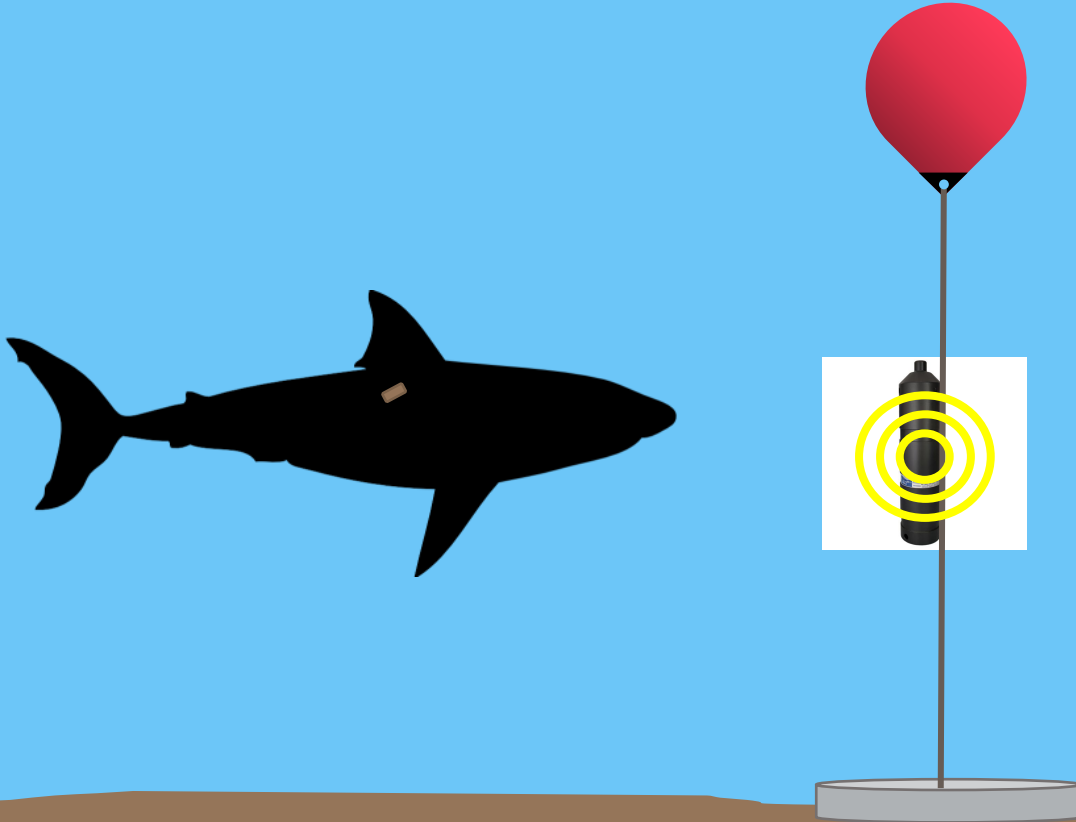




Multi-decadal high resolution data reveal the cryptic vertical movement patterns of a large marine predator along the Californian coast

