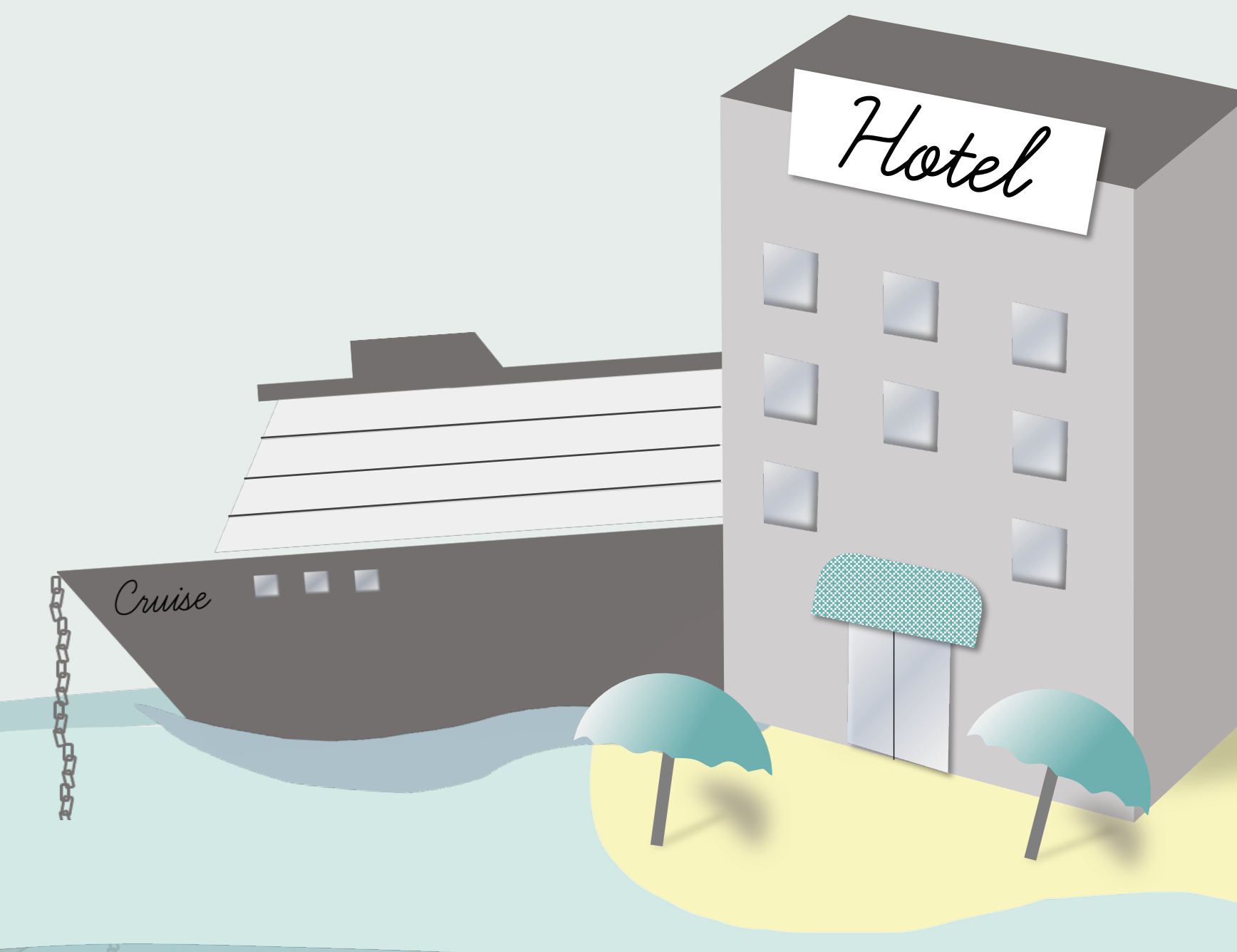


IMPACT OF ANTHROPOGENIC NOISE ON JUVENILE LEMON SHARKS

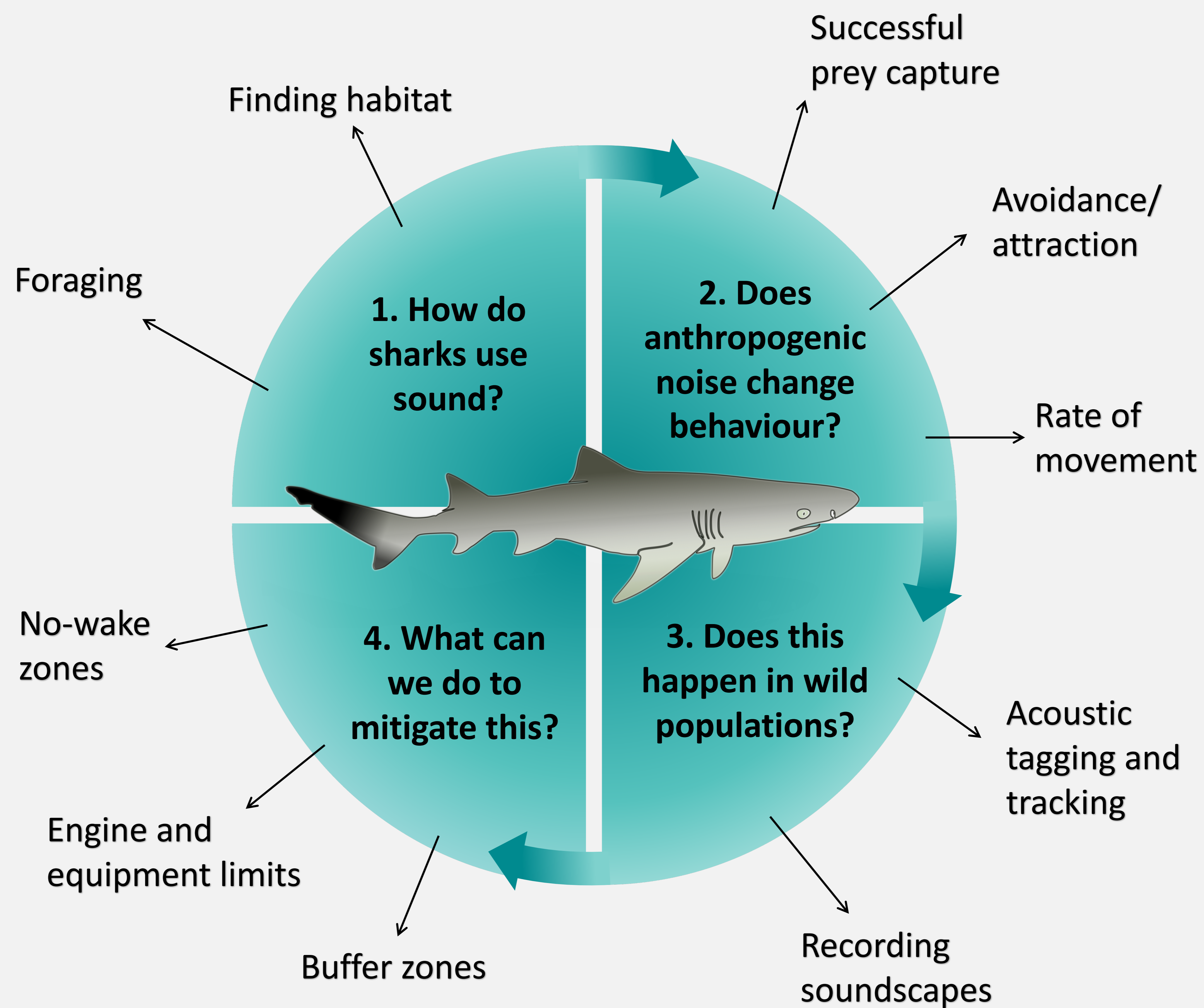
Clemency E. White, Matthew J. Witt, Stephen D. Simpson



RESEARCH QUESTIONS

1. Do sharks use sound to find habitat and prey?
2. Does anthropogenic noise modify behaviour?
3. Can we mitigate potential impacts?

METHODS



MODEL SYSTEM

- Bimini, The Bahamas, supports 300 juvenile lemon sharks⁴
- Range spans pristine mangrove and areas of high human disturbance



BACKGROUND

- Human presence on coastlines is **increasing**¹
- Noise from human activities **pollutes** marine soundscapes
- Juvenile sharks **depend** on coastal environments for shelter and prey²
- Sharks are **sensitive** to low-frequency noise³
- Noises from human sources may be **detected** by sharks, **affecting** behaviour

IMPLICATIONS

- Increasing our understanding of shark sensory ecology
- Conservation of sharks and their habitat
- Creating a framework for further study
- Development of policy to mitigate impact of coastal development

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 3. Nelson, D.R. (1967) Hearing thresholds, frequency discrimination, and acoustic orientation in the lemon shark, *Negaprion brevirostris* (Poey). *Bulletin of Marine Science*. 17, 741-768.
 4. Gruber, S.H., De Marignac, J.R. and Hoenig, J.M. (2001) Survival of juvenile lemon sharks at Bimini, Bahamas, estimated by mark-depletion experiments. *Transactions of the American Fisheries Society*. 130, 376-384.
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