Interannual variation in zooplankton prey distribution determines marine breeding distributions of Cassin’s Auklet in the proposed Scott Islands National Marine Wildlife Area in Canada.

Bertram, Mackas, Boyd, Ryder, Welch Galbraith & Hedd

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Nestucca Oil Spill Resource Damage Trust Fund


Ship-based DFO zooplankton sampling stations
Seasonal life cycle of *Neocalanus plumchrus*


A highly profitable prey for Cassin’s Auklet
Copepod *Neocalanus cristatus* is a key prey
Radio attachment to breeding birds

Figure 1. Placement of ATS radios with anchors on a CAAU.
Aerial telemetry for detection of radio signals
2000 telemetry
2001 telemetry

Designation expected Mid 2015

Slide courtesy Greg Jones, CWS
Proposed Scott Islands National Marine Wildlife Area
Are *N. cristatus* biomass anomalies usually positive offshore?
Neocalanus cristatus biomass anomalies in May

CS and T lines offshore stations
Figure 2. Mass of nestling Cassin’s Auklets at 25 days of age, averaged for each year

Source Hipfner report Irvine & Crawford 2013
No relationship between CAAU performance and zooplankton biomass anomalies at offshore stations
Conclusions

1. Radio telemetry (planes) coupled with zooplankton sampling (ships) and Cassin’s auklet nestling diet and transmitters (colony)

2. 1999-2001 Cassin’s auklet foraging locations were generally linked to station locations which had *Neocalanus cristatus*.

3. *N. cristatus* anomalies offshore were above average in 5 years and below average in 7 years.

4. Breeding performance was not linked to copepod biomass anomalies at the offshelf stations.
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