

FLORA AND FAUNA SURVEY
BALDWIN BEACH PARK MASTER PLAN PROJECT
PĀ'IA, MAUI

by

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INTRODUCTION

The Baldwin Beach Park Master Plan project is located along the north coast of East Maui adjacent to the town of Pā`ia. It lies below Hāna Highway, extending from Kailua Stream to the western edge of lower Pā`ia on a total of 54.35 acres of land (TMK (2) 2-5-05:014, 017, 040 and TMK (2) 2-6-02:001, 015) see Figures 1 & 2. This biological resource study was initiated by the County of Maui in conformity with environmental requirements of the planning process.

SITE DESCRIPTION

Baldwin Beach Park lies along a 0.7 mile coastal strip below Hāna Highway. It consists of a nearly continuous stretch of coral sand beach above which are some low dune lands and mostly flat land at about 10 feet elevation. Vegetation consists mostly of grassland but with some large trees and shrubs above the shore and along the Kailua Stream channel. Soils are mostly calcareous sand on the shoreline and dunes and with Pūlehu silt loam below the highway (Foote et al, 1972). Rainfall averages 30 inches per year with most occurring during the winter months (Armstrong, 1983). The existing park facilities are located at the east and west ends of the project area. Two private parcels totaling approximately 4.4 acres lie within the central portion of the project area and were not included in the study area.

SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the Baldwin Beach Park Master Plan project. The objectives of the survey were to:

1. Document what plant and animal species occur on the property or may likely occur in the existing habitat.
2. Document the status and abundance of each species.
3. Determine the presence or likely occurrence of any native flora and fauna, particularly any that are Federally listed as Threatened or Endangered (USFWS, 2021). If such occur, identify what features of the habitat may be essential for these species.
4. Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the flora and fauna in this part of the island.

FLORA SURVEY REPORT

SURVEY METHODS

A walk-through botanical survey method was used following routes to ensure that all parts of the project area were covered. Areas most likely to harbor native or rare plants such as undisturbed sand dunes were more intensively examined. Notes were made on plant species, distribution, and abundance as well as on terrain and substrate.

DESCRIPTION OF THE VEGETATION

The vegetation varies considerably within this project area. Different species occupy the currently developed park lands, the shoreline and dune lands as well as the forested areas. A total of 85 plant species were identified during the survey. Six species were common in the project area: Bermuda grass (*Cynodon dactylon*), common ironwood (*Casuarina equisetifolia* L.), Rhodes grass (*Chloris gayana*), Guinea grass (*Megathyrsus maximus*), bristly foxtail (*Setaria verticillata*) and koa haole (*Leucaena leucocephala*). Twenty-one species were uncommon, and fifty-eight species were of rare occurrence.

Ten common, indigenous native plants were found during the survey:

'aki'aki (<i>Sporobolus virginicus</i>)	naupaka kahakai (<i>Scaevola taccada</i>)
'ākulikuli (<i>Sesuvium portulacastrum</i>)	'uhaloa (<i>Waltheria indica</i>)
kou (<i>Cordia subcordata</i>)	mānawanawa (<i>Vitex rotundifolia</i>)
kipūkai (<i>Heliotropium curassavicum</i>)	pōpolo (<i>Solanum americanum</i>)
pōhuehue (<i>Ipomoea pes-caprae</i> subsp. <i>brasiliensis</i>)	naio (<i>Myoporum sandwicense</i>)

An additional four species were “canoe plants”, those brought to Hawaii by Polynesians during the course of their migrations:

niu (<i>Cocos nucifera</i>)	milo (<i>Thespesia populnea</i>)
hau (<i>Hibiscus tiliaceus</i>)	kukui (<i>Aleurites moluccana</i>)

The remaining seventy-one species were a variety of non-native grasses, several ornamental plants and many widespread weedy species.

DISCUSSION AND RECOMMENDATIONS

Most of the plant species inventoried during the survey were non-native trees, shrubs, grasses, and weeds. While some of these are of value as components of lawns, hedges, wind breaks or landscape ornamentals, none of these are species of environmental concern.

