

Kalij Pheasants Established in the Wai`anae Mts. on O`ahu: Is Eradication Too Late?

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Background

Kalij pheasants (*Lophura leucomelanos*) are native to Southeast Asia and were first introduced as a game bird species to the Island of Hawai`i in 1962 at Pu`u Wa`awa`a Ranch. Kalij quickly spread throughout most forested areas on the Island of Hawai`i within 14 years at a dispersal rate of about 8km/year (Lewin & Lewin 1984).

Foraging Habits

Kalij are both seed dispersers and seed predators of both invasive and native plants. On the Island of Hawai`i, Kalij have been implicated in the spread of banana poka (*Passiflora mollissima*) and *Rubus* spp. Lewin and Lewin (1984) identified 19 plant food items within Kalij crops and gizzards, as well as, invasive slugs and snails, small native snails, isopods, and earthworms.

Native plant species consumed on Hawai`i:

Cibotium sp., *Leptecophylla tameiameia*, *Rubus hawaiiensis*, *Vaccinium calycinum*, *Korthalsella complanata*, *Cyanea pilosa*, *Ilex anomala*, *Cheirodendron trigynum*, *Hedyotis terminalis*, *Coprosma* sp., *Antidesma playtphyllum*, *Myrsine lessertiana*, *Nestegis sandwicensis*, *Sapindus saponaria*, *Pipturus albidus*, *Osteomeles anthyllidifolia* (Lewin & Lewin 1984, Postelli et al. 2004).

Invasive plant species consumed on Hawai`i:

Banana poka (*Passiflora mollissima*), Blackberry (*Rubus argutus*), Thimbleberry (*Rubus rosifolius*), Guava (*Psidium guajava*), lilikoi (*Passiflora edulis*), *Fragaria vesca*, *Kyllinga brevifolia*, *Ehrharta stipoides* (Lewin and Lewin 1984, Postelli et al. 2004).

O`ahu Sightings

Kalij pheasant have become established on O`ahu through the unauthorized release(s) of birds on or prior to 2003. Sighting locations have ranged from Kuaokala in the northern Wai`anae Mts. to Palehua in the far south of the mountain range (Fig. 1). Since 2003, Kalij have been sighted on O`ahu at an increasing number of locations and in increasing numbers of birds in the Wai`anae Mts (Fig. 2, 3, 4).

O`ahu Information

- First Kalij pair sighting on Oahu 2003.
- 56 sighting events from 2003 to 2010 (Table 1).
- Sightings observed within eight general locations (Fig. 1).
- Group size range 1 to 13 (Fig. 3).
- First family group sighting 2007 in Pahole NAR.
- A minimum of 10 family groups observed.
- Elevation range 1280 ft to 2350 ft (Fig. 5).

Implications

- Kalij are native seed predators and invasive plant seed dispersers.
- Potential threat to endangered plant species in the Wai`anae Mts.
- Could have a impact on the remaining mesic forest composition.
- Potential threat to native arthropods and native ground snails.

Future

- With the distribution of Kalij sightings throughout the Wai`anae Mts. is the possibility of eradication or control to late?
- Do we have the necessary management tools to succeed?

References

Lewin, V., and G. Lewin. 1984. The Kalij Pheasant, a newly established game bird on the Island of Hawaii. *Wilson Bulletin* 96: 634-646.
 Postelli, K., J. McBroom, D. Hu, and T.K. Pratt. 2004. Kalij Pheasant (*Lophura leucomelanos*) seed dispersal and predation in a mesic forest. *Hawaii Conservation Conference*, Honolulu, HI. (Abstract)

