Norman Greenhawk

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CITIZENSHIP STATUS: US Citizen

SKILLS SUMMARY:
Over 18 years of experience in the fields of Biology, Conservation, Environmental Consulting, and Ecology, with nearly 13 years of experience in management positions. Expert in management and volunteer coordination. Experience in research design, project management, field work, consulting, permitting processes, biodiversity surveys, environmental assessments, and reporting & compliance procedures. Overseen and managed approximately 2,000 staff members, students, volunteers, and subcontractors over the course of my career. MS in Environmental Science. US Fulbright Student & US Fulbright Specialist. National Geographic Explorer.

EMPLOYMENT HISTORY

Project Director, Founder, and Biologist July 16th 2015-Current
Organization: **Project Palaka**
Location: Laguna, Republic of the Philippines
Supervisor: Self

Weekly hours worked: (July 16th,2015- April 30th, 2016, 70 hours weekly; June 1st, 2016-Oct 30th, 2019; 20 hours weekly*; October 31st, 2019- Current, 70 hours weekly)
*During this time period, I was simultaneously completing my MS degree.
Total work hours to date: Approximately 17,600

Duties:

- Designed and implemented the first amphibian ex-situ conservation project in the Philippines.
- Successfully navigated the project through the challenges brought about by the global COVID-19 pandemic, such as travel restrictions, supply chain disruptions, and sudden “lockdown” community quarantines.
- Manage and train university student Research Assistants.
- Mentor undergraduate and graduate students in career development; work with students to develop thesis projects that fit into the objectives of Project Palaka, but also allow each student to pursue individual research interests.
- Responsible for all aspects of project planning and management, including but not limited to legal requirements (permitting, employment contracts, international MOAs and MOUs), hiring of staff, developing weekly schedules, assigning individual projects, employee performance review, salary and finance management, report writing, and development of long-term organizational objectives.
- Coordinate and manage subcontractors, including electricians, plumbers, construction workers, and painters.
- Developed methodology for daily data collection.

- Review collected data on a weekly basis, make data-driven changes to captive amphibian care as needed.
- Liaison with government officials; complete all permitting and reporting.
- Designed and built project infrastructure for the captive care and maintenance of endangered amphibians.
- Developed the first protocols for keeping Philippine amphibians alive in captivity.
- Nurtured collaborations and partnerships with the University of the Philippines, Los Baños, Avilon Zoo, and the National Museum of Natural History of the Philippines.
- Oversee, administer, and develop long-term conservation plans, conservation action plans, research programs, forest restoration plans, and wildlife inventories.
- Currently serving a short six-week consultancy as a Fulbright Specialist, working with in-country partners to collaboratively formulate programmatic visions, strategic plans for expansion and sustainability of the project, long-term policies and objectives, and goals to improve and grow Project Palaka as the first ex-situ amphibian conservation program in the Philippines.

Achievement Highlight: In July of 2021, I successfully led a team to the remote Gigantes Islands in the Visayan Sea. We spent 30 days in the field conducting population counts, habitat assessments, and threat assessments for *Platymantis insulatus*, the only species of amphibian in the Philippines that is listed by the IUCN as Critically Endangered. My team and I also met with local government officials, community leaders, and teacher to involve the local community in our conservation efforts, as well as to jointly develop educational outreach activities for children on the island. We are also working with community members to establish part of islands as a “Protected Landscape”, as defined under Philippine law. At the end of our field work, we returned with 21 live specimens of *P. insulatus* to begin a captive breeding program to boost wild populations. These animals are currently healthy and about to undergo their first captive breeding cycle.

Volunteer Coordinator November 8th, 2008 – July 30th,2017
Organization: Tropic Ventures Research and Education Foundation
Location: Patillas, Puerto Rico
Supervisor: Thrity Vakil (Phone: (787) 329-7761)

Weekly hours worked: (November 8th, 2008-July 16th, 2015, 30 hours weekly; July 17th, 2017 to July 30th, 2017, 10 hours weekly*)
*During this time, I was simultaneously working at Project Palaka and/or my MS degree, resulting in reduced hours.
Total hours worked: Approximately 11,525 hours

Duties:
- Managed and supervised student volunteer teams of 4 to 53 individuals (average team size: 22) from diverse backgrounds
- Planned, implemented, and oversaw the completion of various projects, including trail building, infrastructure construction, landscaping, trail drainage system maintenance, bridge construction, and the planting and labeling of trees, shrubs, and plants along the "Ethnobotanical Trail."

