

NICHOLAS M. BALFOUR

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QUALIFICATIONS SUMMARY

Dedicated marine scientist and project leader passionate about leveraging technology and awareness to foster nature stewardship and develop scalable solutions for nature and climate. Diligent researcher who is comfortable analyzing diverse data sets across disciplines using an array of analytical techniques. Proven project manager with over 10 years of experience in building multistakeholder partnerships and professional networks. Lifetime educator focused on communicating the importance of conservation via storytelling and scientific communication across diverse audiences. Professional captain and marine operations specialist with extensive experience in aquatic biological experimental design, leading laboratory studies, remote field expeditions, underwater survey operations, and underwater imaging systems.

EDUCATION

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- | | |
|---|-------------|
| • California State University, Chico, CA
M.S., Biological Sciences | 2016 - 2022 |
| • University of Vermont, Burlington, VT
B.A., Biology | 2007 - 2011 |

RELEVANT SKILLS

Field & Laboratory Research and Operations

- Led field and laboratory studies on fish physiology, behavior, and ecology in both freshwater and marine environments.
- Conducted large-scale acoustic tagging, telemetry, and eDNA sampling programs for fish and shark species.
- Skilled in advanced fish husbandry, artificial fertilization, egg rearing, water quality monitoring, and habitat construction.
- Managed fish health, pathology, and the transport of rare and protected species; trained staff in lab operations and safety.
- Experienced in marine survey and sampling methods including water quality, otter trawls, longlines, side scan sonar, plankton tows invasive species surveys, block seining, habitat mapping, BRUVs, light traps, ropeless fishing gear, and tissue sampling.
- USCG-licensed captain with extensive experience piloting and maintaining research, commercial, and educational vessels (16–55 ft) across the Atlantic, Caribbean, South Pacific, and inland waterways.
- Led scientific and commercial charters for offshore wind, shipwreck, and fiber optic surveys using ROVs, AUVs, USVs, and sonar systems.

Underwater Technology & Marine Equipment

- Designed, adapted, and deployed underwater imaging systems, sampling devices, and scientific instrumentation for divers, ROVs, AUVs, and USVs.
- Integrated photogrammetry and ropeless gear technologies into habitat mapping and conservation initiatives.
- Operated advanced oceanographic systems including side-scan sonar, multibeam sonar, and acoustic arrays on multi-day expeditions.
- Experienced with remote sensing, hydrographic mapping, and underwater vehicle troubleshooting and maintenance.

Scientific Diving & Marine Operations

- Logged over 1,000 dives across tropical, subtropical, and temperate environments, including caves, wrecks, and extreme cold-water sites.
- Led professional dive expeditions for research, film, search and recovery, and specimen transport.
- Served as Dive Safety Officer and Dive Medic on advanced projects requiring specialized planning and risk management.
- Certified PADI Open Water Instructor with additional credentials in Nitrox, Wreck, Side mount, Drysuit and Cave Diving

Data Collection, Analysis & Visualization

- Skilled in handling diverse biological and environmental datasets—from population surveys and telemetry data to physiological metrics and behavioral tracking.
- Proficient in R, RStudio, MATLAB, and SwisTrack for data analysis, visualization, and behavioral modeling.
- Experienced in oceanographic sampling, sonar and sounding, image analysis, and integration of structured and unstructured data.
- Adept at applying statistical and computational tools to interpret complex ecological patterns and system dynamics.

Project Development & Management

- Ten years of experience designing, coordinating, and leading interdisciplinary marine projects.
- Skilled at creating and implementing workflows that enhance communication, efficiency, and deliverable quality across teams.
- Developed and secured funding for conservation and technology initiatives through grant writing and proposal authorship.
- Built and maintained partnerships among NGOs, agencies, research institutions, and private-sector collaborators.
- Experienced mentor and team leader committed to fostering professional growth through coaching, logistical support, and field training.

Education & Science Communication

- Nine years of experience designing and teaching experiential, field-based, and research-driven STEM programs for middle school, high school, and university students.
- Creates accessible, audience-tailored materials that communicate real-world relevance and scientific application.
- Engages diverse audiences through storytelling, field interpretation, and public speaking across formal and informal settings.
- Experienced in developing field-based research curricula and guiding students in independent research design, data collection, and analysis.

