

# MAUI'S PROTECTED AREAS SHELTER LONG-LIVED HAWAIIAN HONEYCREEPERS

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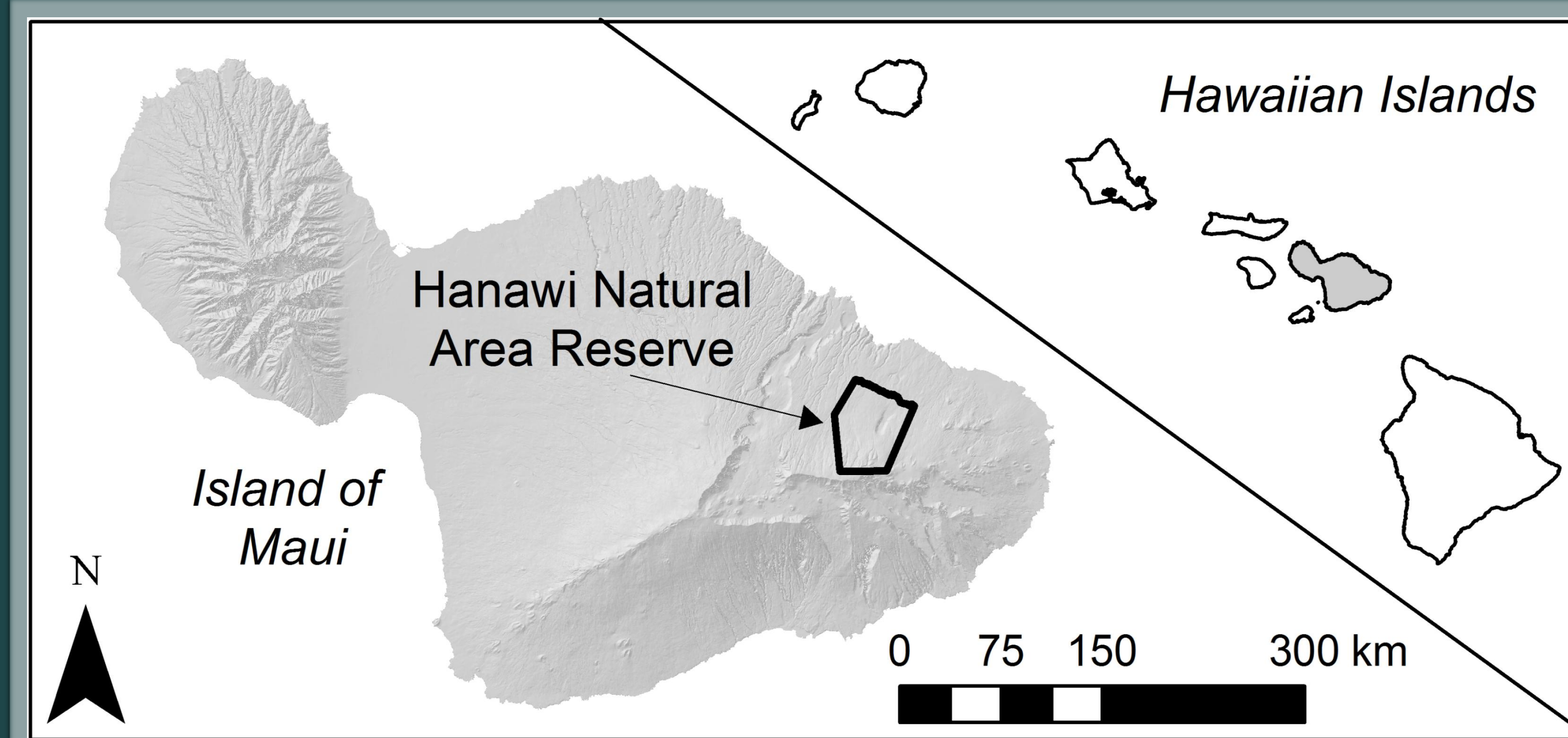
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Similar to the other Hawaiian Islands, Maui's avifauna has suffered numerous extinctions. The island now only supports six honeycreeper species: Maui Parrotbill (*Pseudonestor xanthophrys*), Hawai'i 'Amakihi (*Hemignathus virens*), Maui 'Alauahio (*Paroreomyza montana*), 'I'iwi (*Vestiaria coccinea*), 'Ākohekohe (*Palmeria dolei*), and 'Apapane (*Himatione sanguinea*). Endemic to Maui Nui, the Maui Parrotbill, Maui 'Alauahio, and 'Ākohekohe are all now restricted to Maui.