- Coordinated with host universities to plan volunteer experiences for "Alternative Spring Break" students.
- Organized the logistics for volunteer groups- transportation, meals, daily schedules, break times, and educational experiences.
- Provide leadership, guidance and direction for all new volunteers; conducted orientation sessions, including overview of research station rules, safety concerns/regulations, relevant training for projects, and emergency response protocols.
- Developed the first standardized policy for vetting volunteer applicants. Designed a formal volunteer application process.
- Produced a handbook to give potential volunteers the information they needed to understand their responsibilities as a volunteer at TVREF.
- Worked with the director to standardize internal policies of managing large groups of volunteers, allowing TVREF staff to smoothly oversee between 12-18 volunteer groups each year.

Achievement Highlight: TVREF is located in a remote tropical rain forest in Puerto Rico. The site presents many hazardous conditions. Over the course of my tenure at TVREF, it was necessary to manage emergency situations. Two involved hurricane preparation and recovery, a common occurrence in the tropics. Another situation involved a 20-year-old volunteer member leaving the homestead/research station without informing the staff of where she was going. She became lost in the tropical forest overnight; our staff organized a search party, which included local police and groups of staff and other volunteers. The young volunteer was safely recovered with no injury. I've also managed medical emergencies, all of which involved administering first aid for injured volunteers, then quickly and safely getting the individuals to emergency medical treatment.

Biologist and Ecologist November 2008-July 2017
Organization: Tropic Ventures Research and Education Foundation
Location: Patillas, Puerto Rico
Supervisor: Thrity Vakil (Phone: (787) 329-7761)

Weekly hours worked: (November 8th, 2008-July 16th, 2015, 30 hours weekly; July 17th, 2017 to July 30th, 2017, 10 hours weekly*)
*During this time, I was simultaneously working at Project Palaka and/or my MS degree, resulting in reduced hours.
Total hours worked: Approximately 11,525 hours

Duties:
- Worked with the Project Director to review management plans for "Las Casas de la Selva", a 404-hectare sustainable tropical forestry project currently managed by Tropic Ventures.
- Conducted biodiversity and wildlife surveys of secondary tropical forests and managed timber plantations, confirming the presence of 11 species of animals previously not recorded on the property, including the IUCN Critically Endangered frog *Eleutherodactylus richmondi*.

- Researched the effects of non-native timber trees had on lizard populations. Worked with the Project Director to renew a long-running grant with Earthwatch, which yielded approximately $22,000 USD annually.
- Independently wrote grant applications that yielded an additional $14,000 USD of funding for scientific research.
- Assisted with the planting of IUCN Critically Endangered endemic tree *Styrax portoricensis*.
- Planned and oversaw the installation of the grass *Chrysopogon zizanioides* as an erosion control and site stabilization measure in areas of the property impacted by hurricane-induced landslides.
- Conducted nearly 1,000 hours of educational outreach to elementary, middle, high school, and undergraduate students.
- Designed research projects to be carried out after my departure from the position, to allow TVREF to continue to monitor biodiversity within the forests of Las Casas de la Selva.
- Led fieldwork teams of 4-20 people through hazardous terrain to collect data for several research studies.

Achievement Highlight: Successfully planned and raised grant money for a biodiversity survey of two remote, unstudied valleys in Puerto Rico. Interviewed, selected, and led 14 undergraduate students from the mainland US and Puerto Rico into the valleys; the team camped on-site in the tropical forest for one month. Conducted visual encounter surveys and collected swab samples to test for the presence of the pathogen *Batrachochytrium dendrobatidis*.

