact: The thickets exclude native vegetation. Eating by a non-ruminant animal too much can result in a decrease of health.

Control: It re-grows from cut stumps and regenerates rapidly from basal shoots after fire. New seedlings often rapidly re-establish stands after fire or other disturbance. An insect, the Leucaena Psyllid (*Heterophylla cubana*), damages but does not eliminate the plant.

Lysiphyllum hookeri syn. *Bauhinia hookeri* Bauhinia

Other Common Names: Pegunny, White Bauhinia, Hookers Bauhinia.

http://www.tuascelta.se/katalog/ colour/a-b.html

Description: Tree, usually with short trunk and branches of irregular shape; bark dark grey or almost black; dry, hard, coarsely flaky and somewhat furrowed; leaves deciduous, consisting of two equal rounded halves folded down the middle, usually with a notch between the two at the tip; flowers white; pods hard, dry, 7.5 to 10 cm long and 4 to 5 cm wide, flat, containing hard, brown, discoid seeds. Bauhinia trees are leafless during late winter and spring and are usually leafless during major droughts.

Dispersal: Seeding and with seed pods.

Impact:

Control:

Macroptilium atropurpureum Siratro

Other common names: Sirato, Purple-bean, Conchito

http://pppis.fao.org/GPPIS.exe$ShowHost?Host=1396

Description: The plant is a trailing perennial twining legume combining with tall grasses. The purplish-black flowers on long stalks arising from the leaf axils and is produced in autumn. It has leaves with three leaflets, the lower two usually lobed.

Dispersal: The plant establishes readily from seed and plant nodulates

Impact:

Control: Hercides such as glufosinate-ammonium and ametryn mixtures can be sprayed when actively growing ensuring thorough coverage.

Magnifera indica Mango Tree

http://www.albion.edu/plants/images/mangin.jpg

Description: The mango is a perennial, branching, evergreen tree and is 30-40 m tall. Trees flowers after 5-7 years. Leaves range in shape from lanceolate to round oblong. Viewed from the shoot tips, the leaves appear in a whorl. Young leaves are reddish brown but gradually become dark green. The cuticles are thick, and stomata are present in greater numbers on the upper surfaces. Flowers: the inflorescence is determinate, and flowers are borne in panicles. They develop usually from terminal buds and occasionally from axillary buds. There are normally several hundred flowers in a single panicle, less than 1% of which develop in fruits because of pollination failure and premature fruit drop. Seeds: The mango seed is enclosed in a stony endocarp and two thin inner layers, the testa and the tegmen. Mango embryos are large and have massive starch-filled cotyledons.

Dispersal: Seeds contained in the fruit are transported when the fruit is removed from the tree or from the ground where it has fallen. Thus mango trees have the potential to spread over large areas through accidental transport.

Impact: Mango trees grow rapidly and can displace native trees.

Control:

Melinis minutiflora Molasses Grass

Other common names: Stink Grass

http://www.hear.org/pier/MEMIN.htm

Description: A perennial grass that grows up to 180 cm tall. The spreading reddish leaves are up to 20 cm long and covered in hairs. The leaves secrete oil that has a strong and distinctive odour. The inflorescence is a panicle up to 30 cm long that is open in flower but closes at maturity with a sometime pale pink to purple colour. Has many spikelets, grass flowerheads, with two florets but only the upper one is fertile. The odour is believed to repel insects and was planted as a pioneer species for erosion control and smothering other weeds.

Dispersal: It produces seeds that are dispersed by wind.

Spreadability: Regeneration is rapid, therefore so is colony expansion is fast through seed dispersal.

Impact: Smothers other plants including native vegetation.

Control: This plant does not tolerate repeated mowing or heavy grazing. Adapted to fire, as only part of dense mats are generally killed. Due to the oil content burning it can produce a hot fire to clear other weeds. Biological control is not effective.

Melinis Repens syn. *Rhynchelytrum repens* Red Natal Grass

Other Common Names: Natal Redtop, Natal Grass, Holme's Grass, Blanket Grass.

http://www.hear.org/pier/rhrepp.htm

Description: a tufted perennial up to 90-100 cm high The inflorescence is an open panicle covered in dense reddish hairs, aging to grey, produced in spring and summer; sheaths to 10 cm long, sometimes longer, lower ones often slightly pubescent; ligule of short hairs 1 mm long; blades flat, 5-20 cm long, 2-5 mm wide. Spikelets about 5 mm long, clothed with fine silky hairs 3-5 mm long.

Dispersal: wind dispersal of seeds.

Impact: a fast growing and invasive grass commonly found in disturbed areas.

Control:

Mimosa pudica L. Common Sensitive Plant

Other common names: Sensitive Plant, Touch-me-not, Shame Plant

http://my.netian.com/~yeppuni/mimosa.html

Description: A sprawling, perennial plant that grows up to 45 cm high. The stems are often woody with recurved prickles. The leaves are divided to produce feather-like leaflets and when touched or disturbed by wind they fold up. The flowers are fluffy pink balls about 1 cm in diameter.

Dispersal: Each flower may develop a pod 3 cm big with a fringe of hair, each containing up to five seeds. The pods later break into one-seed pieces able to attach to animals and man. The seeds are able to remain viable for many years.

Impact: Totally infests areas out competing native plants. The spines decrease enjoyment of area for campers and other visitors, decreasing amenity.

Control: The plant is difficult to kill amongst native grasslands. Dicamba and fluroxypyr herbicides are available to control the plant and must thoroughly cover the whole of the plant. The herbicides should be applied to actively growing plants and are ineffective if the plants are disturbed just before spraying, as the leaves will be closed. Velpar + diuron mixtures are also used.

Nerium oleander Pink Oleander

Other Common Names:


http://library.thinkquest.org/C007974/media/1_1ole.jpg

Description: Evergreen shrub or small tree with thick, gummy, clear sap; leaves opposite or whorled, simple, leathery, with smooth margins and conspicuous pinnate veins; flowers clustered at tip of twigs, 5-parted, funnel-shaped, white, pink, red, or yellow.

Dispersal:

Impact:

Control:

Oldenlandia corymbosa

Other Common Names:

http://www.nybg.org/bsci/res/OLDENLANDIA.HTML
Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.

Description: A prostrate herb.

Dispersal:

Impact:

Control:

Opuntia spp. Prickly Pear

Other common names: Common Prickly Pear


http://www.chariot.net.au/~adplains/weed_prickly_pear.htm
http://users.wantree.com.au/~weeds/western_weeds/bud_cac_caes.htm

Description: These perennial plants have succulent green stems modified into segments or pads. These are covered in spines that are surrounded by fine hair. Can grow to several metres high and wide. The yellow flowers are located on the pad margins and sit on a fleshy base, which later becomes the edible fleshy fruit.

Dispersal: The segments regenerate readily if detached. These can be detached from the main plant by wind, animals or other forms of contact. The segments will root and establish a new plant wherever the piece falls. Spreading to surrounding islands can occur when the sea carries the pads. Animals and birds also ingest the seeds in the fruit, dispersing them in their droppings.

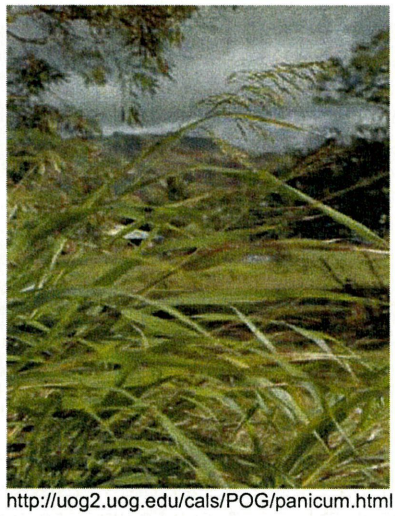
Spreadability: The plants are slow spreading but fast growing. Can spread to other islands.

Impact: Grows in large clumps excluding native vegetation.

Control: The plant is very hard to eradicate due to the regeneration options. The larva of the *Cactoblastis* moth, its natural enemy, can control the plant. But specimens near the seashore are not as readily controlled as those further inland. Eight other insects are also known to keep the plant under control. The growth of prickly pears can be removed by severing the base of the plant from the shallow and fibrous root system. The plant has to be disposed of carefully or burnt. Hot fires are effective for dense infestations. Does not respond well to spray but triclopyr and picloram+triclopyr can be effective.

Panicum maximum Guinea Grass

Other common names: Green Panic, Gatton panic.



http://uog2.uog.edu/cals/POG/panicum.html

Description: An erect perennial grass up to 3m tall. Grows well in disturbed sites and combines well with twining legumes. The root system is branched and is concentrate near the soil surface. The dark green leaf blades are flat and occasionally folded with serrate margins. They are between 30-60 cm long, about 5 cm wide and mostly without hairs apart from a few hairs above. The flowers are borne in open panicle to dense panicles up to 45 cm long and 20 cm broad. Sparse stands of this grass thicken after seeding. Planted for pasture.

Dispersal: Seed are produced practically all year round and are dispersed by wind. It can also reproduce vegetatively.

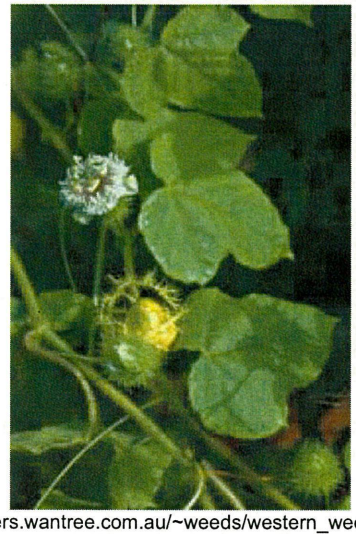
Spreadability: Spread is fast.

Impact: The dense thickets smother native plants.

Control: Hand pulling small infestations can be efficient. Herbicides are also effective such as diuron and the TCA+2,2-DPA+amitrole mixture that can be applied to the thoroughly plant. Glyphosate can be applied to actively growing plants when most have reached the early head stage. Cattle grazing will control it.

Passiflora foetida L. Stinking Passion Flower

Other common names: Love-in-a-mist, Passion Flower, Stinking Passion Vine, Wild Water Lemon.



http://users.wantree.com.au/~weeds/western_weeds/pap_pas_phy_pitt.htm

Description: A climbing perennial vine with thin stems. The three-lobed leaves give off an unpleasant smell when crushed. It attaches itself to other plants by tendrils and has solitary flowers up to 5cm across with cream petals and a white or purple corona. After flowering, the prickly bracts enlarge to enclose the orange berry.

Dispersal: The pulp encloses black seeds. Birds spread the seeds in their droppings.

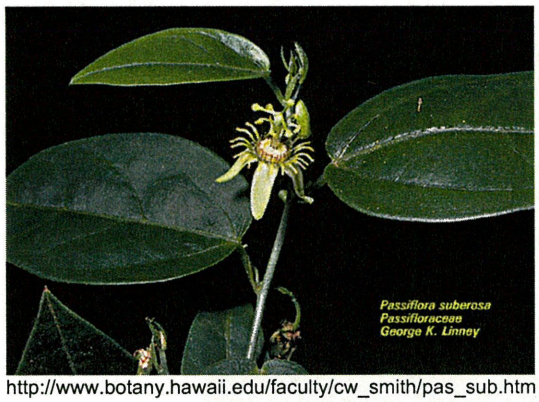
Spreadability: Can spread to other islands.

Impact: The plant can smother large stands of native vegetation.

Control: The plant is hard to eradicate. Herbicides are available but only for crops.

Passiflora suberosa Corky Passionfruit

Other common names: Cork-stem Passionfruit, Cork-stem Passionflower.



http://www.botany.hawaii.edu/faculty/cw_smith/pas_sub.htm

Description: This plant is a vine that climbs by tendrils. They have alternate, palmately lobed leaves. The flowers have a distinctive ring of large filamentous appendages, called the corona, lying flat on top of the petals. The fruit is a black coloured berry.

Dispersal: Birds eat the fruit and disperse the seeds in their droppings.

Spreadability: Can spread to other islands

Impact: The vine smothers shrubs and small trees as well as the ground layer disrupting native plants.

Control: Herbicides are available but only for crops.

Pedilanthus tithymaloides subsp. smallii Jacob's Ladder

Other Common Names: Zig Zag Plant, Redbird Flower, Slipper Flower, Devil's-Backbone

Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.

Description: Succulent shrub with milky juice; stems green, often zig-zag; leaves alternate, simple, pointed, green or white-edged; flowers red and clustered at the end of branches; fruit a capsule.

Dispersal: Seeds contained in fruit.

Impact:

Control:

Phyllanthus amarus *Phyllanthus*

Other Common Names: Black Catnip, Meniran, Gale of the Wind, Carry-me-seed, Egg Woman.

Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.

Description: This weed grows up to no more than 1.5 feet high. It has small leaves and very small (2mm) fruits that burst open and the seeds are hurled away.

Dispersal: Through seed pods bursting and hurling the seeds away.

Impact:

Control:

Pityrogramma austroamericanum a Fern

http://www.nhm.org/research/botany/wilsonferns/pit_aus_ph.html

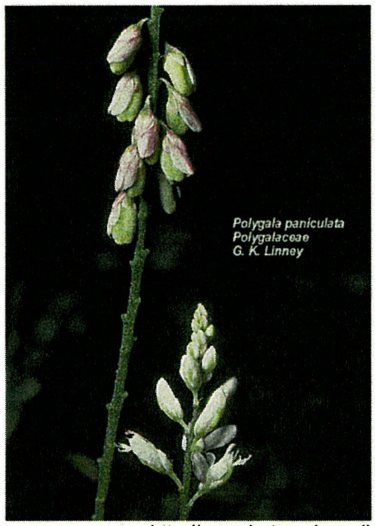
Description:

Dispersal:

Impact:

Control:

Polygala paniculata



http://www.botany.hawaii.edu/faculty/carr/images/pol_pan_fl.jpg
Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.

