

Shearwater Soiree - 2012



'U au' Kani

Freeman Seabird Preserve (Blackpoint)



Landscape - Coastal Terrace, Rocky Slope



Improving Breeding Habitat on Terrace



Weeding on the Slope



Lots of Available Nesting Spaces



Yearly Monitoring - Since 2009



➤ mid July: Mark ~ 30 nests

➤ mid July - late November:

Weekly chick mass



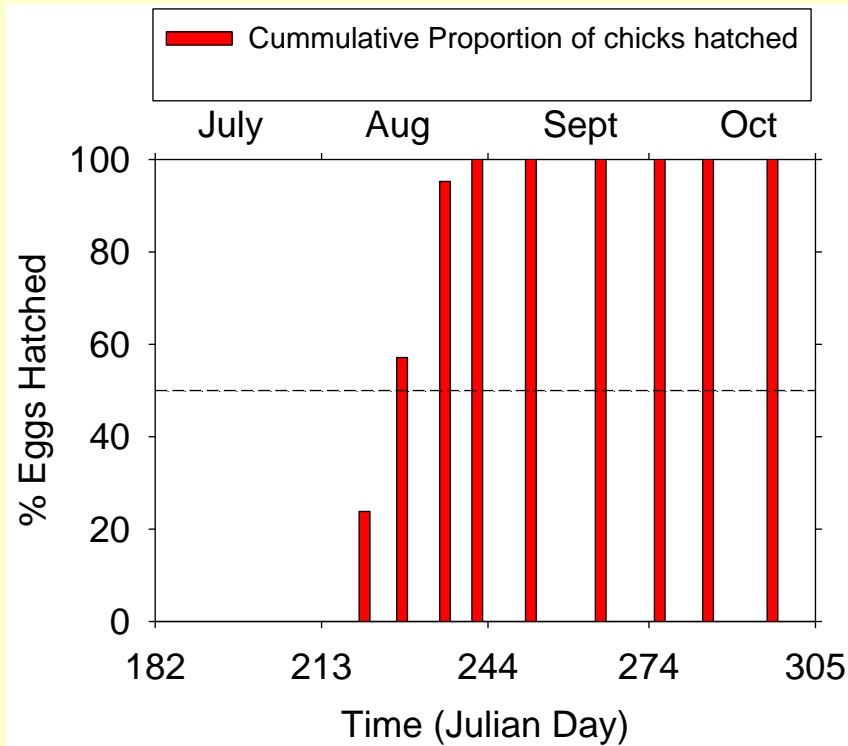
➤ late November:

