

**Taylor K. Chapple**  
Assistant Professor  
Department of Fisheries and Wildlife  
Coastal Oregon Marine Experiment Station (COMES)  
Oregon State University  
Hatfield Marine Science Center  
2030 SE Marine Science Drive  
Newport, OR 97365

## EDUCATION

- 2009      **Doctor of Philosophy, Ecology**  
University of California, Davis  
*Methods for assessment of data-poor shark species*  
Advisor: Loo Botsford
- 2001      **Bachelor of Arts, Biology (marine science concentration)**  
Boston University  
Honors Thesis: *Potential effects of capturing schooling and non-schooling prey on patterns of energy allocation and growth of the Nile perch, Lates niloticus*  
Advisor: Les Kaufman

## CURRENT APPOINTMENT

- 2019-Present      **Assistant Professor**  
Fisheries and Wildlife Department, Coastal Oregon Marine Experimental Station  
Oregon State University, Newport OR

I study the behavior and physiology of marine predators using cutting-edge bio-logging techniques. I design and deploy novel marine biologging tags to understand the foundations of animal movements and quantify the kinematics of dynamic movements. I am also interested in the roles elasmobranch predators play in the energetic budgets of coastal ecosystems.

## PAST APPOINTMENTS

- 2015 - 2019      **Research Scientist**  
Hopkins Marine Station, Stanford University Pacific Grove, CA  
Supervisor: Barbara Block

I studied the movement and behaviors of large marine predators. I used cutting edge technologies (i.e., Sailydrones, Wavegilders, camera tags, etc.) to describe the trophic and ecological interactions of top predators at remote atoll communities and pelagic habitats and I developed new techniques with these technologies for protection, monitoring, enforcement and management of remote marine protected areas.

2011 – 2014    **Post-doctoral Researcher**  
Hopkins Marine Station, Stanford University  
Supervisor: Barbara Block

Developed novel quantitative methods to assess population abundance of marine species to inform conservation strategies. Studied the physiology, population abundance and status, behavior, and movement of three species of warm-bodied lamnid sharks (*Carcharodon carcharias*, *Isurus oxyrinchus* and *Lamna ditropis*) using unique approaches with electronic and natural tagging techniques. Developed innovative tools to affect the intersection of science, education and the public.

2010 – 2011    **Post-doctoral Researcher**  
Max Planck Institute for Ornithology, Radolfzell, Germany  
Supervisor: Martin Wikelski

Designed and developed a novel external tag that creates an artificial ambient magnetic field around fish in their natural environment and in controlled conditions to determine how sharks navigate during migrations using earth's magnetic field and local foraging events using small-scale magnetic anomalies.

## **APPLIED RESEARCH EXPERIENCE**

2003 – 2004    **Research Scientist**  
Commercial Shark Fisheries Observer Program, Gainesville, FL

Conducted fishery independent research cruises to collect shark specimens used for stock assessment and conservation recommendations. Performed life history analyses including histological and physiological reproductive analyses and age-growth relationships.

2003            **Shark Population Assessment Researcher**  
NMFS Shark Population Assessment Group, Panama City, FL

Analyzed diet composition from the Atlantic Sharpnose, *Rhizoprionodon terraenovae*, and Scalloped Hammerhead, *Sphyrna lewini*, to develop a model of early age and growth and feeding behavior. Conducted mark-recapture study on Bonnethead shark, *Sphyrna tiburo*. Analyzed shark vertebrae to gauge the relationship between age and growth for studies contributing to stock assessments.

2000, 2003    **Bycatch Research Specialist**  
Manomet Center for Conservation Sciences, Manomet, MA

Designed, manufactured and tested experimental fishing gear based on animal behavior in order to conserve and protect incidentally caught species.

2001                   **Head Research Technician**  
Boston University Aquatic Conservation Lab., Boston, MA

Analyzed behavioral and morphological differences between wild and aquaculture raised Tautog, *Tautoga onitis*. Conducted freshwater conservation research on interactions between fish species of Lake Victoria, Africa.