Description:

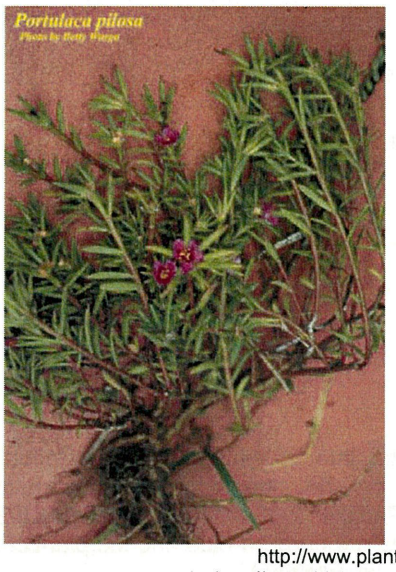
Dispersal:

Impact:

Control:

Portulaca pilosa Pink Purslane

Other Common Names: Kiss-me-quick.



http://www.plantatlas.usf.edu/images.asp?plantID=2033#
http://www.biolresearch.com/plants/web_pichtml/p/portu_pil_fl.html

Description: Tender annuals 15 cm tall, 35 cm in spread.

Dispersal:

Impact:

Control:

Praxellis clematidea Praxellis

Other Common Names:

No Picture Available

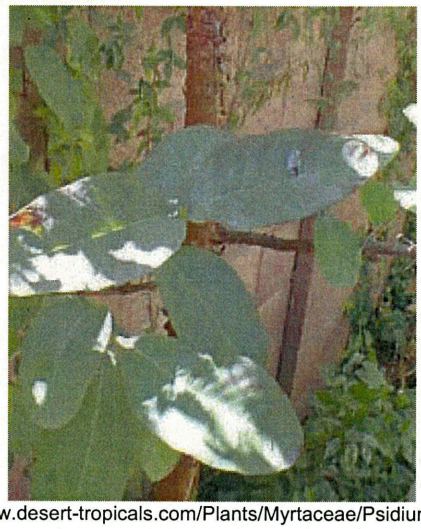
Description: A perennial, 0.3-1m tall, woody, erect and branched. Internodes 3-16 cm long. Petioles 0.3-2 cm long, blades ovate to rhomboid, 2.5-6 by 1-4 cm, teeth 5-8 on each side. Inflorescence of many capitules in terminal, dense, corymbiform, few-headed cymes. Pedicels 2-10 mm long. Flowers 25-30, somewhat purplish blue or lilac; corolla 3.5-4.8 mm long. Flowers are purplish-blue and the plant can be confused with Billy Goat Weed (Ageratum houstonianum and A. conyzoides).

Dispersal: Seeds are wind borne, aided by fine bristles on the ends of the seeds, and spread widely.

Impact: Prevalent along roadsides. Forms monospecific stands, excluding other vegetation.

Control:

Psidium guajava L. Guava



http://www.desert-tropicals.com/Plants/Myrtaceae/Psidium_guajava.html

Description: The plant is an evergreen tree up to 10 m high. The trunk is slender with wide spreading branches. The leaves are up to 15 cm long and oval-shaped and with a blunt tip. The flowers are white with about five petals. The fruits have a yellow skin and vary in shape from round to pear-shape and are fragrant when ripe.

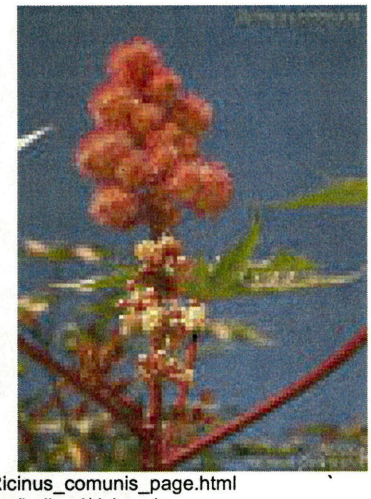
Dispersal: The pulp contains small hard seeds and birds disperse the seeds in their droppings.

Spreadability: Can spread to other islands.

Impact: Grows in dense thickets competing with native vegetation. Often shades other plants preventing them from getting light.

Control:

Ricinus communis Castor Oil Plant



www.missouriplants.com/Redalt/Ricinus_comunis_page.html
www.csdl.tamu.edu/FLORA/bleeker/holland/ricinus.jpg

Description: This plant is a shrub that grows up to 4 m tall. It has stout spreading branches. The leaves are on stalks that are up to 60 cm long. The leaves are divided into seven to nine leaflets that arise from the same point and can be up to 40 cm long. The flowers are large with the male flowers being yellow and the female flowers red. Spikes surround the flowers in the upper branches. Female flowers develop into the fruit that are covered with soft spines. Garden plant.

Dispersal: The fruit has three segments each containing a seed. When ripe the fruit explodes throwing the seeds several metres away.

Spreadability: Infestations expand by metres/yr

Impact: The plant is unpalatable and the seeds are poisonous and dangerous to animals and people.

Control: Hand pulling ie effective for small infestations. Herbicides are more effective for larger infestations such as 2,4-D amine, which should be sprayed to the point of runoff. Triclopyr can be sprayed around the base of plant whilst actively growing or to a cut stump.

Rhoeo discolor syn. *Rhoeo spathacae* Moses in the Cradle

Other common names: Oyster Plant, Boat Lily, Moses-in-a-Boat

http://www.pssc.ttu.edu/PSS3317/lab/commelinaceae.htm

Description: This plant grows in large clumps up to 40 cm high. It has dark green spear shaped leaves with purple undersides that contains a toxin. Little white flowers are cradled in boat shaped brackets. Garden plant.

Dispersal: Vegetation reproduction of clumps.

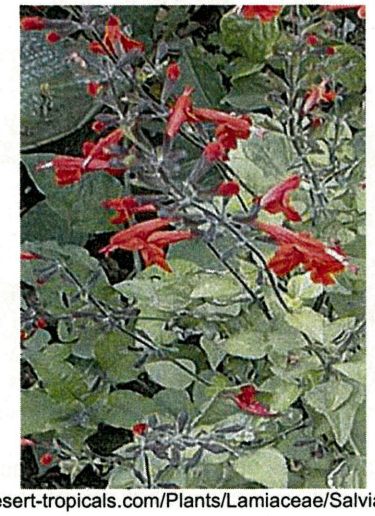
Spreadability: Planted as a garden and landscape plant providing sources of invasion to surrounding native vegetation. The weed is spreading to new locations in bays on large World Heritage islands (mechanism unknown).

Impact: The weed is invading and disrupting native plant communities. The toxin irritates through handling therefore decreasing visitor comfort and value of area. The plant does not support any visible wildlife.

Control: Very hard to kill and is not affected by sprays.

Salvia coccinea Red Salvia

Other Common Names: Scarlet Sage, Texas Sage, Cherry Red Sage.



http://www.desert-tropicals.com/Plants/Lamiaceae/Salvia_coccinea.jpg

Description: Perennial, or self seeding annual, 60-90 cm tall, 60cm wide. Several whorls of red flowers form an interrupted spike on a square stem. Flowers are2.5 cm long; corolla 2-lipped, the lower lip 3-lobed, larger than the 2-lobed upper lip; with 2 stamens. Leaves are usually about 5 cm long; opposite, ovate, blunt, and scalloped.

Dispersal:

Impact:

Control:

Sansevieria trifasciata Mother-in-law's Tongue

Other common name: Snake Plant

generalhorticulture.tamu.edu/h202/labs/lab3/laurentii.html

Description: The plant can grow up to 1.5 m and is a stiff, erect, herbaceous perennial. The very thick leaves are long and flat and are usually borne basally. They are often mottled green with yellow edges. Flowers are rarely produced and only on older plants are star-like and fragrant, and appear on a single stem that grows from the soil near the base of the plant. Garden plant.

Dispersal: This plant grows from rhizomes, a creeping stem below ground from which new aerial shoots arise.

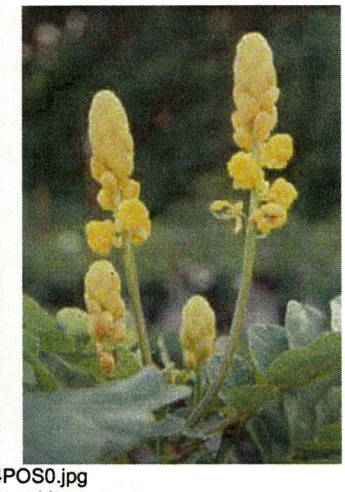
Spreadability: Slow spread

Impact: This plant will choke out all ground layer plants.

Control: Can be removed by hand but all rhizomes must be grubbed out. Removed pieces must be disposed of thoroughly or they will regrow.

Senna alata Candle bush

Other Common Names: Candelabra Bush, Roman Candle Tree, Emperor's Candlesticks, Ringworm Bush.



http://www.hortpix.com/pix/U4POS0.jpg
http://www.rareflora.com/sennaal.jpg

Description: Coarse erect shrub up to 3-4 m tall. Leaves about 50-80 cm long, with 8-14 pairs of large leaflets (the distal ones largest), up to 17 cm long, ovate-oblong, obtuse, truncate, or even slightly notched at apex, subsessile; inflorescence a long-pedunculate erect dense oblong spike, the yellow flowers crowded and overlapping; pod ripening black, straight, papery in texture, winged on the angles (2), up to 15-20 cm long and slightly over 1 cm wide; seeds numerous (to 60).

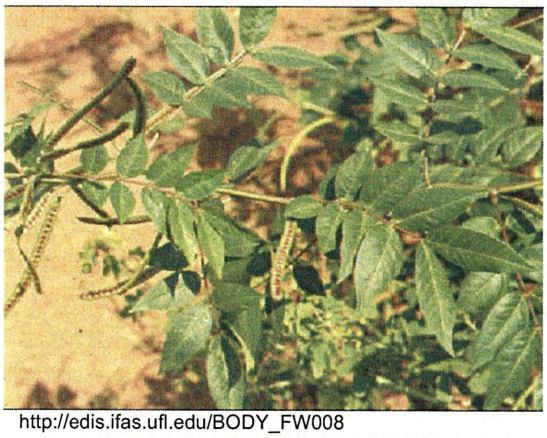
Dispersal: Seeding from pods, many seeds per pod. Seeds can be distributed by water or animals. Can also sucker from roots.

Impact: Often forms thickets. Particularly aggressive in areas where there is a high water table.

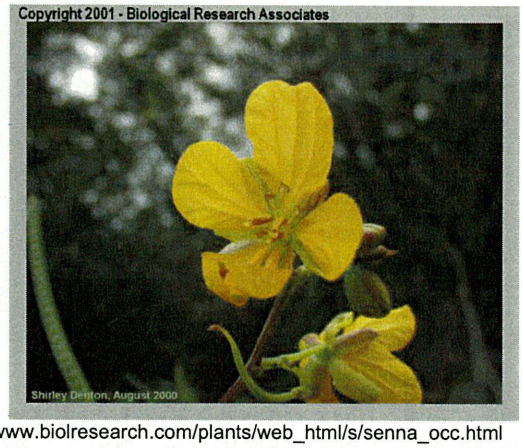
Control: Mechanical methods of control are usually ineffective because of suckering, although seedling plants may be dug out provided all roots are removed. There is little data available about chemical control, but some control of larger infestations may be possible by slashing aerial growth close to the ground and applying picloram + 2,4-D to the cut surfaces immediately. Triclopyr may also be useful in this way but is not yet registered for this purpose.

Senna occidentalis Coffee Senna

Other Common Names: Coffee Weed.



http://edis.ifas.ufl.edu/BODY_FW008



http://www.biolresearch.com/plants/web_html/s/senna_occ.html

Description: Coffee Senna is a smooth annual that can be 2 m tall. The leaves are compound. The leaflets are in 4-6 pairs and have a sharp leaf apex. These leaflets are 2-9 cm long and 2-3 cm wide with a distinct gland 3-5 mm from the base of the stalk. Flowering occurs in the leaf axils. The sepals are green and 6-9 mm long. The petals are yellow and 1-2 cm long. The 6-7 stamens are of two different lengths. The seed pods are dark brown, 8 to 12 cm long, 7-10 mm wide and curve slightly upward. The seeds are dull brown, 4-5 mm long and flattened on both ends. The pods grow upwards from the stem and curl towards the branch tip. Each pod contains 20 to 30 seeds. Seedlings: the cotyledons are smooth, round, about 1 cm long, and usually less than 1 cm wide with 3 distinct veins in the upper surface seedling. The stems have visible hairs just above and below the cotyledons.

Dispersal: The hard seed produced by coffee senna can germinate from depths of up to 12 cm.

Impact: A weed of disturbed areas which can be poisonous to native animals.

Control: This weed is reputed to be tolerant to many herbicides**.** The fungus *Colletotrichum gloeosporioides* has shown promise as a method for biological control of Coffee Senna.

Sida acuta Spinyhead Sida

Other Common Names: Morning mallow.

http://www.biolresearch.com/plants/web_small/s/sida_acu_fl.jpg

Description: This is a much branched shrubby plant growing to a height of a feet or a little more. Its leaves are simple lanceolate, and can vary in size. Some plants have leaves that are quite small, while others grow leaves that can be quite long. The leaves are prominently toothed and have an acute base (hence acuta) with stipules being present. The flowers are axillary in position, yellow in colour, solitary or occasionally in pairs. Epicalyx absent. This last mentioned feature helps distinguish it from Malvestrum, another genus of the same family with similar features, similarly coloured flower, growing in the same habitat. Sida this year began flowering from August and is still in full bloom and growth.

Dispersal:

Impact:

Control: Chemical control methods include using 200 g/litre fluroxypyr on actively growing plants, before flowering. In addition to this repeated slashing as a manual method can be used. A biological control agent (beetle) has been released in Northern Territory.

Sida cordifolia Flannel Weed

Other Common Names:

www.rain-tree.com/ Plant-Images/

Description: An erect herbaceous shrub growing to a height of about 1m. The stem is woody, branching several times and with a well developed tap root. The leaves are heart-shaped with serrated margins and have a dense covering of hairs which give a light green, felt-like appearance to the leaves. Flowers are yellow, usually borne in dense clusters at the end of branches. See capsules divide into 10 portions and have two fine bristles at one end.

Dispersal: Seeding through capsules.

Impact: It competes with native plant species.