Field Scientist May 30th 2006 – January 7th 2008
Organization: KEMRON Environmental Services
Location: Atlanta, Georgia, USA
Supervisor: Kevin McGowan (Phone: (404) 636-0928)

Weekly hours worked: 40 hours weekly
Total hours worked: Approximately 3,360 hours

Duties:
Managed subcontractors hired for various services pertaining to field work.
Performed soil sampling and remediation at Brownfield sites in the Metro Atlanta Area.
Conducted Phase I Environmental Site Assessments in the Metro Atlanta area.
Conducted groundwater monitoring, sampling, and free product (petroleum) removal from various sites throughout the State of Georgia.
Participated in a long-term remediation project involving the removal of petroleum products from the groundwater at the Hartsfield-Jackson International Airport.
Oversaw the proper and legal disposal of wastewater products.
Conducted interior mold testing.
Trained at a phytoremediation project in Crozet, Virginia, where brake ferns (*Pteris spp*.) were used to remove arsenic from an abandoned orchard slated for development.

Highlight: I participated in a massive remediation project of an abandoned train station in Atlanta, GA. The soil had been contaminated with creosote from the burial of old railroad ties. Activities included site assessment, free product recovery, and soil removal & remediation. Several tons of contaminated soil needed to be removed and safely hauled to a disposal facility in order to completely remediate the site. The operation was politically and culturally sensitive, as the site was located in an area of economic hardship, and a local alderman was opposed to the project. We met with local officials and community members to assuage fears by incorporating transportation methods that would ensure the community would not be exposed to soil that contained hazardous chemicals.

Field Scientist January 10th 2002 – May 4th 2006
BP Environmental Services, Inc.
St. Michaels, Maryland, USA
Supervisor: Lou Ann Parsons (Phone: (410) 819-0919)

Weekly hours worked: (January 10th, 2002-June 30th, 2003, 20 hours weekly*; July 1st, 2003 to May 4th, 2006, 50 hours weekly)
* During this time, I was also completing my undergraduate degree at Washington College.
Total hours worked: Approximately 8,950.

Duties:

- Managed and supervised subcontractors performing drilling services, groundwater testing, and monitoring well installation at field work locations.
- Conducted Phase I Environmental Site Assessments throughout Maryland and Delaware.
- Conducted limited Phase II Environmental Site Assessments.
- Conducted twice-weekly free product (petroleum) removal from groundwater monitoring wells at a publishing facility Easton, Maryland.
- Completed various soil and groundwater remediation projects for clients ranging from public housing managers, gas station owners, and construction companies seeking to develop Brownfield sites; our clients ranged across the country, from Maryland to Washington state.
- Conducted interior mold testing.
- Conducted field work to inspect a 400-acre farm that was being sold to the Eastern Shore Land Conservancy.

Achievement Highlight: Co-managed a challenging soil remediation project in Chestertown, Maryland. The client had failed to perform due diligence before purchasing an abandoned mechanic's shop. A subsequent Phase I Environmental Site Assessment revealed that the previous owner had illegally disposed of oil by dumping it on the property. Additionally, the site had been used as a coal yard in the early 1900s. Remediation involved carefully removing several tons of soil to a depth of nearly four meters, while maintaining the integrity of the building.

FORMAL EDUCATION

MSc. in Environmental Science
University of Puerto Rico, Rio Piedras 2016-2019
San Juan, Puerto Rico

Master's Thesis: The impact of multiple hurricanes on *Anolis* lizards and *Eleutherodactylus* frogs within the Canopy Trimming Experiment, El Yunque National Forest, Puerto Rico.

Research interests: Liana abundance, tropical forest ecosystems, tropical forest management, herpetology, biodiversity assessment, data analysis

Individual Classes
Universidad Metropolitana 2014-2015
I attended Universidad Metropolitana for two semesters to gain the necessary credits to transfer to the graduate program in Environmental Science at the University of Puerto Rico.

BA. in Environmental Studies 1999 -2003
Washington College
Chestertown, Maryland, USA

Concentration: Chesapeake Bay Regional Studies

PROFESSIONAL TRAINING

Online Course: "FIGHTING HATE AND BIAS", by Jonathan Greenblatt of the American Defamation League October 2021
Acumen Academy
Online
Summary: This course, taught by the CEO of the American Defamation League, focuses on how to spot and mitigate bias in the workplace.
Total hours of instruction: 3

Certification: "PROJECT MANAGEMENT FOR WILDLIFE CONSERVATION" June 2021
Wildteam UK
Online
Summary: This six-week course was an intensive training session focused on developing executive-level management skills, including project plan development, team management, identification and mitigation of risks and issues, report development, and the management of all stages of a project, including planning, implementation, and closure.
Certification Number: PMV3.748
Total hours of instruction: 60