Final chick mass

Chick morphometrics

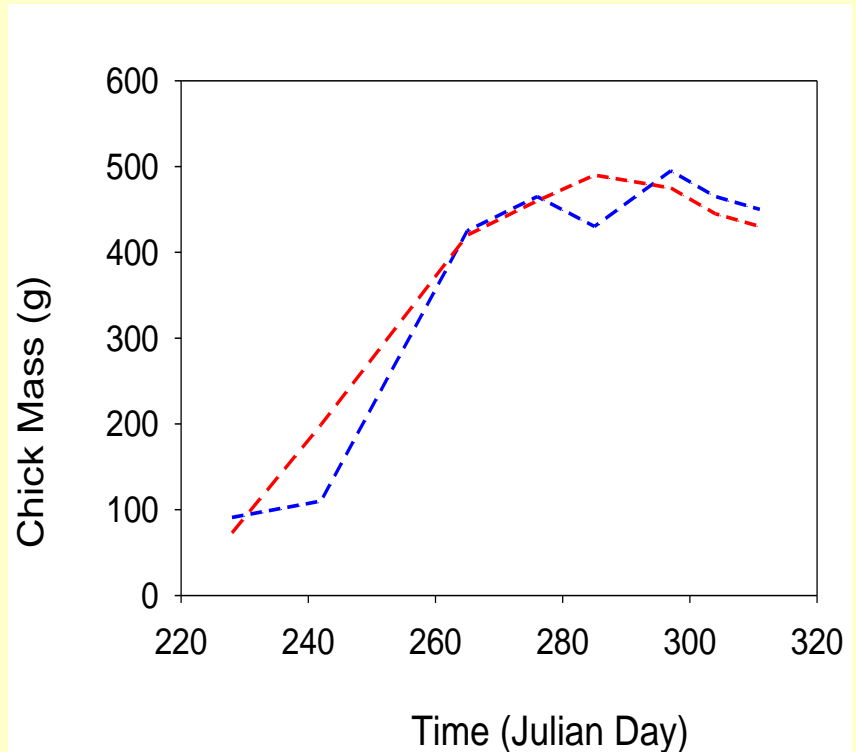
Quantifying Shearwater Productivity

Timing of Hatching:



When did 50% of chicks hatch?

Chick Mass:



What was the mean chick mass?

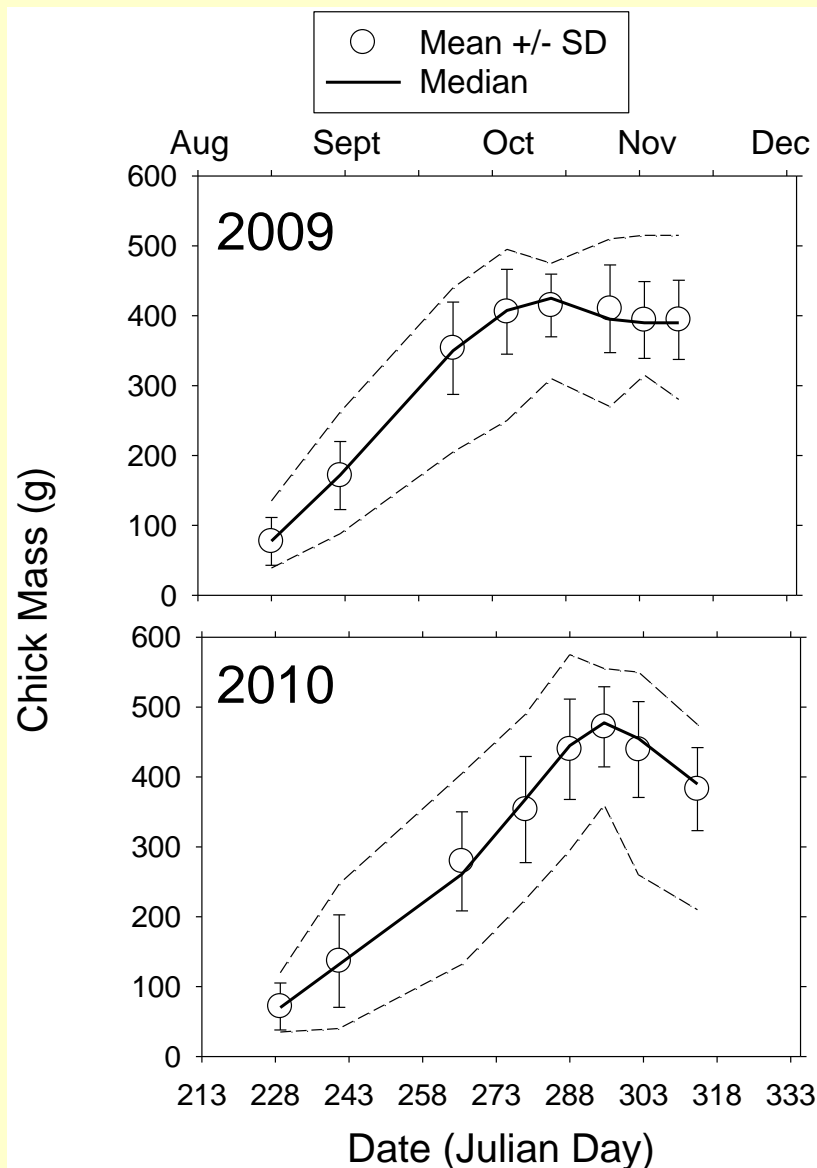
**Tale of Two Years: Monitoring Wedge-tailed Shearwaters
at Freeman Seabird Preserve in Black Point, O'ahu.**