Control: Declared in Queensland as a Class B and C noxious weed, thus it should be controlled and further introduction be prevented. Repeated slashing can control concentrated areas. In addition several herbicides are registered for use in some states. A biological control agent, *Calligrapha pantherina*, has been introduced to augment control of Spinyhead Sida. This beetle feeds on the leaves, flowers and growing tips.

Sida rhombifolia Sida Retusa

Other Common Names:

http://www.biolresearch.com/plants/web_small/s/sida_rho_fl.jpg

Description: An evergreen shrub, it grows to a height of 2m with a spread of 2m. The stem is erect and branching; the leaves are narrowly oval to rhomboidal, alternate and 7cm long, with serrate margins and a white undersurface; the flowers are yellow, open and petalled, occurring in the leaf axils.

Dispersal:

Impact: As it is a very hardy and fast growing plant it competes with native vegetation.

Control:

Sida sp. (some species) Sida

Sida acuta
http://users.wantree.com.au/~weeds/western_weeds/malvaceae.htm

Description: *Sida sp.* is a sparsely branched annual shrub up to 1.5 metres tall with fibrous stems. It has light green, slightly concave oval leaves with a shiny surface and toothed margins. The flowers are yellow, inconspicuous and borne on short stalks (peduncles) in leaf axils. The calyx and petals are five lobed ,joined at the base. The fruit is dark brown; it splits into six to ten single seeds with two sharp awns at the top of each seed.

Dispersal:

Impact:

Control: Repeated slashing can reduce the numbers. A biological agent, a beetle, has been released in Northern Territory. Herbicides such as fluroxypyr and glufosinate-ammonium can be applied whilst plant is actively growing before flowering. Atrazine and MCPA can be applied a few weeks after emergence. Repeat treatments may be necessary. In addition it should be noted that *Sida sp.* does not compete well with perennial grass.

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Sigesbeckia orientalis Indian Weed

Other Common Names: Collar-Collar.

http://hala.refer.mg/imra/50pr/seig.html

Description: an upright, slightly hairy annual grass, about 1m tall, with opposite toothed leaves and small, yellow, daisy-like heads in the leaf axils. The flower-heads are equipped with bracts covered with sticking hairs.

Dispersal:

Impact:

Control:

Silybum marianum Milk Thistle

Other common name: St. Mary's Thistle

http://www.deutsches-museum.de/ausstell/dauer/pharma/e_phar11.htm

Description: This plant is can grow up to 2 m tall and grows best in disturbed soil. The flowering stems are stout, erect and carry small, spiny, alternate leaves and end in a thistle-like flower head. The flower heads are 5-12cm across, with long spiny bracts, up to 4cm long, outside a dens cluster of soft purple florets. The rosette of leaves has a sparsely branched stem in the middle. Flowers in late spring and early summer. The ripe fruits are black, oblong and 5-7mm long with a dense tuft of silky bristles, 12-20mmlong, at the top. Thistles have deep taproots.

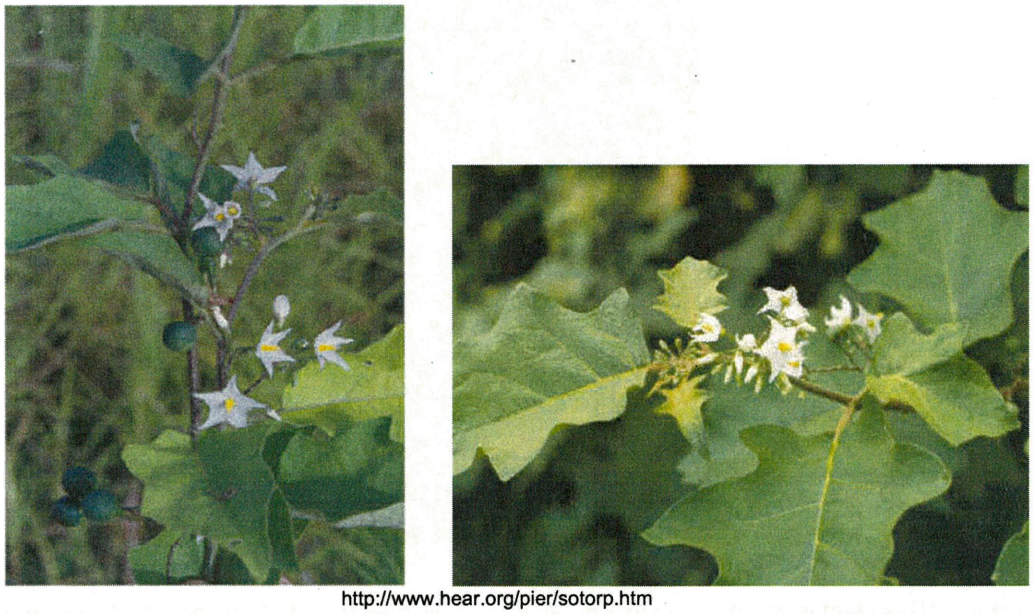
Dispersal: The seeds, crowned with feathery tufts, are capable of long-distance wind dispersal. Seeds are also carried by water and so can spread to other islands.

Impact: The prickly leaves cause discomfort to the visitors decreasing the value of the area. The plant is also competing with native plants.

Control: Flower heads should be removed before flowering can take place. The roots should be removed completely to ensure eradication. The herbicide glyphosate is effective if sprayed or dabbed onto the leaves.

Solanum torvum Devils Fig

Other Common Names: Prickly Solanum, Turkey Berry, Terongan.



http://www.hear.org/pier/sotorp.htm

Description: Erect, much-branching perennial shrub up to 4 m in height. Stems densely tomentose, armed with scattered prickles. Leaves simple, alternate; blade ovate to elliptic in shape with an acute tip and rounded to oblique base, and mostly 5-20 cm long. Leaf margins shallowly and irregularly lobed, upper leaf surface scabrous, lower surface, petioles, and pedicels densely tomentose, petiole about one-quarter as long as the blade. Flowers in many-flowered corymbs borne at intervals on the stems. Calyx with five acute lobes, tomentose; corolla sympetalous, deeply divided into five acuminate lobes, white, and 12-18 mm long. Stamens five, yellow, epipetalous, and erect. Fruit a many-seeded, green or yellow, glabrous, globose berry 10-15 mm in diameter.

Dispersal: Birds eat the berry and spread the seeds..

Impact: A weed of disturbed areas. Prefers moist, fertile soil. Will tolerate drought. Forms impenetrable thickets.

Control: Physical control is in the form of grubbing, but the entire plant must be removed. Chemical control: susceptible to translocated herbicides, including glyphosate, 2,4-D, picloram and triclopyr applied to the foliage for freshly-cut stumps at standard rates. Biological control: most organisms which are reported to attack *S. torvum* also attack other *Solanum* species which are not weeds. However, the leaf-eating chrysomelid beetle *Leptinotarsa undecimlineata*, is reported to be host-specific and might be a useful control agent.

Sorghum bicolor Sorghum

Other Common Names: Shattercane.

http://www.rrz.uni-hamburg.de/biologie/b_online/schaugarten/Sorghumbicolor/Sorghum.html

Description: Summer annual grass. Coarse and erect with much variability in growth characteristics; culms solid or sometimes with spaces in pith, 0.6–5 m tall, depending on variety and growing conditions, 5 to over 30 mm in diameter, either dry at maturity or with sweet insipid juice; leaves broad and coarse, similar in shape to those of corn but shorter and wider; blades glabrous and waxy; sheaths encircle culm and have overlapping margins; panicle erect, sometimes recurved. Seeds white, yellow, red, or brown; panicle with up to 6,000 spikelets.

Dispersal: Can become dormant under adverse conditions and can resume growth after relatively severe drought.

Impact:

Control:

Sporobolus jacquemontii Smut Grass

Other Common Names: Rats Tail Grass

No picture available

Description: Many species of Rats Tail Grass are weeds. More commonly the Giant varieties, GRT Grass. However this is a perennial bunch-type plant. It generally has an open type seed head with no fungus and broad leaf blades at the base of the plant.

Dispersal: The reddish Smut Grass seeds which may remain attached to the seed head for sometime after maturing, are spread mainly by adhering to fur, by water, or wind and may remain viable for two or more years. Smut Grass produces in excess of 45,000 seeds per plant with over 1400 seeds per head. Seed production takes place continuously throughout the growing season with natural germination averaging less than 9% because of a hard seed coat.

Impact:

Control: It can be effectively controlled with 0.5 lb/A active Velpar plus 0.25% non-ionic sulfactant in 30 gal/A water. This Velpar treatment will provide about 90% smutgrass control, with 0.75 lb/A active Velpar providing 95% control. This should be broadcast spraying in July, August and early September

Stachytarpheta spp. Snakeweed

Stachytarpheta cayennensis
http://users.wantree.com.au/~weeds/western_weeds/urt_val_ver_vio_zygo.htm

Description: A stout perennial herb with stalked egg-shaped leaves. Tough, branched stems and woody roots. Four snakeweeds are found in Queensland varying in flower colour and leaf shape, some hybridisation has also been reported. It is capable of forming dense clumps. The leaves are in pairs along the stem. they are 10cm long and are more or less oval shaped, usually tapering at the base into a short stalk. The long flower spike above the leaves can be up to 50 cm long and are often slightly curved. Small flowers open from the bottom in succession upwards so only one or two blooms open at one time on each spike. Colours of the petals vary with the species from white to pale blue, light blue, dark blue to purple and pink to red. Each flower is a slender 0.5cm wide tube opening into 5 petals. The lower part of the flower is sunk into a depression in the flower stalk. A pointed bract protects the point where the flower joins the spike. The distinctive 'snake skin' appearance of the flower spike develops as the flowers dry and fall as the seeds develop beneath the 'scale'.

Dispersal: By seed. Becomes most noticeable in November-January.

Impact: The weed can totally cover large areas out competing native plants.

Control: Slashing the plant before the seed stage and herbicides control the weed effectively. The only chemical registered for non-agricultural use is 2,4-D amine, which should be sprayed on young plants. It is only effective on actively growing plants. Spraying in summer is most effective.

Stylosanthes humilis Townsville Stylo

Other Common Names: Townsville Lucerne, Annual Stylo.

http://www.fao.org/ag/AGP/AGPC/doc/Gallery/pic.htm
www.prosea.nl/specie_r.html

Description: Erect annual herb, self-fertile, up to 1 m high with narrow trifoliate leaves and branched stems, ascending or prostrate. Leaflets lanceolate, narrow and pointed. Fruit, a biarticulate pod terminated by a persistent style that gives a beaked appearance. Each loment contains one seed. Six or more pods are produced in each seed head.

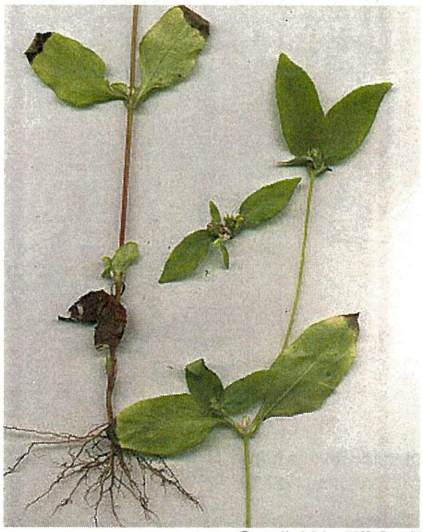
Dispersal: Is spread readily by animals.

Impact: Grows quickly and can spread into native grassland rapidly.

Control: As a chemical control method, 2,4-D has been used successfully.

Synedrella nodiflora Node Weed

Other Common Names:



Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.
http://flora.sut.ac.th/images/pg76a.jpg

Description: Erect herb, stem with appressed hairs; leaves opposite, serrate, ovate or narrowly elliptic, 2 sides slightly to noticeably unequal, appressed hairs on both surfaces; blade with decurrent base, apex acute or subacute, primary vein forming short apical point; petiole with long hairs along 2 margins; inflorescence of 2 (or more?) sessile or pedunculate heads in axil of leaf; heads paleaceous; marginal flowers ligulate, apex of corolla yellow, ovary flattened with row of bristles on either edge and 2 bristles distally, pappus wanting; disk flowers approximately 3-6, corolla with yellow apex, 4 lobes, the lobes fimbriate with short, thick hairs; anthers surrounding style and stigma; ovary 4-angled, with 2 (-3) large bristles, pappus wanting; fruit from both flattened and 4-angled flowers, with blackish seed.

Dispersal:

Impact:

Control:

Tamarindus indica Tamarind

Other Common Names:

http://www.floraguide.es/arboles/Tamarindusindica.htm
http://www.hort.purdue.edu/newcrop/morton/tamarind.html

Description: The tamarind, a slow-growing, long-lived tree reaches a height of 24-30 m, and may attain a spread of 12 m and a trunk circumference of 7.5 m. It is highly wind-resistant, with strong, supple branches, gracefully drooping at the ends, and has dark-grey, rough, fissured bark. The mass of bright-green, fine, feathery foliage is composed of pinnate leaves, 7.5-15 cm in length, each having 10 to 20 pairs of oblong leaflets, 1.25-2.5 cm long and 5-6 mm wide, which fold at night. The leaves are normally evergreen but may be shed briefly in very dry areas during the hot season. Inconspicuous, inch-wide flowers, borne in small racemes, are 5-petalled (2 reduced to bristles), yellow with orange or red streaks. The flower buds are distinctly pink due to the outer colour of the 4 sepals which are shed when the flower opens. The fruits, flattish, beanlike, irregularly curved and bulged pods, are borne in great abundance along the new branches and usually vary from 2 to 7 in long and from 2-3.2 cm in diameter. The pods may be cinnamon-brown or greyish-brown externally and, at first, are tender-skinned with green, highly acid flesh and soft, whitish, under-developed seeds. As they mature, the pods fill out somewhat and the juicy, acidulous pulp turns brown or reddish-brown. Thereafter, the skin becomes a brittle, easily-cracked shell and the pulp dehydrates naturally to a sticky paste enclosed by a few coarse strands of fibre extending lengthwise from the stalk. The 1 to 12 fully formed seeds are hard, glossy-brown, squarish in form, 1.1-1.25 cm in diameter, and each is enclosed in a parchment like membrane.

