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**PAM LATHAM, Ph.D., PWS, CSE**  
Senior Scientist / Ecologist

Dr. Latham is an Ecologist with more than 25 years of professional experience in natural resource assessments and management, working with federal, state, regional, and local agencies. Dr. Latham's areas of expertise include NEPA, development of Minimum Flows and Levels (MFLs) for rivers, and wetlands restoration. Her experience with NEPA compliance and understanding of the nexus of environmental and regulatory issues provides her with the technical and management skills necessary to ensure that natural, cultural, and economic resources are addressed adequately and that work products meet regulatory and scientific scrutiny. Dr. Latham's regional focus is on planning, data collection, and analysis in support of development of MFLs in Florida, pursuant to the Florida Water Resources Act (1972), which is intended to protect Florida's water resources. Her restoration work in the last several years has included design and permitting for coastal marsh restoration projects following storm damage or remediation. Much of her career has included work with protected species under the Endangered Species Act (ESA). Dr. Latham has several peer-reviewed publications and presents her work at professional conferences to learn from, and share information with, the scientific community and interested public.

**EDUCATION**

Ph.D., Environmental Engineering Sciences, University of Florida, Gainesville Florida. Affiliated with the USFWS Cooperative Fish and Wildlife Research Unit and the Center for Wetlands. Dissertation title: *Plant distributions and competitive interactions along a gradient of tidal freshwater and brackish marshes*

M.S., Biology, University of Central Florida. Thesis: *A statistical analysis of sand pine scrubs of central and east-central Florida.*

B.S., Biology, University of Central Florida.

**CERTIFICATIONS**

Certified Senior Ecologist (CSE) Ecological Society of America  
Professional Wetland Scientist (PWS) (00001381)

**PROFESSIONAL EXPERIENCE**

Senior Technical Manager for Tampa, Orlando, and Miami Sciences. Atkins North America, Tampa, Florida (2013-2014).

Principal Scientist. Atkins North America, Tampa, Florida (2009-2013).

Senior Scientist II-III. Atkins North America, Tampa, Florida (1997-2009).

Associate Environmental Engineer. Northwest Florida Water Management District (1991-1995).

Post-doc and graduate assistant with USFWS Cooperative Fish and Wildlife Research Unit. University of Florida, Gainesville, Florida (1985-1990).

Biology and chemistry instructor. Seminole County School District (1979-1984)

**Dr. Latham's experience with NEPA, MFLs, restoration, and the ESA is summarized below.**

Programmatic EIS, Florida Keys Water Quality Improvements Project. Lead agency: USACE, Jacksonville District. Dr. Latham was the deputy project manager for this programmatic EIS triggered by

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\$10 million funding to communities for design and implementation of waste-and storm- water improvements. The project targeted inadequate and untreated waste- and storm- water that ultimately flowed into nearshore waters of the Florida Keys National Marine Sanctuary. She prepared Biological Assessments (BAs) for the Schaus swallowtail butterfly and Key Largo tree snail under Section 7 of the ESA. The EIS received accolades from the Jacksonville District.

Third Party EIS for the Cano Martin Pena Restoration, Puerto Rico. Lead agency: USACE, Jacksonville District. The client, ENLACE, was awarded a 2010 National Achievement in Environmental Justice by EPA for the project, which will restore the historic tidal connection between San Juan Bay and the Atlantic Ocean and improve living conditions for the local community. Dr. Latham coordinated with scientists, engineers, and planners to prepare the environmental consequences section and ensure technically accurate analysis and NEPA consistency in the EIS.

Third Party EIS for the Bayou Casotte Harbor Improvement Project in Pascagoula, Mississippi. Lead agency: USACE, Mobile District. As deputy project manager, Dr. Latham coordinated with lead and cooperating agencies, prepared and/or reviewed major portions of the EIS, responded to comments, reviewed the EIS for NEPA consistency, and prepared the draft Record of Decision and Notice of Availability. Components included the Marine Protection Research and Sanctuaries Act, the Clean Water Act (CWA), Essential Fish Habitat of the Magnuson- Stevens Act, and the ESA. The EIS was completed in 12 months.