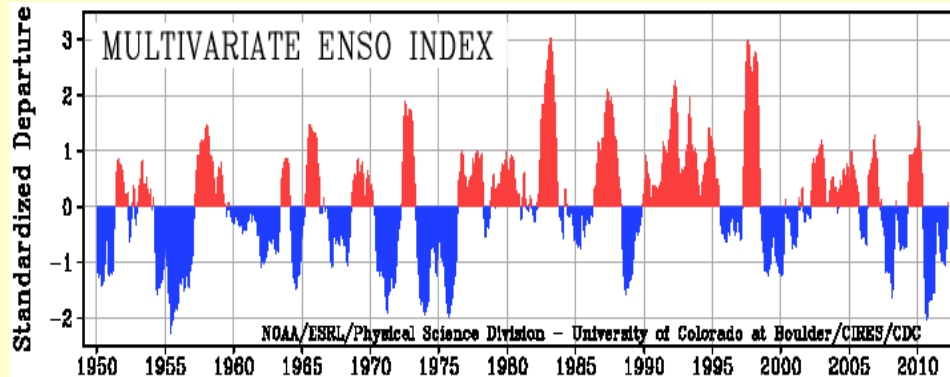
- Hatching later in 2010 than in 2009 ($p = 0.013$)
- Maximum chick weights higher in 2010 ($p = 0.028$)

Available online: www.hawaiiaudubon.com/

2009 vs 2010

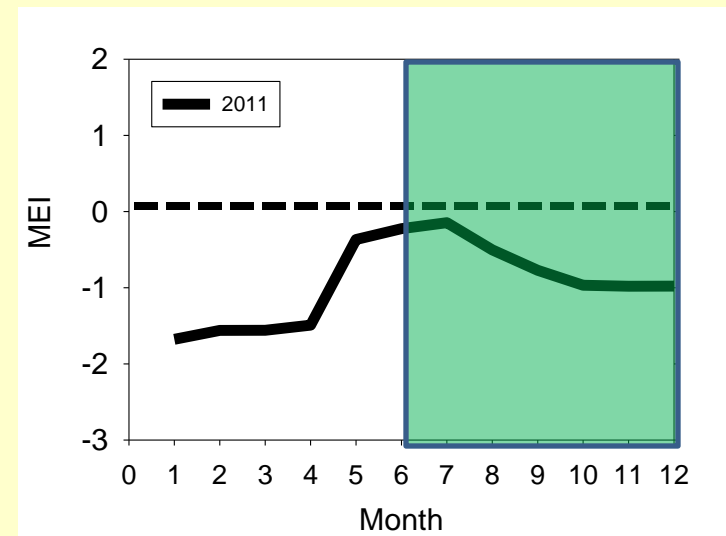
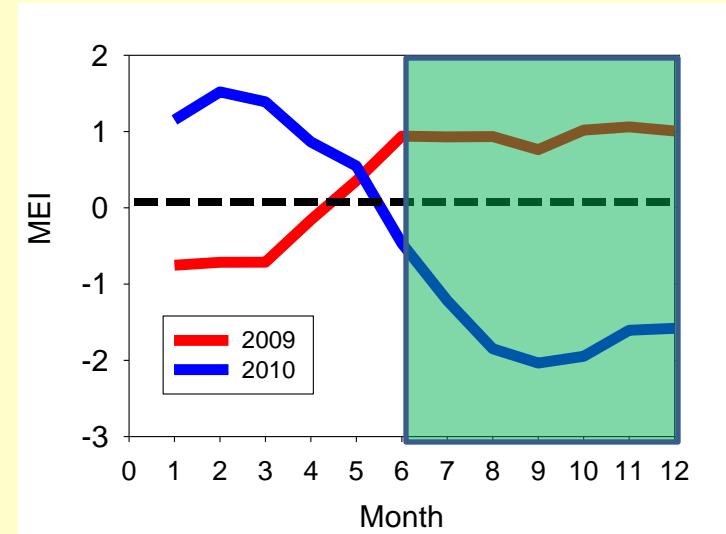


Links with Ocean Conditions



Index of El Niño Conditions
(www.esrl.noaa.gov/psd/enso/mei/)