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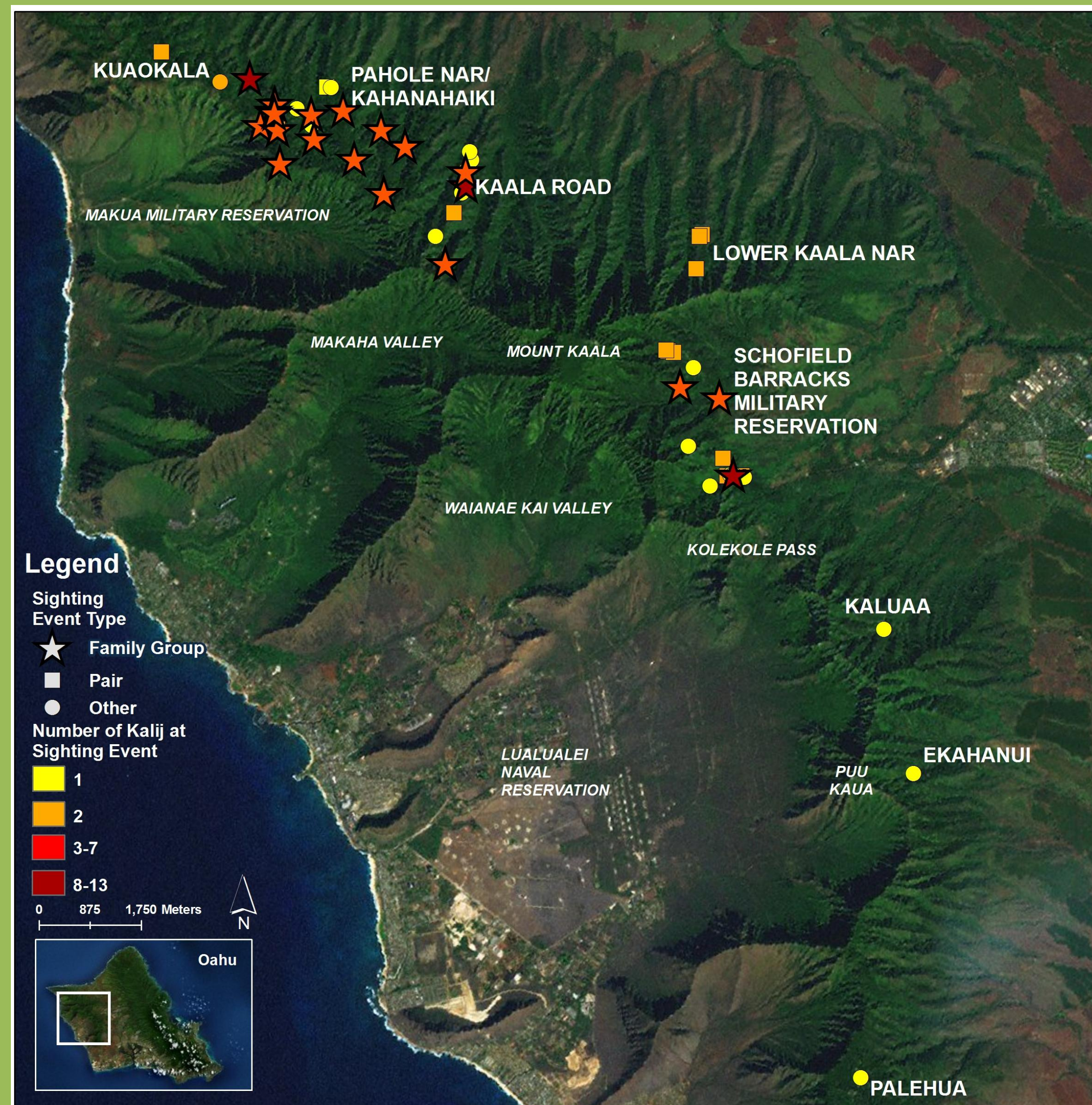


Figure 1. Kalij Pheasant sighting Locations in the Wai'anae Mountain Range on Oahu 2003 to 2010. Family groups defined as a pair plus one or more birds (adult or juvenile), pair (male & female) only, and other corresponding to individual birds observed and in one case two males.