## TEACHING EXPERIENCE

- 2016                   **Part-time Instructor, *Animal Movement***, Eastern Michigan University, Ypsilanti, MI  
Developed an upper-division, special topics course on the behavioral ecology of animal movement. Covered ultimate and proximate mechanisms of long-distance movements, modes and physics of locomotion, navigation systems and modern techniques. Students presented peer-reviewed literature, developed multi-media presentations and participated online with a remote research expedition.
- 2013 – 2018       **Guest Lecturer/Curriculum Developer**, Glenbard East High School, Chicago, IL  
Lectured on shark biology, marine-career development and developed adaptations of Oceantracks into regular curriculum.
- 2014, 2017       **Webinar Lecturer**, Illinois Mathematics and Science Academy  
Contributed to Webinar series with topics on marine biology, shark biology and behavior and marine science technology with over 300 4<sup>th</sup>-8<sup>th</sup> grade students throughout Illinois
- 2006 – 2008       **Teaching Assistant, *Population Dynamics and Estimation***, University of California  
Taught topics ranging from introductory estimation techniques to complex modeling frameworks.
- 2008                   **Guest Lecture, *Issues in Conservation***, University of California-Davis  
**Guest Lecture, *Conservation biology***, University of California-Davis
- 2001 – 2002       **Resident Educator, *Marine Biology***, Salish Sea Expeditions, Bainbridge Island, WA  
**Seattle Audubon Society, *Environmental Science***, Seattle, WA

## PUBLICATIONS

- In Review       **Chapple, T.K.**, Tickler, D., Roche, R.C., Bayley, D.T.I., Gleiss, A.G., Kanive, P.E., Jewell, O.D.J., Jorgensen, S.J., Schallert, R., Carlisle, A.B., Andrzejczek, S., Wikelski, M., Hussey, N.E., & Block, B.A. Animal-borne cameras as a novel ecological survey tool for marine communities. *Methods in Ecology and Evolution*
- Jacoby, D. Ferretti, F., Freeman, R., Carlisle, A.B., **Chapple, T. K.**, Curnick, D., Dale, J.J., Schallert, R., Tickler, D. & Block, B.A. Shark movement ecology to inform MPA enforcement. *Proceedings of the Royal Society B*
- In-Press       Carlisle A.B., Tickler, D., Dale, J.J., Ferretti, F., Curnick, D.J., **Chapple, T.K.**, Schallert, R., Castleton, M. & Block, B. A. Estimating space use of mobile fishes in a large marine protected area with methodological considerations in acoustic array design. *Frontiers in Marine Science*

Quieroz, N.,.... et al. Global spatial risk assessment of sharks under the footprint of fisheries. *Nature*

2019 *Andrzejaczek S., Gleiss A.C., Lear K.O. , Pattiaratchi, C.B., **Chapple, T.K.**, & Meekan, M.G.* Biologging Tags Reveal Links Between Fine-Scale Horizontal and Vertical Movement Behaviors in Tiger Sharks (*Galeocerdo cuvier*). *Frontiers in Marine Science*.  
<https://doi.org/10.3389/fmars.2019.00229>

Jewell, O.J.D., Gleiss, A.C., Jorgensen, S.J., Andrzejaczek, S., Moxley, J.H., Beatty, S.J., Wikelski, M., Block., B.A., & **Chapple, T.K.** Cryptic habitat use of white sharks in kelp forest revealed by animal-borne video. *Biology Letters*.  
<https://doi.org/10.1098/rsbl.2019.0085>

Jorgensen, S.J., Anderson, S.D., Ferretti, F., Tietz, J., **Chapple, T.K.**, Kanive, P.E., & Block, B.A. Killer whales displace white sharks on foraging grounds. *Scientific Reports*.  
<https://doi.org/10.1038/s41598-019-39356-2>

Kanive, P.E., Rotella, J.J., Jorgensen, S.J., **Chapple, T.K.**, Hines, J.E., Anderson, S.D. & Block, B.A. Size-specific apparent survival rate estimates of white sharks using mark-recapture models. *Canadian Journal of Fisheries and Aquatic Sciences*.  
<https://doi.org/10.1139/cjfas-2018-0142>

Tickler, D., Carlisle, A.B., **Chapple, T.K.**, Curnick, D.J., Dale, J.J., Schallert, R. & Block, B.B. Potential detection of illegal fishing by passive acoustic telemetry. *Animal Biotelemetry*.  
<https://doi.org/10.1186/s40317-019-0163-9>

2018 Huvneers, C., Apps, K., Becerril-García, E.E., Bruce, B., Butcher, P.A., Carlisle, A.B., **Chapple, T.K.**, ... & Werry, J. Future Research Directions on the “Elusive” White Shark. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2018.00455>

