Fact Sheet

FACT: Government Agency NOAA endorses our shark repellent in a report to Congress.

- A government biologist working at NOAA has stated that our scientist partners deserve credit for developing a chemical shark repellent that works.
- The American Lifeguard Association has endorsed our repellent and the director of health and safety for the association is a strong advocate as well.
- Reported by: http://www.washingtonpost.com/wp-dyn/content/article/2005/08/07/AR2005080700593.html
- Reported by: http://keysnews.com/node/59544

FACT: Our scientists used semiochemicals in our product to reduce shark by-catch by 71% in a government grant initiative.

- Scientists estimated that if our semiochemicals are applied globally **then 4,258,080 – 8,279,600 sharks a year will be saved.**
- An Agency under the U.S. Department of Commerce released these findings in a report to Congress: http://www.nmfs.noaa.gov/by_catch/docs/brep_2014_rice.pdf

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FACT: Verified field testing on numerous shark species.

- 15 species have proven to be effectively repelled by the semiochemicals in SharkTec's product.
- Reported By: http://pubs.acs.org/cen/news/8251/8251critter.html
- Reported by National Geographic: http://news.nationalgeographic.com/news/2004/07/0729_040729_sharkrepellent.html
- University of Miami oversaw study.

FACT: 5 year study concluded consistent, effective shark repellent results.

- A 5 year field trial on SharkTec's technology proved to repel 2 species of sharks 100% of the time within 1 minute of local dispersion of our product.
- The findings were published in the scientific journal Ocean & Coastal Management.
- Seton Hall University contributed to the study.
- Published Findings: http://bmis.wcpfc.int/docs/references/Stroud_etal_2013_Chemical_shark_repellent_Myth_fact_necromones_effect_OpenA.pdf

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FACT: Chemical repellents are more effective than magnetic or electrical repellents.

- A study concluded chemical signals travel much further than mechanical or electrical signals.
- Olfaction is considered especially important as a distant sense because chemical signals can become entrained in currents and transported much farther in the marine environment than mechanical or electrical signals (Hueter et al., 2004).
- Reported By: http://www.science.fau.edu/sharklab/pdfs/mk10b.pdf

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FACT: Shark species are chemically aware of its dead and will avoid odors that replicate this awareness.

- Published in the Canadian Journal of Fisheries and Aquatic Sciences: http://www.nrcresearchpress.com/doi/full/10.1139/f2011-072#.VrV5KLIrKUk
- Michigan State University conducted study and provided Grant.
- Great Lakes Fishery Commission endorsed study.

Supporting research

Claim: Commercial fishermen have long reported that shark fishing dramatically decreased in areas where decomposing shark tissue was present.

- Published in Military Medicine, a peer-reviewed international journal.
- Read More: https://www.researchgate.net/publication/21037050_Shark_repellent_Not_yet_maybe_never

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Claim: Semiochemicals found in the bodily secretions of predators may convey survival information to a shark and elicit rapid flight from an area that is potentially dangerous.

- Study conducted by the Department of Biological Sciences, California State University.
- Published in Environmental Biology of Fishes international scientific journal.
- Read More: https://www.researchgate.net/publication/263688098_Surfactants_as_Chemical_Shark_Repellents_Past_Present_and_Future

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Claim: Semiochemicals exist in extremely low concentrations within decaying shark flesh and act as alarm substances for other sharks in the proximity.

- Source: Rasmussen, L.E.L., Schmidt, M.J., 1992. Are sharks chemically aware of crocodiles? In: Doty, R.L., Müller-Schwarze, D. (Eds.), Chemical Signals in Vertebrates IV. Plenum Press, New York, pp. 335e342.

Claim: The findings from this study suggested that sharks may be chemically aware of the presence of potential danger through the sensing of bodily secretions from predators.

- Source: Sisneros, J.A., Nelson, D.R., 2001. Surfactants as chemical shark repellents: past, present, and future. Environmental Biology of Fishes 60, 117e129

Grants and Funding

- Federal Funding Grant to develop technology.
    - Source: http://www.fisheries.noaa.gov/mb/sk/pdf/sk2010_report.pdf pg.15-16

- 2012. NOAA Bycatch Reduction and Engineering Program (BREP).
- 2010. Great Lakes Fishery Commission. Development of a Putrefaction-Derived Repellent for the Sea Lamprey.
- 2010. National Science Foundation. Small Business Innovative Research Phase 1B Award (SBIR). “Multifunctional Hook Material for Commercial Fisheries”.
- 2010. Michigan State University, Center for Water Sciences Venture Grant. “Preliminary identification of a putrefaction-derived repellent for the invasive sea lamprey (Petromyzon marinus)”.
- 2009. Saltonstall-Kennedy Grant Program, FY 2009. “Process for Converting Shark Discards into a Shark Bycatch Reduction Technology”.
- 2005. NOAA PIFSC/JIMAR, Hawaii. Chemical repellents as a means to reduce shark bycatch in commercial longlines.
- 2005. NOAA PIFSC/JIMAR, Hawaii. Equipment/capital grant for chemical repellent research.