Intensive demographic monitoring has resulted in data that extends the maximum known lifespan, i.e., longevity, for four species of these species. In addition to revising the life history data for these honeycreepers, more than doubling the longevity records for the three Maui restricted species, these data have significant implications for Maui conservation measures.

## State of Hawai'i Natural Area Reserves System

In 1970, the Hawai'i State Legislature created the Natural Area Reserves System (NARS) to protect and preserve Hawai'i's unique natural resources. NARS is administered by the Department of Land and Natural Resources, Division of Forestry and Wildlife. These areas support many of Hawai'i's rarest, endemic plants and animals and controlling the encroachment of non-native plants and animals is a critical component of managing these areas.



## Hanawi Natural Area Reserve

Created in 1986 as part of the Hawai'i NARS, Hanawi NAR covers 3035 ha on the northeastern slope of Maui's Haleakalā Volcano. Fencing and threat eradication conducted by NARS on Maui protects and restores forest ecosystem functionality, which may have contributed to the longevity of the individuals presented herein.

## Longevity in Maui Honeycreepers

Analysis of this long-term banding and resight dataset (1992–2011) has shown new longevity records for Maui's honeycreepers. Minimum age was calculated as the elapsed time from the initial capture to the most recent recapture or resight (visually identifying an individual based on a unique combination of color bands).

There is scant published data on the longevity of Hawaiian honeycreepers. Our current analyses have identified 21 individuals with minimum ages in excess of 12 years (Table 1).

## Conclusions

Four species of Hawaiian honeycreepers have been able to reach remarkable longevity within the protection of the NARS. Increased survivorship likely allows these individuals additional opportunities to successfully reproduce. Although survival is only one factor in population demographics, if Hawaiian honeycreepers are living longer than 12 years, this may bode well for current and future conservation measures. Further habitat restoration and preservation is of utmost concern for Maui forest bird recovery and for increasing lifetime reproductive success for these honeycreepers.



**Table 1.** Minimum ages for all individuals exceeding 12 years for Maui Parrotbill, Hawai'i 'Amakihi, Maui 'Alauahio, and 'Ākohekohe in Hanawi Natural Area Reserve (NAR), Maui, Hawai'i.

Species	Minimum Age (years)	Sex	Date Banded
Maui Parrotbill	13.48	Male	8/2/1994
Maui Parrotbill	13.52	Male	12/14/1997
Maui Parrotbill	14.28	Male	2/8/1998
Maui Parrotbill	14.54	Male	12/11/1997
Maui Parrotbill	15.33	Female	2/20/1997
Hawai'i 'Amakihi	12.78	Male	6/5/1996
Hawai'i 'Amakihi	15.09	Female	1/26/1993
Hawai'i 'Amakihi	17.69	Female	10/10/1992
Maui 'Alauahio	12.00	Unknown	2/24/1992
Maui 'Alauahio	12.39	Male	9/16/1992
Maui 'Alauahio	13.39	Unknown	1/15/1998
Maui 'Alauahio	14.17	Unknown	1/25/1997
Maui 'Alauahio	14.48	Unknown	12/9/1996
Maui 'Alauahio	15.67	Unknown	6/23/1994
Maui 'Alauahio	15.77	Unknown	7/31/1996
Maui 'Alauahio	15.84	Unknown	4/29/1996
Maui 'Alauahio	16.25	Unknown	3/20/1996
Maui 'Alauahio	16.80	Unknown	7/18/1994
'Ākohekohe	12.02	Male	1/27/1998
'Ākohekohe	13.81	Unknown	7/31/1996
'Ākohekohe	14.73	Unknown	5/25/1997

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