

Jason A. Hale

Ecologist, Senior Technical Manager

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EDUCATION

2014 PhD. Candidate, Environmental Engineering, UPC, Barcelona, Spain. Advisor: Dr. J. Garcia.

2002 M.S., Interdisciplinary Ecology, College of Natural Resources and Environment, University of Florida. Advisor, Dr. T. K. Frazer.

1991 B.S., Resource Conservation, School of Forest Resources and Conservation, University of Florida. Advisor, Dr. K. Ewel.

PROFESSIONAL POSITIONS AND EXPERIENCE

2011 – pres. **Senior Technical Manager**, Pandion Technology, Ltd. (Currently based in Al Khobar, KSA)

- Program and project development for environmental science and technical consulting company in the Gulf region. Tasks include new proposal writing, development of company profile, and conducting and participating in meetings with government, inter-government, and private stakeholders. Current program development targets include constructed wetlands and sustainable waste management and disposal; cumulative impacts and effects assessment for development projects; and design of large-scale conservation projects.
- Provided technical guidance for large ecological restoration projects focused on salt marsh habitats along the Gulf coast of Saudi Arabia. Other tasks include: management of 4 to 6 technical employees and 2 to 3 logistics employees, technical report writing for UNCC review, remediation contractor management, and engagement with government and citizen interest groups.
- Managed a site selection survey for a large-scale artificial reef program in western Arabian Gulf; conducted dive surveys at 60 locations to collect fish, sedentary, and sessile taxa data; analyzed data to prioritize locations and develop conceptual design that will meet environmental stewardship goals.

2009 – 2011 **Ecologist**, Pandion Technology, Ltd.

- Ecologist supporting large-scale ecological restoration program focused on salt marsh habitats along the Gulf coast of Saudi Arabia. Tasks include management of 2 to 3 technical employees, development of field protocols for coastal habitat mapping and site description, technical report writing for UN Compensation Commission review, and engagement with government and citizen interest groups.

2004 – 2009 **Senior Scientist**, Charlotte Harbor Environmental Center, Punta Gorda, FL

- Managed the development of the Watershed Resource Center, to “provide original ecological research and environmental information to citizens and visitors of Charlotte Harbor and its watershed”. Tasks included program development, environmental research

and monitoring project management, grant and report writing, supervision of employees and volunteers, and development of internet resources to improve public access to environmental and policy information.

- Managed an investigation of nutrient sources and phytoplankton communities in the context of the Impaired Waters Rule for the City of Sanibel to evaluate the efficacy of nutrient reduction actions such as a fertilizer ordinance and septic tank removal.
- Conducted a field-based research project relating basin land forms in small coastal catchments, water quality in tidal creeks, and seagrasses in Charlotte Harbor, Florida, to support sustainable management decisions and growth planning processes.

2006 – 2008 Adjunct Instructor, Department of Marine and Ecological Studies, Florida Gulf Coast University, Ft. Myers, FL

- “Marine Systems” (5 semesters). Developed curriculum for non-science undergraduates focused on relating to global and local marine ecology topics through observation and personal experience.
- “Environmental Biology of Southwest Florida” (1 semester). Original field and in-class curriculum for non-science undergraduates based on a watershed approach to natural resource management.

1999 – 2004 Senior Biological Scientist, Department of Fisheries and Aquatic Sciences, University of Florida, Gainesville, FL

- Managed field collection of monthly water quality samples, conducted analyses of a long-term water quality database and GIS data, and supported related presentations at national and international scientific meetings and publications.
- Trained and supervised volunteers and graduate students in field, lab, and GIS protocols.
- Operated and managed field sampling equipment, including outboard motorboats up to 24 ft OL in coastal and near shore research projects.

1991 – 1999 Biological Scientist, Department of Fisheries and Aquatic Sciences, University of Florida, Gainesville, FL

- Contributed to the design and management of sampling protocols on experimental artificial reef treatments along the Big Bend Coast of Florida to describe effects of habitat quality and spacing on fish and invertebrate communities.
- Constructed and monitored artificial reef modules in support of large-scale manipulative field experiments resulting in several peer-reviewed publications and presentations at national meetings.
- Conducted and assisted in studies of cave fauna abundance and distribution in flooded caves of north central Florida which resulted in several peer-reviewed publications.