The ten indigenous native plant species and the four species introduced by the early Hawaiians are all common throughout Hawaii and, also occur naturally on many other Pacific islands. None of these native species are the focus of any environmental protection programs as federally listed endangered or threatened species (USFWS, 2021). They are, however, all species that are adapted to growing in coastal habitats. It is recommended that they be considered as candidates for use in any shoreline and dune restoration projects that may be planned. The Baldwin Beach Park Master Plan aims to protect and enhance the environment on this coastline while developing recreational facilities. The proposed project is not expected to have any significant negative impacts to the native plants in this part of Hawaii.

FLORA SPECIES LIST

Following is a checklist of all those vascular plant species inventoried during the field studies. Plant families are arranged alphabetically within three groups: Conifers, Monocots and Dicots. Taxonomy and nomenclature of the plants are in accordance with Wagner et al. (1999) and Staples & Herbst (2005).

For each species, the following information is provided:

1. Scientific name with author citation.
2. Common English or Hawaiian name.
3. Bio-geographical status. The following symbols are used:

endemic = native only to the Hawaiian Islands; not naturally occurring anywhere else in the world.

indigenous = native to the Hawaiian Islands and, also to one or more other geographic area(s).

Polynesian = those plants brought to the islands by the Polynesians in the course of their migrations.

non-native = all those plants brought to the islands intentionally or accidentally after western contact.

4. Abundance of each species within the project area:

abundant = forming a major part of the vegetation within the project area.

common = widely scattered throughout the area or locally abundant within a portion of it.

uncommon = scattered sparsely throughout the area or occurring in a few small patches.

rare = only a few isolated individuals within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
CONIFERS			
ARAUCARIACEAE (Araucaria Family)			
<i>Araucaria columnaris</i> (G.Forster) J.D. Hooker	Cook pine	non-native	rare
MONOCOTS			
AMARYLLIDACEAE (Amaryllus Family)			
<i>Crinum augustum</i> Roxb.	Queen Emma lily	non-native	rare
ARECACEAE (Palm Family)			
<i>Cocos nucifera</i> L.	niu, coconut	Polynesian	uncommon
ASPARAGACEAE (Asparagus Family)			
<i>Furcraea foetida</i> (L.) Hayworth	Mauritius hemp	non-native	rare
CYPERACEAE (Sedge Family)			
<i>Cyperus rotundus</i> L.	nut sedge	non-native	rare
POACEAE (Grass Family)			
<i>Cenchrus ciliaris</i> L.	buffelgrass	non-native	uncommon
<i>Chloris gayana</i> Kunth	Rhodes grass	non-native	common
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	non-native	common
<i>Eleusine indica</i> (L.) Gaertn.	wire grass	non-native	uncommon
<i>Eremochloa ophiuroides</i> (Munro) Hackel	centipede grass	non-native	rare
<i>Megathyrsus maximus</i> (Jacq.) Simon & Jacobs	Guinea grass	non-native	common
<i>Setaria verticillata</i> (L.) Beauv.	bristly foxtail	non-native	common
<i>Sporobolus elongatus</i> R. Br.	elongate dropseed	non-native	rare
<i>Sporobolus virginicus</i> (L.) Kunth	'aki'aki	indigenous	rare
<i>Zoysia matrella</i> (L.) Merrill	zoysia grass	non-native	rare
DICOTS			
ACANTHACEAE (Acanthus Family)			
<i>Asystasia gangetica</i> (L.) T. Anderson	Chinese violet	non-native	uncommon
<i>Barleria repens</i> C. Nees	pink ruellia	non-native	rare
AIZOACEAE (Fig-marigold Family)			
<i>Sesuvium portulacastrum</i>	'ākulikuli	indigenous	uncommon
<i>Tetragonia tetragonioides</i> (Pall) Kuntze	New Zealand spinach	non-native	uncommon
AMARANTHACEAE (Amaranth Family)			
<i>Alternanthera pungens</i> Kunth	khaki weed	non-native	uncommon
<i>Amaranthus spinosus</i> L.	spiny amaranth	non-native	uncommon
<i>Amaranthus viridis</i> L.	smooth amaranth	non-native	uncommon
<i>Atriplex suberecta</i> Verd.	saltbush	non-native	rare
<i>Chenopodium murale</i>	'āheahea	non-native	uncommon
ANACARDIACEAE (Mango Family)			
<i>Schinus terebinthifolius</i> Raddi	Christmas berry	non-native	uncommon
APOCYNACEAE (Dogbane Family)			
<i>Carissa macrocarpa</i> (Ecklon) A. deCandolle	Natal plum	non-native	rare
ASTERACEAE (Sunflower Family)			
<i>Calyptocarpus vialis</i> Less.	straggler daisy	non-native	rare
<i>Conyza bonariensis</i> (L.) Cronq.	hairy horseweed	non-native	rare