Table 1. Kalij Pheasant Sightings Wai'anae Mts. on Oahu 2003 to 2010.									
Year	Date	Region	Area	Land Owner	Elevation (ft)	Pair	Family Group	Number of birds	Juvenile birds
2003	2003	Kuaokala	Kuaokala Road	State	1800	Yes	No	2	No
2010	10-Mar	Kuaokala	Kuaokala Road	State	1640	Yes	Yes	8	Unk
	23-Mar	Kuaokala	Kuaokala Road	State	1800	No	No	2	No
2007	13-Jun	Pahole NAR/Kahanahaiki	Pahole Gulch	State	1480	No	Yes	3	Yes
	11-Jul	Pahole NAR/Kahanahaiki	Pahole Gulch	State	1480	Yes	Yes	4	Yes
	August	Pahole NAR/Kahanahaiki	Pahole Gulch	State	1520	Yes	No	2	Unk
2008	20-May	Pahole NAR/Kahanahaiki	Keawapilau	State	2250	Yes	Yes	7	Yes
	21-Aug	Pahole NAR/Kahanahaiki	Pahole Rd	State	2000	Yes	Yes	5	Yes
	16-Sep	Pahole NAR/Kahanahaiki	Pahole Rd	State	2000	Yes	Yes	6	Unk
2009	17-Sep	Pahole NAR/Kahanahaiki	Kahanahaiki	Army	1720	Yes	Yes	3	Unk
	22-Sep	Pahole NAR/Kahanahaiki	Kahanahaiki	Army	2240	Yes	Yes	4	Unk
	13-Oct	Pahole NAR/Kahanahaiki	Pahole Gulch	State	1580	No	No	1	Unk
	19-Nov	Pahole NAR/Kahanahaiki	Pahole Road	State	1550	Yes	Yes	4	No
2010	4-Jan	Pahole NAR/Kahanahaiki	Kapuna	State	1700	Yes	Yes	3	Unk
	3-Feb	Pahole NAR/Kahanahaiki	Pahole Gulch	State	1720	No	Yes	3	No
	4-Feb	Pahole NAR/Kahanahaiki	Kapuna	State	2120	Yes	Yes	3	Unk
	9-Feb	Pahole NAR/Kahanahaiki	Pahole Road	State	1520	No	No	1	No
	February	Pahole NAR/Kahanahaiki	Kahanahaiki	Army	1920	Yes	No	2	No
	23-Mar	Pahole NAR/Kahanahaiki	Pahole/K-iki Trail	State	2080	Yes	Yes	3	No
	28-Apr	Pahole NAR/Kahanahaiki	Pahole/K-iki Trail	State	2040	Yes	No	2	No
	11-May	Pahole NAR/Kahanahaiki	Kahanahaiki	Army	1920	Yes	Yes	3	No
	16-May	Pahole NAR/Kahanahaiki	Pahole/K-iki Trail	State	2100	Yes	Yes	3	Unk
	1-Jun	Pahole NAR/Kahanahaiki	Pahole Road	State	1740	No	No	1	No
	Winter	Pahole NAR/Kahanahaiki	Kapuna	State	1520	Yes	Yes	3	Unk
	Spring	Pahole NAR/Kahanahaiki	Keawapilau	State	1320	Yes	Yes	7	Yes
2003	Fall	Kaala	Kaala Road	State	1960	Yes	No	2	No
2008	17-Mar	Kaala	Kaala Road	State	1960	Yes	No	2	Unk
	12-Nov	Kaala	Kaala Road	State	1620	Yes	Yes	13	Yes
2009	14-Sep	Kaala	Central Makaleha	State	2350	Yes	Yes	5	Unk
	14-Sep	Kaala	Kaala Road	State	1480	Yes	Yes	3	Yes
2010	13-May	Kaala	Kaala Road	State	1480	No	No	1	No
	13-May	Kaala	Kaala Road	State	2140	No	No	1	No
	13-May	Kaala	Kaala Road	Army	1370	No	No	1	No
	19-May	Kaala	Kaala Road	State	1280	No	No	1	No
	19-May	Kaala	Kaala Road	Army	1720	No	No	1	No
2009	25-Mar	Lower Kaala NAR	Manuwai	State	1960	Yes	No	2	No
2010	17-May	Lower Kaala NAR	Manuwai	State	1600	Yes	No	2	No
	Summer	Lower Kaala NAR	Manuwai	State	1680	Yes	No	2	No
2004	June	Schofield Barracks	Firebreak Road	Army	1700	Yes	No	2	No
2005	February	Schofield Barracks	Firebreak Road	Army	1600	Yes	No	2	No
	13-Apr	Schofield Barracks	N. Haleauau Gulch	Army	2000	No	No	1	No
2009	14-Apr	Schofield Barracks	N. Haleauau Gulch	Army	1580	No	No	1	No
	6-Aug	Schofield Barracks	Firebreak Road	Army	1680	Yes	Yes	4	Yes
	27-Aug	Schofield Barracks	Banana Gulch	Army	2280	No	No	1	No
	29-Oct	Schofield Barracks	Firebreak Road	Army	1660	Yes	Yes	10	Unk
2010	13-Jan	Schofield Barracks	Firebreak Road	Army	1680	No	No	1	No
	26-Jan	Schofield Barracks	Mohikea Gulch	Army	1890	No	No	1	No
	17-Mar	Schofield Barracks	Firebreak Road	Army	1800	Yes	No	2	Unk
	8-Apr	Schofield Barracks	Firebreak Road	Army	1660	No	No	1	No
	6-May	Schofield Barracks	N. Haleauau Gulch	Army	2260	Yes	No	2	Unk
	12-May	Schofield Barracks	N. Haleauau Gulch	Army	2200	Yes	Yes	3	Unk
	3-Jun	Schofield Barracks	N. Haleauau Gulch	Army	2200	Yes	No	2	No
	8-Jul	Schofield Barracks	N. Haleauau Gulch	Army	2280	Yes	No	2	Unk
2008	26-Mar	Kaluaa	Kaluaa	State	1720	No	No	1	Unk
2010	24-Mar	Ekahanui	Ekahanui	State	1760	No	No	1	No
2006	2-Sep	Palehua	Palehua Road	Private	2200	No	No	1	No

