



Western Washington University
Western CEDAR

Salish Sea Ecosystem Conference

2018 Salish Sea Ecosystem Conference
(Seattle, Wash.)

Apr 4th, 2:30 PM - 2:45 PM

Where have all the forage fish gone? Response of rhinoceros auklets to an anomalously poor breeding season

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Hodum, Peter; Pearson, Scott F.; and Good, Tom, "Where have all the forage fish gone? Response of rhinoceros auklets to an anomalously poor breeding season" (2018). *Salish Sea Ecosystem Conference*. 50.

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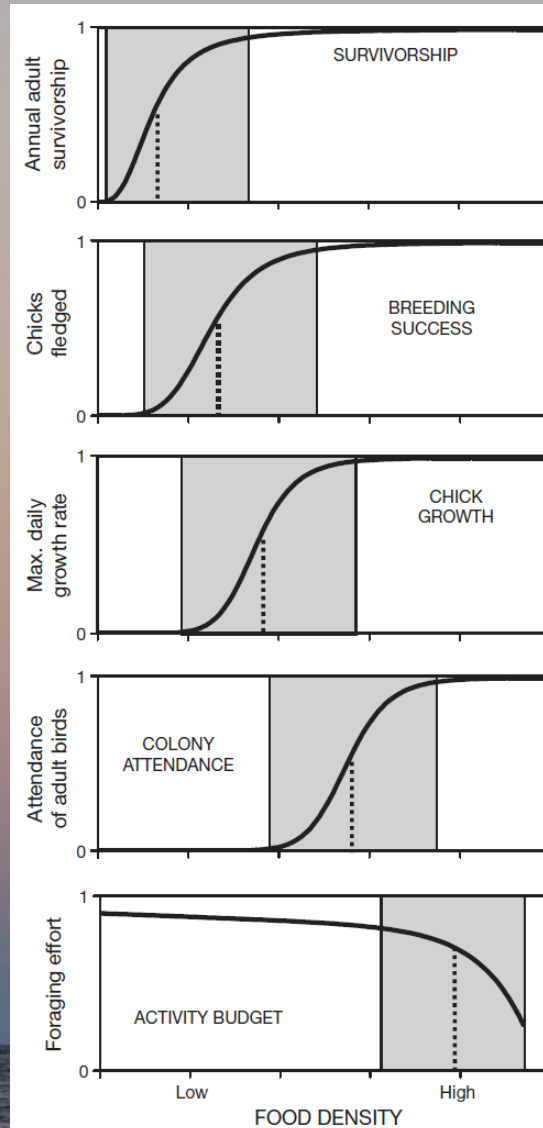
Where have all the forage fish gone?