Certification: "DISASTER RISK MANAGEMENT AND KOREAN POLICIES" March 2021
Yonsei University, Republic of Korea
Online
Summary: This course covered the development of the Republic of Korea's policies towards disaster management, both natural and man-made.
Total hours of instruction: 40

Certification: "NONPROFIT FUNDRAISING" November 2020
Acumen Academy
Online
Summary: This course is an in-depth look at fundraising for a nonprofit. Topics covered include: developing a fundraising plan, developing relationships with potential funders, knowing when to say no to an offer of funding, and completing reporting requirements to funders.
Total hours of instruction: 20

Certification: "DESIGNING FOR ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT" November 2020
Acumen Academy
Online
This course was taught jointly by conservationists and corporate executives, and was focused on teaching the essentials of how to design products, projects, and marketing campaigns in a sustainable manner that incorporates the needs of local communities.
Total hours of instruction: 15

Certification: "R PROGRAMMING" November 2020
Johns Hopkins
Online
This course delved into the use of R Programming, teaching control structures, scoping rules, coding standards, loop functions, debugging, and simulation.
Total hours of instruction: 30

Certification: "THE DATA SCIENTIST'S TOOLBOX" October 2020
Johns Hopkins
Online
This course provided an introduction to data science fundamentals, R Programming, GitHub, "Big Data", and experimental design.
Total hours of instruction: 20

Amphibian Conservation Field Work October 2013
Bolivian Amphibian Initiative
Several locations, Bolivia

Assisted the staff of BAI with field work activities to locate *Psychrophrynella illimani,* a species of frog thought to be extinct. Intensive investigation found that the IUCN Critically-Endangered frog still exists in a fragmented range.
Total hours of training: 120

Iguana Conservation Internship September 2013
Utila Island Iguana Sanctuary
Utila Island, Honduras

Learned the maintenance protocols to care for a captive population of Utila Island Spiny Tail Iguana (*Ctenosaura bakeri*), a dietary-specialist and habitat-specialist endemic lizard of the island.
Total hours of training: 100

Crocodile Conservation Internship July-August 2013
American Crocodile Education Sanctuary
Various locations, Belize

Learned how to trap, subdue, and relocate crocodiles that posed a safety threat to local communities. Learned proper data recording, captive care, and maintenance protocols for approximately three dozen crocodilians kept at a crocodile sanctuary in Ladyville, Belize.
Total hours of training: 320

Ex-situ Amphibian Care Internship June 2013
Panama Amphibian Rescue and Conservation Project (PARC)
Gamboa, Panama

I volunteered at the Smithsonian's PARC project for one month so I could refresh my skills in captive care and maintenance of endangered amphibians.
Total hours of training: 175

Snake Conservation and Research Internship May 2013
La MICA Biological Field Station
El Cope, Panama

Conducted visual encounter surveys for venomous and non-venomous snakes in remote areas of Panama. Assisted with educational outreach to local citizens, helping them gain the skills needed to differentiate venomous snakes from non-venomous snakes, to reduce dangerous human-snake interactions. Learned basic capture methods of venomous snakes.
Total hours of training: 100

Ex-situ Amphibian Care Internship June 2012
Panama Amphibian Rescue and Conservation Project
Gamboa, Panama

Learned captive care methods for endangered frogs of the genus *Atelopus*, as well as general procedures for maintaining amphibians in captivity.
Total hours of training: 100

RELEVANT VOLUNTEER EXPERIENCE

Environmental Educational Outreach January 2019-July 2019
San Juan, Puerto Rico
Grades: K-5th
Summary: As an NCRT Scholarship recipient, I conducted weekly visits to elementary schools in the San Juan Metropolitan Area. Outreach consisted of prep time, lectures, indoor educational activities, and outdoor educational activities. Topics included native Puerto Rican biodiversity, basic conservation concepts, and basic concepts of evolution.