2016 **Chapple, T. K.**, Chambert, T., Kanive, P. E., Jorgensen, S. J., Anderson, S. D., Carlisle, A. B., Rotella, J. J., & Block, B. A. A novel application of multi-event modeling to efficiently estimate segregation among sex and age classes of a highly migratory pelagic vertebrate. *Ecology*. <https://doi.org/10.1002/ecy.1589>

2015 Kanive, P. E., Rotella, J. J., Jorgensen, S. J., **Chapple, T. K.**, Anderson, S. D., Klimley, A. P., & Block, B. A. Estimating apparent survival of sub-adult and adult white sharks (*Carcharodon carcharias*) in central California using mark-recapture methods. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2015.00019>

Jorgensen, S. J., Gleiss, A. C., Kanive, P. E., **Chapple, T. K.**, Anderson, S. D., Ezcurra, J. M., Brandt W. T. & Block, B. A. In the Belly of the Beast: Resolving Stomach Tag Data to Link Temperature, Acceleration and Feeding in White Sharks (*Carcharodon carcharias*). *Animal Biotelemetry*. <https://doi.org/10.1186/s40317-015-0071-6>

Feretti, F., Jorgensen, S. J., **Chapple, T. K.**, De Leo, G. & Micheli, F. Reconciling predator conservation with public safety. *Frontiers in Ecology and the Environment*.  
<https://doi.org/10.1890/150109>

**Chapple, T. K.**, Gleiss, A. C., Jewell, O. J. D., Wikelski, M. & Block, B. A. Tracking Sharks Without Teeth: A Non-Invasive Rigid Tag Attachment for Large Predatory Sharks. *Animal Biotelemetry*. <https://doi.org/10.1186/s40317-015-0044-9>

2013 **Chapple, T. K.** & Botsford, L. W. A comparison of linear demographic models and the fraction of lifetime egg production (FLEP) for assessing sustainability in sharks. *Conservation Biology*. <https://doi.org/10.1111/cobi.12053>

2012 Jorgensen, S. J., Arnoldi, N. S., Estess, E. E., **Chapple, T. K.**, Rückert, M., Anderson, S. D. & Block, B. A. Eating or Meeting? Cluster Analysis Reveals Intricacies of White Shark (*Carcharodon carcharias*) Migration and Offshore Behavior. *PLoS ONE*.  
<https://doi.org/10.1371/journal.pone.0047819>

Carlisle A.B., Kim S.L., Semmens B.X., Madigan D.J., Perle C.R., Jorgensen S.J., Anderson, S.A., **Chapple, T.K.**, Kanive, P.E. & Block B.A. Using stable isotope analysis to understand migration and trophic ecology of eastern North Pacific white sharks (*Carcharodon carcharias*). *PLoS ONE*. <https://doi.org/10.1371/journal.pone.0030492>

Jorgensen, S. J., **Chapple, T. K.**, Anderson, S. A., Hoyos, M., Reeb, C., & Block, B. A. Connectivity among White Sharks Coastal Aggregation Areas in the Northeastern Pacific. *Global Perspectives on the Biology and Life History of the Great White Shark*. DOI: 10.1201/b11532-16

2011 **Chapple, T. K.**, Jorgensen, S. J., Anderson, S. A., Kanive, P. E., Klimley, A. P., & Block, B. A. A first estimate of white shark, *Carcharodon carcharias*, abundance off central California using photo-identity marking. *Biology Letters*.  
<https://doi.org/10.1098/rsbl.2011.0124>

Anderson, S. A., **Chapple, T. K.**, Jorgensen, S. J., Klimley, A. P., & Block, B. A. Validation of Long-term Individual Identification and Site Fidelity of Great White Sharks, *Carcharodon carcharias*, Off California Using Dorsal Fins. *Marine Biology*.  
<https://dx.doi.org/10.1007%2Fs00227-011-1643-5>

2009 Jorgensen, S. J., Reeb, C. A., **Chapple, T. K.**, Anderson, S., Perle, C., Van Sommeran, S. R., Fritz-Cope, C., Brown, A. C., Klimley, A. P., & Block, B. A. Philopatry and migration of Pacific white sharks. *Proceedings of the Royal Society B: Biological Sciences*.  
<https://doi.org/10.1098/rspb.2009.1155>