Response of Rhinoceros Auklets to an
anomalously poor breeding season

Peter Hodum, Scott Pearson and Tom Good



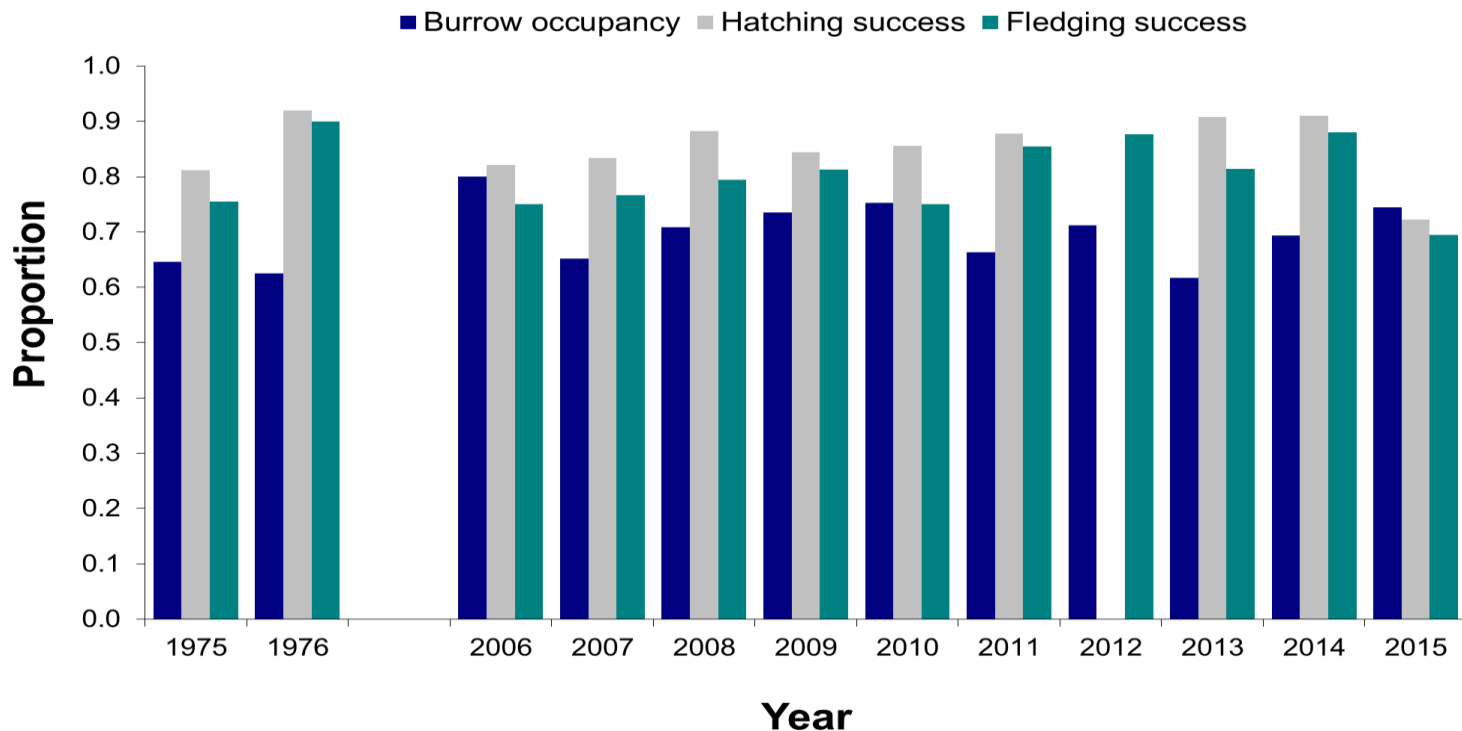
Seabirds as indicators



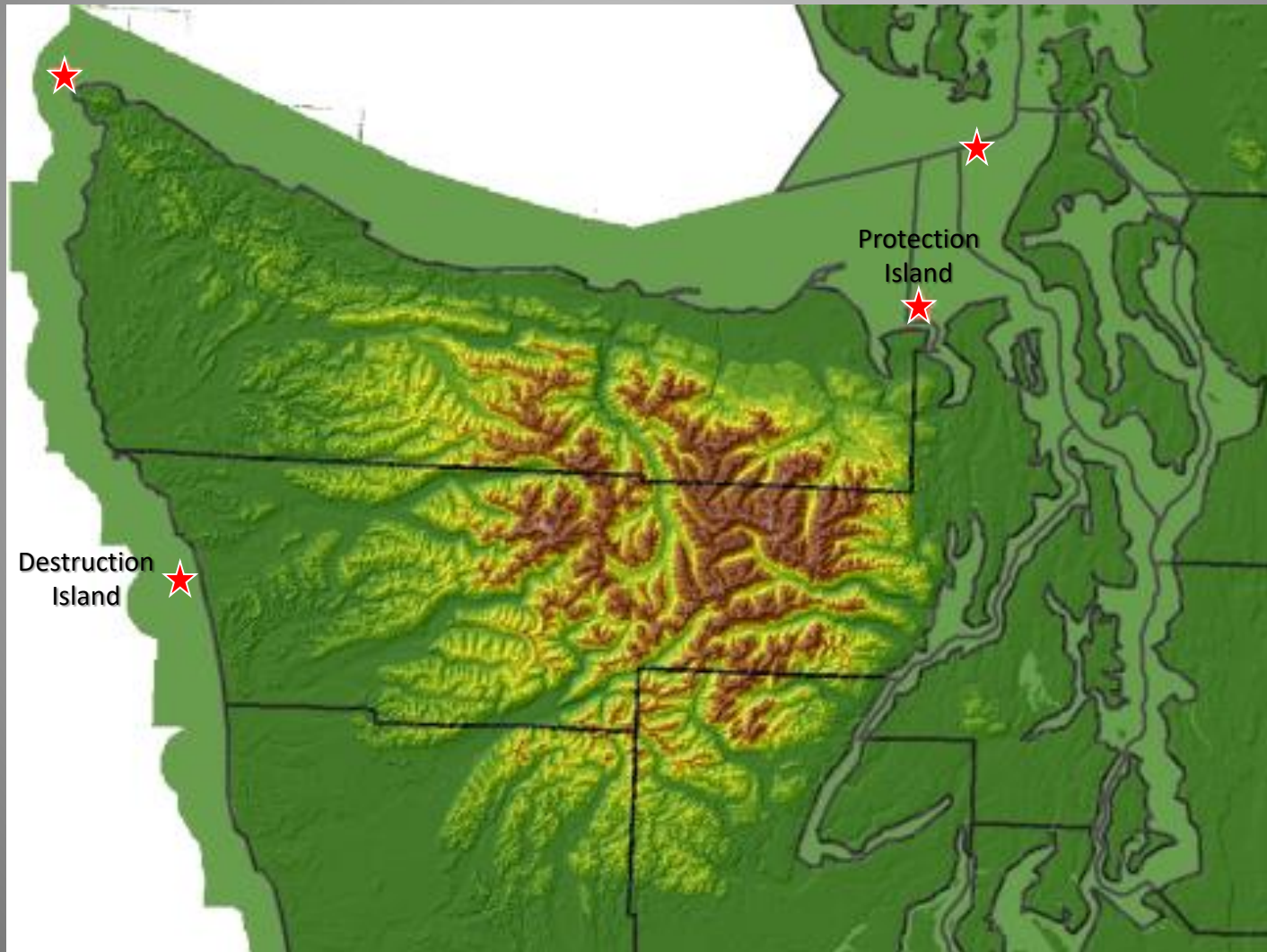
Cairns 1987

Rhinoceros Auklet breeding

- Little interannual variability
- Relative insensitivity to range of conditions typically experienced



