

APPENDIX F
Faunal Survey

INTRODUCTION

The purpose of this report is to provide the findings of a two day (6, 7 July 2011) field survey of property proposed for the Pu'unene Heavy Industrial Subdivision Project at Pu'unene, Maui TMK (2) 3-8-008: 019. In addition to the data obtained from the field survey, relevant published and unpublished sources are also noted in the report. These resources add a broader perspective of the wildlife in this region of the island. The goals of the survey were:

- 1- Document the species of birds and mammals observed on or near the property.
- 2- Devote special attention to documenting the presence and/or possible use of this area by native and migratory species particularly those that are listed as threatened or endangered.

SITE DESCRIPTION

This proposed project is located on a 86 acre parcel. Access to the proposed subdivision will be provided by Kama'una Road and South Firebreak Road via a 56 foot wide access and utility easement. An alternative subdivision access road around the north and east side of an Hawaiian Commercial & Sugar irrigation reservoir was also examined. The property currently contains mostly alien (introduced) vegetation

AVIFAUNAL AND FERAL MAMMAL SURVEY FOR THE PROPOSED PU'UNENE HEAVY INDUSTRIAL SUBDIVISION PU'UNENE, MAUI, TMK: (2)3-8-888:019

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dominated by Kiawe or Mesquite trees (*Prosopis pallida*) and dry grass/weeds. Surrounding lands are in sugar cane and similar dry brush/grass. An active irrigation reservoir is located nearby to the north of the property and adjacent to South Firebreak Road. This reservoir is fairly large with emergent vegetation along portions of its shoreline.

SURVEY PROTOCOL

The field survey was conducted over two consecutive days (6, 7, July 2011). Data were collected in the early morning and late in the day when birds and mammals are most active and more easily detected. Visual and auditory observations form the basis of the data. The entire property was examined along with adjoining lands including the irrigation reservoir. Observations of mammals were primarily limited to visual sightings. The evening of 6 July 2011 was devoted to a search for the presence of the endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*). A Peterson Electronic AB Ultrasound Detector D 100 was used to listen for echolocating bats at several sites throughout the property and along the roads around the site as well as at the irrigation reservoir.

Weather during the survey was generally clear with some light passing showers in the early morning and evening. The wind was gusting above 30mph during mid-day.

Scientific and common vernacular names used in this report follow Honacki et al. (1982) and Pyle (2002).

RESULTS AND DISCUSSION

Native Land Birds:

No native land birds were observed on the survey. The only species that might on rare occasions occur in this area is the Hawaiian Short-eared Owl or Pueo (*Asio flammeus sandwichensis*) (Pratt et al. 1987, Hawaii Audubon Society (2005). The Pueo is listed by the State of Hawaii as endangered on Oahu but not on Maui. They forage over an array of habitats including: forests, grasslands, agricultural fields and nest on the ground in high, dense grass (Hawaii Audubon Society 2005).

Native Waterbirds:

An average of 16 Aukr'u or Black-crowned Night Heron were observed over the two day survey around the irrigation reservoir, but none were seen on the property proposed for development. This species is indigenous to Hawaii. It is not listed as endangered or threatened. They forage on a wide variety of prey and wetland habitats. Over 40 Koloa or Hawaiian Duck (*Anas wyvilliana*) were tallied on the irrigation reservoir on both mornings of the survey. Koloa are an endangered species. Those on Maui are believed to be hybrids between the Koloa and Mallard (Hawaii Audubon

Society 2005). An average of 31 Hawaiian Coot or Alae Ke'oke'o (*Fulica alai*) were counted on the irrigation reservoir during the survey. This endangered waterbird is common on Maui. The only other native waterbird that might occur at times along the edges of the irrigation pond is the endangered Hawaiian or Black-necked Stilt or Ae'o (*Himantopus mexicanus knudseni*).

Migratory shorebirds:

At this time of year migratory shorebirds are on their breeding grounds in the arctic and subarctic. They winter in Hawaii between August and April. The only species that would potentially occur on this site would be the Pacific Golden-Plover or Kolea (*Ploveris fulva*). Kolea forage for insects on lawns and other habitats in Hawaii. They can be seen on cane haul roads and in agricultural fields (Pratt et al. 1987, Hawaii Audubon Society 2005). They are not a threatened or endangered species. A few plover likely occur on this site during August – April. No other migratory shorebirds would likely occur at this site.

Alien (Introduced) Birds:

The property contains the usual array of introduced birds seen on similar property in Central Maui (Bruner 1993, 1994, 1995, 1996, 2002). Table One notes the species recorded on this survey. None of these are listed as endangered or threatened.

Mammals:

The only feral mammal observed was the Small Indian Mongoose (*Hesperetes javanicus*). Rats (*Rattus* spp.) and mice (*Mus musculus*) also likely occur on the site along with perhaps feral cats (*Felis catus*). No endangered Hawaiian Hoary Bat were detected by the ultrasound device during an evening search of the property on 6 July 2011. I know of no recent documented records for the Hawaiian Hoary Bat in the area of the proposed project. The Hawaiian Hoary Bat roosts solitarily in trees. They forage for flying insects in a wide variety of habitats including forests, agricultural lands, urban areas, as well as over bays and ponds (Tomich 1986, Kepler and Scott 1990, Jacobs 1991, 1993, Duval and Duvall 1991, Reynolds et al. 1998, and Bonaccorso 2008 pers. comm.).

EXECUTIVE SUMMARY AND RECOMMENDATIONS

This survey found the typical assemblage of non-native (alien) birds and mammals on the proposed Heavy Industrial Subdivision Property. No endangered or threatened avian species were observed nor expected given the available resources on this site. The nearby irrigation reservoir, however, is utilized by at least two endangered waterbirds (Kolea, Alaeke'oke'o. This reservoir sits beside South Firebreak Road. The waterbirds were not responsive to the traffic noise from nearby roadways. The vegetation buffer around the irrigation pond also visually shields the birds from human disturbance unless one climbs up the embankment and walks along the edge of the pond. The

proposed Heavy Industrial Subdivision Project and alternative subdivision access road should not adversely impact the waterbirds at this reservoir. The road and 86 acre property is hidden from the actual irrigation pond by a high embankment and vegetation. The only potential migratory shorebird that might forage along roads and cleared areas in Pu'unene is the Pacific Golden-Plover. It is not threatened or endangered. I know of no published bat sightings for the area involved in this project. However, because they forage over a wide variety of habitats it is possible they could on rare occasion occur in this area. Bonaccorso (2008 pers. comm.) has conducted extensive research on the Hawaiian Hoary Bat on the island of Hawaii. He recommends that trees in a project area not be cut or disturbed between the months of April and August if there is any current evidence bats occur in the area. At this time of year young flightless bats are left in the tree while their mother forages.

TABLE ONE

Alien (Introduced Birds) found on a 6, 7 July 2011 field survey of TMK (2) 3-8-008: 019 at Pu'unene, Maui.

Common Name	Scientific Name
Cattle Egret	<i>Bubulcus ibis</i>
Gray Francolin	<i>Francolinus pondicerianus</i>
Black Francolin	<i>Francolinus francolinus</i>
Ring-necked Pheasant	<i>Phasianus colchicus</i>
Spotted Dove	<i>Streptopelia chinensis</i>
Zebra Dove	<i>Geopelia striata</i>
Barn Owl	<i>Tyto alba</i>
Japanese White-eye	<i>Zosterops japonicus</i>
Common Myna	<i>Acridotheres tristis</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
House Finch	<i>Carpodacus mexicanus</i>
Nutmeg Mannikin	<i>Lonchura punctulata</i>

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