Dispersal: Propagate by seeds and seed pods. The seeds remain viable for months. Thorny branches protecting the young seedlings, mean that many survive to become mature trees.

Impact:

Control:

Tecoma stans Tecoma

Other Common Names: Yellow Bells, Yellow-elder, Yellow Trumpet Bush.

http://www.hear.org/pier/testa.htm
http://www.rareflora.com/tecomasta.jpg

Description: Shrub or small tree, much branched, twigs tan or reddish tan, smooth, scarcely 4-sided; leaves opposite, pinnately compound, leaflets 1-9, leaves quite variable, rachis and petiole slender, glabrous; inflorescence an axillary or terminal raceme, pedicels short, irregularly curved or twisted, bracts reduced to minute scales, flowers rather few, calyx narrowly cylindric-campanulate, 5-7 cm long, with 5 sub-equal acuminate teeth, glabrous; corolla bright yellow, narrowly campanulate, tube narrow, about 1 cm long, throat about 2.5 cm long. Seeds flat, oblong, 7-8 x 4 mm, with a membranous transparent wing on each end, ends of wing erose, seeds entire including wing about 20 x 6 mm.

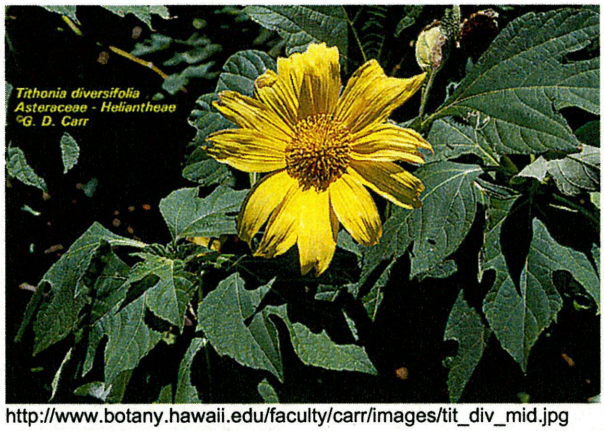
Dispersal: Wind-dispersed seeds.

Impact: Prefers disturbed areas and mesic or wet habitats. Can grow in dense stands, inhibiting regeneration of other species.

Control: Larger trees can be cut and the stumps treated with glyphosate to prevent re-sprouting. Stem injection may also be effective. Smaller trees and seedlings may be treated by foliar or basal sprays of systemic herbicides.

Tithonia diversifolia Japanese Sunflower

Other common names: Wild Sunflower Mexican Sunflower, Bolivian Sunflower, Tree marigold.



http://www.botany.hawaii.edu/faculty/carr/images/tit_div_mid.jpg

Description: This perennial plant is a shrub up to 3 m high. The plant has dull green stems. The leaves are alternate and divided into 5 segments. They are velvety underneath and up to 20 cm long. The flower heads are at the ends of branches on the upper plant. They are bright yellow and shaped like a sunflower and up to 10 cm big. Garden plant.

Dispersal: The seeds are narrow and flat about 6 mm long. The seed is can be spread by water.

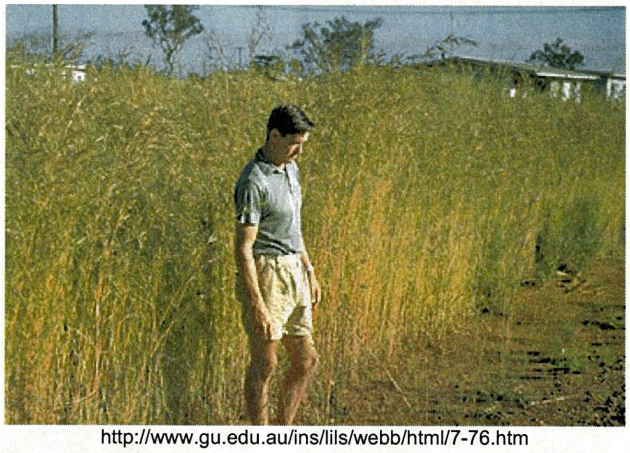
Spreadability: It is a fast growing shrub.

Impact:

Control: Slashing or ploughing can control this weed. The herbicide mesulfuron methyl and sulfonyl urea can be sprayed when the plants are actively growing. Triclopyr+picloram mixtures and 2,4-D are also effective.

Themeda quadrivalvis Grader Grass

Other Common Names: Giant Kangaroo Grass



http://www.gu.edu.au/ins/lils/webb/html/7-76.htm

Description: An annual, growing to 1.4 m; it turns a distinctive orange-red colour as obliquely lanceolate with stout, coarsely tuberculate hairs on the keels but with hairless, cane-like stems. The leaves are well spaced, up to about 30cm long by 4-7mm wide, with a pronounced keel. The seed heads are up to 60cm long and branched, interspersed with short leaves. the seeds have bent, brown awls. The general appearance of the plant is similar to that of Kangaroo Grass, *T. triandra*, but Grader Grass is usually much taller and more robust.

Dispersal: It spreads rapidly by seed. it grows vigorously and flowers from October to January. Readily colonises bare, open areas. Seedlings germinate in large numbers after early wet season rains.

Impact: It is a fast growing and fast-spreading weedy grass, as it establishes very quickly. However it will not grow well in shade.

Control: Burning encourages germination. It can be controlled chemically by paraquat at 1.4 litres/ha of a 200g AI/1 product (e.g. Gramoxone) plus surfactant at 250 ml per 200 litres of water, when the plant is at the young seedling stage of growth; plants must be thoroughly wetted. On well-grown grass, paraquat at 2.81/ha as above can be used, but increasing the rate to 400 litres of water per hectare; alternatively, 2,2-DPA at 2.3 kg of a 740g AI/kg product (e.g. Shirpon, Ellapon, Dowpon) plus TCA at 9 kg of a 940g AI/kg product (e.g. TCA grass-killer) per 200 1 of water can also be used. A wetting agent at 250 ml per 200 litres of water must be added and the plants thoroughly wetted. For pre-emergence control of grass seedlings, trifluralin at 2.8 litres/ha of a 400g AI/1 product (e.g. Treflan EC) can be used, but it must be well incorporated into the soil immediately following application.

Thevetia peruviana Yellow Oleander

http://agrolink.moa.my/doa/english/garden/s_theve1.jpg
www.cactustropicalgarden.com/photos/op/0014.html

Description: This is a shrub up to 6 m tall. The green leaves are narrow up to 3 cm long and occur in whorls of three. Tip of leafs are pointed with a dark green colour. The flowers are yellow and shaped like a funnel up to 7 cm long. Following the flowers are green fruit that turns deep purple and are toxic. Garden plant.

Dispersal: The fruit contain two to four flat seeds. It will sucker readily

Spreadability: This plant is fast growing. Seeds do not travel far. Gardens provide sources for infestation.

Impact: All parts of the plant are poisonous especially the seeds to both human and animal. The plants can form thickets out-competing native vegetation

Control:

Thunbergia grandiflora Blue Thunbergia

Other Common Names: Blue Trumpet Vine.

http://www.bestgardening.com/bgc/images/thunbergiagrandiflora02.jpg
http://www.support.net/Medit-Plants/plants/Thunbergia.grandiflora.html

Description: Vigorous perennial twining vine. The leaves are opposite along the stem and are choko-like; up to 15cm long and 10cm wide, broadly-based narrowing to a pointed tip, usually with deeply scalloped lobes towards the base. The trumpet-shaped flowers have a short, broad tube, white on the outside, yellowish inside, which expands to five rounded pale lavender-blue petals, one larger than the others. The flowers are up to 8cm long and 6-8cm across. The seed pod is inconspicuous, cone shaped, 3-5cm long, with a rounded base. the seed is flat, up to 1cm long and covered with brown scales. It is catapulted several metres when the ripe pod splits. The plant develops a very tuberous root system, some tubers being as large as 70kg. The root system when cut, persistently sprouts from its many dormant buds.

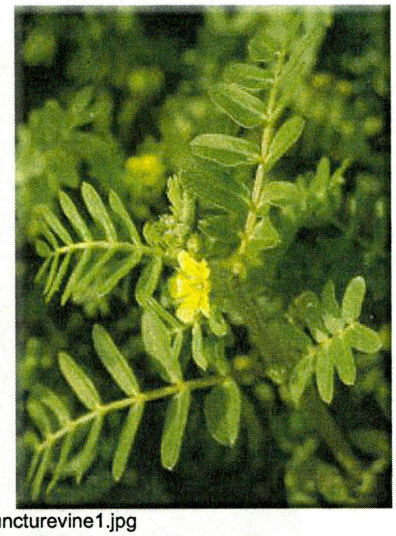
Dispersal: Dispersed many through stem cuttings or shoots from the tuberous roots, particularly when damaged or severed. Dispersal of the plant can often be traced to transport of root pieces along river banks during floods, or transport from infested sites with earth removed for fill or other soil use. However vegetative propagation is not the only means of dispersal. Seeds are also dispersed when the seed pod splits open releasing the seeds over several metres of the surrounding area.

Impact: The plant climbs and blankets native vegetation, often pulling down mature trees with the weight of the vine. Smothering vegetation also dramatically reduces light levels to lower layers of vegetation drastically limiting growth, and killing many plants.

Control: Cutting of vines at ground level will give smothered plants a reprieve, but regeneration from tubers will soon occur. Spraying or injection with herbicides is often the only option. Arsenal is a systematic herbicide which when applied as a foliar spray, is transported within the plant to kill the underground tubers. If access can be gained to tubers, it is possible to inject or apply the herbicide through a series of open cuts. Arsenal is very effective in killing Thunbergia but does not drastically affect surrounding vegetation. Good application technique should result in few non-target plants being killed. Although very effective, one application by either overall spraying or injection, rarely achieves 100% kill rate, thus ongoing monitoring and follow-up is needed.

Tribulus terrestris Caltrop

Other Common Names: Puncture vine, Yellow vine, Bullhead, Goathead, Cathead.



http://www.naturesongs.com/vvplants/punctureviine1.jpg
www.pioneerherbs.com/tribulus_terrestris.htm

Description: Prostrate annual or perennial herb with purplish-brown branches and a woody taproot. The plant produces numerous stems, over 1m long, that are much branched and arise from the crown to produce a dense mat. The stems and leaves, especially when young, are usually covered with long, silky hairs. Leaves are pinnate with oblong to ovate leaflets, about 12mm long and 6mm wide, green above and paler beneath. Flowers are bright yellow and solitary in the leaf axils. They have five conspicuous petals each up to about 1cm long. The fruit is a woody, burr, 6-12mm across, composed of five wedge-shaped segments each with two large spreading and, usually, two small, stout, conical, sharp spines.

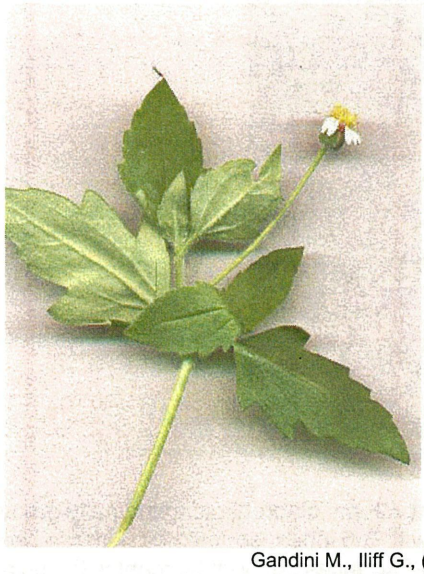
Dispersal: Reproduce solely by seeds. There is considerable seed dormancy over the autumn and winter. Seeds germinate in late spring and early summer under suitably moist conditions. Fruit are produced through summer and fall. The seeds are dispersed in the sharp 'fruit' which attach to animals feet and fur, causing extreme discomfort if stepped upon directly. A single plant can produce as many as 400 fruit, with 2 to 3 seeds per fruit. The seeds have an initial dormancy and very few will develop immediately after development. 84% germination rate has been reported in six month old seed, and seeds may remain viable for many years if buried in the soil.

Impact: Can cause great discomfort and some injury to native animals and visitors to the islands. Capable of large population increases over a short period of time. With its large seed production and the long term viability of seeds, this weed can increase in numbers rapidly if given the right conditions.

Control: Chemical control methods include: picloram, applied as a pre-emergence spray can give adequate, but not complete control. The spraying of young plants with amitrole, cholsulfuron, or 2,4-D may also be desirable. Some biological control methods have been investigated. Two weevils, *Microlarinus lareynii* and *M. lypriformis*, have been introduced to the USA as biological control agents. The larvae attack the seed and stems and have given reasonably good results. No micro organisms or viruses are known to give control.

Tridax procumbens Tridax Daisy

Other Common Names: Coat Buttons.



Gandini M., Iliff G., (2000), Low Isles Herbarium CDROM.
http://flora.sut.ac.th/images/pg115a.jpg

Description: Ascendent herb; solitary, long-stalked, yellow or yellow and white flowering heads, rooting at nodes; hairs on stem; leaves opposite, thick, sometimes 2 or 3 lobed; serrate with large teeth; base with decurrent margin; upper and lower leaf surface with bristly hairs; corolla a narrow, yellowish tube abruptly opening into a whitish ray; ovary inferior, flattened, covered with appressed hairs; style filiform; stigma 2-lobed; disc flowers many; pappus a ring of feather-like bristles; corolla yellow, tube expanding distally, 5 lobes.

Dispersal:

Impact: A low impact weed, but can spread rapidly in bare and disturbed areas.

Control: Many methods of chemical control have proved successful with this weed. This include: Atrazine, Diuron, Diuron + Hexazinona, 2,4-D + Picloram. In the test of these herbicides, the application was made when the weed was 25-35 cm in height and actively growing.

