

CURRICULUM VITAE: Demian D. Chapman (Ph.D.)

Pew Institute for Ocean Science, Rosenstiel School of Marine and Atmospheric Science,
University of Miami, 4600 Rickenbacker Causeway, Miami, FL 33149 U.S.A.

Phone: 305 421 4908 (work) 954 739 2920 (home)

e-mail: dchapman@rsmas.miami.edu

STATEMENT OF RESEARCH INTERESTS: My primary research interests lie in elucidating dispersal and reproductive patterns in marine vertebrates (principally elasmobranch fishes) by integrating genetic and electronic tagging data, with a particular focus on how these characteristics influence population dynamics, evolution and conservation strategies.

EDUCATION.

B.Sc. 1995. (Zoology/Ecology), Victoria University of Wellington, Wellington, New Zealand.

M.S. 2003. and **Ph.D.** 2007. (Oceanography-Marine Biology), Nova Southeastern University Oceanographic Ctr, Dania Beach, Florida, U.S.A.

RELEVANT SKILLS

- o DNA sequencing and microsatellite DNA profiling [LiCor and ABI DNA analyzers].
- o Population genetics, phylogeography, parentage assessment and wildlife forensic applications and associated analytical methods.
- o Acoustic telemetry tracking (manual and automated).
- o Satellite tracking.
- o SCUBA certified (PADI Open water).
- o Small boat handling.
- o Elasmobranch live-capture and handling.

PUBLICATIONS

Chapman D.D. and S.H. Gruber. 2002. A further observation of the prey-handling behavior of the great hammerhead shark, *Sphyrna mokarran*: predation upon a spotted eagle ray, *Aetobatus narinari*. *Bulletin of Marine Science* **70(3)**: 947-952.

Chapman, D.D., D.L. Abercrombie, E.K. Pritch, C. Douady, M. Stanhope and M.S. Shivji. 2003. A streamlined, bi-organelle, multiplex PCR approach to species identification: global conservation and trade monitoring for the great white shark, *Carcharodon carcharias*. *Conservation Genetics* **4**: 415-425.

Chapman, D.D., M.J. Corcoran, G.M. Harvey, S. Malan and M.S. Shivji. 2003. Mating behavior of southern stingrays, *Dasyatis americana* (Dasyatidae). *Environmental Biology of Fishes* **68**: 241-245.

- Chapman, D.D.**, P.A. Prodöhl, J. Gelsleichter, C.A. Manire and M.S. Shivji. 2004. Predominance of genetic monogamy by females in a hammerhead shark, *Sphyrna tiburo*: Implications for shark conservation. *Molecular Ecology* **13**: 1965-1974.
- Chapman, D.D.**, E.K. Pikitch, E. Babcock and M. Shivji. 2005. Marine reserve design and evaluation using automated acoustic telemetry: a case-study involving coral reef-associated sharks in the Mesoamerican Caribbean. *Marine Technology Society Journal* **39**: 42-53.
- Pikitch, E. K., **D.D. Chapman**, E. A. Babcock and M. S. Shivji. 2005. Habitat use and demographic population structure of elasmobranchs at a Caribbean atoll (Glover's Reef, Belize). *Marine Ecology Progress Series* **302**:187-197.
- Shivji, M.S., **D.D. Chapman**, E.K. Pikitch and P.W. Raymond. 2005. Genetic profiling reveals illegal international trade in fins of the great white shark, *Carcharodon carcharias*. *Conservation Genetics* **6**: 1035-1039.
- Chapman, D. D.**, E.K. Pikitch and E.A. Babcock. 2006. Marine Parks Need Sharks? *Science* **312**: 526-527.
- Garla, R.C., **D.D. Chapman**, B.M. Wetherbee and M.S. Shivji. 2006. Movement patterns of young Caribbean reef sharks, *Carcharhinus perezii*, at Fernando de Noronha Archipelago, Brazil: the potential of marine protected areas for conservation of a nursery ground. *Marine Biology* **149**: 189-199.
- Garla, R.C., **D.D. Chapman**, B.M. Wetherbee, M.S. Shivji and A.F. Amorim. 2006. Habitat of juvenile Caribbean reef sharks, *Carcharhinus perezii*, at two oceanic insular Marine Protected Areas in the southwestern Atlantic Ocean: Fernando de Noronha Archipelago and Atol das Rocas, Brazil. *Fisheries Research* **81**: 236-247.
- Chapman, D.D.**, M. S. Shivji, E. Louis, J. Sommer, H. Fletcher and P.A. Prodöhl. 2007. Virgin birth in a hammerhead shark. *Biology Letters* **3**(4): 425-427.
- Chapman, D.D.**, E.K. Pikitch, E.A. Babcock and M.S. Shivji. 2007. Deep-diving and diel changes in vertical habitat use by Caribbean reef sharks, *Carcharhinus perezii*. *Marine Ecology Progress Series* **344**: 271-275.
- Feldheim, K.A., A.J. Stow, H. Ahonen, **D.D. Chapman**, M.S. Shivji, V. Peddemors and S. Wintner. 2007. Polymorphic microsatellite markers for studies of the conservation and reproductive genetics of imperiled sand tiger sharks (*Carcharias taurus*). *Molecular Ecology Notes* **7**(6): 1366-1368.
- Chapman, D.D.**, B. Firchau and M.S. Shivji. *Accepted*. Parthenogenesis in a large-bodied requiem shark, the blacktip *Carcharhinus limbatus* (F. Carcharhinidae). *Journal of Fish Biology*.