Third Party EIS for the Lac du Flambeau Band of Lake Superior Chippewa Indians, Shullsburg, WI. Lead agency: Bureau of Indian Affairs (BIA). Dr. Latham is the project manager for this EIS for the fee-to-trust application to the Bureau of Indian Affairs for a casino development. Dr. Latham coordinates needs among the Tribe, BIA, EPA, and other agencies and is responsible for ensuring NEPA compliance. Particularly relevant federal regulations addressed in the EIS include the Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, ESA, and USACE 404(b) permitting for wetlands impacts. The draft EIS is presently under agency review.

Third Party EIS for the South Carolina Palmetto Railways Intermodal Container Transfer Facility (ICTF). Lead agency: USACE, Charleston District. Dr. Latham provides the QA/QC for this EIS and is responsible for reviewing the EIS for NEPA consistency as well as technical accuracy. Palmetto Railways is the applicant for a permit for the proposed construction and operation of an ICTF at the former Charleston Navy Complex to handle and process current and projected increases in intermodal container traffic at the Port of Charleston. The Description of the Proposed Action and Alternatives has been submitted for review by the USACE.

Programmatic EIS for Essential Fish Habitat (EFH) for the Gulf of Mexico Fishery Management Council. Dr. Latham was the lead scientist responsible for the impacts analysis and environmental consequences section of the PEIS for the Council's Generic Amendment for Essential Fish Habitat in the Gulf of Mexico. NMFS and regional Fish Management Councils prepared new EISs for the EFH to: assess a range of potential alternatives to designate EFH; identify habitat areas of particular concern (HAP); and prevent, mitigate, or minimize the adverse effects of fishing on EFH to the extent practicable, using the best available scientific information.

Essential Fish Habitat (EFH) evaluation under FEMA's National Flood Insurance Program (NFIP) in Florida. Lead agency: NMFS. Dr. Latham provided the EFH technical expertise under a Hazard Mitigation Technical Assistance Program contract with FEMA. She participated in coordination with

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FEMA, USFWS, and NMFS to define potential impacts of the NFIP on EFH, including discretionary actions such as Community Rating System (CRS) and Letters and Conditional Letters of Map Revision with respect to potential adverse impacts to EFH.

NEPA Compliance Document, Florida Bay Seagrass Habitat Restoration Management Plan (Plan), Homestead, FL. Lead agency: National Park Service (NPS). Dr. Latham provided QA/QC and technical support and agency coordination in support of the Plan to ensure its compliance with NEPA prior to submittal. The Plan was prepared and submitted for compliance and consistency with all applicable laws and policies including, but not limited to: National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archaeological Resources Protection Act, ESA, and Wilderness Act.

Supplemental EIS for Colorado DOT for proposed improvements to the I-70 corridor across northeast Denver, CO. Lead agency: Federal Highway Administration. Dr. Latham provided QA/QC review for the EIS with respect to impacts to land use, historic preservation, floodplain, and hazardous materials. The SEIS analyzes project alternatives and details the process through which highway improvement alternatives were developed; discloses foreseeable social, economic, and environmental impacts due to the project; provides findings for public review; and outlines mitigation measures to minimize impacts. The SEIS is schedule for release in September 2014.

EIS and design and permitting for the Ocklawaha River Restoration project for the Florida Department of Environmental Protection (FDEP). Lead agency: USACE, Jacksonville District. Dr. Latham was the lead on the EIS and addressed Section 10 of the Rivers and Harbors Act, Section 404 of the CWA, and Section 7 of the ESA. She also provided support for the design and permitting of the Ocklawaha River Restoration that targeted 1,900 acres of forested floodplain on U.S. Forest lands. Regulatory issues have delayed project implementation.

Environmental Information Document (EID) for the South Tampa Area Reuse (STAR) project. Lead agency: City of Tampa, FL. Dr. Latham prepared and submitted the EID, which was subject to NEPA due to federal matching funds for the design and construction of the treatment and distribution facilities for the project. The EID addressed potential impacts of a 10 mgd capacity pumping station, over 100 miles of transmission main, directional drill transmission main pipelines under the Seddon Channel , and distribution lines do deliver reclaimed water to Tampa irrigation customers.