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
<i>Eclipta prostrata</i> (L.) L.	false daisy	non-native	rare
<i>Lactuca sativa</i> L.	prickly lettuce	non-native	rare
<i>Parthenium hysterophorus</i> L.	Santa Maria	non-native	rare
<i>Pluchea carolinensis</i> (Jacq.) G.Don	sourbush	non-native	uncommon
<i>Pluchea indica</i> (L.) Less.	Indian fleabane	non-native	rare
<i>Pluchea x fosbergii</i> Cooperr. & Galang	hybrid pluchea	non-native	uncommon
<i>Sonchus oleraceus</i> L.	pualele	non-native	uncommon
<i>Synedrella nodiflora</i> (L.) Gaertn.	nodeweed	non-native	rare
<i>Tridax procumbens</i> L.	coat buttons	non-native	rare
<i>Verbesina encelioides</i> (Cav.) Benth. & Hook.	golden crown-beard	non-native	rare
<i>Xanthium strumarium</i> L.	kikānia	non-native	rare
BORAGINACEAE (Borage Family)			
<i>Carmona retusa</i> (Vahl.) Masamino	Fukien tea	non-native	rare
<i>Heliotropium curassavicum</i> L.	kīpūkai	indigenous	rare
<i>Heliotropium procumbens</i> Mill.	four-spike heliotrope	non-native	uncommon
<i>Tournefortia argentea</i> L. fil.	tree heliotrope	non-native	rare
BRASSICACEAE (Mustard Family)			
<i>Lepidium virginicum</i> L.	Virginia pepperwort	non-native	rare
CARYOPHYLLACEAE (Pink Family)			
<i>Spergularia marina</i> (L.) Griesb.	salt marsh sandspurry	non-native	rare
CASUARINACEAE (She-oak Family)			
<i>Casuarina equisetifolia</i> L.	common ironwood	non-native	common
COMBRETACEAE (Indian Almond Family)			
<i>Conocarpus erectus</i> L.	buttonwood	non-native	rare
CONVOLVULACEAE (Morning Glory Family)			
<i>Ipomoea obscura</i> (L.) Ker-Gawl.	obscure morning glory	non-native	rare
<i>Ipomoea pes-caprae</i> (L.) R.Br. subsp. <i>brasiliensis</i> (L.) Oostr.	pōhuehue	indigenous	rare
CUCURBITACEAE (Gourd Family)			
<i>Cucumis dipsaceus</i> Ehrenb. ex Spach	hedgehog gourd	non-native	rare
<i>Momordica charantia</i> L.	bitter melon	non-native	uncommon
EUPHORBIACEAE (Spurge Family)			
<i>Aleurites moluccana</i> (L.) Willd.	kukui	Polynesian	rare
<i>Euphorbia hirta</i> L.	hairy spurge	non-native	rare
<i>Euphorbia prostrata</i> Aiton	prostrate spurge	non-native	rare
<i>Ricinus communis</i> L.	Castor bean	non-native	uncommon
FABACEAE (Pea Family)			
<i>Crotalaria pallida</i> Aiton	smooth rattlepod	non-native	rare
<i>Desmanthus pernambucanus</i> (L.) Thellung	slender mimosa	non-native	rare
<i>Desmodium tortuosum</i> (Sw.) DC.	Florida beggarweed	non-native	rare
<i>Indigofera spicata</i> Forssk.	creeping indigo	non-native	rare
<i>Leucaena leucocephala</i> (Lam.) de Wit	koa haole	non-native	common
<i>Neonotonia wightii</i> (Wight & Arnott) Lackey	glycine	non-native	rare
<i>Pithecellobium dulce</i> (Roxb.) Benth.	'opiuma	non-native	rare