SELECTED GRANTS AND CONTRACTS

“Artificial Reef Site Selection Survey and Design”. Senior Technical Manager for Client: Environmental Protection Department, Saudi Aramco. 2012-2013 (\$600,000).

“Vegetation and fauna survey for an EIA of pipeline upgrade at North Jeddah Bulk Plant”, Project Manager for Client: AES International Consultants. November, 2011. (\$5,300).

“Vegetation and fauna survey for EIA of Najibiyah Mine Lease”. Project Manager for Client: AES International Consultants. September, 2011. (\$4,000).

“Accuracy Assessment of 2008 SWFWMD Seagrass Maps in Charlotte Harbor and Lemon Bay.” FY2009. Project Manager for Client: Southwest Florida Water Management District, Brooksville, Florida. (\$20,000).

- “The Sanibel River and The Impaired Waters Rule: how stable nitrogen isotopes and phytoplankton community analyses can indicate nutrient sources and evaluate nutrient reduction efforts.” FY2008. Project Manager for Client: City of Sanibel, Florida. (\$11,000).
- “Seagrass species composition and distribution trends in relation to salinity, hydrology and water quality fluctuations in Biscayne Bay, Florida.” FY 2008. Project Manager for Client: South Florida Water Management District, West Palm Beach, Florida. (\$30,000).
- “Characterizing the influence of coastal creeks on SAV in Charlotte Harbor” FY 2008. Project Manager for Client: Southwest Florida Water Management District, Brooksville, Florida. (\$40,000).
- “Seagrass Transect Analysis From The Five Year Period 1999-2004” FY 2006. Project Manager for Client: Southwest Florida Water Management District, Brooksville, Florida. (\$40,000).
- “Water Quality in the Peace and Myakka River Basins, and Charlotte Harbor and Lemon Bay”. FY 2005 - 2009. Project Manager for Client: Southwest Florida Water Management District, Brooksville, Florida. (\$30,000 annually).
- “Does Nitrogen From Sludge Farms Persist in the Charlotte Harbor Study Area?” FY 2005. Project Manager for Client: Charlotte Harbor National Estuary Program, Research and Restoration Partners Program, Ft. Myers, Florida. (\$10,000).

SELECTED PUBLICATIONS (PEER-REVIEWED OR REFEREED)

- Minter, T.G., **J.A. Hale**, C.D. Cormack, L. Cotsapas, and J. Michel. 2014. Tidal Flat and Sand Beach Remediation: Choosing Remediation Techniques to Speed Ecological Recovery of Habitats Still Impacted 20 Years after the Gulf War Oil Spill. . *In*: International Oil Spill Conference Proceedings. Vol. 2014. No. 1. American Petroleum Institute, 2014
- Priest, Brant M., **J.A. Hale**, T.G. Minter, C.D. Cormack, L. Cotsapas, and M.J. Risk. 2014. "Using Foraminifera as Indicators of Habitat Recovery following Remediation of Sheltered Tidal Flats in Saudi Arabia." International Oil Spill Conference Proceedings. Vol. 2014. No. 1. American Petroleum Institute, 2014.
- Langman, O., **J.A. Hale**, C.D. Cormack, M.J. Risk, and S.M. Madon. 2012. Developing multimetric indices for monitoring ecological restoration progress in salt marshes. *Marine Pollution Bulletin* 64(2012): 820-835.
- Hale, J.A.**, C.D. Cormack, L. Cotsapas, T.M. Montello, O. Langman, J.J. Gabriel, and J. Michel. 2011. Relationships between key indicators of environmental condition and degrees of oiling in sediments in salt marsh habits: A balance between contamination and ecological recovery by natural processes. *In*: Proceedings of the 2011 International Oil Spill Conference, Portland, Oregon (USA), 12 pages.
- Cormack, C.D., **J.A. Hale**, J.J. Gabriel, and O. Langman. 2011. Nasima and Oil – do they mix? Assessing crab survival in oiled sediments. *In*: Proceedings of the 2011 International Oil Spill Conference, Portland, Oregon (USA), 11 pages.
- Gabriel, J.J., **J.A. Hale**, C.D. Cormack, and O. Langman. 2011. Rate of deformity in benthic foraminifera as a result of persistent oiling from the 1991 Gulf War oil spill. *In*: Proceedings of the 2011 International Oil Spill Conference, Portland, Oregon (USA), poster.
- Hale, J.A.**, R.M. Duffey, B. Pederson, E.R. Hall, and E. Milbrandt. 2009. The Sanibel River and The Impaired Waters Rule: how stable nitrogen isotopes and phytoplankton community analyses can indicate nutrient sources and evaluate nutrient reduction efforts. Report to the City of Sanibel, Florida. 25 pp.
- Hale, J.A.**, and R.M. Duffey. 2009. Using Stable Nitrogen Isotopes to Quantify the Influence of Potential Nutrient Sources in the Peace River Watershed. Report to the Charlotte Harbor National Estuary Program, Ft Meyers, Florida. 27 pp.

