

Mark-recapture assessment of Cuvier's beaked whales on a Navy sonar range

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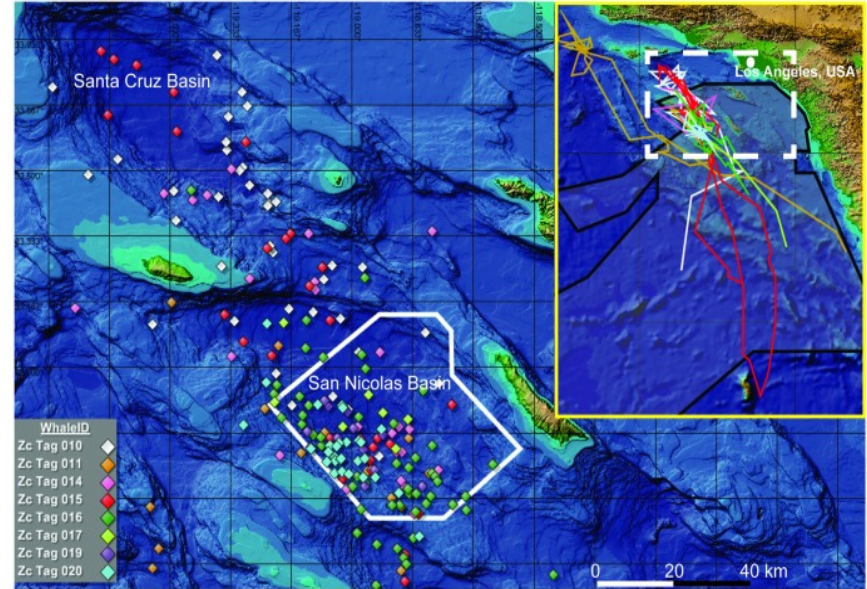
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Study site and population

- 2006: high density in SOCAL Offshore Anti-Submarine Warfare Range (SOAR)
- Telemetry: high site fidelity prevalent
- 2007-present: photo-ID study guided by passive acoustics



Schorr et al., 2014

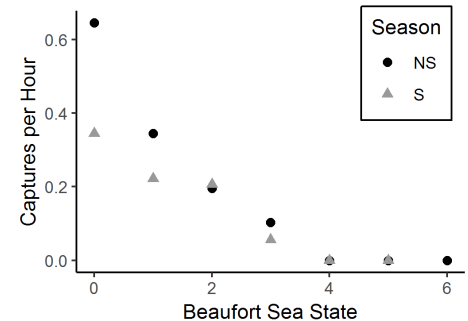


Analyzing sparse CMR data

- Bayesian hierarchical models
 - Estimated ϕ , N , λ separately
 - Inclusion of detections from both sides (ϕ , N) with *multimark*
 - N based on closed-population model for Aug 2015 – Jul 2018
 - Addition of precaptures to capture histories for unbiased λ
- 0 2 0 0 0 0 1 0 0 2 0
- Multiple imputation to import precision in ϕ from *multimark* CJS to λ estimation

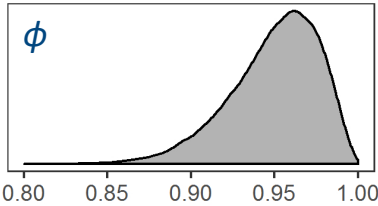


Capture histories	n	x
Left side only	18	1.06
Both sides or fin	87	1.69
Right side only	21	1.14



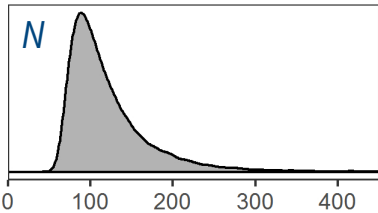
(Curtis et al., in revision)

Estimated parameters and conclusions



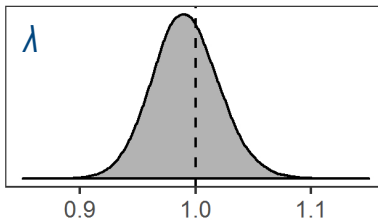
x	s	Mode	P ₅	P ₉₅
0.950	0.027	0.962	0.899	0.986

- High apparent survival, but support for transient component
- Dynamics of residents vs transients?



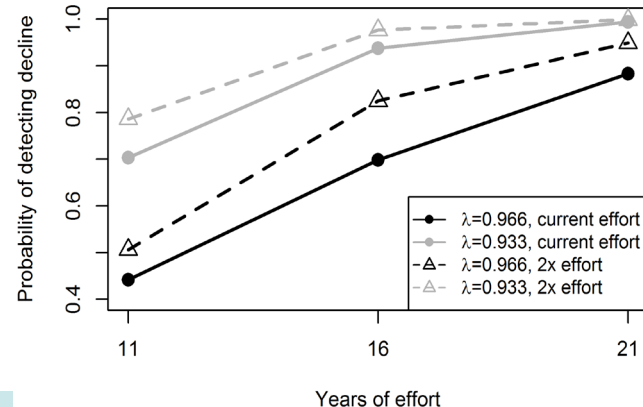
x	s	Mode	P ₅	P ₉₅
121	52	89	71	219

- Due to transient component, likely overestimate of N in given year, underestimate of super- N over whole period



x	s	P ₅	P ₉₅
0.984	0.038	0.925	1.049

- No evidence of decline, but...



(Curtis et al., in revision)

Acknowledgments



US Navy: N45, LMR Program, Pacific Fleet
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Cascadia Research Collective
NOAA Fisheries SWFSC
NOAA Fisheries OST

Erin Falcone (Poster 1113): Tue 8:30-9:45
“Preliminary estimates of vital rates from Cuvier’s beaked whales on a military training range”
(Population Biology and Abundance)

Greg Schorr (Speed Talk): Wed 11:40-11:45
Room 115
“Cuvier’s beaked whales in high fidelity: Medium-term archival tags allow for detailed behavioral studies”
(Behavioral Ecology II)



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