Triumpheta rhomboidea Chinese Burr

Other Common Names: Paroquet Burr, Burr Bush.

http://www.hear.org/pier/trrhop.htm

Description: Erect, woody herb or shrub 75-150 cm in height. Stems glabrous, longitudinally grooved. Leaves simple, alternate; blade ovate to rhomboid in shape with 3-5 lobes, sometimes nearly as wide as broad, and 2-10 cm long. Leaf margins irregularly serrate, leaf surfaces softly-pubescent with stellate hairs, blade palmately veined. Flowers in short, condensed, axillary cymes. Calyx divided into five pubescent, narrowly oblong sepals; corolla of five yellow, obovate petals about 5 mm long. Stamens 10-15. Fruit a burr with the body 3-4 mm in diameter, covered with 75-100 hooked spines 1.0 to 1.5 mm long

Dispersal: Large number of burrs produced which stick to clothing and fur very easily, and so can spread rapidly over large areas and to other islands through accidental human transportation.

Impact: Can spread quickly and grows amongst native grasslands and scrub. Causes irritation to human visitors and native animals.

Control:

Urena lobata Urena Burr

Other Common Names: Hibiscus Burr, Aramina, Caesarweed, Pink Chinese Burr.

http://155.187.10.12/images/photo_cd/732131822186/044_2.jpg

Description: An erect annual shrub to 1.5 m tall with a stringy bark. Leaves alternate, hairy on both surfaces. Pinkish flowers in leaf axils, about 1 cm broad, producing a 5-celled fruit each with one seed. There are barbed spines on the fruit.

Dispersal: Seed of hibiscus burr is readily spread by animals and humans. Can spread to other islands.

Impact: Invades disturbed areas

Control: Can be chemically controlled with 2,4 -D sprayed on seedlings.

Vigna radiata Mung Bean

Other Common Names:

http://www.prosea.nl/images/0000205.jpg

Description: An upright annual legume ranging in height from 15 cm to 1 m; average height of mature plant, 0.9 m. Branches freely, but not heavily foliaged. Leaves and stems are slightly hairy. Junctions of branches and stems are stipuled. The flowers are yellow. Thin, cylindrical pods are borne at the top of the plant containing small, often cylindrical seeds covered with a white rough layer. Pods clothed in long, spreading, deciduous silky hairs.

Dispersal: Dispersed by seeds contained in seed pods.

Impact:

Control:

Vinca major Blue Periwinkle

Other common names: Greater Periwinkle


http://tncweeds.ucdavis.edu/photos/vinma01.jpg
http://tncweeds.ucdavis.edu/photos/vinma03.jpg

Description: A perennial, evergreen herb with erect flowering stems, 0.25-0.5 m long, and trailing non-flowering stems, 1 m long, which root at the nodes. The stems contain a milky latex. The shiny, dark green leaves are 2-3 cm long, opposite, round-ovate, and pinnately veined. The entire margins are ciliate with hairs 0.1-0.4 mm long, and there are usually numerous hairs along the midribs on the upper surface. The flowers, which are regular and solitary, are borne in the axil of every other leaf. The slender pedicels are 3-5 cm long. The calyx is five-parted with essentially equal lobes of about 1 cm long. The violet or blue corolla (2.5-3 cm long) is equally five-parted, and with the tube pubescent within. The two slender cylindric follicles are somewhat torulous, about 4-5 cm long, and bear 3-5 seeds. The seeds are without coma.

Dispersal: Stems take root where in contact with the ground.

Spreadability: Slow spread vegetatively, however in ideal growth conditions, *Vinca major* can spread with great rapidity by means of its arching stolons, which root at the tips.

Impact: It forms a dense carpet to the exclusion of other plants, this creates a problem where it is competing in areas with native flora. It appears to be quite stable in the environment; dry or cold weather may temporarily set growth back, but quickly re-sprouts and regains lost ground coverage. It is also toxic and therefore can be harmful to native animals.

Control: Manual removal is possible by raising the runners with a rake and mowing them close or digging them out by hand. Chemical methods for this weed are few, as most environmentally benign herbicides are not effective, due to the waxy cuticle of the leaves that make chemical penetration difficult. Even the makers of Roundup, an herbicide that biodegrades within a week, advise against its use on this weed. The most caustic chemicals, including paraquat (made by Chevron) and "Goal," which contains the active ingredient oxyflurfen, may be considered strong enough to eradicate *Vinca major* due to their persistence. The plant is also fire resistive plant and so can slow a prescribed burn in a localised area. No biological controls are known. At present, methods suggested for controlling the spread and/or eradication are scanty. Mechanical means for control include raising the runners and mowing or complete removal by hand. Herbicides proven successful are 2,4-D, 2,3,6-TBA, and Fenuron, among others.

Wedelia trilobata Singapore Daisy

Other common names: Wedelia, Creeping daisy, Creeping Oxeye

http://www.hear.org/pier/wetrip.htm

Description: This plant is a creeping perennial herb that grows up to 30 cm high. The stems are round with green serrated fleshy leaves. Small yellow flowers can appear year round and has insignificant brown fruit. Garden plant.

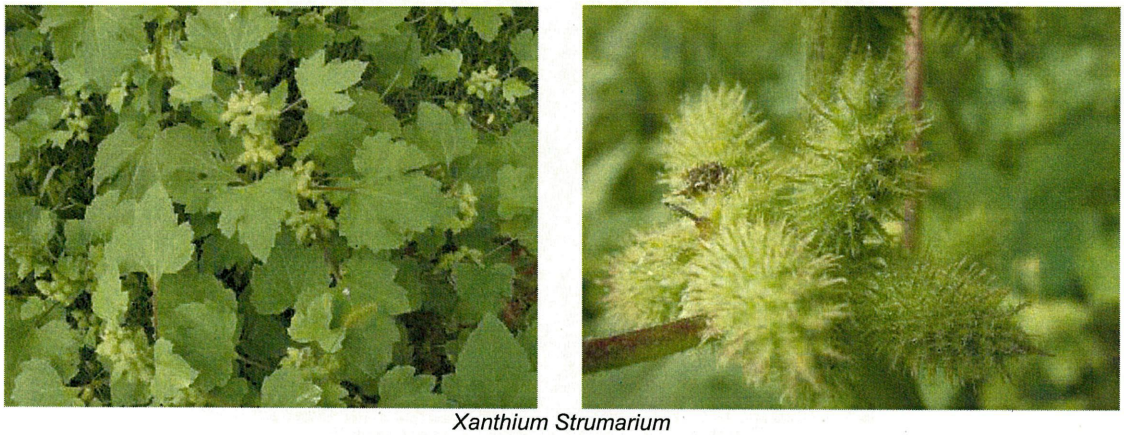
Dispersal: When the stems touch the ground new plants are formed as well as from the seeds

Spreadability: Fast growing and roots well

Impact: The plant has been shown to disrupt native plant communities by forming a dense ground cover and either crowding out or preventing regeneration of native plants.

Control: The herbicide glyphosphate can be used effectively to control the plant.

Xanthium spp. Noogoora Burr



Xanthium Strumarium
http://www.holoweb.com/nature/plants/Xanthium_Strumarium.htm

Description: These plants are erect perennials able to grow up to 3 m tall and have deep taproots. They are rarely branched when they occur in patches but as single plants have many spreading branches. The leaves alternate on the stems and are 7-15 cm in diameter with prominent purplish veins and shaped like grapevine leaves. The flowers are in clusters nears the tip of the stem and contain both male and female flowers. The female flowers develop to become burr-like fruit. The hard and woody burr is egg-shaped and densely covered with hooked spines. The burrs go brown in colour when they mature.

Dispersal: There are two seeds in each burr with one being slightly larger. They are brown and boat-shaped. The burrs are dispersed easily as the hooked spines readily attach to animals and people. The burrs hold on to the dead plant when they die in autumn until the next season. The burrs can also float in water therefore can spread to other islands. Can be spread on visitors clothing.

Spreadability: The seedlings grow rapidly. Can spread to other islands

Impact: The seedlings are poisonous therefore dangerous to native animals. The burrs can irritate animals as well as visitors therefore decreasing the value of area.

Control: Hand pulling is only effective before flowering or before burr formation. Hand hoeing or chipping is only economical in small areas or sparsely populated situations, as it is very labour intensive. Slashing and burning plants prevent the burr formation. A hot fire kills burrs on the soil surface but if less intense will encourage growth. Biological agents such as a rust fungus *Puccunia xanthii* and some insects have had little effect in controlling the weed. They are susceptible to many herbicides. 2,4-D amine and 2,4-D ester can be applied before flowering and glyphosate prior to burr formation. Different types of MCPA can be used for older weeds or seedlings. Ametryn can be applied thoroughly to young actively growing plants.

Yucca spp. Yucca

http://iquebec.ifrance.com/cactophilie/images/yucca.jpg

Description: This plant is a shrub and a succulent. It has a rosette of stiff leaves arising from a stout stalk or trunk. Only the leaves at the tip are green the rest are dead and brown in colour. The stalk can fall over by becoming top heavy but the tip of the stem will continue growing upwards once fallen. A flowering spike is produced at the tip with a pyramid of bell-shaped flowers. The colour varies depending on the species. They are able to form thickets.

Dispersal: This plant regenerates from seed as well as producing buds near the base of the stem.

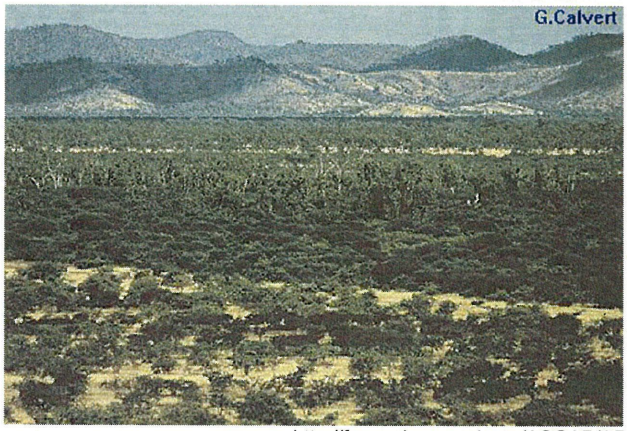
Spreadability: Slow vegetative spread until flower spike produced.

Impact: The plant especially thickets excludes native plants. The tip of the leaves are very sharp and can inflict wounds to animals and people therefore decreasing visitor comfort and value of the land.

Control: Manual removal can be effective if roots area grubbed out but it is a difficult task.

Zizyphus mauritiana Chinee Apple

Other Common Names: Chonky Apple, Indian Jujube.



http://farrer.riv.csu.edu.au/ASGAP/APOL16/dec99-2g.html
http://www.hort.purdue.edu/newcrop/morton/indian_jujube.html

Description: The plant is a vigorous grower and has a rapidly-developing taproot. It may be a bushy shrub, 1.2-1.8 m high, or a tree 3-9 or even 12 m tall; erect or wide-spreading, with gracefully drooping branches and downy, zigzag branchlets, thornless or set with short, sharp straight or hooked spines. It may be evergreen, or leafless for several weeks in hot summers. The leaves are alternate, ovate- or oblong-elliptic, 2.5-6.25cm long, 2-4 cm wide; distinguished from those of the Chinese jujube by the dense, silky, whitish or brownish hairs on the underside and the short, downy petioles. On the upper surface, they are very glossy, dark-green, with 3 conspicuous, depressed, longitudinal veins, and there are very fine teeth on the margins. The 5-petalled flowers are yellow, tiny, in 2's or 3's in the leaf axils. The fruit of wild trees is 1.25-2.5cm long. The form may be oval, obovate, round or oblong; the skin smooth or rough, glossy, thin but tough, turns from light-green to yellow, later becomes partially or wholly burnt-orange or red-brown or all-red; overripe fruits are wrinkled, the flesh buff-colored, soft, spongy and musky. There is a single, hard, oval or oblate, rough central stone which contains 2 elliptic, brown seeds, 6mm long.

Dispersal: Dispersed by seeds, which remain viable for 2 1/2 years but the rate of germination declines with age. Seeds dispersed mainly by birds and animals which eat the fruit and spread the seed in their droppings.

Impact: Fast spreading and hardy tree which forms dense thickets which make access impenetrable to larger native animals and humans.

Control: Control is difficult and expensive. Single plants should be slashed and roots grubbed out, or the whole plant sprayed with glyphosate. The larger patches are best slashed and the cut stumps liberally painted with triclopyr in diesel oil, as soon after slashing as possible. Basal bark sprays also give good control using triclopyr or picloram in diesel oil, thoroughly wetting the bark all around up to about 50 cm from the soil surface.