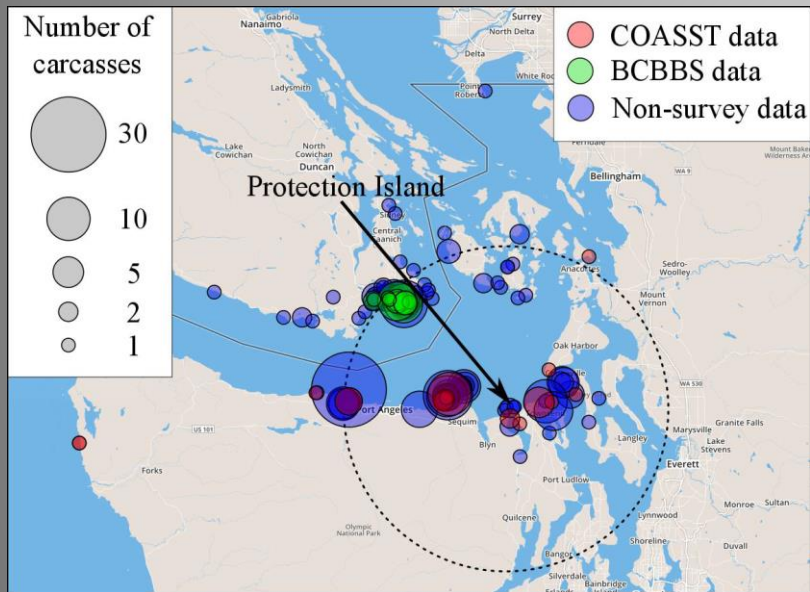
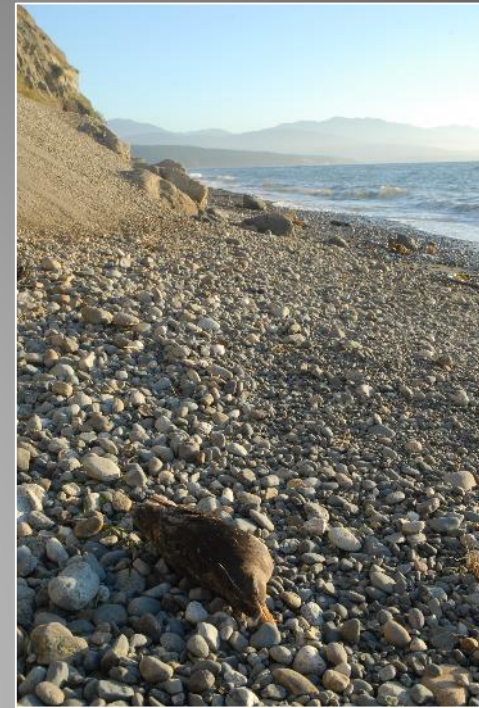
Study sites