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
<i>Prosopis pallida</i> (Humb. & Bonpl. ex Willd.) Kunth	kiawe	non-native	uncommon
GOODENIACEAE (Goodenia Family)			
<i>Scaevola taccada</i> (Gaertn.) Roxb.	naupaka kahakai	indigenous	rare
LAMIACEAE (Mint Family)			
<i>Leonotis nepetifolia</i> (L.) R. Br.	lion's ear	non-native	rare
MALVACEAE (Mallow Family)			
<i>Hibiscus rosa-sinensis</i> L.	Chinese red hibiscus	non-native	rare
<i>Hibiscus tiliaceus</i> L.	hau	Polynesian	rare
<i>Malva parviflora</i> L.	cheeseweed	non-native	rare
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	non-native	uncommon
<i>Sida ciliaris</i> L.	bracted fanpetals	non-native	rare
<i>Sida rhombifolia</i> L.	arrowleaf sida	non-native	uncommon
<i>Sida spinosa</i> L.	prickly sida	non-native	rare
<i>Thespesia populnea</i> (L.) Sol ex Correa	milo	Polynesian	uncommon
<i>Waltheria indica</i> L.	'uhaloa	indigenous	rare
MORACEAE (Mulberry Family)			
<i>Ficus microcarpa</i> L. fil.	Chinese banyan	non-native	rare
MYRTACEAE (Myrtle Family)			
<i>Syzygium cumini</i> (L.) Skeels	Java plum	non-native	rare
NYCTAGINACEAE (Four-o'clock Family)			
<i>Boerhavia coccinea</i> Mill.	scarlet spiderling	non-native	rare
PAPAVERACEAE (Poppy Family)			
<i>Argemone mexicana</i> L.	Mexican poppy	non-native	rare
PORTULACACEAE (Purslane Family)			
<i>Portulaca oleracea</i> L.	common purslane	non-native	rare
RHIZOPHORACEAE (Mangrove Family)			
<i>Rhizophora mangle</i> L.	red mangrove	non-native	rare
SCROPHULARIACEAE (Snapdragon Family)			
<i>Myoporum sandwicense</i> A. Gray	naio	indigenous	rare
SOLANACEAE (Nighthshade Family)			
<i>Nicandra physalodes</i> (L.) Gaertn.	apple of Peru	non-native	rare
<i>Nicotiana glauca</i> R.C. Graham	tree tobacco	non-native	rare
<i>Solanum americanum</i> Mill.	pōpolo	indigenous	rare
VERBENACEAE (Verbena Family)			
<i>Vitex rotundifolia</i> L. fil.	mānawanawa	indigenous	rare
<i>Vitex trifolia</i> L.	blue vitex	non-native	rare

FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through fauna survey method was conducted in conjunction with the botanical survey. All parts of the project area were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species, abundance, activities, and location as well as on observations of trails, tracks, scat and signs of feeding. In addition, an evening visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence or occurrence of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the area.

RESULTS

MAMMALS

Four species of non-native mammals or their signs were observed during three site visits in the project area. Taxonomy and nomenclature follow Tomich (1986). These included mongoose (*Herpestes auropunctatus*), domestic dogs (*Canis familiaris*), domestic cats (*Felis catus*) and a feral pig (*Sus scrofa*). Other mammals likely to occur here, but which were not seen, include mice (*Mus domesticus*), rats (*Rattus* spp.) and possibly axis deer (*Axis axis*). Also, the endemic and Endangered Hawaiian monk seal (*Neomonachus shauinslandi*), could occasionally come ashore either alone or with a pup.

A special effort was made to look for any occurrence of the endemic and endangered Hawaiian hoary bat by making an evening survey in two locations within the project area. When present in an area these bats can be easily identified as they forage for insects, their distinctive flight patterns clearly visible in the glow of twilight. No evidence of such activity was observed though visibility was excellent. In addition, an electronic bat detector (Batbox IIID) was utilized, set to the frequency of 27,000 Hertz that these bats are known to use for echolocation. No bats were detected using this device.

BIRDS

Eight species of non-native birds were observed during the survey. Two of these species were common, the zebra dove (*Geopelia striata*) and the common myna (*Acridotheres tristis*). One species was uncommon, the northern cardinal (*Cardinalis cardinalis*). Five other species were of rare occurrence. During the winter months, one may see the indigenous migratory Pacific golden plover.