Achievement highlight: I introduced concepts such as "cryptic coloration" to students by hiding plastic toy frogs, lizards, and insects outside. Some toys had "earth-tone" colors,

while others were bright red, orange, blue, yellow, etc. Students then searched for the animal toys, and by the end of the activity, they would always agree that the earth-tone animals were much harder to locate.
Total hours of outreach: 100 hours

Environmental Educational Outreach September 2016-August 2018
San Juan, Puerto Rico
Grades: 9-12th
Summary: As a fellow of the Puerto Rico Louis Stokes Alliance for Minority Participation, (PR-LSAMP) I conducted educational outreach to high school students in the San Juan Metropolitan Area. Topics focused on my research at the Universidad de Puerto Rico, as well as explanations of educational opportunities for young Puerto Ricans and other historically underrepresented minorities to pursue STEM careers.

Achievement Highlight: I held a special outreach session specifically for high school seniors to explain how to apply for undergraduate classes at the Universidad de Puerto Rico, as well as how to structure their undergraduate education in such a manner as to make them ideal candidates for the PR-LSAMP and other funding opportunities when they started graduate school.
Total hours of outreach: 50 hours

HONORS AND AWARDS

- **National Geographic Explorer,** National Geographic Society, 2021- Current
- **US Fulbright Specialist,** US State Department, 2021- Current
- **Research Scholar**, Washington College, Chestertown, Maryland, 2019-Current
- **Natural Resources Career Tracks Scholarship**, UPRRP, 2019
- **"Bridge to the Doctorate" Fellowship**, UPRRP, 2016-2018
- **US Fulbright Award to the Philippines**, US State Department, 2015-2016
- **Natural Resources Career Tracks Scholarship**, UPRRP, 2014
- **Neville Shulman Award for Emerging Environmental Leaders**, Earthwatch, 2013

PUBLICATIONS

Greenhawk, N. 2022. *Preliminary herpetological survey of Rio Bravo Conservation Management Area, Orange Walk, Belize*. ***In preparation***.

Greenhawk, N., Zimmerman, J, Medin, A., Gonzalez, G. 2022. *Increased hurricane frequency causes shifts in post-storm microhabitat use by Puerto Rican Anolis lizards and Eleutherodactylus frogs*. ***In review.***

Greenhawk, N., Zlotnik, S., Billy, M., Boas, S., Gabel, S. 2017. *Baseline amphibian survey and Bd testing in Icaco and Hormiga Valleys, Patillas, Puerto Rico*. Phyllomedusa: Journal of Herpetology, 16(1). 63-69.

Willaert, B., Reichle, S., Stegen, G., Martel, A., Barrón Lavayen, S., Sánchez de Lozada Bianco, **N., Greenhawk**, N., Agostini, G., and Muñoz, A. 2016. Distribution, ecology, and conservation of the critically endangered frog *Psychrophrynella illimani (*Anura, Craugastoridae) with the description of its call. Salamandra, 52(4). 317-327.

Greenhawk, N. 2015. Testing sustainable forestry methods in Puerto Rico: Does the presence of the introduced timber tree Blue Mahoe, *Talipariti elatum,* affect the abundance of *Anolis gundlachi?* Herpetology Notes, 8. 141-148.

Greenhawk, N. 2015. On the Consumption of Marshmallow Residues, an Atypical Food Item, by *Anolis cristatellus* (Duméril and Bibron, 1837) in Puerto Rico. Life: The Excitement of Biology, 2(4). 270-271.

Greenhawk, N. 2013. Range Extension of *Eleutherodactylus cooki,* the 'Coqui Guajon', Grant, 1932 *(Amphibia: Eleutherodactylidae)*. Check List, 9(5). 1050-1053.

ACADEMIC RESEARCH EXPERIENCE

Independent study: *Tropical forest ecology and tropical forestry- a comparison of forest ecosystems and management methods in Puerto Rico, the Philippines, and Belize.*
Supervisor: Dr. Nick Brokaw, University of Puerto Rico, Rio Piedras

Field assistant: *Hurricane effects and long-term changes in forest structure at three elevations in a tropical forest.*
Supervisor: Dr. Nick Brokaw, University of Puerto Rico, Rio Piedras

Field assistant: *Liana abundance in a Puerto Rican forest.*
Supervisor: Dr. Nick Brokaw, University of Puerto Rico, Rio Piedras

Principal Investigator: *Preliminary herpetological surveys of forest ecosystems in the Rio Bravo Conservation Management Area, Orange Walk, Belize.*
Partners: Dr. Nick Brokaw (University of Puerto Rico, Rio Piedras) and Dr. Sheila Ward (Mahogany for the Future)

PUBLIC SPEAKING & OUTREACH ACTIVITIES

2019 Lecturer, writing workshop, University of Puerto Rico, Rio Piedras, *The US Fulbright Award: How to apply, what to expect*.