- El Niño Conditions in 2009
Warmer water, Less productive
- La Niña Conditions in 2010
Colder water, More productive



14 July 2011 Colony Count: 133 Nests !!!



2011 Monitoring

2011: A Mixed Year at the Freeman Seabird Preserve

by K. David Hyrenbach, Assistant Professor of Oceanography, Hawai'i Pacific University, khyrenbach@hpu.edu
and Wendy Johnson, Hawai'i Audubon Society, johnsonw002@hawaii.rr.com



32 nests: chick growth
20 nests: controls



HCO ScoutGuard

1.10.2011 23:01:22

4 cameras
4 traps

Available online: www.hawaiiaudubon.com/

2011 Summary

2011: A Mixed Year at the Freeman Seabird Preserve

by K. David Hyrenbach, Assistant Professor of Oceanography, Hawai'i Pacific University, khyrenbach@hpu.edu
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Chick Growth



Chick Survivorship

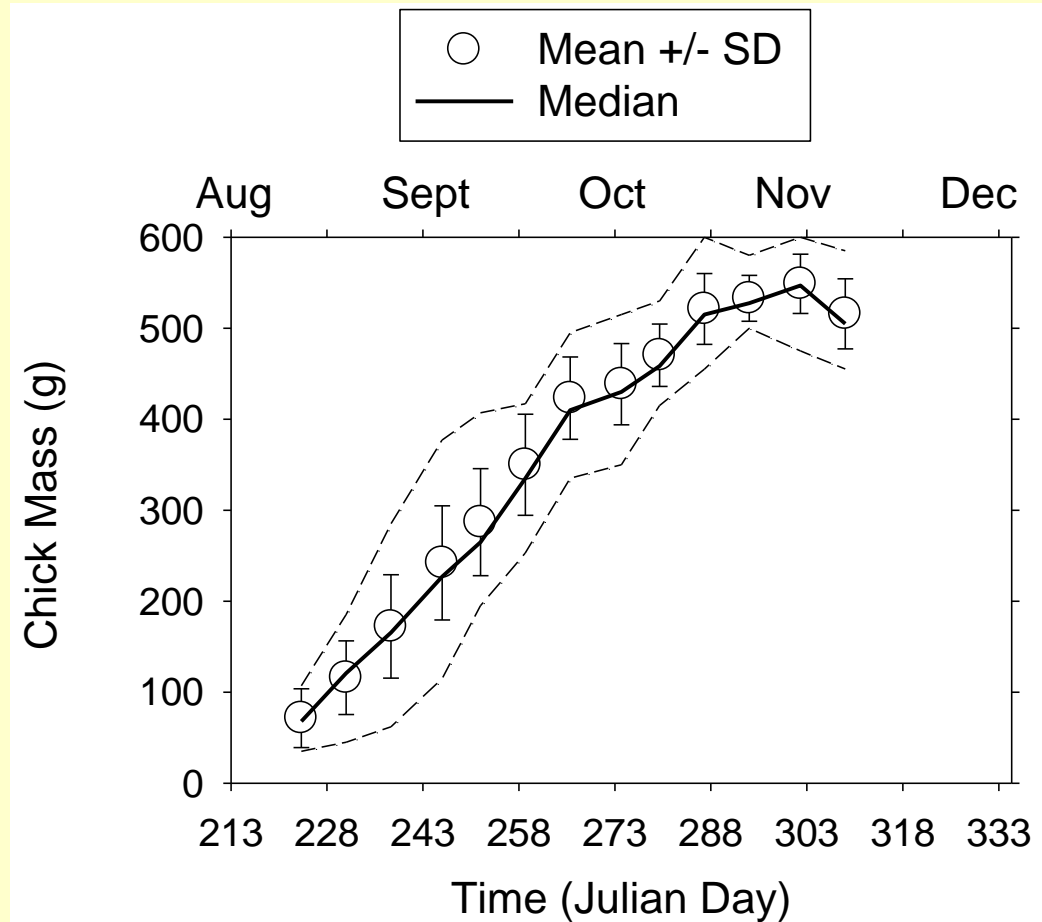


Available online: www.hawaiiaudubon.com/

2011 - Chick Growth



- Maximum chick weights highest in 2011
- Final chick weights highest in 2011
- No "handling effects": mass, survivorship