- Bergquist, D.C., **J.A. Hale**, P. Baker, and S.H. Baker. 2006. Development of ecosystem indicators for the Suwannee River estuary: oyster reef habitat quality along a salinity gradient. *Estuaries and Coasts* 29(3):353 - 360.
- Calleja, Maria L., C. Barrón, **J.A. Hale**, T.K. Frazer, and C.M. Duarte. 2006. Light regulation of benthic sulfate reduction rates mediated by seagrass (*Thalassia testudinum*) metabolism. *Estuaries and Coasts* 29(6B):1255-1264.
- Corbett, C.A. and **J.A. Hale**. 2006. Development of water quality targets for Charlotte Harbor, Florida, using seagrass light requirements. *Florida Scientist* 69(S2):36-50.
- Greenawalt-Boswell, J.M., **J.A. Hale**, K.S. Fuhr, and J.A. Ott. 2006. Seagrass species composition and distribution trends in relation to salinity fluctuations in Charlotte Harbor, Florida. *Florida Scientist* 69(S2):24-35.
- Thompson, T.M., C. E. Cichra, W. J. Lindberg, **J. A. Hale**, and J.E. Hill. 2005. Movement and habitat selection of largemouth bass in a Florida steep-sided quarry lake. *Proc. Annu. Conf. Southeast. Assoc. Fish and Wildlife Agencies* 59:227-240.
- Hale, J.A.**, T.K. Frazer, D.A. Tomasko, and M.O. Hall. 2004. Changes in the distribution of seagrass species along Florida's Central Gulf coast: Iverson and Bittaker revisited. *Estuaries* 27(1): 36 - 43.
- Mattson, R.A., T.K. Frazer, **J.A. Hale**, S.B. Blitch and L. Ahijevych. 2003. The Florida Big Bend. *In: USEPA. Status and Trends of Seagrasses in the Gulf of Mexico. U.S. Geological Survey Report, Lafayette, LA.*
- Frazer, T.K. and **J.A. Hale**. 2001. Changes in the Abundance and Distribution of Submersed Aquatic Vegetation Along Florida's Springs Coast: 1992 - 1999. Final Report. Southwest Florida Water Management District, Brooksville, Florida. 10 pp. (plus GIS products).
- Frazer, T.K., M.V. Hoyer, S.K. Notestein, **J.A. Hale** and D.E. Canfield, Jr. 2001. Physical, chemical and vegetative characteristics of five Gulf coast rivers. Final Report. Southwest Florida Water Management District, Brooksville, Florida. 333 pp. (plus app).
- Hale, Jason A.** and Thomas K. Frazer. 2000. Image enhancements applied to scanned aerial photographs for benthic habitat mapping. Pp 459-467 *in: Proc. of the Sixth International Conference on Remote Sensing for Marine and Coastal Environments, Vol. 1, Charleston, South Carolina (USA).*
- Hale, J.A.** and W.J. Streever. 1994. Cave fauna distribution within fully-flooded cave systems in Florida. *Journal of Freshwater Ecology* 9(3): 171-174.