Summery List of Problem Weeds

Agave spp.	Sisal Hemp
Ageratum spp.	Goat Weed
Alternathera bettzickiana	
Alysicarpus vaginalis	Buffalo Clover
Amaranthus viridis	Green Amaranth
Annona glabra	Pond Apple
Antigonon leptopus	Coral Vine
Asclepias curassavica	Red Flowering Cotton Bush
Bidens pilosa	Cobblers Peg
Bothriochloa pertusa	Indian Couch
Brachiaria mutica	Para Grass
Bryophyllum spp.	Mother of Millions
Cassia fistula	Golden Rain Tree
Catharanthus roseus	Pink Periwinkle
Cenchrus echinatus	Mossman River Grass
Chamaesyce hirta (syn. *Euphorbia*)	Asthma Plant
Chamaesyce prostata (syn. *Euphorbia*)	Red Caustic Creeper
Chloris barbata	Purple-top Chloris
Chloris inflata	
Cocos nucifera	Coconut Palm
Commelina benghalensis	Wandering Jew
Convolvulus arvensis	Field Bind Weed
Conyza parva	a Fleebane
Crotalaria goreensis	Gambia Pea
Crotalaria pallida	Streaked Rattlepod
Crotalaria sp.	Rattlepod (some species)
Cryptostogia grandiflora	Rubber Vine
Cyperus rotundus	Nut Grass
Dactyloctenium aegypticum	Coast Button Grass
Datura ferox	Fierce Thornapple
Desmodium scorpiurus	
Desmodium tortuosum	
Desmodium torvum	
Dioscorea alata	Greater Yam
Eleusine indica	Crows Foot Grass
Emilia sonchifolia	Emilia
Euphorbia cyathophora	Painted Spurge
Euphorbia heterophylla	Milk Weed
Gomphocarpus fruticosus	Narrow Leaf Cotton Bush
Gomphrena celosioides	Soft Khaki Weed
Hymenachne amplexicaulis	Hymenachne
Hyptis suaveolens	Hyptis
Indigofera suffruticosa	
Ipomoea indica	Morning Glory
Ipomoea quamoclit	Star of Bethlehem
Jatropha gossypifolia	Bellyache Bush
Lantana camara	Lantana
Lantana montevidensis	Creeping Lantana
Leucaena leucocephala	Leucaena
Lysiphyllum hookeri (syn. Bauhinia)	Bauhinia
Macroptilium atropurpureum	Siratro
Magnifera indica	Mango Tree
Melinis minutiflora	Molasses Grass
Melinis repens (syn. *Rhynchelytrum*)	Red Natal Grass
Mimosa pudica	Common Sensitive Plant
Nerium oleander	Pink Oleander

Oldenlandia corymbosa	
Opuntia spp.	Prickly Pear
Panicum maximum	Guinea Grass
Passiflora foetida	Stinking Passion Flower
Passiflora suberosa	Corky Passionfruit
Pedilanthus tithymaloides	Jacobs Ladder
Phyllanthus amarus	
Pityrogramma austroamericanum	a Fern
Polygalia paniculata	
Portulaca pilosa	
Praxellis clematidea	Praxellis
Psidium guajava	Guava
Ricinus communis	Castrol Oil Plant
Rhoeo discolor, R. spathacae	Moses in the Cradle
Salvia coccinea	Red Salvia
Sanseveria trifasciata	Mother-in-Laws Tongue
Senna alata	Candle Bush
Senna occidentalis	Coffee Senna
Sida acuta	
Sida cordifolia	Flannel Weed
Sida rhombifolia	Sida Retusa
Sida sp.	Sida (some species)
Sigesbeckia orientalis	Indian Weed
Silybum marianum	Milk Thistle
Solanum torvum	Devils Fig
Sorghum bicolor	a Sorghum
Sporobolus jacquemontii	Rats Tail Grass
Stachytarpheta spp.	Snakeweed
Stylosanthes humilis	Townsville Stylo
Synedrella nodiflora	
Tamarindus indica	Tamarind
Tecoma stans	Tecoma
Tithonia diversifolia	Japanese Sunflower
Themeda quadrivalvis	Grader Grass
Thevetia peruviana	Yellow Oleander
Thunbergia grandiflora	Blue Thunbergia
Tribulus terrestris	Caltrop
Tridax procumbens	Tridax Daisy
Triumpheta rhomboidea	Chinese Burr
Urena lobata	Urena Burr
Vigna radiata	Mungbean
Vinca major	Blue Periwinkle
Wedelia trilobata	Singapore Daisy
Xanthium spp.	Noogoora Burr
Yucca spp.	Yucca
Zizyphus mauritiana	Chinee Apple

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Problem Animals

Problem Animals in the Great Barrier Reef World Heritage Area

Feral animals on islands are a threat to the values of the islands. Feral animals can destroy native vegetation, reduce numbers of threatened plants, compete with native fauna for food and shelter, prey on fauna and their eggs, destroy and poison habitat and spread diseases.

Some large species of native mammals become problems when they are introduced to islands. With few predators on the island and an inability to migrate away they can overpopulate the island. This may result in them reducing native vegetation, altering the habitat of other species, out competing other fauna for food and shelter and causing a nuisance to people.

Problem animal management

The first aim of management is the eradication of feral animals. This can is difficult to achieve, particularly removing the last few individuals. Control is the alternative management strategy. Control seeks to decrease their impact by reducing numbers and the limiting their capacity to spread.

Capture and re-location usually control problem native species, as killing native species is a sensitive public issue.

New infestations of problem animals must be acted on promptly before they become well established and already established populations must be prevented from further spreading.

Priority

Priority for problem animal management should be based on the actual and potential impact of animals on the values of the islands. Factors that influence priorities for species include the capacity to destroy native fauna and their nests, impact threatened species, destroy native vegetation, spread to other islands and cause a nuisance to users.

Considerations like accessibility of populations, remoteness and difficulty of eradication are factors that influence operational decisions rather than priorities.

This is a summary of the problem animals in the Great Barrier Reef World Heritage Area. The list of infestations is likely to grow as more attention is directed to islands that have recently been declared National Park. Additional infestations of problem animals especially rodents and toads are also likely to be found during fieldwork, and new infestations may occur through accidental introductions in transported materials or through animals swimming or drifting to islands.

Information in Report

For problem animals the information includes:
Alternative names
Photo
Description
Reproduction
History
Impact - on island ecosystems and species
Control - recorded information on control (these notes are not comprehensive should not be viewed as recommended control measures or even the most up-to-date methods.)
Occurrence - which islands these pest species are found on in the Great Barrier Reef World Heritage Area.

Bos taurus Feral Cattle

Other common names: Scrub bull

http://www.murraygreybeef.com/photo.htm

Description: Feral cattle are domestic cattle that have not been mustered for some time and have gone wild. The colour varies and their height on average is about 120 cm. Cattle are herbivores and eat grasses, herbs, leaves and twigs. They can be shy of humans. They usually do not have brands or ear tags.

Reproduction: These animals have a year round mating season. One young is normally produced each pregnancy but there can be twins. They have a gestation period of about 9 months.

History: They were introduced to Australia with the First Fleet in 1788 for food. Some herds were released and others escaped and have since turned wild and become shy of humans. Sometimes managed stock that is free roaming and mustered on an occasional basis strays onto land that is managed to protect its natural values without cattle. There is grey area between these cattle and feral cattle.

Impact: Theses animals contribute to land degradation by over grazing of the vegetation. They also compete with native animals for food and as a result may cause nutritional deficiencies. They also trample the burrows of ground nesting seabirds and act as reservoirs of disease-causing organisms.

Control: Feral cattle can be captured and released into domestic herds. Mustering using helicopters flush animals out from their hideouts. Shooting keeps the numbers down.

Occurrence on islands in the GBRWHA:
Capricorn District – Curtis.

Bufo marinus Cane Toad

Other common names: Giant Toad, Marine Toad

http://www.env.qld.gov.au/cgi-bin/w3-msql/environment/plant/animals/resultframe.html?id=13

Description: Cane toads are heavily built amphibians that can grow up to 20cm long. Females are larger and have smoother skin than males. The skin on the back is warty with a leathery feel ranging from olive-brown to reddish-brown in colour. The underside is lighter in colour varying from white to yellow, which can be mottled with brown or grey. The ridge over each eye and the large paratoid glands above the shoulders behind the eyes are the most distinctive characteristics of the Cane toad. Webbing only exists between the toes and the tips of the digits on both the hands and feet do not have pads. Cane toads are ground dwelling predators and forage mostly at night, feeding on insects and small animals. Their diet includes frogs, small reptiles, mammals and even birds. The cane toad has the ability to lose half its body weight through dehydration, and replaces it when water becomes available. The lifespan of a Cane toad ranges between 7 and 24 years in captivity so in the wild the lifespan is probably shorter.

Reproduction: Mating can occur at any time of the year. The female produces up to 35 000 small black eggs. The male fertilisers the eggs that are laid in long sticky strings. Native frog eggs are laid in clumps. The tadpoles are black.

History: Native to Central America, the cane toad was introduced to Australia in 1935 to control two species of cane beetles, a pest in the sugarcane crops in North Queensland. However they proved ineffective and thrived to such an extent that it is now a pest. They have spread throughout Queensland except the arid zone.

Impact: Cane toads compete with small invertebrates for food, shelter and breeding sites. This is thought to have caused numbers of some native frogs to drop. They are toxic to potential predators. Cane toad venom is also found all over the skin, so predators often die even when just picking up toads. The eggs and tadpoles are also poisonous. Predators of all stages of the life cycle are affected. Some native animals have declined in numbers where the cane toad is present.

Control: The cane toad has a few predators such as the Keelback Snake that can detoxify the venom. Some birds and animals such as the Crow and the Water Rat have learnt to turn the toad over and eat the internal organs, which are non-toxic. The removal and drying of the eggs along with removal of tadpoles can keep the numbers down. Caution is needed, as the tadpoles are similar to some native frog tadpoles. Hand collection and freezing the cane toad causes them to become dormant as a reaction to the cold and eventually die in its sleep. Preventing them laying eggs by removing standing water may be an option but native frogs may be affected. Biological control is being investigated. Viruses have proved effective on tadpoles but were also shown to kill a native Australian frog.

Occurrence on islands in the GBRWHA:
Northern Coastal District – Sisters, Snapper
Burdekin District– Dunk, Orpheus, Hinchinbrook, Magnetic.

Canis familiaris Feral Dog

No Picture Available

Description: Feral dogs are domestic dogs that have been abandoned or let loose and are now wild. Feral dogs can range in size and colour. This animal is an opportunistic predator. The feral dog will also readily breed with dingoes.

Reproduction: Litters

History: Domestic dogs were brought with the settlements. Some were released or escaped and have turned wild and shy of humans.

Impact: They dig up turtle and bird nests as well as eating the young. Feral dogs can also act as a reservoir for disease and parasites that could be harmful to native animals.

Control: Opportunistic shooting can only control small populations. Trapping is again suitable for small populations but is labour intensive. Poisoning using sodium monofluoroacetate (1080) or strychnine is the most effective method. Helicopters can be used to ensure baits are placed accurately in inaccessible territories. Care must be taken not to impact other species with baiting.

Occurrence on islands in the GBRWHA:
Burdekin District – Magnetic.
Capricorn District – Wild Cattle

Capra hircus Feral Goat

http://www.env.qld.gov.au/cgi-bin/w3-msql/environment/plant/animals/resultframe.html?id=15

Description: Feral goats can weigh up to 60 kg with the male being larger than the female. They can be just under a metre tall to the shoulders and up to 1.5 m long. Coats vary widely in both colour and type of hair. Horns may be present and can either be curved or straight. The goat is a herbivore and eats most plant matter including fruits, leaves, bark, twigs, and roots. Water is necessary every few days when the availability of lush growth is scarce.

Reproduction: Goats become sexually mature at six months and usually have one or two kids each pregnancy. Gestation lasts five months so they often have two litters a year.

History: Goats were introduced to Australia with the First Fleet in 1788 and were valued by settlers for its meat and milk. In 1861 Angora and Cashmere goats were introduced for a wool trade but when theses ventures failed the flocks were abandoned. During the 19th century, sailors released goats onto islands and the mainland for emergency food supplies. The released and escaped goats formed feral herds.

Impact: In high numbers, the feral goat can have a devastating effect on the environment especially native plants. Goats are selective feeders and can therefore reduce the native plant diversity. At high populations levels they can eat nearly all plant life below 1·8 m. Their hooves destroy plant life and also break the soil making it vulnerable to erosion. Goats compete with native animals for food, water and shelter. The feral goat can also act as reservoir for disease and parasites that could be harmful to native animals.

Control: With a high reproduction rate and mobility, control is difficult. Without control measures, a goat population can increase by 75 percent in a year. Control to some extent can be maintained through mustering using dogs or motorcycles, trapping and shooting. Trapping has only proved successful at watering points. Shooting from helicopters is useful over inaccessible terrain and has been more successful at eradicating herds on islands than has shooting on the ground. Eradication can also be assisted by the 'Judas goat' technique. A radio transmitter is attached to a trapped goat, which then leads a hunter to the herd allowing the last pockets of a goat population to be found. Poisoning trials using 1080 suspended in a gel and applied to the leaves of preferred species plants has been successful in New Zealand but is not registered in Queensland for this purpose. Where common, the dingo can adequately control the goat. Small numbers of dingoes can be introduced to islands to eradicate goats. The dingoes then need to be removed. Care should be taken with this technique if native wildlife vulnerable to dingo predation are also present on the islands.

Occurrence on islands in the GBRWHA:
Burdekin District – Orpheus.
Whitsunday District – Hook & Long.
Capricorn District – Curtis, North East Percy & South Percy.

Felis catus Feral Cat

http://www.env.qld.gov.au/cgi-bin/w3-msql/environment/plant/animals/resultframe.html?id=19

Description: Feral cats are similar to domestic cats but are more muscular around the head. Their coats are mainly short and the colour varies depending on the surroundings. They are nocturnal and are predatory carnivores. They feed on any animal including insects, reptiles, birds and mammals.

Reproduction: A female becomes sexually mature at a year old can have up to three litters a year. On average five kittens are born in each litter but few survive to eight weeks.

History: Cats were introduced into Australia by European settlements and later were brought in to control rabbits, rats and mice. Cats may have arrived in Nothern Australia earlier via Maccassan traders. They became feral and established populations in the wild. The feral population is boosted by owner dumping pet cats in the bush.

Impact: Feral cats threaten the native wildlife reducing populations and endangering threatened species. They are particularly damaging to isolated populations such as on islalnds. Cats also compete with native animals for food and shelter. They can also act as reservoirs for disease and parasites that could be harmful to native animals

Control: The best method is to use traps but this is labour intensive. They do not take baits as readily as other pests such as foxes. Shooting can be time consuming.

Occurrence
Burdekin District – Magnetic.

Gallus gallus Feral Chicken

No Picture Available

Description: This is a bird up to 35 cm in height. Feral populations revert to their pre domestication colour forms. The males (roosters) normally have a more splendid plumage whilst the females are more plain. They have also regained the art of fly well when the need arises. They need to drink water in hot weather.

Reproduction: Hens can start laying eggs at 5 months old. The eggs are laid and they hatch after 21 days.

History: They were introduced to Australia with the First Fleet in 1788 for meat, eggs and feathers. With escapees and releases it was not long before they became feral and established populations in the wild but most have not survived. Today few feral populations exist in Australia

Impact: They compete with native ground birds such as rails for food.

Control: Shooting and trapping are the most effective ways of controlling and eradicating the bird. Follow ups are necessary.

Occurrence on islands in the GBRWHA:
Capricorn District – North West.

Macropus agilis Agile Wallaby

http://www.geocities.com/Athens/Delphi/2970/wallaby.htm

Description: They have large hind legs and a big and strong tail and their forelegs in comparison are small. Their heads are small with large ears. In colour they are sandy brown above and whitish below. They have a dark stripe over the cheeks and between the eyes and the ears. Grasses are the main constituent of their diet.