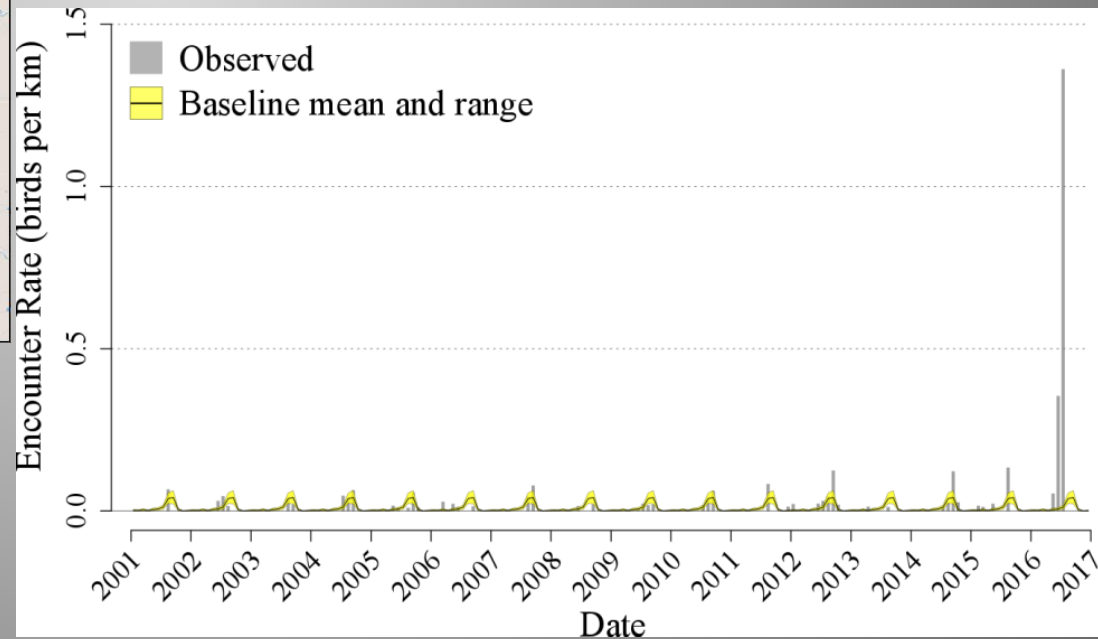
2016 in Salish Sea

RHAU adult mass mortality event

May-August 2016

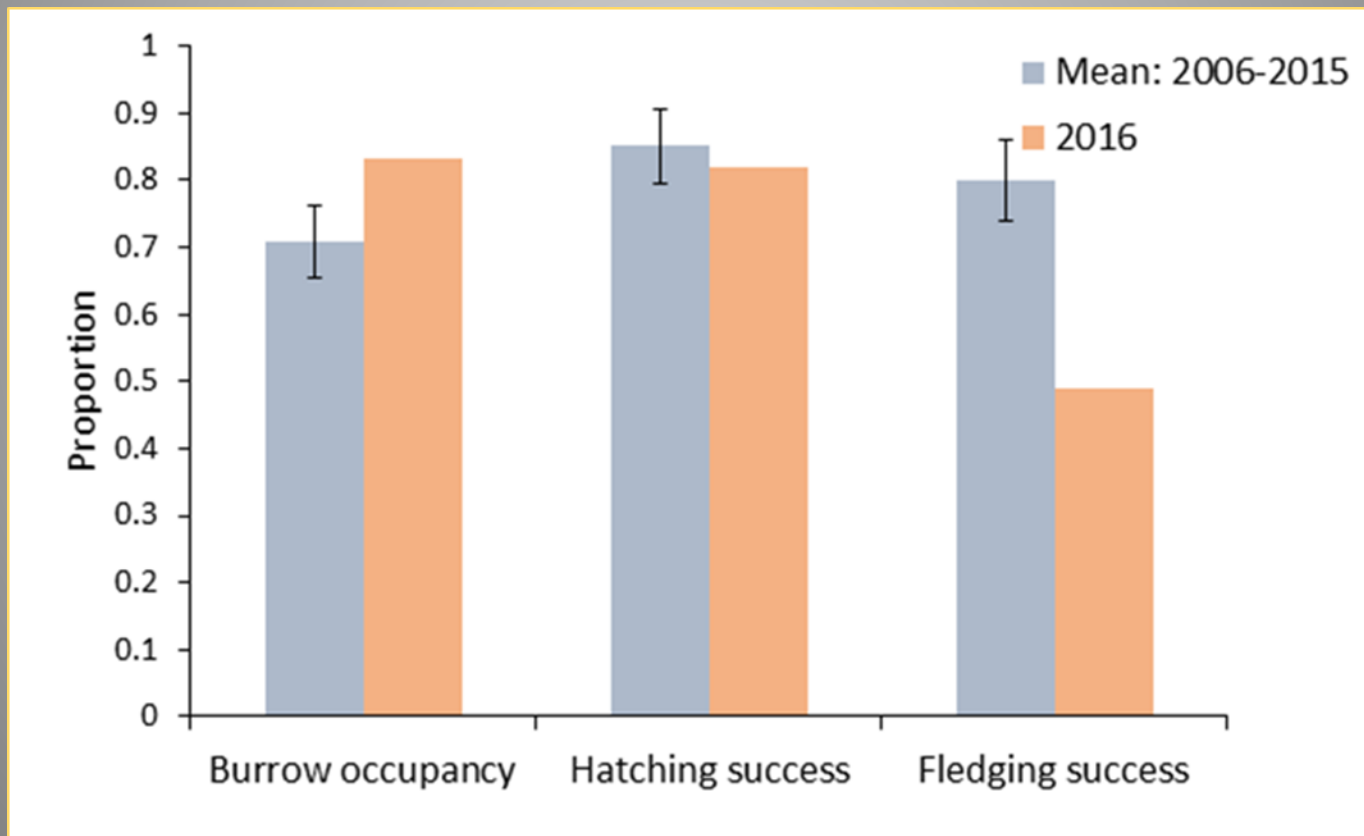


Figures courtesy of COASST

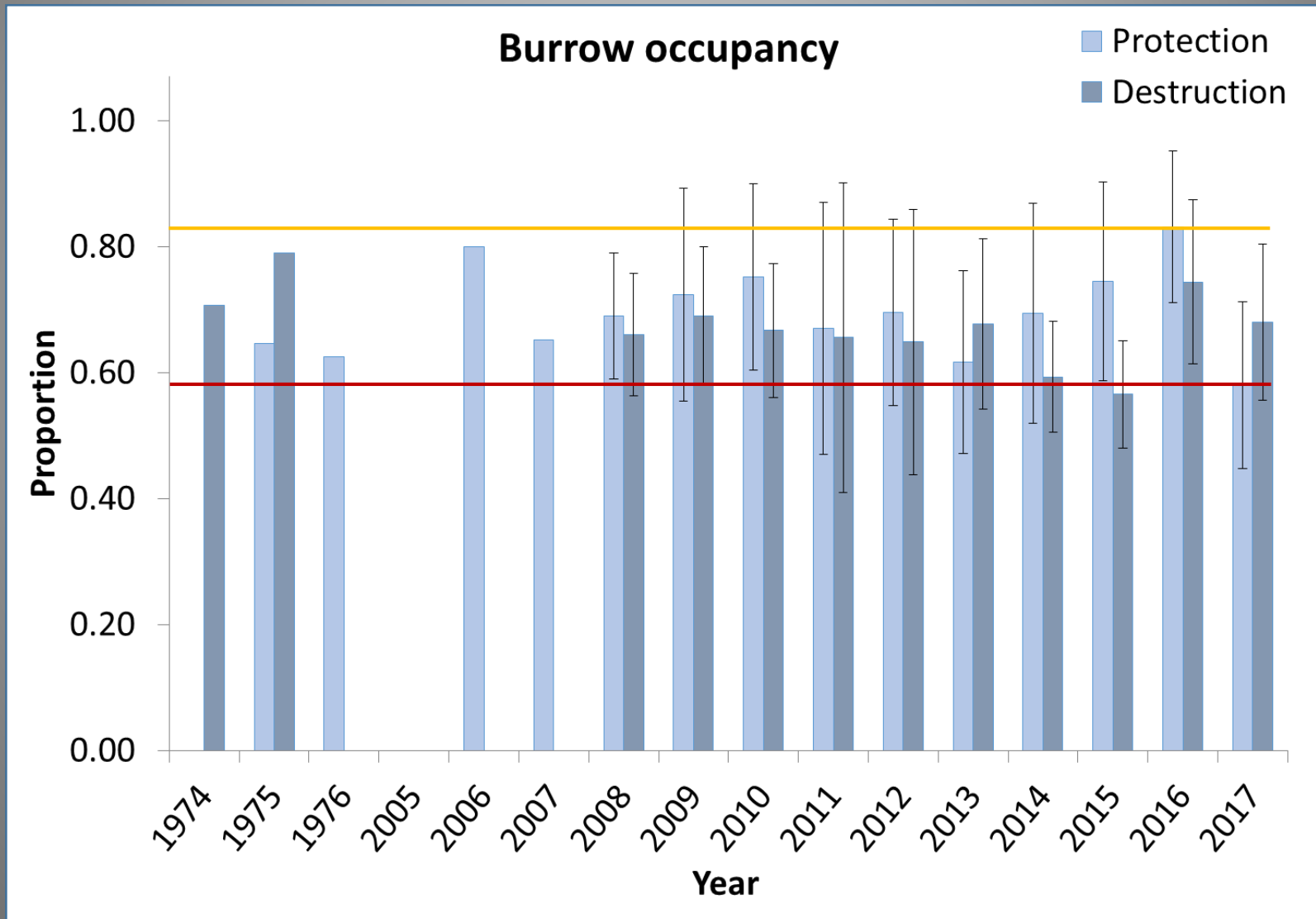