Selected media coverage of research: Science News, ScienceNOW, Discovery Channel, The Washington Post, The New York Times, National Geographic, Animal Planet, Scientific American, New Scientist, TIME Magazine, National Public Radio (NPR), The Globe and Mail [Canada], The Guardian [UK], Chicago Tribune, Miami Herald, Sun Sentinel, The New Zealand Herald, *NBC 6, Good Morning America, National Geographic Explorer.*

One research finding (shark parthenogenesis) was reported on the evening news in at least 40 countries worldwide and was listed as one of the “Top science stories of 2007” by *Science News*.

PROFESSIONAL EXPERIENCE

Research:

Postdoctoral Research Scientist- March 2007 to present: Pew Institute for Ocean Science, Rosenstiel School of Marine and Atmospheric Science, University of Miami. Responsibilities include developing, fundraising and conducting a shark conservation research program for the institute. Current projects that I have developed and manage include:

Belize Shark Survey: A longline-based elasmobranch abundance and diversity survey that is currently the longest continuous time-series of shark abundance in the Caribbean.

Belize Acoustic Tracking Array: A 20+ VR2 receiver array at Glover’s Reef atoll, Belize, currently being used to track large sharks (70+ animals, 3 species) and several other species (e.g. hawksbill turtle) for enhancing marine reserve design.

Lemon shark dispersal: A combination field and laboratory project that samples and tags the entire cohort of newborn lemon sharks in Bimini, Bahamas, as well as several older juvenile and adult sharks each year and uses a combination of genetics and satellite tracking to measure dispersal of each life-stage from their natal nursery area.

Doctoral student/ Research Assistant – August 1999-February 2007: Nova Southeastern University, Oceanographic Center, Dania Beach, FL, U.S.A. Dissertation title: “From microsatellite DNA profiling to satellite tagging: integrating behavioral ecology into shark conservation”. Together with laboratory research, I led multiple elasmobranch field research expeditions to Belize, Grand Cayman, Fernando de Noronha archipelago [Brazil], New Providence [Bahamas], Bimini [Bahamas], New Zealand and the Indian River Lagoon, Florida [U.S.A.].

Chief Scientist/Consultant- May 2000- 2006 Wildlife Conservation Society and Pew Institute for Ocean Science, Glover’s Reef atoll, Belize, Central America. Fishery independent longline and gillnet survey of elasmobranchs of Marine Protected Area. Developed and maintained an acoustic tracking array, comprising up to 15 Vemco VR2 receivers and over 50 electronically tagged sharks.

Visiting Scientist- October 2005, June-August 2004, September 2003, October-November 2002, April-May 2002, October-December 2001: Biology and Biochemistry, Queen’s University of Belfast, Belfast, Northern Ireland, UK. Development, optimization and utility of microsatellite DNA markers for studies of elasmobranch fishes.