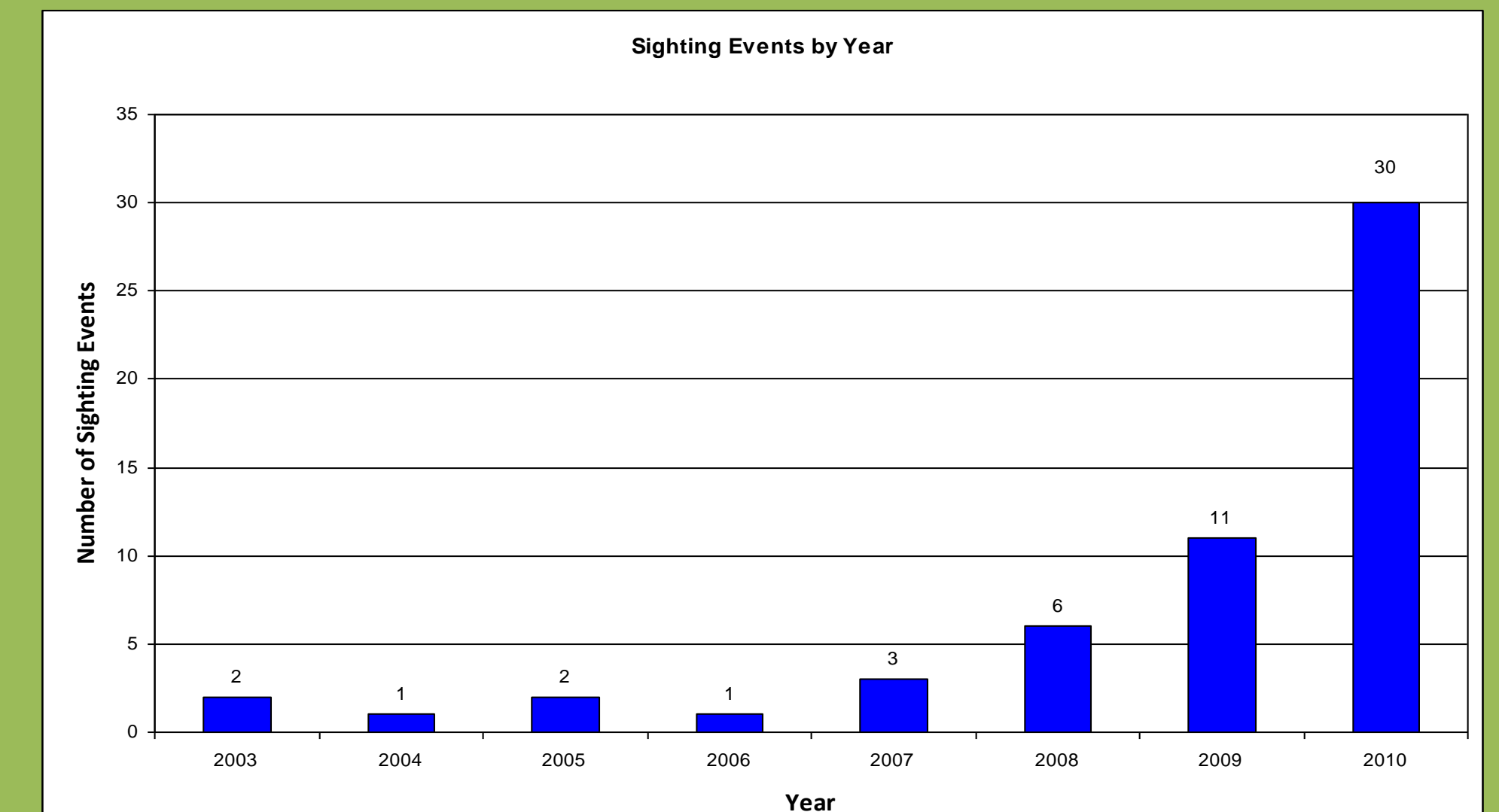


Figure 2. Kalij sighting events by year on Oahu 2003 to 2010.