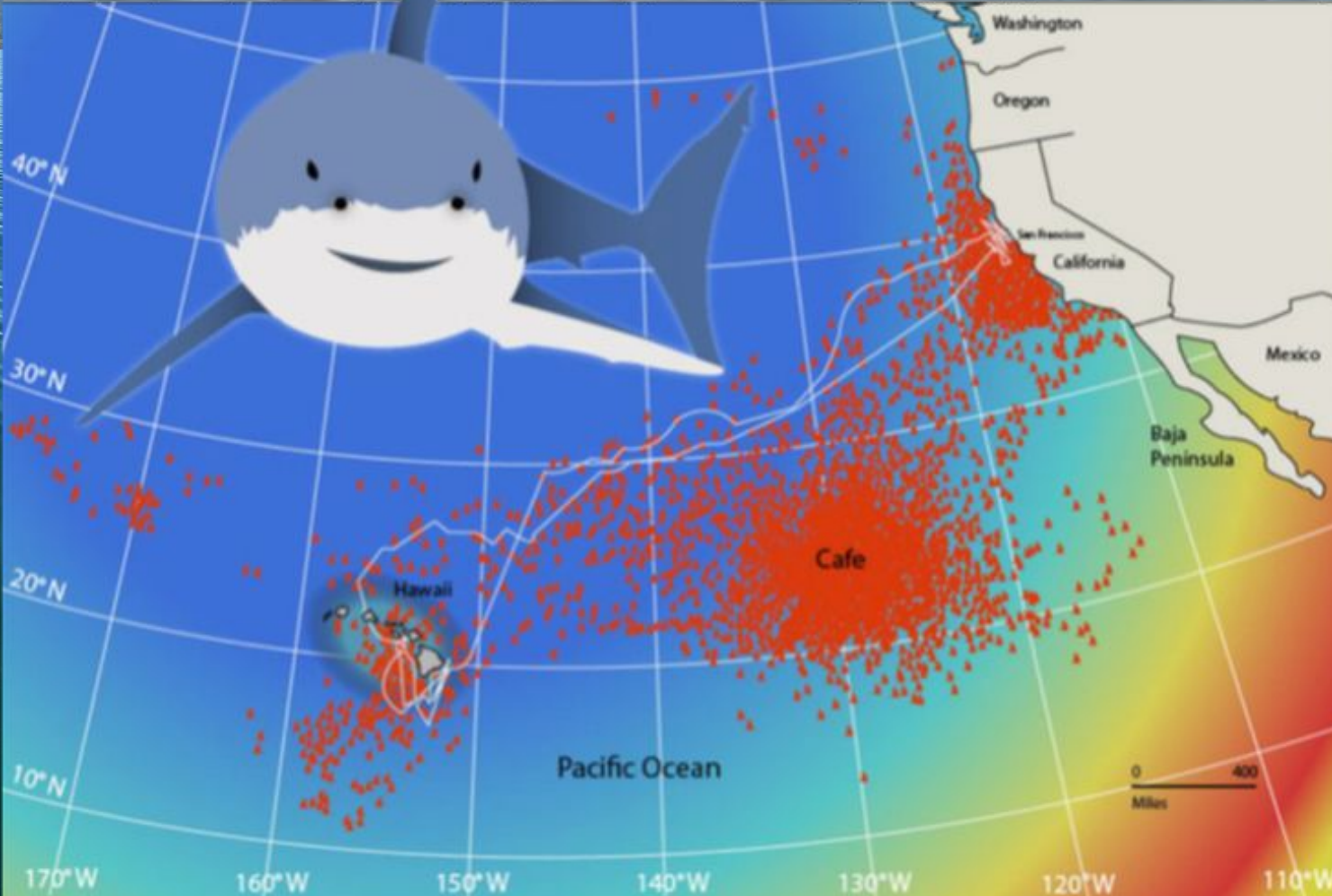
Samantha Andrzejczek, Taylor Chapple, Salvador Jorgensen, Paul Kanive, Scot Anderson, Mike Castleton, Tim White, Barbara Block