**Dr. Latham's restoration experience includes freshwater and coastal communities, remediation, and groundwater recharge projects.**

Post-storm evaluation and restoration plan for Prime Hook NWR, Delaware. Dr. Latham is the project manager and senior scientist on the restoration team and works with coastal engineers to develop restoration alternatives to convert former freshwater impoundments to (historic) salt marsh habitats. Dune breaches will be filled and tidal channels opened to restore historic hydrologic connections and salinities throughout the Refuge. The marsh restoration is a part of the larger coastal restoration effort being developed with the USFWS following Hurricane Sandy. A draft conceptual design has been submitted to the USFWS. View the project at <http://www.fws.gov/northeast/primehook/marshrestoration.html>

Sawgrass Lake Restoration Project, Pinellas County, FL. Dr. Latham was the project manager for the project design and permitting, which included removal of contaminated materials (due to adjacent gun range activities) from the 39 acre remediation area, treatment/disposal of material, and construction of a

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21 acre treatment wetland to reduce pollutant loads to Tampa Bay. Over 104,000 cy of lake bottom sediments were removed. The project is the 2nd in Florida to use a polymer process that inactivates the dredged materials so it can remain on site, thereby reducing off-site disposal costs. Project completion is scheduled for 2015.

Design of Advanced Mitigation Area Plan, Brighton Seminole Indian Reservation, Seminole Tribe of Florida, Glades County, FL. Dr. Latham was the principal ecologist for this project to restore, create, and preserve 881 acres of wetland and upland habitat, resulting in approximately 200 mitigation credits to offset previous and future development impacts and acquire permits from USACE and SWFWMD. Dr. Latham conducted initial field evaluations, researched historic (pre-development) conditions, and developed hydrological parameters for restoration of wetlands and creation of deepwater refugia for crayfish and other prey for wading birds.

Critical Coastal Habitat Assessment (CCHA) for the Tampa Bay Estuary Program. Dr. Latham is the project manager and lead scientist for the CCHA, a project to develop and implement a long-term coastal habitat monitoring program in Tampa Bay, Florida's largest open-water estuary and a designated "estuary of national significance." Shifts in mangrove and marsh vegetation distributions that have been attributed to rises in sea level will be monitored in individual plots and belt transects and "linked" to aerial photographs for long term monitoring.

Environmental Monitoring Plans (EMPs) in support of Water Use Permits (WUPs) and wetland recovery for Polk County Utilities and the City of Englewood. As lead scientist, Dr. Latham developed and implemented vegetation and soils sampling, water level monitoring, analysis, and reporting for EMP submittals to the SWFWMD per WUP compliance. The EMP documents differences in wetland water levels and examines the influences of rainfall and withdrawals among 13 wellfield and 7 reference wetlands. Wetlands are exhibiting signs of recovery due to reduced pumping and increased rainfall.

Comprehensive Everglades Restoration Program (CERP) for the USACE, Jacksonville District. Dr. Latham provided scientific support through the Everglades Protection Joint Venture (EPJV) within the USACE office in Jacksonville in support of restoration efforts. She drafted performance measures for the recovery of Everglades and slough crayfish as part of efforts to restore white ibis population.

Upper Floridan Aquifer Regional Recharge Concepts, Suwannee River Water Management District (SRWMD), FL. Dr. Latham was the lead scientist responsible for identification and feasibility analysis of projects with respect to water quality and MFLs regulations. The purpose of this project was to identify and evaluate water resource development projects to restore the potentiometric surface of the Upper Floridan aquifer in the SRWMD and identify potential sources of water for groundwater recharge.

**Dr. Latham provides MFL support to three of Florida's five water management districts, pursuant to the Florida Water Resources Act (1972).**

MFLs development for the St. Marks River Rise, Wakulla, and Sally Ward springs for the Northwest Florida Water Management District (NFWMD). Dr. Latham is the project manager for the District's first MFLs and developed a Work Plan that presents a sampling design to fill critical data gaps and monitoring plans for data collection in instream and floodplain habitats; analysis of rainfall, surface and ground water flows, elevations, soils, habitats; public involvement; peer review; schedules; and costs.

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Implementation of sampling and elevation survey support for HEC-RAS and other models is anticipated to begin in October 2014; scheduled completion of the draft MFLs is 2017.