## PRESENTATIONS

- 2019      **Jackson Hole Wildlife Foundation**, Jackson Hole, WY  
Science of Sharks: Meeting the Predator Next Door
- 2018      **Northern Illinois Science Educators**, Chicago, IL  
Science of Sharks: Past, Present and Future
- Animal Behavior Society**, Milwaukee, WI  
Energy Demands and Feeding Strategies in the Largest Marine Raptorial Predator
- 2017      **International Biologging Society**, Konstanz, Germany  
A once in a while predator: low expense and high reward dictates feeding behaviour in white sharks
- Año Nuevo State Park**, Davenport, CA, 2012, 2013, 2014, 2015, 2016, 2017  
California White Sharks: Creatures of Amazing Complexity
- 2016      **Illinois Science and Mathematics Academy**, Chicago, IL  
Science in the Oceans: the life of a Marine Biologist
- 2015      **Seymour Science Center**, Santa Cruz, CA  
True Predators: A real Understanding of White Sharks off California
- Eastern Michigan University**, Ypsilanti, MI  
California's White Sharks: New Methods to Study Ancient Predators
- 2014      **Friends of the Elephant Seals**, Piedras Blancas, CA  
The Biology of White Sharks
- 2013      **California Surf Rider Foundation**, Monterey, CA  
True Locals: The Behavior and Biology of White Sharks
- Humboldt State University**, Humboldt, CA  
California White Sharks: Creatures of Amazing Complexity
- 2012      **Montana State University**, Bozeman, MT  
White Sharks of the Blue Serengeti
- 2011      **Max Planck Institute**, Möggingen, Germany      *(in German)*  
Haifische der Welt; Biologie, Physiologie und Verhalten
- 2010      **Grand Teton National Park**, Moose, WY  
Migratory routes, behavior and population abundance of white sharks (*Carcharodon carcharias*) in the northeast Pacific
- International White Shark Symposium**, Honolulu, HI

A first estimate of white shark, *Carcharodon carcharias*, abundance off central California using photo-identity marking

- 2009 **American Elasmobranch Society**, Portland, OR  
A mark-recapture population estimate of white sharks, *Carcharodon carcharias*, off California
- Society for Integrative and Comparative Biology**, Boston, MA  
A comparison of differential spatial and temporal use by male and female migrating Great White Sharks, *Carcharodon carcharias*, in the eastern Pacific
- 2008 **American Elasmobranch Society**, Montreal, Canada  
A validation for the use of fin photographs for individual identification and a comparison of two analysis frameworks for the white shark, *Carcharodon carcharias*.
- 2007 **Point Reyes National Seashore**, Point Reyes, CA  
White shark (*Carcharodon carcharias*) research and their population off northern California.
- American Elasmobranch Society**, St. Louis, MO  
Determination of the effects of fishing on the status of the common thresher shark, *Alopias vulpinus*, off the coast of California
- 2004 **American Elasmobranch Society**, Norman, OK  
At-vessel mortality of large and small coastal sharks in the U.S. Atlantic shark bottom longline fishery

## SELECTED POPULAR MEDIA

- 2019 **New York Times** 'Watch a Great White Shark Hunt Through a Kelp Forest for Its Next Meal'  
**BBC** 'Great white sharks filmed hunting in kelp for first time'  
**Smithsonian** 'A new study dispels the belief that the sharks are too large to maneuver through dense kelp growths'  
**CBS** 'Cameras Capture Sharks in Kelp for first time'  
**The Independent** 'Cameras mounted on great white sharks capture giant predators hunting in kelp for first time'  
**Naked Scientist** 'What a great white shark sees'  
**Forbes** 'The Secret Life Of Great White Sharks In Kelp'  
96.9 KMTN Radio  
89.1 KHOL Radio
- 2018 **KCBS** Radio
- 2016 **Discovery Channel** 'Blue Serengeti'  
**Discovery Channel** 'Shark Bait'
- 2015 **KALW** 'Are white sharks doing something different this year? Or are we?'  
**Hakai Magazine** 'Now It's Personal'