SELECTED PROFESSIONAL PRESENTATIONS

- "A role for theoretical ecology in the science and practice of constructed/treatment wetlands". The 6th International Symposium on Wetland Pollutant Dynamics and Control. September, 2015. York, United Kingdom.
- "Biodiversity and offshore structures in the marine environment." PetroEnvironment 2014: Fourth Specialty Conference on Environmental Progress in the Petroleum and Petrochemical Industries. 24-26 February 2014. Khobar, Kingdom of Saudi Arabia.
- "Accelerating restoration of salt marshes by tidal channel excavation and mangrove transplantation in Saudi Arabia. Society for Ecological Restoration, Annual Meeting 7-10 October, 2013. Madison Wisconsin, USA.
- "Recovery of tidal channel habitats in remediated salt marshes of Saudi Arabia". Society for Ecological Restoration, Annual Meeting 7-10 October, 2013. Madison Wisconsin, USA.
- "UNCC Coastal Environment Remediation and Restoration Program". Royal Commission for Jubail and Yanbu. 5 February 2012.
- "Using Mangroves (*Avicennia marina*) to promote remediation and restoration of salt marsh habitats impacted by the 1991 Gulf War Oil Spill.": International Congress of Environmental Research

- 10: 16-18 September, 2010. Organized by: University of Mauritius and Journal of Environmental Research and Development.
- “Seagrass transect data summary and analysis from a six-year period: 1999 – 2004”. Southwest Florida Seagrass Working Group, October, 2006.
- “Ecological relationships and resource management issues in two estuaries along the West Coast of Florida”. Charlotte Harbor National Estuary Program, Charlotte Harbor Watershed Summit, Punta Gorda, Florida. February, 2005.
- “Watershed land-use and estuarine water quality: patterns and processes involving color in the Peace River and Charlotte Harbor” . Mote Marine Laboratory, 5th Annual Charlotte Harbor Conference, Sarasota, Florida. October, 2005.
- “Complimentary data sources describe landscape patterns of SAV along Florida’s Gulf Coast”. Estuarine Research Federation, 17th Biennial Conference, Seattle, Washington. September, 2003. (poster)
- “Changes in the abundance and distribution of SAV along Florida’s Springs Coast: A comparison based on aerial photography acquired in 1992 and 1999”. Marine Benthic Ecology Meeting, March, 2002.
- “Mapping submersed vegetation of Kings Bay” . Southwest Florida Water Management District, Springs Coast Research Technical Meeting, January, 2002.
- “Detection of changes in SAV abundance and distribution from aerial photographs using image processing methodology” . Estuarine Research Federation, 16th Biennial Conference, St. Petersburg, Florida. November, 2001.
- “Abundance and distribution of submerged aquatic vegetation from aerial photographs: image enhancement, ground-truth, and classification”. Marine Benthic Ecology Meeting, March, 2001. (poster)
- “Cave fauna distributions within fully flooded cave systems in Florida”. Meeting of National Association for Cave Diving, Florida Chapter, Gainesville, Florida, March, 1996.

ACADEMIC AND PROFESSIONAL REFERENCES

- Linos Cotsapas, General Manager, Pandion Technology, Ltd. Supervisor, 2009 – Present. email: lcotsapas@researchplanning.com.
- Michael J. Risk, Technical advisor, 2009 – Present. email riskmj@mcmaster.ca.
- Alton L. Cheatham, President, Charlotte Harbor Environmental Center, Inc., Punta Gorda, Florida. Supervisor, 2004 to 2009. email: alc@embarqmail.com.
- Thomas K. Frazer, Associate Professor, School of Forest Resources and Conservation, University of Florida. Supervisor, 1998 to 2004; Major Professor, 1999 to 2002. email: frazer@ufl.edu.
- Seth Blich, Director of Coastal and Marine Conservation, The Nature Conservancy in Louisiana. Professional colleague. email: sblitch@tnc.org