WORK & EDUCATION HISTORY

Volunteer Scientist

Remote Ecologist, Inc, Darien, CT

Sep. 2025 - Present

- Conduct bathymetric surveys using AUVs and USVs
- Develop methodologies for oceanographic equipment
- Author proposals for funding marine conservation and technical innovation
- Manage partnerships within marine commercial operations and field research

Volunteer Marine Scientist

Map of Life, New Haven, CT

Sep. 2025 - Present

- Lead the sourcing of external marine biodiversity datasets for Map of Life
- Outline the strategic plan for engagement among NGO's and corporates in marine sector

Associate Director of Operations, Captain

Marine Imaging Technologies (MiTech), LLC, Cataumet, MA

Aug. 2024 - Jun. 2025

- Oversaw partnerships with organizations including, BBC, Ørsted, WHOI, RMS Titanic, NPS, DPAA, NOAA, Orpheus Ocean and Inspire Environmental
- Authored MiTech proposals for funding in marine conservation and tech innovation
- Led integration of photogrammetry into large-scale offshore coral conservation projects
- Promoted for leadership in company growth and organization
- Managed planning and logistics of expeditions to ensure mission success
- Led oceanographic surveys of offshore wind and fiber optic installations

Expedition Specialist, Captain

Marine Imaging Technologies (MiTech), LLC, Cataumet, MA

May 2022 - Aug. 2024

- Developed unique tools and custom methodologies and ROV tools for field projects
- Sourced all mission specific resources and ensured delivery to field sites
- Promoted for exceeding leadership expectations
- Secured critical partnerships and funding for international marine biological research
- Implemented company-wide asset management of critical resources
- Maintained and operated imaging systems, sampling equipment, AUVs, USVs, and ROVs
- Captained survey vessels for domestic and international expeditions

Business Development Consultant, Captain, Diver

Marine Imaging Technologies (MiTech), LLC, Cataumet, MA

Nov. 2020 - May 2022

- Built strategic partnerships for underwater photogrammetry applications
- Captained vessels for ROV and imaging surveys
- Provided underwater photography and videography services on expeditions

Captain, Open Water Dive Instructor

Finz Dive Center, Key West, FL

Nov. 2019 - Jun. 2022

- Led SCUBA dives in the Atlantic, Gulf of Mexico, and the Dry Tortugas National Park
- Developed training and safety protocols for spearfishing operations
- Coordinated private charters for partners such as The Discovery Channel, WHOI and Ceebus Technologies
- Oversaw marine research charters for NGOs such as REEF, FKNMS and NPS.

Captain

Sunset Watersports, Key West, FL

Jun. 2019 - Nov. 2019

- Captained 40-ft inspected catamaran for snorkeling and dolphin tours
- Maintained shipboard systems and coordinated repairs
- Designed and led emergency drills and daily operations training

Captain, Open Water Dive Instructor

Adventure Watersport Charters, Key West, FL

Aug. 2018 - May 2019

- Led liveaboard dive trips in the Florida Keys and the Dry Tortugas National Park
- Piloted and maintained 43-ft liveaboard charter vessel
- Maintained and repaired all shipboard equipment and shore-based facilities
- Directed the re-supply and provisioning of vessel while in port

Research Assistant

California State University, Chico, CA

Aug. 2016 - Jul. 2018

- Surveyed and restored salmon habitat and natural infrastructure on the Sacramento River
- Developed a multi-agency monitoring plan with the Bureau of Reclamation, California Dept. of Fish and Wildlife, and CSU Chico.
- Conducted bi-weekly abundance surveys of juvenile salmonids in Sacramento River side channels in Northern California

Graduate Student Researcher, Lab Manager

California State University, Chico, CA

Aug. 2016 - Jul. 2018

- Managed a 1,000 gal. fish hatchery and rearing facility for ongoing research
- Mentored undergraduate students on independent research projects
- Recruited and managed a team of 13 undergraduate research assistants for lab operations
- Completed thesis: Long-term influence of thermal stress during incubation on the aerobic scope and thermal tolerance of juvenile pacific salmonids
- Co-directed daily operations of the Banet Lab's Aquatic Ecology and Organismal Biology center

Graduate Student Researcher,

University of Washington, Friday Harbor, WA

Jun. 2017 - Jul. 2017

- Completed graduate course at Friday Harbor Laboratories on Fish Swimming, Kinematics, Eco-morphology, Behavior, and Environmental Physiology.
- Concluded research on the effect of boldness-shyness on escape response and schooling behavior of juvenile surfperch (*Cymatogaster aggregata*)
- Received extensive hands-on training in advanced research methodologies utilized in Fish Biology