2016 in Salish Sea

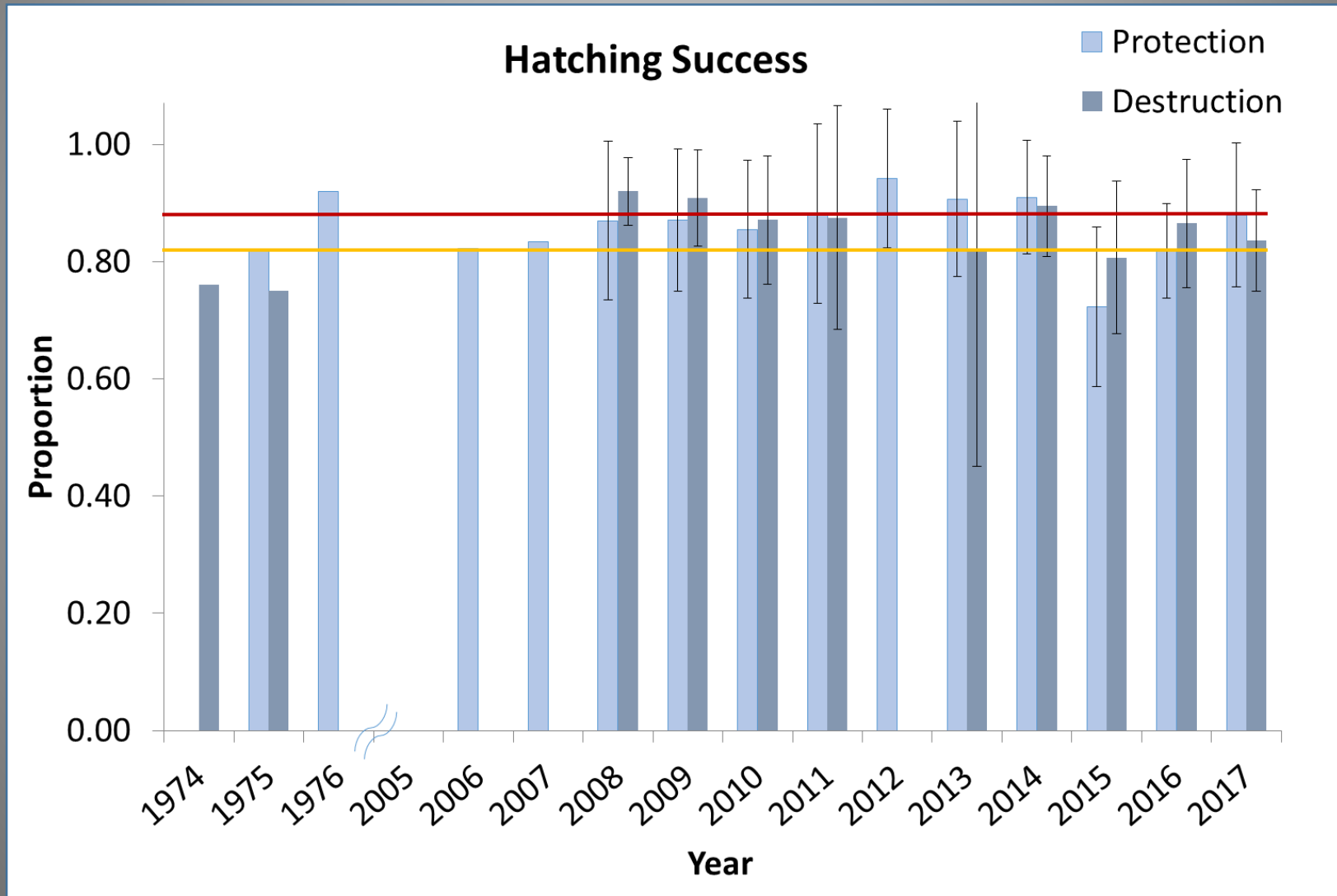
RHAU reproductive performance



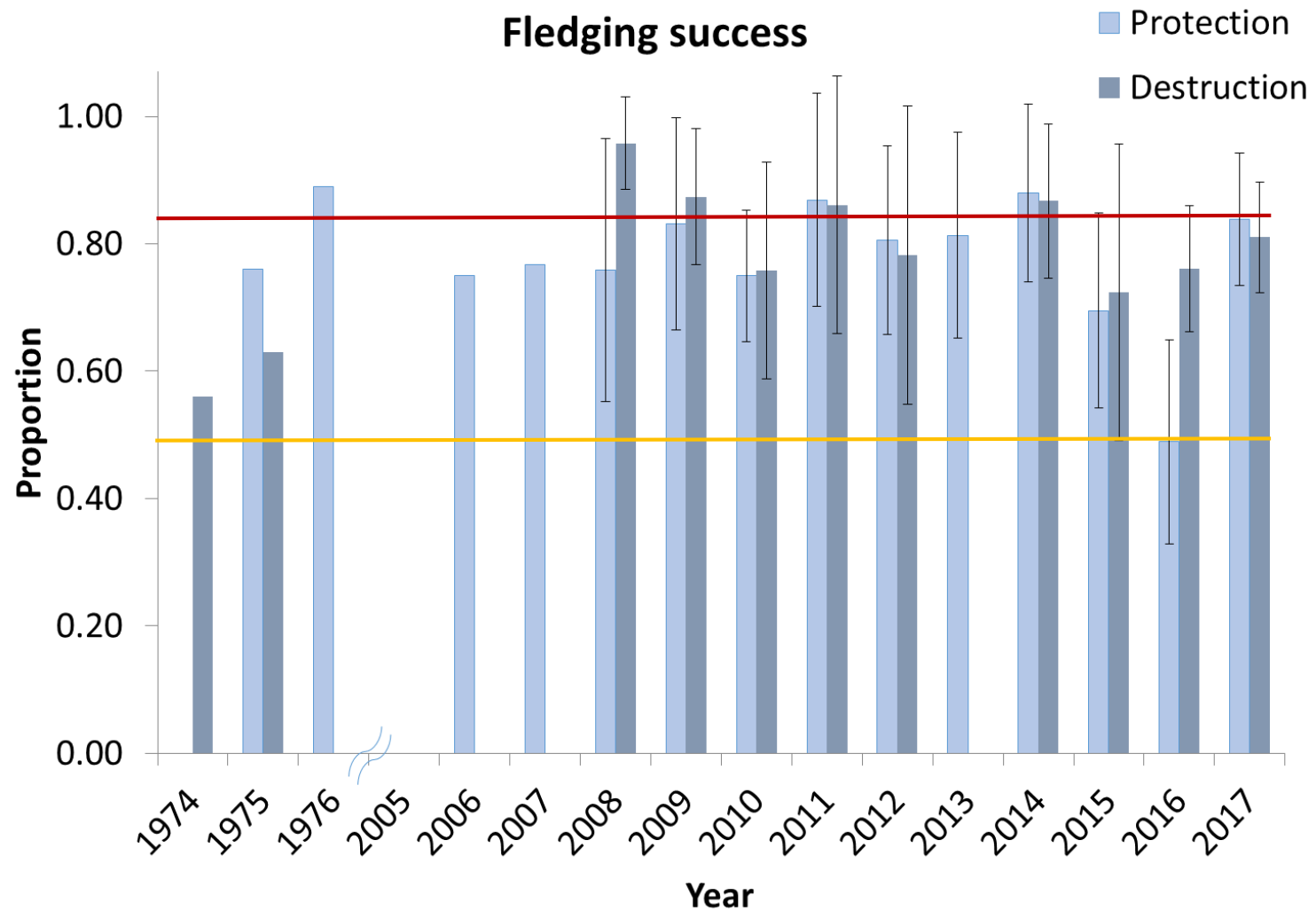
Burrow occupancy



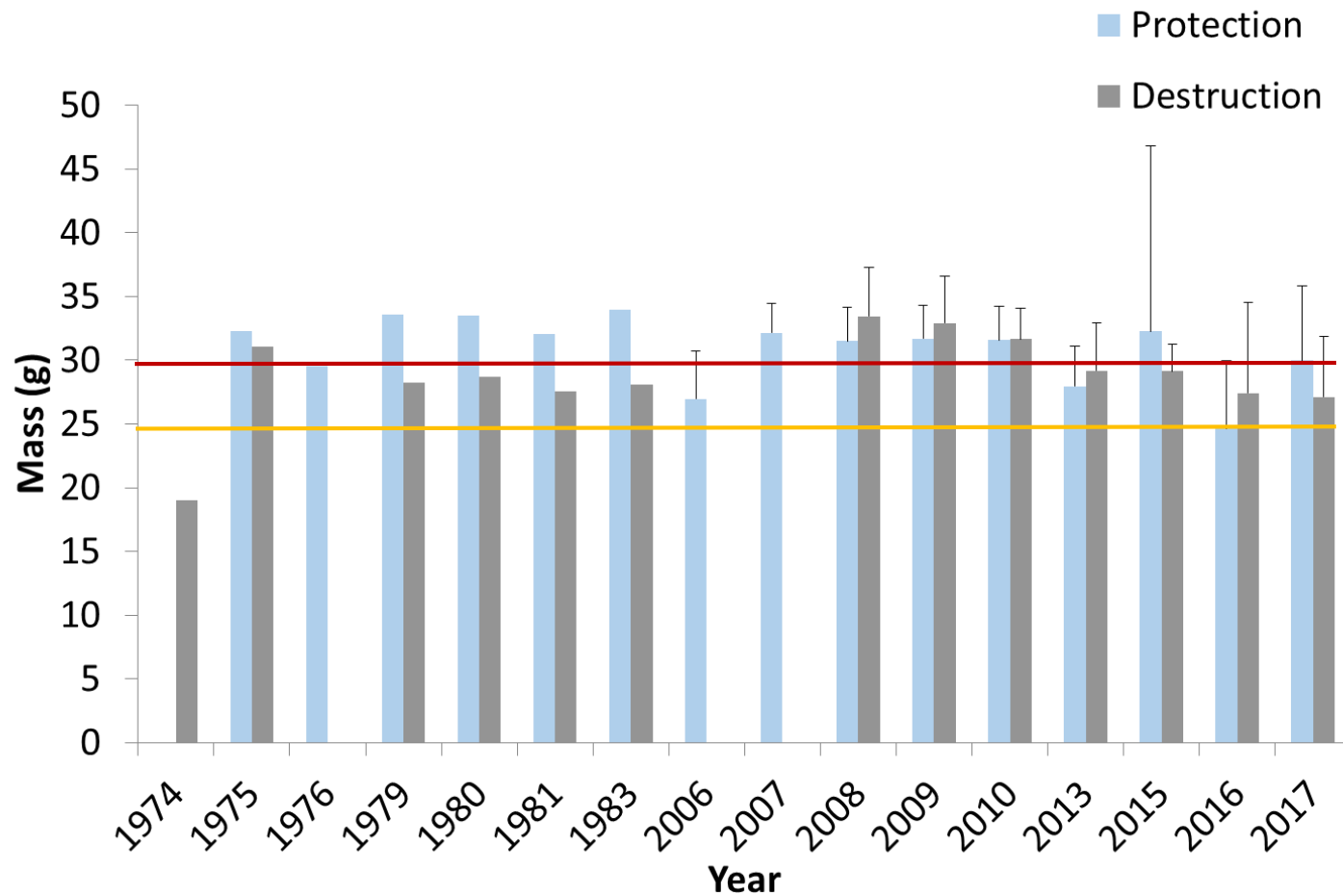
Hatching success