- Santa Cruz Sentinel** *'Researcher Taylor Chapple keeps focus on white sharks'*  
**KCBS Radio**
- 2014 **National Geographic** *'Great White Ambush'*  
**CBS This Morning**
- 2013 **Discover Magazine** *'Struggling to Save Sharks From Extinction'*
- 2012 **Discovery Channel** *'Great White Highway'*  
**The Today Show**  
**SÜDKURIER** *'Der Hai ist kein Monster'*
- 2011 **Associated Press** *'California study finds low number of great white sharks'*  
**National Public Radio** *'Survey Shows Fewer Great White Sharks in State Waters Than Expected'*  
**San Francisco Chronicle** *'Fewer great white sharks found than expected'*  
**Yahoo! News** *'Short Shark Supply: Great White Population Low, Census Finds'*  
**Christian Science Monitor** *'Great white shark population lower than previously believed'*  
**MSNBC** *'Great white sharks swimming to extinction?'*  
**Fox News** *'Census Finds Just 219 Great White Sharks Off California Coast'*  
**Discovery News** *'Calif. Great White Shark Count Down to 219'*  
**ABC** *'Shark population off coast surprisingly low'*
- 2010 **Bay Nature** *'Beyond Jaws: Fathoming the Ways of the White Shark'*
- 2009 **Point Reyes Light** *'Great white sharks move predictably, mate mysteriously'*
- 2008 **Point Reyes National Seashore Podcast:** *'White sharks of the Northern Pacific'*  
**Independent Film** *'White Shark Café'*
- 2007 **Point Reyes National Seashore** *'In search of the Great White Shark'*

My research has also been covered in **Forbes, United Press International, Kansas City Star, The Columbian, Star Tribune, The Telegram, Seattle Times, Outdoors, Action and Adventure, PoliJAM Times, SeaGrant California, Davis Enterprise, Monterey Herald, Mercury News, e! Science News, The Daily Journal, Marin Independent Journal, Central Valley Business Times, All Headline News, The Bay Citizen, Cleveland Plain Dealer** as well as other media outlets.

## **OUTREACH PROGRAMS**

### **Oceantracks**

Oceantracks is a web-based resource to explore where top predators congregate in the Pacific Ocean, learn about human impacts, and discover how oceanographic conditions can affect marine life. (<http://oceantracks.org>)



### **Shark Net**

Shark Net is a free iPhone application that gives you a deep look into research being done by Stanford University scientists and the worldwide collaborative research of GTOPP - the Global Tagging of Pacific Predators project (<http://www.gtopp.org>).

### **Meet The Sharks**

Meet the Sharks is an interactive webpage, part of the [whitesharkcafe.org](http://whitesharkcafe.org) website. The goal of this webpage is to introduce the public to individual white sharks in the Northeast Pacific population and to our research on their behaviors, movements and biology ([http://whitesharkcafe.org/the\\_sharks/](http://whitesharkcafe.org/the_sharks/)).

### **White Shark VR**

White Shark VR is a virtual reality experience that enables anyone- a student in Ohio or a grandparent in Tibet- to virtually experience what it is like interacting with the largest predatory fish in the sea. The experience is not passive, but is rather a virtual white shark scientific study that allows the user to interact with the animals.

### **Schmidt Ocean Institute Expedition Live-feeds**

Live online lecture series to school classrooms around the world during the Voyage to the White Shark Café aboard the R/V Falkor.

### **Underwater Live-streaming** (in Spanish and English)

Live underwater educational classroom sessions from a White Shark cage in Mexico

### **Online Science**

Informal online classroom sessions with students grade 1 through college-level in over 30 different schools. Formats ranged from basic Q&A to discussions of complex biological processes.

## **OCEANOGRAPHIC EXPEDITIONS** \*expedition leader

2019	Sharks and rays of the British Indian Ocean Territory, M/Y VAVA II (April)*
2018	Voyage to the White Shark Café, R/V Falkor, (May) Sharks and rays of the British Indian Ocean Territory, R/V Tethys (March)*
2016	Sharks and rays of the British Indian Ocean Territory, M/Y VAVA II (March)*
2015	Salmon Sharks in Alaska, R/V Pandalis (July)  Sharks and rays of the British Indian Ocean Territory, M/Y Vava (March)*
2014	Sharks and rays of the British Indian Ocean Territory, M/Y Vava (March)*
2012	Salmon Sharks in Alaska, R/V Solstice (July)
2009	Tracking Sharks in Galapagos Islands, R/V Sierra Negra (Sept.)