Available online: www.hawaiiadubon.com/

Shearwater Response to a Consistently Cold Year

- Earlier breeding in Cold Years (early)
- Higher peak mass in Cold Years (late)



		2009	2010	2011
Hatching Date	sample size	21	29	24
	mean	Aug. 13	Aug. 19	Aug. 13
	range	Aug. 4 - 28	Aug. 1 - Sept. 8	Aug. 2 - Sept. 6
Peak Chick Mass (grams)	sample size	19	21	18
	mean	447	483	562
	range	515 - 325	575 - 360	600 - 505
Final Chick Mass (grams)	sample size	19	21	18
	mean	379	383	516
	range	495 - 280	475 - 210	585 - 445

2011 - Chick Survivorship

Egg Losses: 25% (8 / 32) of monitored nests lost before hatching: 2 cracked and infested by ants and 6 vanished.

Chick Losses: 2 lost to predators and 5 disappeared.

Lower overall success was due to chick mortality:

71% of the chicks that hatched successfully fledged, compared with:

95% (2009)

83% (2010)



Predator Control

Trap Results

Traps deployed for a total of 189 trap nights
(Sept to Nov - 4 traps).

On 23 September 2011,
a cat was caught in the
trap set against east
wooden fence of reserve.

Cat released by owner.



HCO ScoutGuard

1.10.2011 23:01:22

Predator Control

Camera Results

Three unique cats observed in reserve. Two multiple times.

No other predators caught on camera.

Aside from people working at the reserve, only one other person caught on camera.