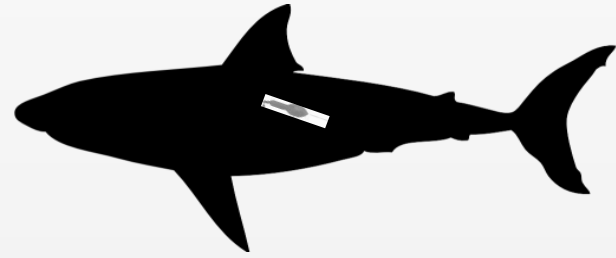
Acoustic tracking



Satellite tracking

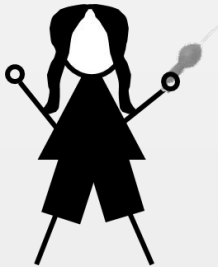






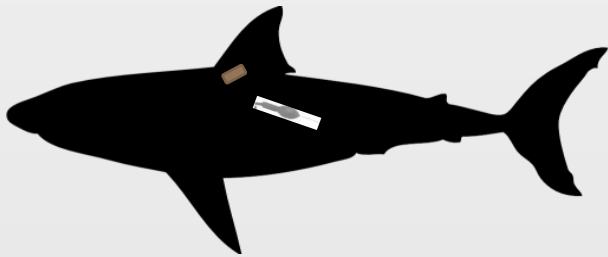
$N = >109$

Pop-up satellite archival tags
1999-2021