Research Assistant- February 1996-August 1999: Bimini Biological Field Station, Bimini, Bahamas. Population genetics and behavioral ecology of lemon sharks (*Negaprion brevirostris*).

Research Biologist- January 1995-January 1996: Department of Conservation, Wellington, New Zealand. Tagging and demographics of New Zealand fur seals (*Arctocephalus forsteri*) at haulout sites on the south coast of the North Island.

Research Biologist- July-August 1994: Department of Conservation, Napier, New Zealand. Intertidal survey of marine macroalgae and invertebrates at Te Angi Angi, Hawkes Bay for Marine Protected Area application.

Teaching:

Lead Teaching Assistant-1999-2005 (twice annually): Nova Southeastern University, Farquhar Center Undergraduate Division of Math, Science & Technology. Course number and title: Biol 3600, Molecular Biology and Genetics. Responsibilities included developing and supervising bioinformatics and wet laboratories for classes of 15-20 undergraduate students (2-4 sessions/week), including introductory lectures prior to each session and classroom lectures on population genetics.

Teaching Assistant -2000-2001: Nova Southeastern University, Oceanographic Center, Graduate School of Marine and Coastal studies. Course number and title: Biology of Sharks (OCMB 6225). Helped to develop, organize and execute a course in shark biology (including development and delivery of classroom lectures on key topics).

Teaching Assistant-2000-2001: Nova Southeastern University, Oceanographic Center, Graduate School of Marine and Coastal studies. Course number and title: OCMB 7013, Molecular Marine Biology. Developed and run one-week full-time intensive laboratory course and provided classroom lectures on molecular ecology.

Teaching Assistant/Lecturer- 1999, 2008: Coastal Carolina University/ Bimini Biological Field Station. Course title: Shark Biology.

Teaching Assistant- 1999: Rosenstiel School of Marine and Atmospheric Science, University of Miami. Course number and title: MBF 514, Tropical Marine Ecology.

SCHOLARSHIPS/HONORS

- o Nova Southeastern University Oceanographic Center Student of the Year (2006).
- o National Science Foundation Predoctoral Fellowship (2001-2004).
- o WCS Research Fellowship (2000).
- o Nova Southeastern University Oceanographic Center Tuition Scholarship (1999-2001).

PROFESSIONAL SERVICE.

- o Peer review (Articles): *Ecology, Journal of Heredity, Bulletin of Marine Science, Fisheries Research, Biological Conservation, Brazilian Journal of Oceanography*; (Book chapters): *Sharks of the Open Ocean*; (Proposals): National Science Foundation Biological Oceanography Program, WCS Research Fellowship Program; (Government documents): National Plan of Action for Sharks (Belize, 2007), Options of the Protection of White Pointer Sharks (New Zealand Departments of Conservation and Fisheries, 2005).
- o Public outreach: 5-10 lectures on shark biology and conservation presented at high schools, primary schools and SCUBA clubs in Florida, U.S.A and New Zealand each year since 2004.

REFERENCES:

Dr. Ellen K. Pikitch (Ph.D.): Pew Institute for Ocean Science, Rosenstiel School of Marine and Atmospheric Science, University of Miami, 126 E. 56th St, New York, NY 10022, U.S.A. Ph. 212-756-0042; e-mail: epikitch@miami.edu.

Dr. Mahmood S. Shivji (Ph.D.): Nova Southeastern University Oceanographic Ctr, Dania Beach, Florida, U.S.A. Ph. 954-262-3657; e-mail: mahmood@nova.edu.

Dr. Samuel H. Gruber (Ph.D.): Bimini Biological Field Station/Rosenstiel School of Marine and Atmospheric Science, University of Miami, 9300 SW 99 St, Miami, FL 33176-2050, U.S.A. Ph. 305-274-0628. sgruber@rsmas.miami.edu.

Dr. Paulo Prodöhl (Ph.D.): School of Biological and Food Sciences, Queen's University Belfast, 97 Lisburn Rd., Belfast, N. Ireland, U.K. Ph. (028) 9027 202267; e-mail: p.prodohl@qub.ac.uk.