REPTILES

While not seen, two indigenous and endangered turtles, the honu or green sea turtle (*Chelonia mydas*) and the 'ea or hawksbill turtle (*Eretmochelys imbricata*) could come ashore to rest or to excavate a nest and lay their eggs.

CRUSTACEANS

Several indigenous 'ōhiki or Indo Pacific ghost crab burrows were observed above the shoreline and in the vegetation.

INSECTS

Insect life was moderate within the project area. Thirteen non-native insect species were observed during three site visits. Taxonomy and nomenclature follow Nishida et al (1992). Two species were common, the beet webworm moth (*Spoladea recurvalis*) and the short-horned grasshopper (*Oedaleus abruptus*). One species was uncommon, the monarch butterfly (*Danaus plexippus*), and ten other species were rare.

DISCUSSION AND RECOMMENDATIONS

Baldwin Beach Park is a popular recreational resource for Maui residents and visitors. It is heavily used for a diversity of beach and ocean activities. Such human usage is a deterrent to many forms of wildlife that cannot comfortably co-exist with so much activity. Nonetheless, a variety of mammals, birds, insects and crustaceans were recorded in this habitat. Most are non-native species that are of little conservation concern. There are, however, a few native species that could occasionally show up that are discussed here.

The 'ōpe'ape'a is a small native bat that is endemic to Hawaii and is on the federal Endangered Species List. It was not found during this survey but is known to occur throughout much of Maui. These bats are strong fliers and move about widely in search of nocturnal flying insects on which they prey. The adult bats are able to generally cope with habitat disturbance, but their young are vulnerable during the breeding season when they are still unable to fly. The U.S. Fish and Wildlife Service (USFWS) has guidelines to mitigate against such potential injury or mortality. They provide this during the review process.

The kōlea is an indigenous migratory bird that spends the winter months in Hawaii and other Pacific islands. Many thousands fly into Hawaii from their breeding grounds in the arctic tundra. They are widespread and common in most Hawaiian habitats and are not of any particular conservation concern.

The indigenous 'ōhiki crab is common throughout Hawaii on sandy beaches. It is also found in similar habitats in the tropical Pacific and Indian oceans. It is of no conservation concern.

One Endangered native moth, the Blackburn's sphinx moth (*Manduca blackburni*), which was not recorded during the survey needs to be addressed. This large moth and its larvae have developed a critical host plant relationship with a non-native tree tobacco shrub (*Nicotiana glauca*) which is playing a role in this moth's survival and recovery. A few tree tobacco plants were found in the project area, and the moth is known to occur on nearby lands, so there is probability that it could occur in the project area. The USFWS has mitigating guidelines for addressing this situation as the project moves forward and will no doubt respond during the review process.

Hawaiian petrels (*Pterodroma phaeopygia sandwichensis*) and Newell's shearwaters (*Puffinus auricularis newellii*), (collectively known as seabirds) may transit over the project area at dusk and then at dawn when flying between the ocean and nesting sites in the mountains during their breeding season (March through November). Fatalities to these seabirds resulting from collisions with artificial structures that extend above the surrounding vegetation have been documented in Hawaii where high densities of transiting seabirds occur. Additionally, artificial lighting such as floodlighting for construction work can adversely impact seabirds by causing disorientation which may result in collision with utility lines, buildings fences and vehicles. Fledgling seabirds are especially affected by artificial lighting and have a tendency to exhaust themselves while circling the light sources and become grounded. Too weak, these birds become vulnerable to predation by predators such as mongoose, cats and dogs. These threats can be minimized by the shielding of any outdoor lighting so that the light is visible only from below.

While not seen, the endangered Hawaiian monk seal as well as the honu and `ea turtles could occasionally show up on the shoreline within Baldwin Beach Park. These species have federal protections against harassing, injuring or killing them that can incur stiff penalties. It is recommended that informational signage be installed to educate park users.

No other recommendations regarding wildlife are deemed necessary.