Research Assistant

Cape Eleuthera Institute, Eleuthera, The Bahamas

Jan. 2015 - Jul. 2015

- Discovered a new genus of marine cave isopod and published paper in Subterranean Biology
- Co-led lab and field operations for the Flats Ecology and Conservation Program
- Promoted to Research Assistant after 6 mos. for exceeding staff expectations
- Co-instructed semester-long research seminar on juvenile bonefish ecology
- Assisted in research and instruction for the following projects,
 - Behavioral response of juvenile bonefish (*Albula vulpes*) to anthropogenic light pollution
 - Bahamas Initiative Bonefish Tagging Program
 - The abundance of ingested microplastics in pelagic fish species in Exuma Sound and their impact on fish feeding behavior
 - Determining the lethal and non-lethal effects of native predators on invasive lionfish (*Pterois volitans*)

Research Technician

Cape Eleuthera Institute, Eleuthera, The Bahamas

Aug. 2014 - Jan. 2015

- Assisted with lab and field operations for the Flats Ecology and Conservation Program
- Co-instructed semester-long research seminars on the Physiology and Ecology of nearshore fishes
- Co-led internship program and engaged students in research and service opportunities
- Achieved Divemaster certification and contributed to Tropical Reef Ecology class instruction
- Assisted in research and instruction for the following projects,
 - Impact of increased runoff from coastal development on aerobic scope and recovery of schoolmaster snapper (*Lutjanus apodus*)
 - Defining adult bonefish (*Albula vulpes*) movement corridors around Grand Bahama in the Bahamian Archipelago using an acoustic telemetry array
 - Bahamas Initiative Bonefish Tagging Program
 - Effects of thermal stressors on adult and juvenile schoolmaster snapper (*Lutjanus apodus*)

High School Math Teacher, AmeriCorps Volunteer

Maine Academy of Natural Sciences / AmeriCorps, Hinckley, ME.

Oct. 2013 - Aug. 2014

- Designed high school curriculum in mathematics that emphasized an individualized, hands on, and project-based approach to fit each students learning style
- Collaborated between departments to provide interdisciplinary courses grounded in Natural Sciences, Forestry, and Agriculture in rural Maine
- Partnered with students and guardians to provide weekly check-ins towards educational goals, internship opportunities, and post-graduation plans
- Assisted with the maintenance and construction of campus aquaponics system

Marine Science Instructor

Chincoteague Bay Field Station, Wallops Island, VA

Feb. 2013 - Oct. 2013

- Led 1-2-week courses on Barrier Islands, Coastal Wetland Ecology, Maritime Forests and Oceanography for middle and high school students
- Provided exceptional experiential education in Marine Biology to engage students in citizen science
- Developed custom lesson plans that would exceed curriculum requirements

Marine Science Educator, Unit Leader

Newfound Harbor Marine Institute / Seacamp, Big Pine Key, FL

Jan. 2012 - Sep. 2012

- Led and designed 1-2-week SCUBA based field courses in Environmental Science, Coral Reef Ecology, Mangrove Forest & Island Ecology
- Promoted to Unit Leader after 5 months for demonstrating 100% positive reviews from all schools
- Served as Captain and Lead instructor onboard 25 ft catamarans used for field expeditions
- Designed engaging, hands-on, lab and field activities for visiting school groups

Deckhand

Sea Education Association, Falmouth, MA

Dec. 2010 - Jan. 2011

- Promoted to deckhand after demonstrating outstanding reliability during student voyage
- Selected for additional 4-week goodwill voyages from Moorea to Huahine-Iti, Raiatea, and Tahiti
- Performed essential maintenance on vessel and scientific sampling equipment
- Collected oceanographic data for ongoing WHOI and SEA studies in region

Undergraduate Student, Junior Lab and Deck Officer

Sea Education Association (SEA), Falmouth, MA,

Oct. 2010 - Dec. 2010

- Sailed a 134 ft research vessel 2,200 nautical miles from Hawaii to French Polynesia in six weeks as a junior lab and deck officer
- Proposed and conducted undergraduate research project at sea: *The combined effects of the El Niño Southern Oscillation (ENSO) and climate change conditions on primary productivity in the Southern Pacific.*
- Completed courses in Biological Oceanography, Marine Policy and Oceanographic Research Techniques over 4 weeks on land and 6 weeks at sea

COMMUNITY OUTREACH AND SERVICE

Biological Honor Society Outreach Program, CSU Chico, Chico, CA

2016 - 2018

- Collaborated with undergraduate honor society to design experiential education presentations on aquatic biology. Conducted tours of lab facility for CSU Chico Student Visit Day and local k-12 schools

CEI Educational Programs, Cape Eleuthera Institute, Eleuthera, The Bahamas

2014 - 2015

- Designed and instructed outdoor educational programs for local high schools on wetland conservation and applied research

Community Service Scholars Program, University of Vermont, Burlington, VT

2007 - 2011

- Student Director of university wide scholarship program engaging 50 UVM students with faculty advisors in service projects throughout Vermont, the U.S and abroad.