MFLs support to the Southwest Florida Water Management District (SWFWMD) and SRWMD. Dr. Latham developed the sampling design for the upper Peace River MFL in 1999 that is still used by the District. She completed field sampling, statistical analyses (using SAS), and reporting to support establishment of MFLs for the Rainbow, Homosassa, Little Manatee, Anclote, Braden, Myakka, Peace, and Alafia rivers, and Gum Springs in for the Southwest District, and supported MFL establishment on the lower Suwannee, upper Santa Fe, and Ichetucknee rivers for the SRWMD.

Apalachicola-Chattahoochee-Flint River (ACF) instream flows assessment for the ACF Stakeholders group. The goal of the group is to reach consensus among its 56-member governing board for recommendations to the USACE and states of Alabama, Georgia, and Florida regarding water management in the basin. Dr. Latham is the lead scientist, and with other scientists, developed environmental flow criteria for the Apalachicola River based on acres of connected aquatic and floodplain habitat as a function of flow, and flows necessary to sustain protected mussel species. Results are intended to provide input/ constraints on a water management model being used by the ACFS. The final report was submitted to the ACFS in 2012.

**Dr. Latham has experience with surveys and state and federal consultation for several species, including Schaus swallowtail butterfly, flatwoods salamander, sea turtles, gopher tortoise, plovers, beach mice, and bent golden aster.**

Multiple Species Habitat Conservation Plan (MSHCP) and Environmental Assessment for the Choctawhatchee beach mouse, Walton County, FL. The St. Joe Company applied for an incidental take permit (ITP) under Section 10 of the ESA for impacts to 7.6 acres of federally designated Critical Habitat for the beach mouse. Dr. Latham was responsible for the preparation of the HCP, which also addressed Florida snowy plovers and sea turtles, and included beach mouse conservation, reintroduction, and monitoring. The ITP was approved and the project constructed.

MSHCP and Environmental Assessment for the St. Andrews beach mouse (Bay and Gulf counties) and Perdido Key beach mouse (Escambia County), FL. Dr. Latham provided technical support in the development of the ITP and HCP developed for the St. Andrews and Perdido Key beach mice and associated species, including sea turtles and piping plovers. Similar to the work completed for the Choctawhatchee beach mouse, the ITPs were submitted and approved.

Environmental Assessment for impacts to the federally listed flatwoods salamander, Walton County, FL. Dr. Latham coordinated with the USFWS and prepared a BA to address potential impacts to the flatwoods salamander by the proposed Camp Creek North, a 1,023 acre golf course development project. The BA was prepared and submitted to the USFS on behalf of the St. Joe Company, who applied for and received an ITP from the USFWS pursuant to Section 7 of the ESA.

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## PEER REVIEWED PUBLICATIONS

Latham, P., L. Heisler, and V. Engel. 2010. Tree Islands and Everglades Restoration. Pp. 113-119 in Scientific and Technical Knowledge Gained In Everglades Restoration (1999-2009): REStoration COOrdination and VERification (RECOVER).

Latham, P., J. Lane, S. Allen, and S. Hardin. 2010. Exotic Invasive Species. Pp. 208-215 in Scientific and Technical Knowledge Gained In Everglades Restoration (1999-2009): RECOVER.

Latham, P., S. Miao, M. Vaidya, M. Chen, and K. Haag. 2010. Fire Ecology in Everglades. Pages 288-298 in Scientific and Technical Knowledge Gained In Everglades Restoration (1999-2009): RECOVER.

Latham, P.J., L.G. Pearlstine, and W.M. Kitchens. 1994. "Species Association Changes Across a Gradient of Fresh, Oligohaline, and Mesohaline Tidal Marshes along the Lower Savannah River." *Wetlands*. 14(3): 174-183.

Pearlstine, L.G., W.M. Kitchens, P.J. Latham, and R.D. Bartleson. 1993. "Tide Gate Influences on a Tidal Marsh." *Water Resources Bulletin*. 29(6): 1009-1019.

Latham, P.J., L.G. Pearlstine, and W.M. Kitchens. 1991. "Spatial Distributions of the Softstem Bulrush, *Scirpus validus*, across a salinity gradient." *Estuaries*. 2(14): 192-198.

Stout, I.J., C.L. Connery, and P.J. Latham. 1984. "Preliminary Findings on Endangered Plants in Sand Pine Scrubs of East Central Florida." *Florida Scientist* 47 (Supplement 1): 45.