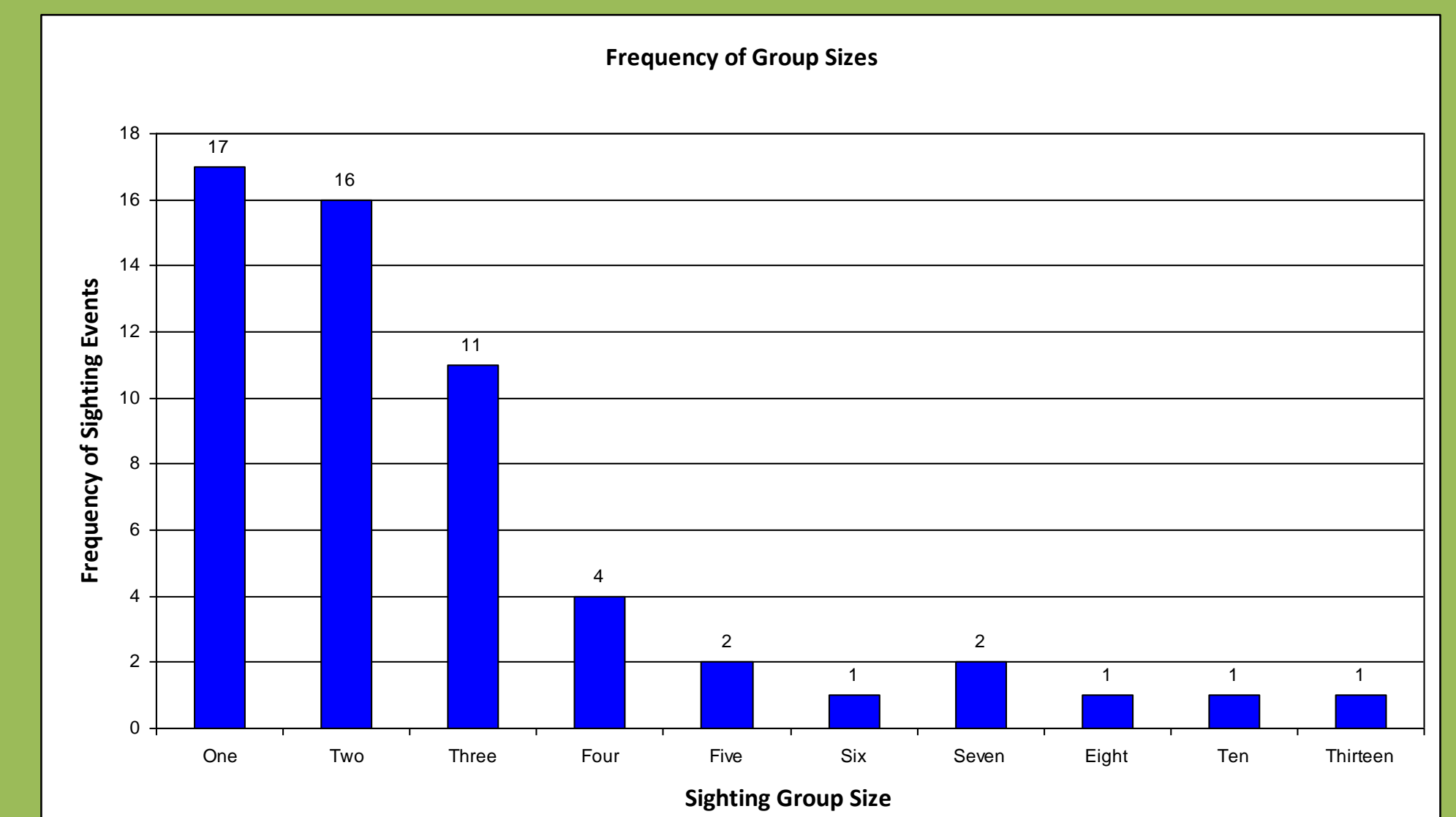


Figure 3. Group size frequency of Kalij sightings 2003 to 2010.