2018 Speaker, Philippines American Education Foundation, *The Impact of Hurricane Maria on Eleutherodactylus Frogs and Anolis Lizards at El Verde Field Station, El Yunque National Forest, Puerto Rico.*

2018 Speaker, University of the Philippines, Los Baños Museum of Natural History**,** *The Impact of Hurricane Maria on Eleutherodactylus Frogs and Anolis Lizards at El Verde Field Station, El Yunque National Forest, Puerto Rico.*

2018 Speaker, University of the Philippines, Los Baños, College of Forestry and Natural Resources, *The Land Use History of Carite Forest, Puerto Rico.*

2017 Speaker, University of Puerto Rico, San Juan, Puerto Rico*, The Fulbright Award: How to Apply, What to expect.*

2017 Speaker, University of Puerto Rico, *From Puerto Rico to the Philippines:*

Lessons Learned from Adventures in Conservation and Herpetology.

2016 Speaker, Washington College, Chestertown, Maryland, *Conservation as a Moral Choice.*

2016 Speaker, Washington College, Chestertown Maryland. Informal Q&A luncheon with students interested in applying for a Fulbright Award.

2016 Speaker, Philippine American Education Foundation*, Autopsy of a Conservation Project: Lessons Learned from Project Palaka.*

2016 Speaker, Fulbright ASEAN Conference, *Project Palaka.*

2015 Speaker, Caribbean Partners in Reptile and Amphibian Conservation, Santo Domingo, Dominican Republic, *Conservation as a Moral Choice.*

2015 Speaker, Caribbean Partners in Reptile and Amphibian Conservation, Santo Domingo, Dominican Republic, *Amphibians of Icaco and Hormiga Valleys.*

LANUGUAGE SKILLS
English- Native Speaker
Spanish- Intermediate
Tagalog- Novice

REFERENCES

Dr. Jess Zimmerman
Lead Principal Investigator, Luquillo LTER
Professor, University of Puerto Rico
Email: jesskz@ites.upr.edu
Cell phone: (787) 380-3311
UPR extension number: 787-764-0000 Ext. 3521, 4227, or 4381
Capacity known: Dr. Zimmerman was my advisor when I was completing my Master's degree at the University of Puerto Rico. He can speak to my capability to conduct research, analyze data, and report my findings. Additionally, Dr. Zimmerman knew me from my time at Las Casas de la Selva, so he has seen my professional progression through the years.

Dr. Nicholas Brokaw
Former Lead Principal Investigator, Luquillo LTER
Professor (retired), University of Puerto Rico
Email: nvbrokaw@ites.upr.edu
Cell phone: (787) 379-7296
Capacity known: Dr. Brokaw oversaw my independent study at the UPR. Additionally, I assisted him in his field work at the El Verde Field Station. I also joined him three times on his trip to Belize, where I helped him gather data on forest recruitment dynamics and conducted herpetological surveys. Dr. Brokaw can speak to my ability to work in various cultures and with diverse groups of people.

Ms. Thrity Vakil
Director, Tropic Ventures Research and Education Foundation
Email: 3tvakil@gmail.com
Cell phone: (787) 329-7761
Capacity known: Thrity is the Director of TVREF, the organization that oversees research at Las Casas de la Selva. Thrity can speak to my ability to manage groups, develop volunteer programs, lead research teams in hazardous environments, conduct outreach & educational programs, and oversee trail work and construction projects related to maintaining trails and research facilities.

Dr. John Seidel
Director, Center for Environment & Society at Washington College
Email: jseidel2@washcoll.edu
CES Extension: (800) 422-1782 Ext. 7756
Cell phone: (410) 708-5094
Capacity known: Dr. Seidel was one of my professors at Washington College. We have remained in contact over the years, and it was he that made the decision to make me a Research Scholar at the college. Dr. Seidel can speak to my progress as a scientist through the years, from an undergraduate to my current role as Director of Project Palaka.