FAUNA SPECIES LIST

Following is a checklist of the animal species inventoried during the field work. Animal species are arranged in descending abundance within seven groups: Mammals, Crustaceans, Insects and Birds. For each species the following information is provided:

1. Common name
2. Scientific name
3. Bio-geographical status. The following symbols are used:

endemic = native only to Hawaii; not naturally occurring anywhere else in the world.

indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).

non-native = all those animals brought to Hawaii intentionally or accidentally after western contact.

migratory = spending a portion of the year in Hawaii and a portion elsewhere. In Hawaii the migratory birds are usually in the overwintering/non-breeding phase of their life cycle.

4. Abundance of each species within the project area:

abundant = many flocks or individuals seen throughout the area, at all times of the day.

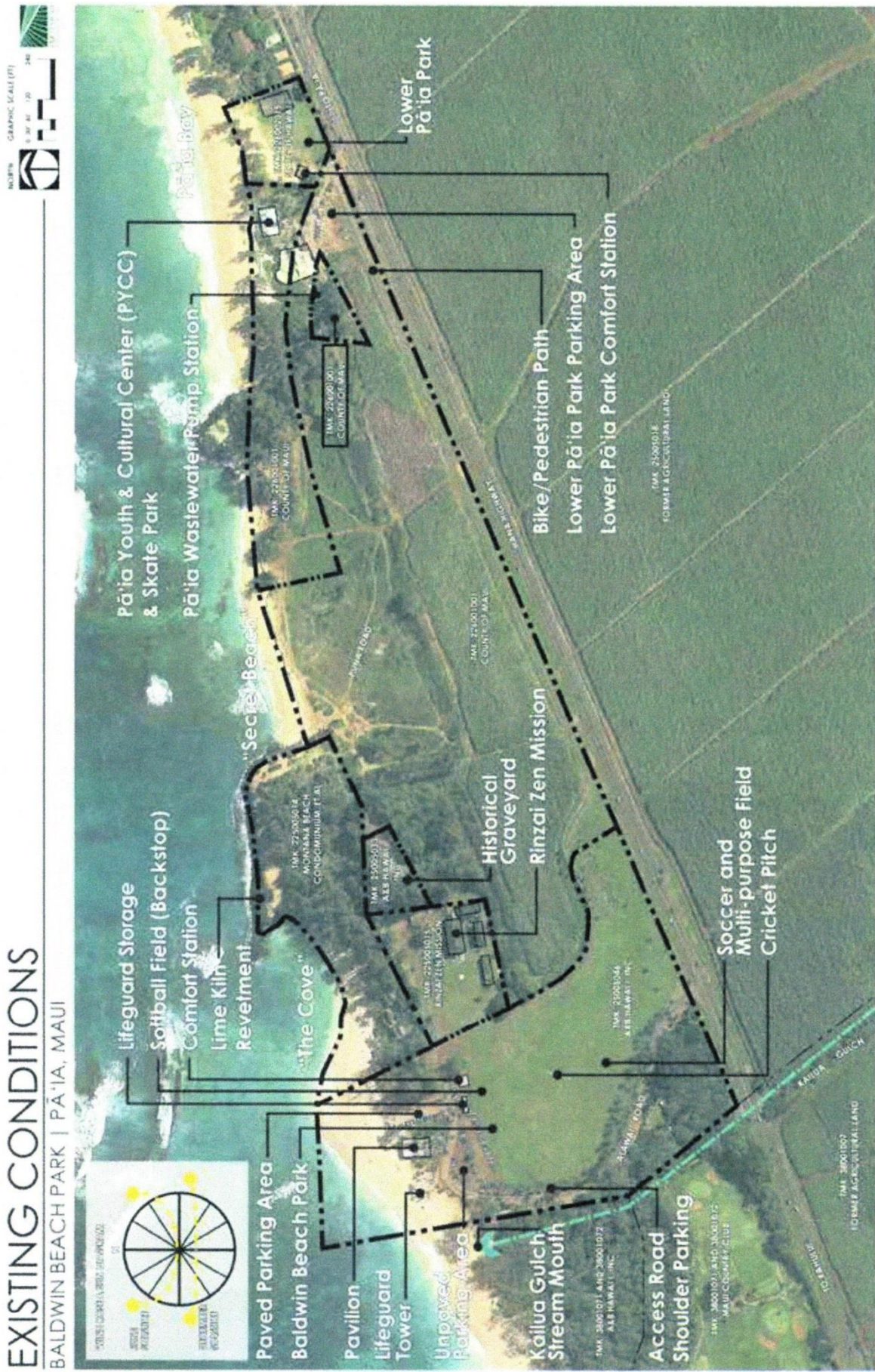
common = a few flocks or well scattered individuals throughout the area.