$N = 31$

Recovered pop-up satellite tags

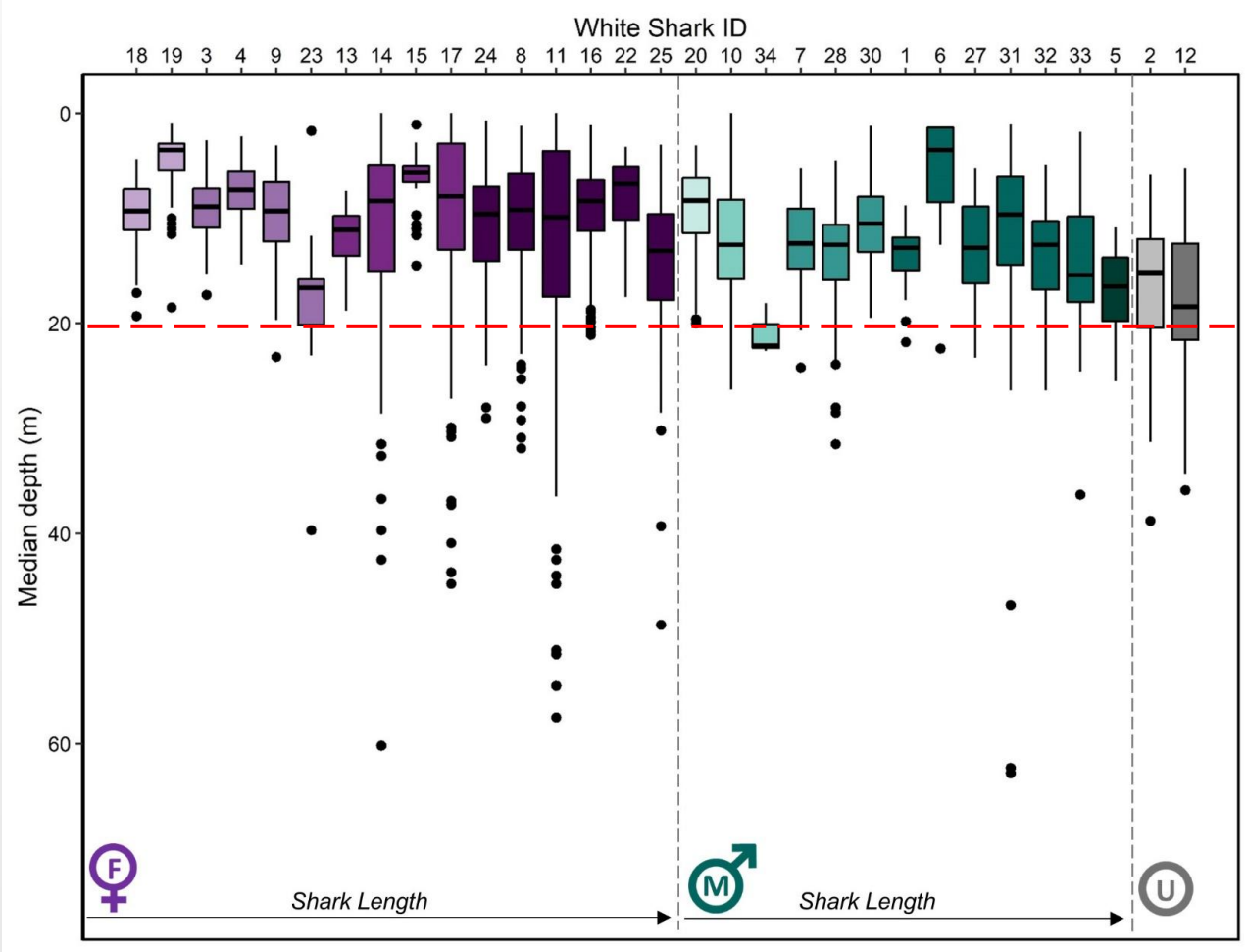


$N = 4$

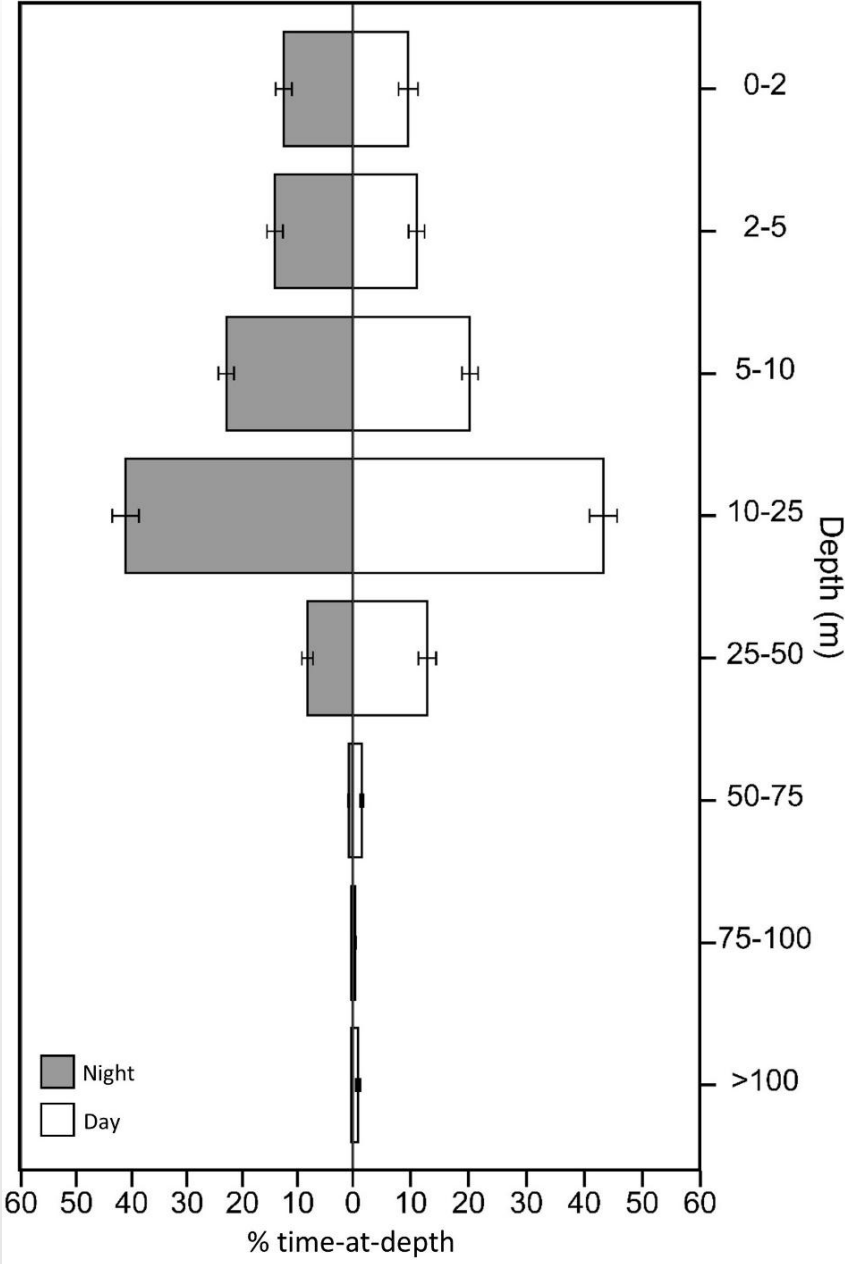
Double-tagged individuals



Coastal vertical movement




Mean median depth = 11.7 ± 8.4 m