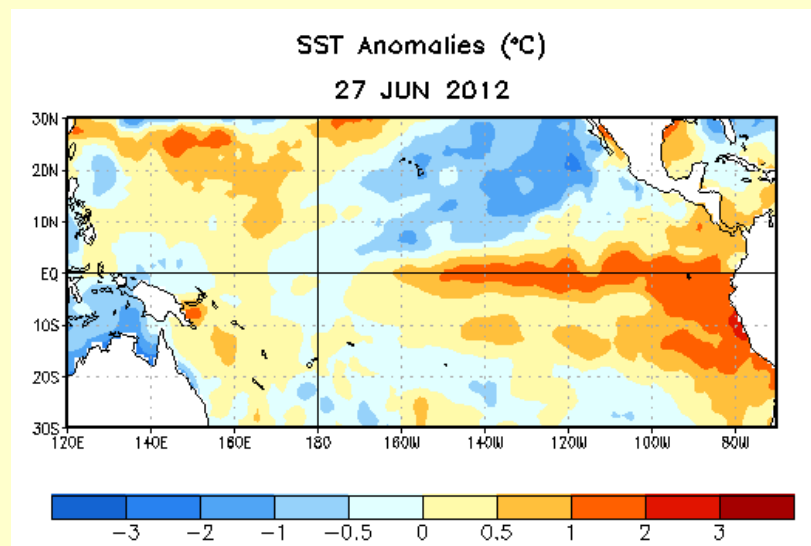
2012 Expectations

CLIMATE PREDICTION CENTER

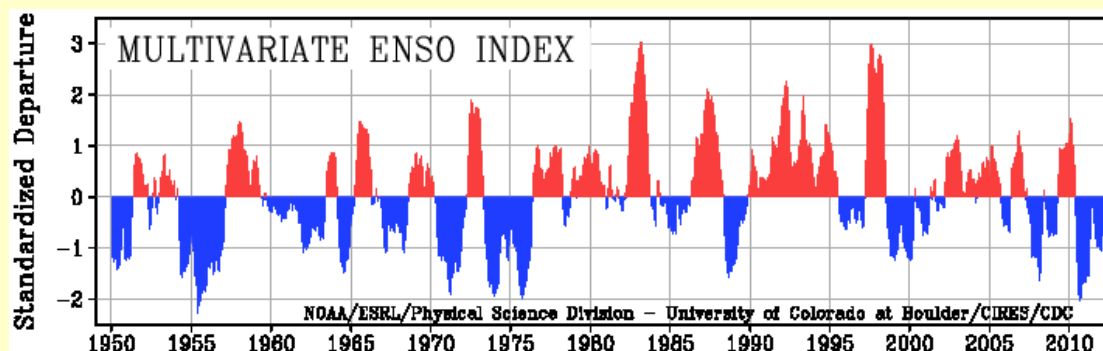
ENSO Status: El Niño Watch

Chances increase for El Niño beginning in July-September

Positive equatorial Pacific sea surface temperature (SST) anomalies have grown, exceeding $+0.5^{\circ}\text{C}$ across eastern Pacific Ocean by the end of June



Entering the warm phase of ENSO, expected to fully develop by fall 2012



www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/index.shtml

2012 Expectations

Shearwater Responses

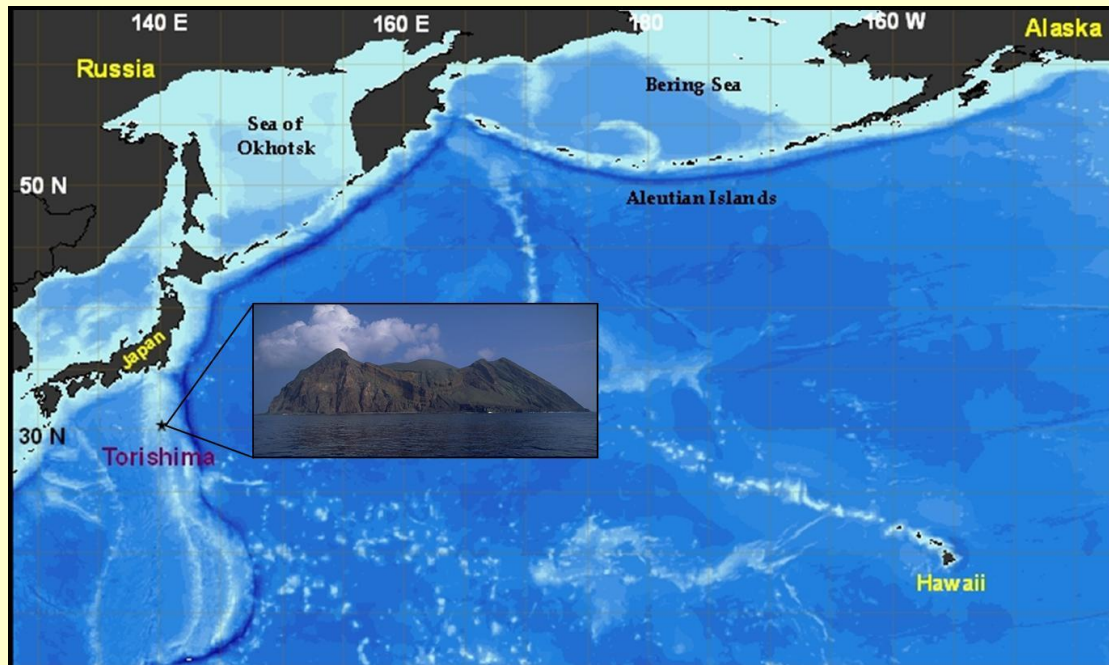
- delayed hatching
- lower chick masses

Predator Monitoring

- ongoing cameras
- trapping, if needed



A Happy Surprise (May 13, 2012)



Hatsunezaki,
Tori Island, Japan

Banding: Hatch year, on November 17, 2003 at Diamond Head, Oahu, Honolulu County, Hawaii.

Resight: Bird came to breeding site, but did not start breeding. There was no brood patch.

Acknowledgements

Thanks to all the volunteers who have contributed to the restoration of the Freeman Seabird Preserve

The Birds



Photos: Michelle Hester, Pam Michael, Lindsay Young & Eric Van der Werf (Pacific Rim Conservation)

Sounds: David Kuhn <http://soundshawaiian.com/>
(Recorded in Lehua, August 2010)