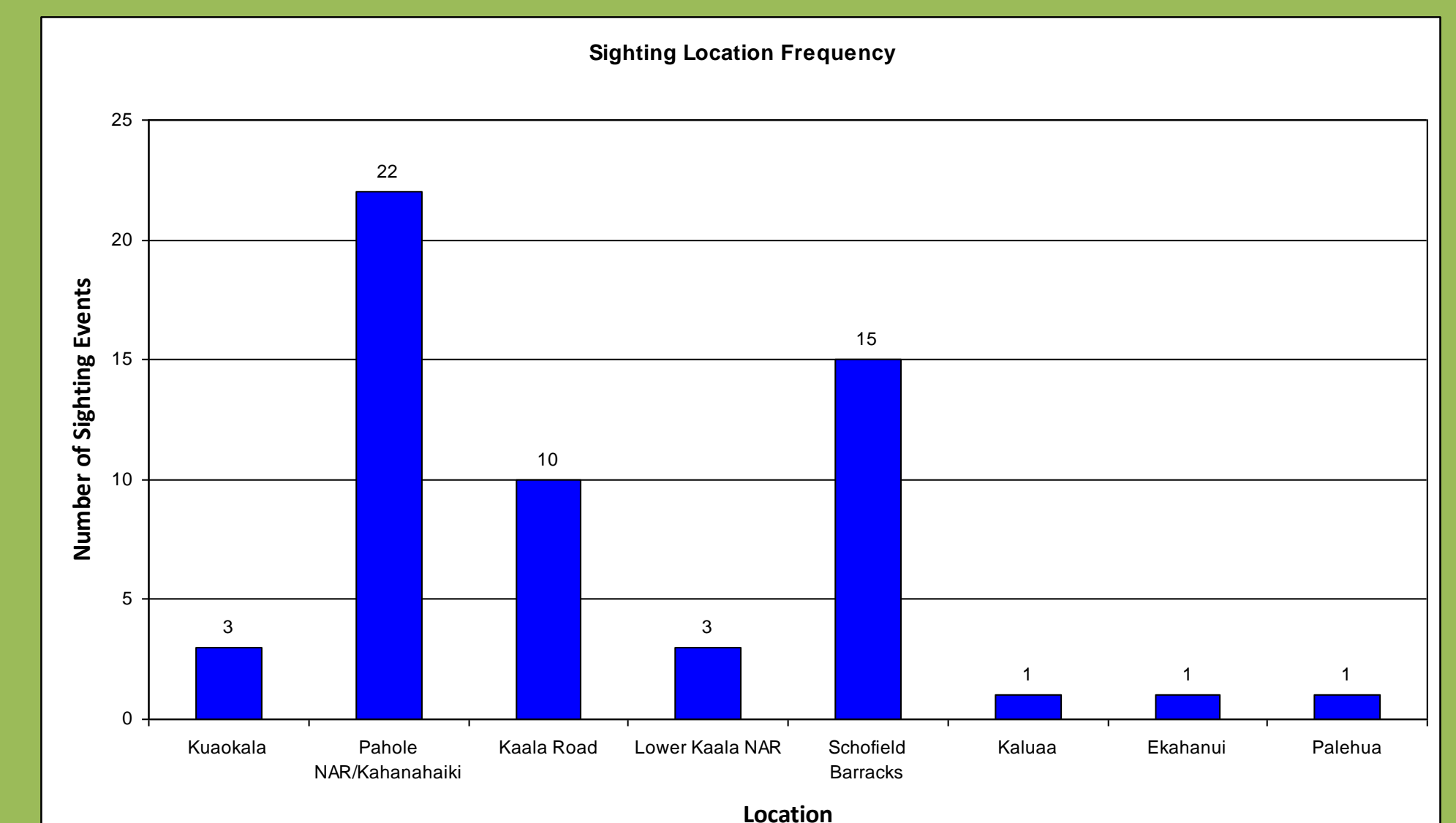


Figure 4. Location of Kalij sighting events on Oahu 2003 to 2010.