Temporal variation

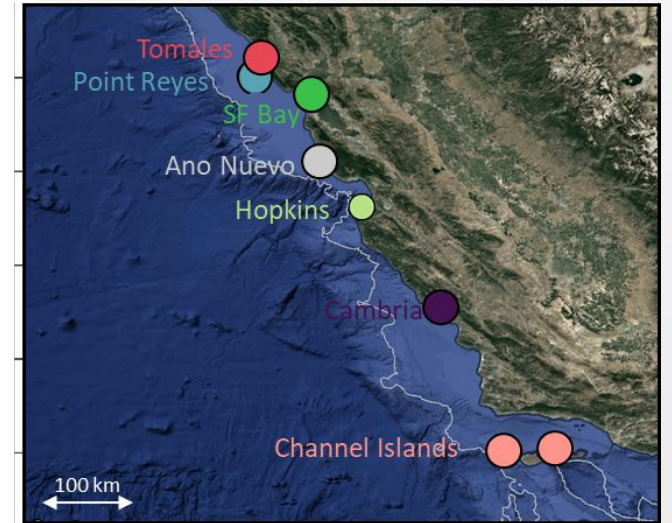
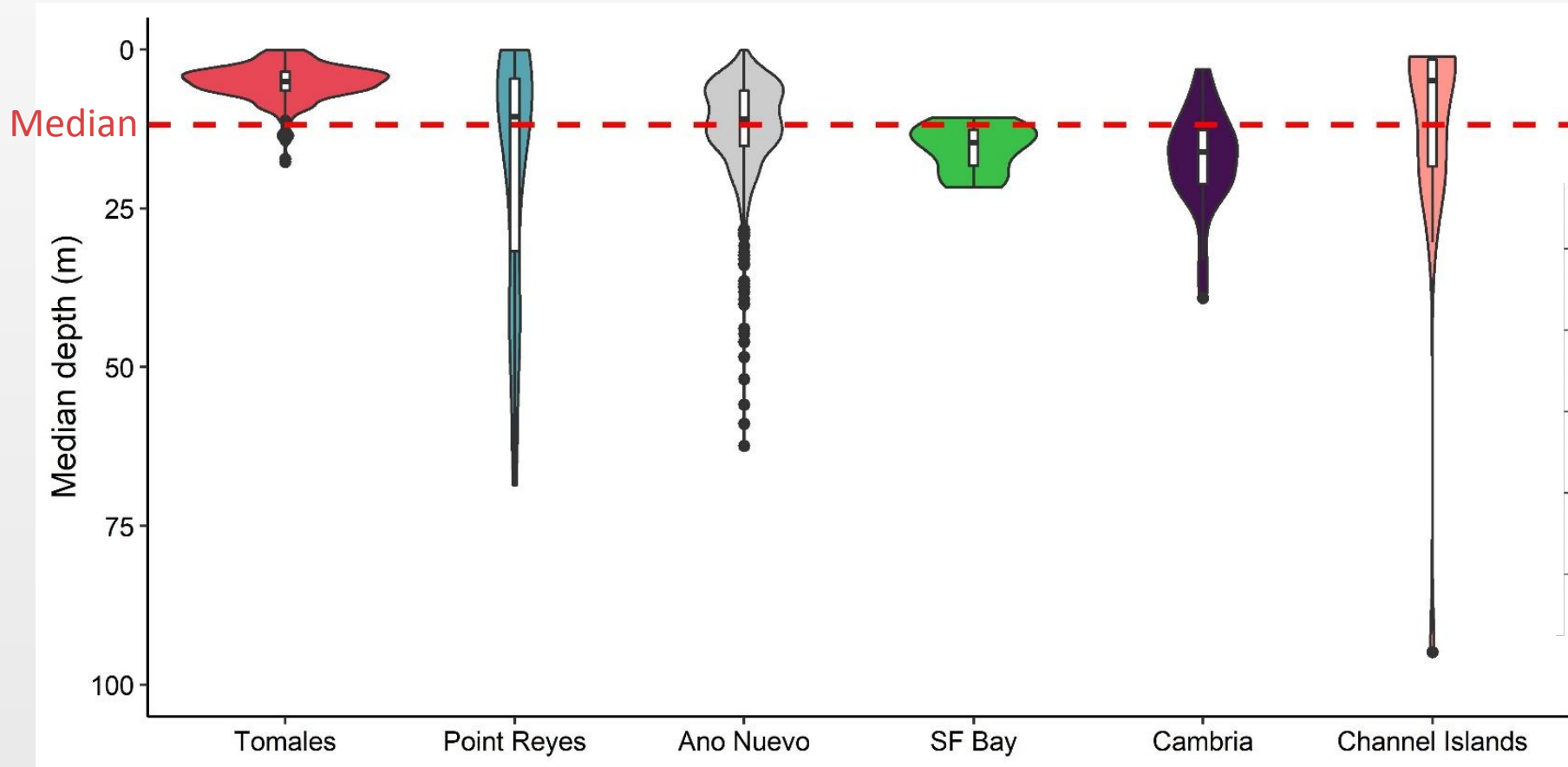
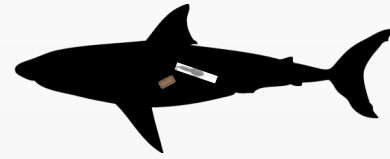
 Consistent diel effects: deeper and more vertically active in day