Reproduction: The newborn wallaby stays in the pouch for about six months.

History: They are native to Australia. They have been introduced to islands.

Impact: Their numbers on islands where they do not occur naturally can become too large as they are unable to emigrate. They can over-graze native vegetation. They are also compete with other animals for food and shelter.

Control: The shooting of any kangaroo is subject to the law and can be a sensitive issue for the public. Shooting will reduce numbers keeping the population under control. Wallabies can also be captured and trans-located. This is a very labour intensive process.

Occurrence on islands in the GBRWHA:
Whitsunday District – Long.

Macropus giganteus Eastern Grey Kangaroo

Other common names:

http://www.streetnet.com.au/wires/3121.htm

Description: They have large hind legs and a big and strong tail and their forelegs in comparison are small. Their heads are small with large ears. A male can weigh up to 66kg and females half that. They are brown to grey in colour. There is strip of hair lighter in colour down the centre of the muzzle. They live in family groups. They are herbivores and eat grass and some plants.

Reproduction: They breed throughout the year.

History: They are native to Australia. They have been introduced to islands.

Impact: Their numbers on islands where they do not occur naturally can get too large as they are unable to emigrate and over grazing of native vegetation occurs. They also compete with other animals for food and shelter.

Control: The shooting of any kangaroo is subject to the law and quotas are determined annually. Shooting will reduce the numbers keeping them under control. Kangaroos can also be captured and trans-located. This is a very labour intensive process. Some work is being conducted in Australia into birth control for kangaroos to limit the ability of a population to reach high levels. At present this is expensive and experimental.

Occurrence
Whitsunday District– Brampton.

Mus musculus House Mouse

http://members.aol.com/MusBeMice/HM2.JPG

Description: The mouse is a small agile rodent. It has a slightly pointed nose with small feet and black eyes. The ears are sparsely haired and the nearly hairless tail is about as long as its body, with obvious scale rings. Colourings vary but are generally greyish-brown throughout. Mice eat many types of food but prefer seeds and grains. The lifespan of a mouse is usually 12 months.

Reproduction: Females can mate at about 35 to 49 days and can have many litters a year. Young are born in litters of five or six about 21 days after mating.

History: They originated from Asia, arriving and travelling across Australia with settlers from Europe and elsewhere. They have been introduced to several islands usually those with a history of settlements and resorts, They still arrive on islands in shipments of food and building materials.

Impact: Mice and their parasites transmit a number of diseases including salmonellosis as well as carrying certain types of tapeworms and roundworms, infectious to animals and humans. They also eat the eggs and young of threatened nesting birds.

Control: Mice have several natural predators such as owls and snakes but they do not control the populations. Trapping can be effective but is expensive and time consuming. There are several types of poisons available and can provide good mouse control. Warfarin, rozol or diphacinone are some anticoagulants commercially available. Anticoagulants cause death as a result of internal bleeding and most must feed on it for several days before death occurs. Warfarin can be a solid (food) or a liquid (mixed with water) bait. Water baits work very well where moisture is absent or the temperature is warm. Brodifacoum and bromodialone can be more effective than other anticoagulants because of they are capable of producing death after a single meal. Strychnine, zinc phosphide (ZP), bromethalin and cholecalciferol are non-anticoagulant toxicants. These are single-dose baits and are not to be left available to mice for more than a few days. Single-dose baits are recommended for a quick population reduction and where anticoagulants are not suitable. Continued use of single-dose baits can result in bait shyness and increases the chance of poisoning other animals. Non-target species may be affected through ingestion of the baits and secondary consumption of the affected mice. Poisoning with sodium monofluoroacetate (1080) may be an effective control but it cannot be used near human habitation. Poisoning is most successful during late summer or autumn when food is low.

Traps should be used where poisons are unsafe. Glueboards are an alternative to traps that catch and hold mice attempting to cross over them. Extension work with barge and boat companies transporting equipment and supplies, including mouse control activities on boats or loading facilities will help reduce the risk of re-infestation of islands.

Occurrence on islands in the GBRWHA:
Burdekin District– Hinchinbrook, Magnetic & Orpheus.
Capricorn District – Heron & North West.

Oryctolagus cuniculus *Rabbit*

Other common names: European Wild Rabbit

http://www.chariot.net.au/~adplains/animals.htm

Description: Rabbits live in burrows that make up a warren, and often cover many square metres. They are herbivores and eat mostly grass and roots but are capable of adapting to a wide range of food types. For instance they can climb trees to eat leaves, twigs and bark. They rarely drink unless not enough water is gained from its diet.

Reproduction: Mating occurs under favourable conditions such as an abundance of food. Females are sexually mature at three months and can have on average five young per litter. Rabbits can have between one and five litters a year.

History: Thomas Austin introduced Rabbits from Britain in 1859 to his property for game. Rabbits then spread rapidly as well as being assisted by numerous translocations by man.

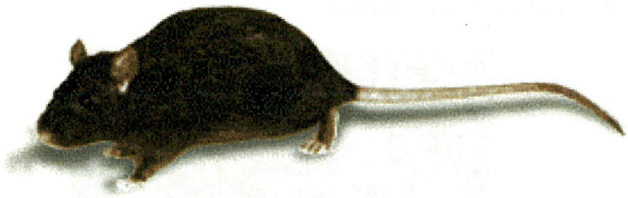
Impact: Rabbits can strip vegetation cover causing soil erosion. Rabbits out compete many native animals for food and often occupy their burrows.

Control: In situations were water is limited numbers have been kept low by foxes and feral cats (not an option on islands). Poisoning with sodium monofluoroacetate (1080) has been the most effective control and is most successful during late summer or autumn when food is low. Fumigation of burrows can be used to treat small rabbit infestations. Biological control agents have also been successful. The myxomatosis virus was released into rabbit populations in the 60's. The virus wiped out about 95% of the population, but the remaining rabbits reproduced rapidly and were resistant to the virus. New strains are produced to kill those resistant to previous viruses. The Rabbit Calici Virus has also been had an impact on the numbers. If both viruses are used together on a population followed by the other control methods eradication might be possible. Warren destruction by thorough ripping is important at maintaining control. Follow-ups are necessary.

Occurrence
Burdekin District– Orpheus

Rattus rattus Black Rat

Other common names: Roof Rat, Ship Rat, Alexandrine Rat.



http://www.ibertrac.com/english/rodent.htm

Description: The body can be between 16-21 cm long while the tail can be up to 25 cm long. The nose of the is pointed and their build is slender. They have larger ears that are not partly covered in fur and their tails are significantly longer than the brown rat (Rattus norvegicus) and native rat species. Individuals usually live 12 to 18 months.

Reproduction: Rats have litters of 6 to 12 young, which are born 21 to 23 days after mating. Young rats are sexually mature in about three months. Breeding occurs mostly in spring and autumn. The average female has four to six litters per year.

History: The first Black rats were stowaways on ships in the First Fleet in 1788. Feral populations established in many areas. Spread by ships to islands has occurred. Rats have gained access to islands by being transported in equipment and supplies and from shipwrecks.

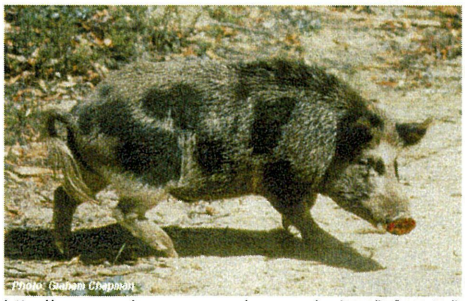
Impact: Rats eat the eggs and young of native birds and other wildlife. They attack ground nesting birds, can climb very well to reach tree nesting species and can dig for food. They have had a devastating impact on some Pacific Island fauna and have been blamed for local extinctions. They also carry many types of tapeworms and roundworms, infectious to animals and humans. Populations can become very dense on small islands.

Control: A wide variety of poisons are available for rat control. Single-dose rodenticides will give a quick knockdown of a rat population. They are used where rats are abundant or where rats tend not to accept the bait more than once. Single-dose rodenticides are more hazardous than the multiple-dose (anticoagulant) rodenticides. Anticoagulants cause death as a result of internal bleeding and most must feed on for several days before death will occur. Grain baits or pelleted forms in packs are easy to place into burrows. Baits formed into paraffin blocks are useful in damp locations, where loose grain baits spoil quickly. Unfortunately they are not as readily accepted. Since rats require water daily water baits are useful where water is scarce. Care should be used to avoid the risk of native species taking baits or affected rats. Baits placed in plastic reduces the risk of non-target species taking the baits.

Fumigants occasionally are used to treat rat burrows in outdoor situations. Aluminum phosphide tablets and gas cartridges are the most commonly used. Fumigants are highly toxic to humans and animals. Trapping can be an effective method of controlling rats, but it requires more skill and labour than most other methods. Traps include wood-based snap traps, wire cage traps and glue boards. These should not be placed where wildlife can contact them.

Occurrence on islands in the GBRWHA:
Northern Coastal District – Green, Kent, Normanby & Russell.
Burdekin District– Hinchinbrook, Magnetic & Orpheus.
Capricorn District – Fairfax Isles.

Sus scrofa Feral Pig



http://www.agric.wa.gov.au/agency/pubns/infonote/infonotes/ao1190.html
http://www.env.qld.gov.au/cgi-bin/w3-msql/environment/plant/animals/resultframe.html?id=16

Description: Feral pigs are smaller than domestic pigs but more muscular. The predominant colour of the pig is black but other colours are produced due to crossbreeding with domestic stock. The feral pig has smaller and narrower hindquarters than domestic breeds. It has a mane on the nape that bristles when the animal is alarmed. Feral pigs are omnivores but mostly eat plant material as well as insects, eggs and small animals. They need to drink daily in hot conditions as they have few sweat glands. Few live for more than five years.

Reproduction: They breed throughout the year. Females are sexually mature from six months of age and have one or two litters a year of four to six piglets. The gestation period is just under four months. Despite a poor survival rate for piglets, feral pigs can more than double their population in one year.

History: Domestic pigs were brought to Sydney in 1788 with the first settlement for food. The original animals probably came from Europe. The pigs were often allowed to roam free to forage for food. It was not long before this animal became feral and established populations in the wild. They have become widespread in North Queensland in habitats from rainforest to wetlands in semi-arid areas.

Impact: The feral pig predates on turtle, crocodile and bird nests. They also damage natural habitats through wallowing and rooting for food. Erosion is caused and plants are destroyed or left vulnerable to infection and food and nesting sites for native animals are destroyed. Pigs are aggressive competitors for food, water and shelter with native animals. They possess diseases that can be transmitted to both man and animal.

Control: The dingo acts as a predator but this is not a factor on GBRWHA island. Poisoning with sodium monofluoroacetate (1080), warfarin or phosphorus is the most effective method. For controlling the numbers of feral pigs in inaccessible areas shooting from helicopters and aerial baiting has been successful as they ensure that the baits have been placed accurately. Care must be taken with baiting to avoid impacts of native species.

Trapping is useful but labour intensive and only effective on a small scale, such as catching survivors from poisoning programs. Ground shooting is only effective on a small scale, again it may be useful after a poisoning program. Dogs may be used to locate pigs. Feral pigs recover from control techniques quickly because of their high reproductive rate.

Occurrence on islands in the GBRWHA:
Northern Coastal District – Flinders Group.
Burdekin District– Dunk, Hinchinbrook & Orpheus.
Whitsunday District – Haslewood.
Capricorn District – Curtis.

Trichosurus vulpecula Common Brushtail Possum

Other common names: Silver-grey Possum, Brushtail Possum

http://www.env.qld.gov.au/cgi-bin/w3-msql/environment/plant/animals/resultframe.html?id=32

Description: The Brushtail possum has a tail that varies from bushy to furry with the underneath part being naked. Their fur is silvery grey with a black band across the snout and a white to brownish-yellow belly. They have pointed faces with long oval ears and pink noses. The body measures about 55cm and the length of the tail can be up to 40 cm. They are tree dwelling and eat mostly plant material including leaves and fruit but supplement their diet with insects and lizards. Possums can live for about ten years.

Reproduction: Females breed annually after their first year. A single young is born 18 days after mating and spends 5 months in the pouch, attached to one of two teats. A further 1 to 2 months are spent dependent on the mother suckling and riding on the back.

History: They are native to Australia.

Impact: Their numbers when introduced to small islands can become too large as they are unable to emigrate. Over browsing of native vegetation occurs. They are also competing with other animals for food and shelter.

Control: Their main predators are owls. Culling by shooting or poisoning is the only practical way of controlling brushtail possums. They can be trapped for humane dispatch or relocation. Relocating them usually results in their death through conflicts with other possums for food and shelter as they are very territorial.

Occurrence on islands in the GBRWHA:
Capricorn District – North Keppel

Vulpes vulpes European Red Fox

http://www.env.qld.gov.au/cgi-bin/w3-msql/environment/plant/animals/resultframe.html?id=18

Description: The body is usually about 60 cm long with the coat being a reddish-brown colour with a white underside. The bushy tail is about 30 cm long and the tip is white often black or dark red. The ears are big relative to the face. Foxes can weigh up to 8 kg and the males usually weigh more than the females. The fox is nocturnal resting in its den by day, which may be thicket or a hollow log. Foxes are territorial and use the scent of their urine and faeces to mark the territory. Foxes are opportunistic feeders. They predate and scavenge eating mainly meat but food varies with season, and wild fruits and insects can be important diet items. A fox doesn't usually live much past four years of age.

Reproduction: Foxes breed once a year with cubs born during August and September. Foxes become sexually mature in their first year. Nearly all adult females are fertile and more than four cubs are usually born in each litter. This means the fox has high reproductive success.

History: The fox was introduced into southern Victoria in 1855 to be hunted for sport but it soon spread establishing many populations. It has spread to Queensland but does not thrive in the tropics.