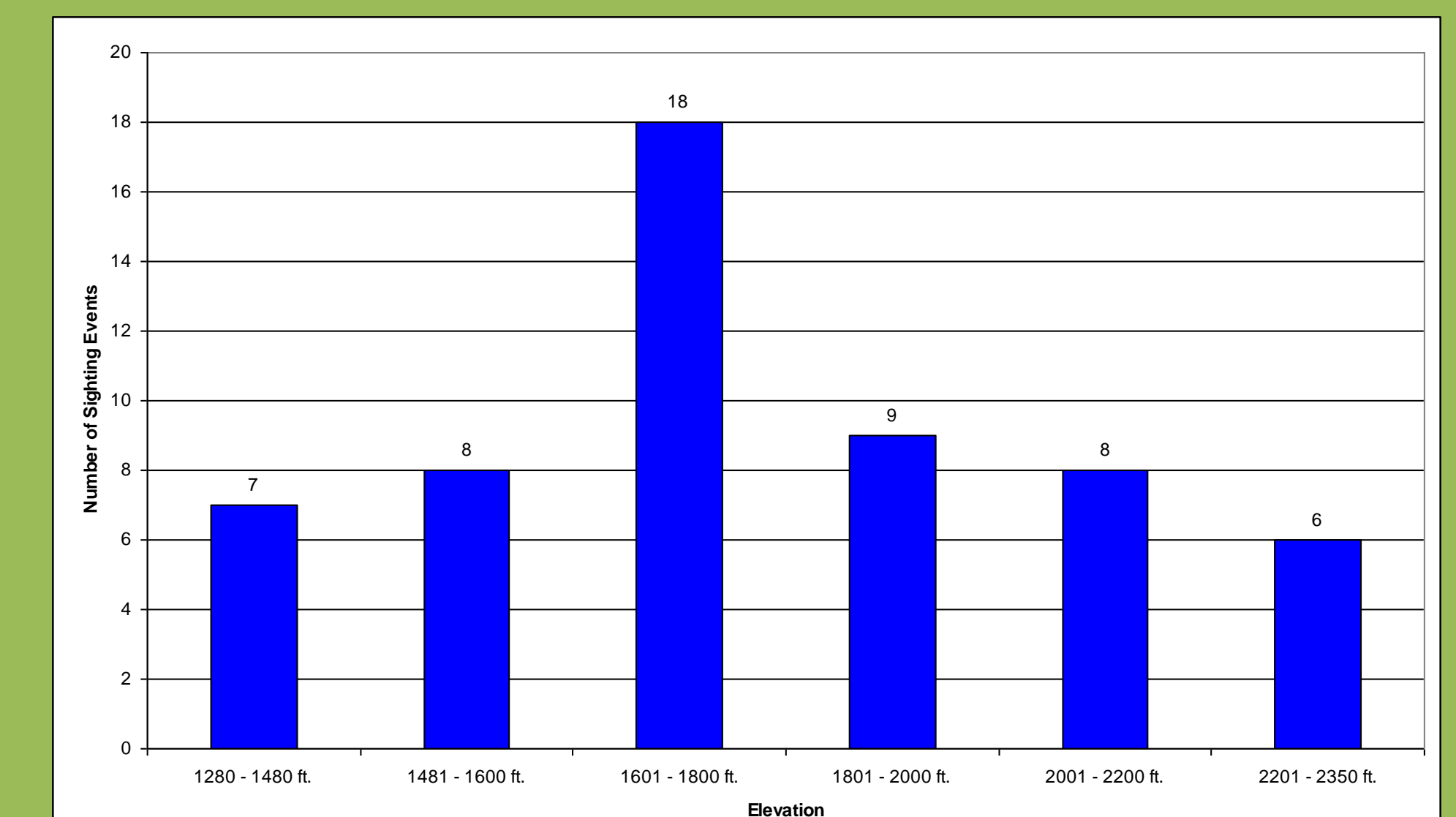


Figure 5. Elevation range of Kalij sighting events on Oahu 2003 to 2010.