 Deeper during higher lunar illumination

 Deeper and more vertically active in winter months

 Effect of month differed between males and females

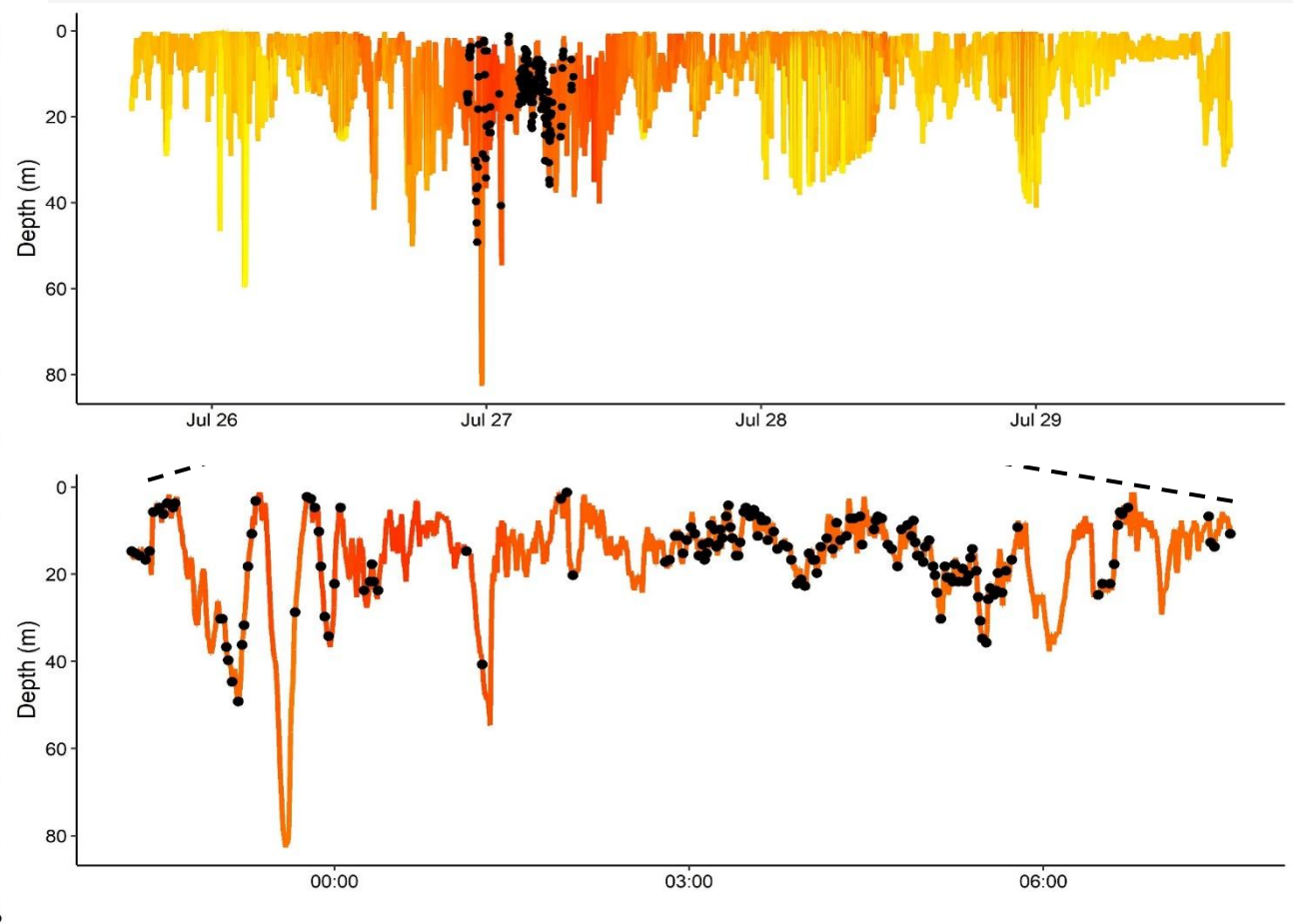
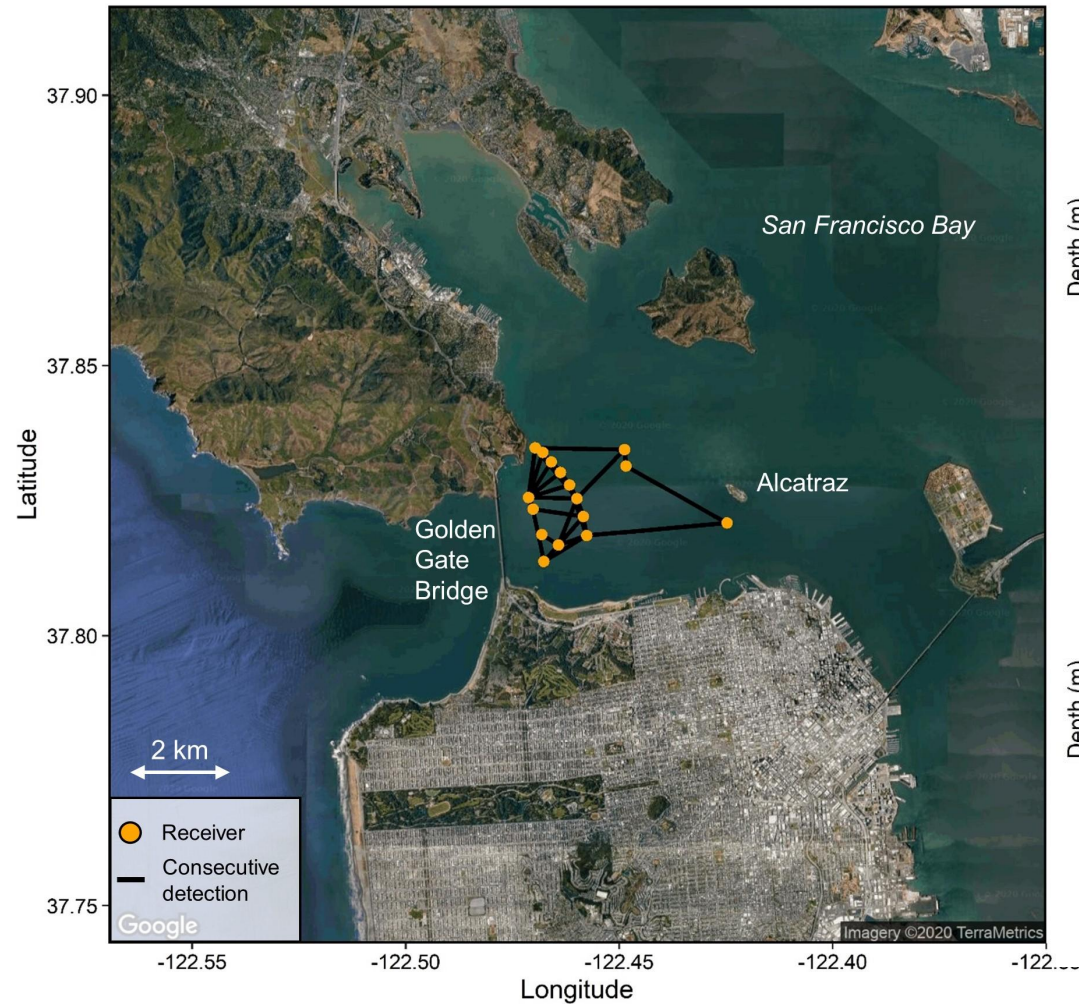
Site-specific behaviours