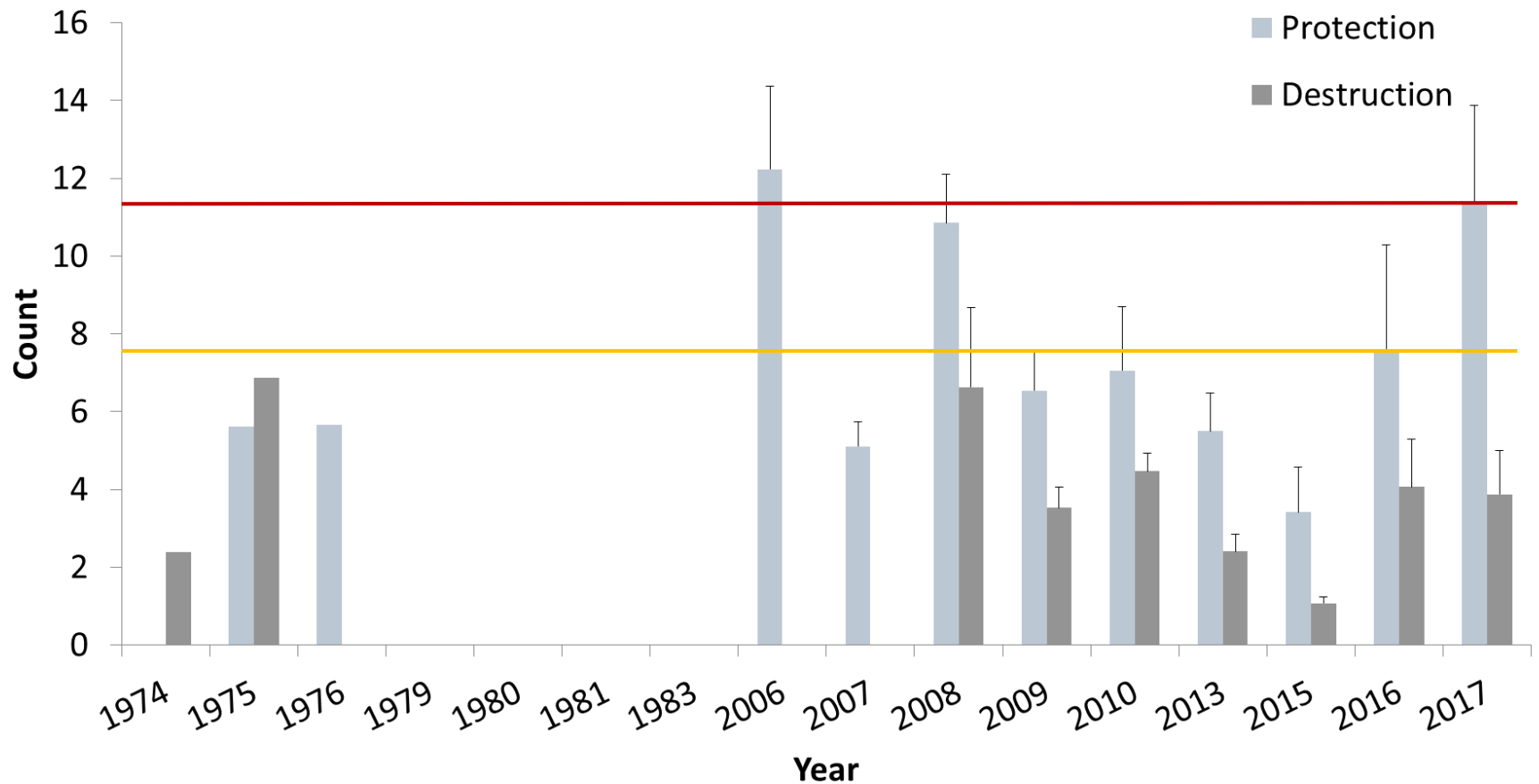
Fledging success



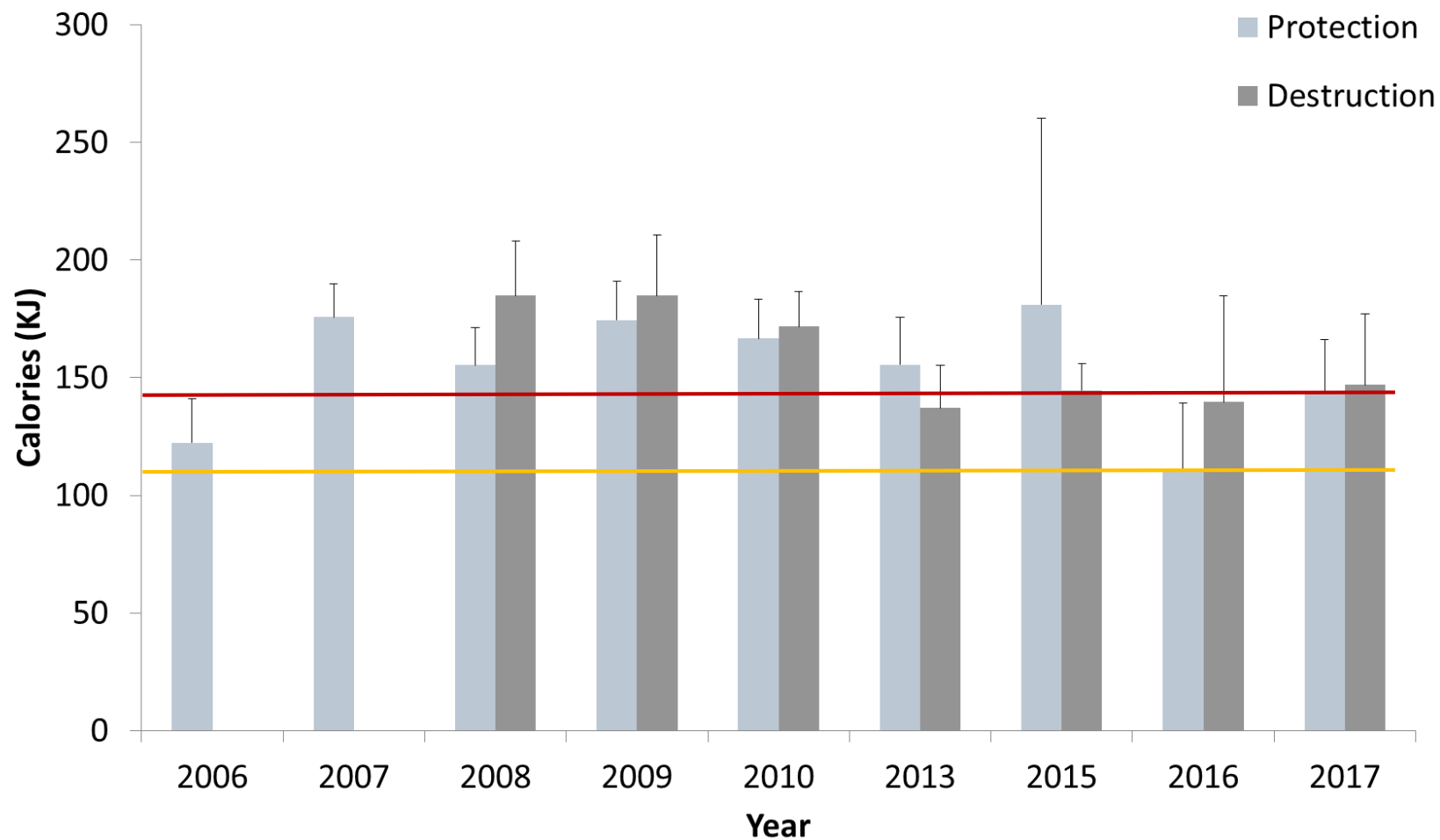
Mean bill load mass



Mean number fish per bill load



Mean calories per bill load



Conclusions

- Low burrow occupancy in 2017
 - Suggests effect of mass mortality event
 - Loss of breeding adults
 - Deferred breeding
- Hatching success, chick survival and fledging success
 - Fledging success: most sensitive parameter
 - 2017: average to above average values
- Diet as indicator
 - 2016 vs. 2017:
 - light bill loads and low caloric value in 2016
 - high fish counts in both 2016 and 2017
 - 2017: ability to compensate with more, small fish



Acknowledgements