Impact: The fox is a major predator on land in Australia and has had a serious impact on some rare and threatened native animals. As these animals did not evolve with the fox present, they have no means of protection against them. Foxes have had devastating impacts on breeding seabird colonies. A single animal will kill dozens of birds in a night although it will only require a small number for food. Foxes have been known to raid loggerhead turtle nests on the beach, eating the eggs. Disease is another issue as the fox is a potential carrier of diseases such as rabies that can be passed on to other animals and people.

Control: Poisoning with strychnine or sodium monofluoroacetate (1080) is the most effective method. Baits can be buried to decrease chances of non target species taking baits. Shooting can be effective at control but not eradication. It has to be done at night as they are nocturnal and along with trapping is labour intensive. Fumigation is successful just after a litter has been born and the den can be destroyed by ripping it up. Control methods in the autumn when young foxes are on the move is only effective at temporarily reducing the numbers. When done during late winter and spring it will have longer lasting effects on the populations. Repeat control work is necessary. Intensive fox control program on islands elsewhere in Australia have shown it is very difficult to eradicate the fox. Survivors become very cautious and difficult to kill. It only takes a few survivors to re-populate an island.

Occurrence on islands in the GBRWHA:
Capricorn District – Curtis.

Summery List of Problem Animals

Bos taurus	Feral Cattle, Scrub Bull
Bufo marinus	Cane Toad, Giant Toad, Marine Toad
Canis familiaris	Feral Dog
Capra hircus	Feral Goat
Felis catus	Feral Cat
Gallus gallus	Feral Chicken, Feral Fowl, Jungle Fowl
Macropus agilis	Agile Wallaby
Macropus giganteus	Eastern Grey Kangaroo
Mus musculus	House Mouse
Oryctolagus cuniculus	Rabbit, European Wild Rabbit
Rattus rattus	Black Rat, Roof Rat, Ship Rat, Alexandrine Rat
Sus scrofa	Feral Pig
Trichosurus vulpecula	Common Brushtail Possum, Silver-grey Possum, Brushtail Possum
Vulpes vulpes	European Red Fox

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- Cane toad - PA21
- Feral pigs, control of - PA7
- Feral pigs in Queensland- PA6
- Feral pig management in the wet tropics - PA8
- Feral goat - PA18
- Fox - PA13
- Dingo/wild dog control - PA10
- Rabbit - PA11
- Declared animals of Queensland - PA2

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Occurrence of Weeds on Islands in the GBRWHA

District / Islands \ Weeds	*Agave spp.* Sisal Hemp	*Ageratum spp.* Goat Weed	*Asclepias curassavica L.* Red Flowering Cotton Bush	*Bidens pilosa* Cobbler's Peg	*Brachiaria mutica* Para Grass	*Bryophyllum spp.* Mother-of-Millions	*Cenchrus echinatus* Mossman River Grass	*Cocos nucifera* Coconut Palm	*Crotalaria spp.* Rattlepod	*Cryptostegia grandiflora* Rubber Vine	*Dioscorea alata* Greater yam	*Euphorbia cyathophora* Painted Spurge	*Hyptis suaveolens* Hyptis	*Jatropha gossypifolia* Bellyache Bush	*Lantana camara L.* Lantana	*Leucaena leucocephala* Leucaena	*Mecroptilium atropurpureum* Siratro	*Melinis minutiflora* Molasses Grass	*Mimosa pudica L.* Common Sensitive Plant	*Opuntia spp.* Prickly Pear	*Panicum maximum* Guinea grass	*Passiflora foetida L.* Stinking Passion Flower	*Passiflora suberosa* Corky Passionfruit	*Psidium guajava L.* Guava	*Ricinus communis* Castor Oil Plant	*Rhoeo discolor, R. spathacae* Moses in the Cradle	*Sanseveria trifasciata* Mother-in-law's Tongue	*Sida spp.* Sida	*Silybum marianum* Milk Thistle	*Stachytarpheta spp.* Snakeweed	*Tithonia diversifolia* Japanese Sunflower	*Thevetia peruviana* Yellow oleander	*Vinca major* Periwinkle	*Wedelia trilobata* Singapore Daisy	*Xanthium spp.* Noogoora Burr	*Yucca spp.* Yucca
Northern Coastal																																				
Cliff Islands																																				
Fitzroy												3			3								3						3							
Flinders Group							3		3				3																							
Forbes																																				
Green									3							3								3				3			3					
High								3	3						3	3								3						3						
Hope Islands																																				
Howick																																				
Kent							3		3						3									3						3						
Lizard				3			3	3	3			3	3				3		3		3	3	3					3		3				3		
Low																							3						3					3		
Michaelmas Cay																																				
Normanby								3	3						3								3						3					3		
Piper Group																																				
Quoin																																				
Raine																																				
Restoration																																				
Russell				3			3		3						3	3								3						3				3		
Sandbank 8																																				
Saunders Group																																				
Sir Charles Hardy																																				
Sisters							3		3		3				3									3						3						
Snapper									3															3												
Stephens							3		3						3									3						3						
Three Islands																																				
Turtle Group																																				
Two Islands																																				
Woody																																		3		
Burdekin																																				
Dunk								3							3				3							3							3		
Family Group								3																												
Hinchinbrook				3			3	3	3						3	3						3				3			3			3	3		
Goold							3								?			3			3	3			3										
Magnetic	3	3		3	3	3	3	3	3	3			3	3	3	3	3	?		3	3	3	3		3	3	3	3		3	?	3	3	3		3
North Brook								3							3																					
Orpheus		3		3		3	3	3	3			3	3		3					3		3	3	3		3	3	3			3	3		3	3	3
Whitsunday																																				
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Bird																																				
Black							3								3																					
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Carlisle	3			3											3														3						
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Curlew							3								3																					
Digby							3								3																					
Double Cone				3																3															
East Repulse				3			3	3							3							3												3	
Eshelby										3																										
Gloucester				3						3					3					3															
Goldsmith	3						3					3			3											3						3			
Grassy				3											3					3									3						
Gumbrell				3																3															
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Henning				3											3								3												
Holbourne										3																										
Keswick	3						3								3														3						
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Long		3	3	3		3			3						3				3	3			3			3			3		3				
Middle				3											3					3															
Musoleum							3														3														3
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Olden				3			3								3					3									3						
Outer Newry							3								3							3													

District / Islands	Weeds	*Agave spp.* Sisal Hemp	*Ageratum spp.* Goat Weed	*Asclepias curassavica L.* Red Flowering Cotton Bush	*Bidens pilosa* Cobbler's Peg	*Brachiaria mutica* Para Grass	*Bryophyllum spp.* Mother-of-Millions	*Cenchrus echinatus* Mossman River Grass	*Cocos nucifera* Coconut Palm	*Crotalaria spp.* Rattlepod	*Cryptostegia grandiflora* Rubber Vine	*Dioscorea alata* Greater yam	*Euphorbia cyathophora* Painted Spurge	*Hyptis suaveolens* Hyptis	*Jatropha gossypiifolia* Bellyache Bush	*Lantana camara L* Lantana	*Leucaena leucocephala* Leucaena	*Macroptilium atropurpureum* Siratro	*Melinis minutiflora* Molasses Grass	*Mimosa pudica L.* Common Sensitive Plant	*Opuntia spp.* Prickly Pear	*Panicum maximum* Guinea grass	*Passiflora foetida L* Stinking Passion Flower	*Passiflora subercsa* Corky Passionfruit	*Psidium guajava L.* Guava	*Ricinus communis* Castor Oil Plant	*Rhoeo discolor, R. spathacae* Moses in the Cradle	*Sanseverla trifasciata* Mother-in-law's Tongue	*Sida spp.* Sida	*Silybum marianum* Milk Thistle	*Stachytarpheta spp.* Snakeweed	*Tithonia diversifolia* Japanese Sunflower	*Thevetia peruviana* Yellow oleander	*Vinca major* Periwinkle	*Wedelia trilobata* Singapore Daisy	*Xanthium spp.* Noogoora Burr	*Yucca spp.* Yucca
Planton																																						
Rabbit								3								3						3									3						3
Repair		3						3													3																
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Tancred			3					3																													
Teague								?								3					3															
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Wild Cattle																					3										3					

Occurrence of Weeds on Islands in the GBRWHA

District / Islands \ Weeds	*Alysicarpus vaginalis*	*Amaranthus viridis*	*Annona glabra* Pond Apple	*Catharanthus roseus* - Pink P.	*Chamaesyce hirta**	*Chamaesyce prostata**	*Chloris inflata*	*Commelina benghalensis*-W.J.	*Crotalaria pallida*-Streaked R.	*Desmodium scorpiurus*	*Desmodium torvum*	*Emilia sonchifolia*	*Euphorbia heterophylla*	*Gomphocarpus fruticosus*	*Gomphrena celosioides* - S.K.	*Ipomoea indica*-Morning Glory	*Ipomoea quamoclit*-Star of B.	*Magnifera indica*-Mango Tree	*Melinis repens* - Red Natal Gr.	*Nerium oleander*-Pink Olean.	*Oldenlandia corymbosa*	*Pedilanthus tithymaloides*	*Phyllanthus amarus*	*Polygala paniculata*	*Praxellis clematidea*-Praxellis	*Salvinia coccinea* - Red Salvia	*Senna alata*	*Sida cordifolia* - Flannel Weed	*Sigesbeckia orientalis*	*Solanum torvum*	*Sporobolus jacquemontii*	*Synedrella nodiflora*	*Thunbergia grandiflora*-Blue T	*Tribulus terrestris* Caltrop	*Tridax procumbens* Tridax Daisy	*Triumfetta rhomboidea* Chinese Burr	*Urena lobata* - Urena Burr
Northern Coastal																																					
Cliff Islands																																					
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Flinders Group																																					
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District / Islands \ Weeds	*Alysicarpus vaginalis*	*Amaranthus viridis*	*Annona glabra* Pond Apple	*Catharanthus roseus* Pink Periwinkle	*Chamaesyce hirta**	*Chamaesyce prostata** R.C.C.	*Chloris inflata*	*Commelina benghalensis*-WJ	*Crotalaria pallida*-Streaked R.	*Desmodium scorpiurus*	*Desmodium torvum*	*Emilia sonchifolia*	*Euphorbia heterophylla*	*Gomphocarpus fruticosus*	*Gomphrena celosioides*	*Ipomoea indica*-Morning Glory	*Ipomoea quamoclit*-Star of B.	*Magnifera indica*-Mango Tree	*Melinis repens* - Red Natal Gr.	*Nerium oleander*-Pink Olean.	*Oldenlandia corymbosa*	*Pedilanthus tithymaloides*	*Phyllanthus amarus*	*Polygalia paniculata*	*Praxelis clematidea*-Praxellis	*Salvia coccinea* - Red Salvia	*Senna alata*	*Sida cordifolia* - Flannel Weed	*Sigesbeckia orientalis* - Ind. W	*Solanum torvum* - Devils Fig	*Sporobolus jacquemontii*	*Synedrella nodiflora*	*Thunbergia grandiflora*-Blue T	*Tribulus terrestris* - Caltrop	*Tridax procumbens* - Tridax D.	*Triumfetta rhomboidea* Chinese Burr	*Urena lobata* - Urena Burr
Planton																			3																	
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Scawfell																																					
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* *Chamaesyce*, in these cases, is also found commonly as *Euphorbia* in other texts.

Occurrence of Weeds on Islands in the GBRWHA

District / Islands	*Alternathera bettzickiana*	*Antigonon leptopus* - Coral Vine	*Bothriochloa pertusa* Indian Couch	*Cassia fistula* - Golden Rain Tree	*Chloris barbata* - Purple-top Chlor.	*Convolvulus arvensis* - Field Bind	*Conyza parva* - a Fleebane	*Crotalaria goreensis* - Gambia Pea	*Cyperus rotundus* - Nut Grass	*Dactyloctenium aegyptium*	*Datura ferox* - Fierce Thornapple	*Desmodium tortuosum*	*Eleusine indica* - Crows Foot Gr.	*Hymenachne amplexicaulis*	*Indigofera suffruticosa*	*Lantana montevidensis*	*Lysiphyllum hookeri*-Bauhinia	*Pilyrogramma austroamericanum*	*Portulaca pilosa*	*Senna occidentalis* - Coffee Senna	*Sida acuta*	*Sida rhombifolia* - Sida Retusa	*Sorghum bicolor*	*Stylosanthes humilis*-Townsville S.	*Tamarindus indica* - Tamarind	*Tecoma stans* - Tecoma	*Themeda quadrivalvis* - Grader Gr.	*Vigna radiata* - Mungbean	*Zizyphus mauritiana* - Chinese Ap.
Northern Coastal																													
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Wilson																																						
Wreck																																						
Wild Cattle																																						

Occurrence of Problem Animals on Islands in the GBRWHA

District / Islands \ Animals	*Bos taurus* Feral Cattle	*Bufo marinus* Cane Toad	*Canis familiaris* Feral Dog	*Capra hircus* Feral Goat	*Felis catus* Feral Cat	*Gallus gallus* Feral Chicken	*Macropus agilis* Agile Wallaby	*Macropus giganteus* Eastern Grey Kangaroo	*Mus musculus* House Mouse	*Oryctolagus cuniculus* Rabbit	*Rattus rattus* Black Rat	*Sus scrofa* Feral Pig	*Trichosurus vulpecula* Common Brushtail Possum	*Vulpes vulpes* European Red Fox
Northern Coastal														
Flinders Group												3		
Green											3			
Kent											3			
Lizard														
Normanby		3									3			
Russell		3									3			
Sisters		3												
Snapper		3												
Burdekin														
Dunk		3										3		
Hinchinbrook		3							3		3	3		
Magnetic		3			3				3		3			
Orpheus		3		3					3	3	3	3		
Whitsunday														
Brampton								3						
Haslewood												3		
Hook				3										
Long				3			3							
Capricorn														
Bedwell Group x 3	TBA													
Beverly Group x 6	TBA													
Curtis	3			3								3		3
Duke Isles x 4	TBA													
Guardfish Isles x 2	TBA													
Fairfax Isles											3			
Flat Isles x 3	TBA													
Heron									3					
North East Percy				3										
North Keppel													3	
North West						3?			3					
South Percy				3										
Shoalwater x 3	TBA													
Wild Cattle			3											