84 days where locations of sharks known. 4 double-tagged sharks and 2 days photo-ID resights.



San Francisco shark



A close-up photograph of a shark's dorsal fin as it breaks the surface of the water. The fin is dark grey and has a slightly serrated edge. The water is a deep blue with white foam from the wave. The sky is a pale blue with some light clouds.

Conclusions

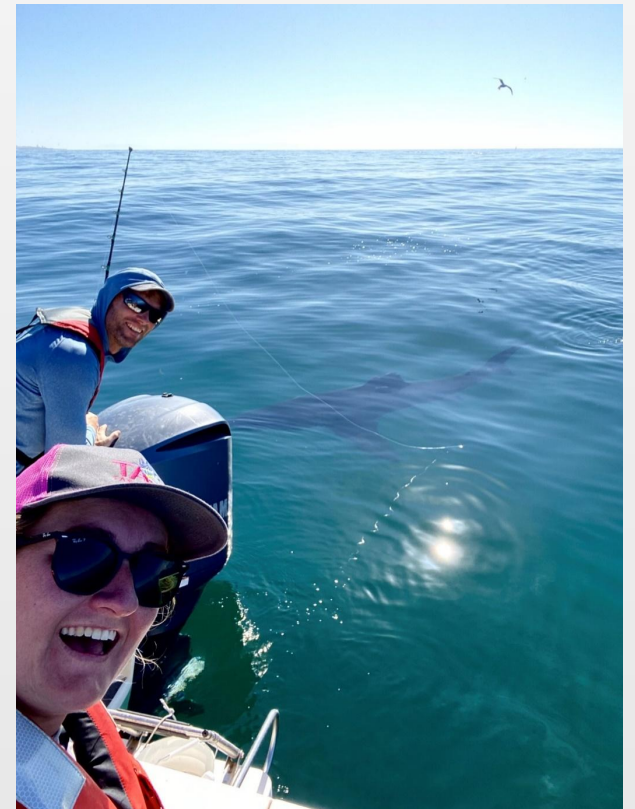
- High individual and temporal variation
- Consistent effect of diel period and lunar illumination assumed to be associated with hunting behaviour
- Site-specific vertical behaviour apparent
- Use of other tools needed to help contextualize behaviours

Acknowledgements

- Collaborators and co-authors:
Barbara Block, Taylor Chapple, Salvador Jorgensen, Paul Kanive, Mike Castleton, Tim White, Ted Reimer, Tom O’Leary
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- Wildlife Computers
- Monterey Bay Aquarium



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