Dewey House for Civic Engagement, University of Vermont, Burlington, VT

2008 - 2011

- Student Director of residential service program focused on fostering community service engagement among participating students throughout their four-year university experience.

SELECT PUBLICATIONS

- Bruce, N.L., Brix, S., **Balfour, N.**, Kihara T.C., Weigand, A.M., Mehterian, S., Iliffe, T., A new genus for *Cirolana troglaxuma* Botosaneanu & Iliffe, 1997, an anchialine cave dwelling cirolanid isopod (Crustacea, Isopoda, Cirolanidae) from the Bahamas. 2017. *Subterranean Biology* 21:57-92 2010
- Stompe, D., Roberts, J., Estrada, C., Keller, D., **Balfour, N.M.** and Banet, A. Sacramento River Predator Diet Analysis: A Comparative Study. (2020) *San Francisco Estuary and Watershed Science* 18.
- **Balfour, N.M.**, Vang, J., Stompe, D., Estrada, C., Drobatz, L., Cunningham, K. Banet, A.I. High incubation temperature and thermal stress increase the aerobic performance of juvenile fall run Chinook salmon (*Oncorhynchus tshawytscha*). In prep for *Conservation Physiology*

PRESENTATIONS AND POSTERS

- **Balfour, N.M.**, Estrada C.A., Pilakowski, R.A., Stompe, D.K., A.I. Banet. Impact of increased incubation temperature and thermal stress on the aerobic scope and thermal tolerance of juvenile rainbow trout (*Oncorhynchus mykiss*). (Poster)
 - California State University, Biological Sciences Student Research Symposium, Chico, CA 2018

- California State University, Chico 14th Annual College of Natural Sciences Poster Symposium, Chico, CA 2018
- Cal-Neva Chapter of the American Fisheries Society 52nd Annual Meeting, San Luis Obispo, CA 2018
- Estrada, C.A., **Balfour, N.M.**, Drobatz L.B., Banet A.I. Impact of increased incubation temperature on the thermal tolerance of juvenile rainbow trout (*Oncorhynchus mykiss*). SACNAS, The National Diversity in STEM Conference, Salt Lake City, UT 2017 (Poster)
- **Balfour, N.M.**, Stompe, D.K., Banet, A.I. The effects of increased larval incubation temperature on the aerobic scope and swimming performance of juvenile Pacific salmonids. CSU Chico Research Symposium, Chico, CA. 2016 (Talk)
- **Balfour, N.M.**, Zuckerman, Z., Schneider, E. Impact of precipitation runoff on the aerobic scope of juvenile schoolmaster snapper (*Lutjanus apodus*). Cape Eleuthera Institute Research Symposium, EL, The Bahamas. 2014 (Talk)

SELECT CERTIFICATIONS AND LICENSES

● USCG Masters Near Coastal 100 Ton Captain's License	2019
● USCG Basic Safety Training (STCW)	2023
● Transportation Worker Identification Credential (TWIC)	2019
● Ørsted South Fork Wind Trained Lookout	2024
● Vineyard Wind Marine Protected Species Gen. Training	2025
● Vineyard Wind Environmental Safety Training	2025
● PADI Open Water Diver Instructor (357006)	2017
● PADI Side mount Diver	2021
● SSI Cave Diving, Configuration: Twinset	2021
● PADI Wreck Diver	2012
● PADI Nitrox Diver	2012
● PADI Rescue Diver	2012
● NAUI Drysuit Diver	2011
● DAN CPR, Oxygen Provider, First AID for Professional Divers	2024
● Emergency First Responder Instructor (OWSI-357006)	2017
● Whitewater Rescue Technician (Sierra Rescue)	2016

SOFTWARE

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- Google Suite, Microsoft Office 365 Suite, Asana, Adobe Photoshop, HYPACK, Poseidon, Zotero, R, R Studio, UWIS Diver Tracker, Mini-Ranger 2, Zoom, Witrox view, GigaTrak Tool & Asset Management System, MATLAB, SwisTrack, SonarView

LANGUAGE PROFICIENCY

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- Basic Spanish (reading, writing and speaking)

Complete list of work experience, boat piloting experience, professional certifications and licensing history, publications, affiliations, awards and references available upon request.