uncommon = only one flock or several individuals seen within the project area.

rare = only one or two seen within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
MAMMALS			
CANIDAE (Dog Family)			
<i>Canis familiaris</i> L.	domestic dog	non-native	rare
FELIDAE (Cat Family)			
<i>Felis catus</i> L.	domestic cat	non-native	rare
SUIDAE (Swine Family)			
<i>Sus scropha</i> L.	feral pig	non-native	rare
VIVERRIDAE (Mongoose Family)			
<i>Herpestes auro punctatus</i> Hodgson	small Indian mongoose	non-native	uncommon
BIRDS			
ARDEIDAE (Heron Family)			
<i>Bubulcus ibis</i> L.	cattle egret	non-native	rare
CARDINALIDAE (Cardinal Family)			
<i>Cardinalis cardinalis</i> L.	northern cardinal	non-native	uncommon
COLUMBIDAE (Dove Family)			
<i>Geopelia striata</i> L.	zebra dove	non-native	common
<i>Streptopelia chinensis</i> Scopoli	spotted dove	non-native	rare
PHASIANIDAE (Pheasant Family)			
<i>Gallus gallus</i> L.	common chicken	non-native	rare
STURNIDAE (Starling Family)			
<i>Acridotheres tristis</i> L.	common myna	non-native	common
THRAUPIDAE (Tanager Family)			
<i>Paroaria coronata</i> Miller	red-crested cardinal	non-native	rare
ZOSTEROPIDAE (White-eye Family)			
<i>Zosterops japonicus</i> Temminck & Schlegel	Japanese white-eye	non-native	rare

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
Order ARANAE - true spiders			
ARANEIDAE (Orb Weaver Family)			
<i>Argiope appensa</i> Walkenaer	common garden spider	non-native	rare
<i>Gasteracantha mammosa</i> Koch	spiny-backed spider	non-native	rare
Order DIPTERA -flies			
CALLIPHORIDAE (Blowfly Family)			
<i>Calliphora vicina</i> Robineau-Desvoidy	bluebotte fly	non-native	rare
CULICIDAE (Mosquito Family)			
<i>Culex quinquefasciata</i> Say	southern house mosquito	non-native	rare
SYRPHIDAE (Hoverfly Family)			
<i>Ornidia obesa</i> Fabricius	irridescent hoverfly	non-native	rare
Order HYMENOPTERA - bees, wasps, ants			
APIDAE (Honey Bee Family)			
<i>Apis mellifera</i> L.	honey bee	non-native	rare
FORMICIDAE (Ant Family)			
<i>Pheidole megacephala</i> Fabricius	big-headed ant	non-native	rare
Order LEPIDOPTERA - butterflies, moths			
CRAMBIDAE (Grass Moth Family)			
<i>Spoladia recurvalis</i> Fabricius	beet webworm moth	non-native	common
GEOMETRIDAE (Geometer Moth Family)			
<i>Anacamptodes fragilaria</i> Grossbeck	kiawe moth	non-native	rare
NOCTUIDAE (Owlet Moth Family)			
<i>Melipotis indomita</i> Walker	indomitable melipotis	non-native	rare
NYMPHALIDAE (Brush-footed Butterfly Family)			
<i>Danaus plexippus</i> L.	monarch butterfly	non-native	uncommon
PIERIDAE (White and Sulphur Butterfly Family)			
<i>Eurema nicippe</i> Cramer	sleepy orange butterfly	non-native	rare
Order ORTHOPTERA - grasshoppers, crickets			
<i>Oedaleus abruptus</i> Thunberg	short-horned grasshopper	non-native	common



EXISTING CONDITIONS

BALDWIN BEACH PARK | PĀ'IA, MAUI

Figure 1. Baldwin Beach Park Master Plan

OWNERSHIP MAP

BALDWIN BEACH PARK | PĀ'IA, MAUI



Figure 2. Baldwin Beach Park Pā'ia, Maui

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