

**Howard Larson Jelks****Fish Biologist**

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**EDUCATION**

post-MS (46 credit hours), Wildlife and Range Science, University of Florida, 1991-93  
MS, Wildlife and Range Science, University of Florida, 1990  
BS summa cum laude, Biological Science, Florida State University, 1983  
Pine View School, Sarasota, Florida 1979

**TRAINING & FIELDS OF INTEREST**

Howard has diverse experience from wetland plants, aquatic invertebrates, fish, and wading birds. He has studied these organisms from the estuaries of Apalachicola Bay, freshwater marshes of the Everglades, and streams of the Piedmont and Coastal Plain. Although he specializes in fishes, he classifies himself as a general naturalist/ecologist. How the dynamic environment structures biotic communities is his broad interest. Imperiled freshwater fishes are his speciality, but nonindigenous and marine taxa are also studied. For the past 15 years, he has been a leader of Okaloosa darter monitoring and recovery planning at Eglin Air Force Base in northwest Florida. He has developed skills in sampling design, database development, geographical information system and statistical analyses.

**EXPERIENCE**

1978: Summer Science Intern, Florida State University  
1981-1983: Research Assistant, Florida State University  
1984-1992: Graduate Research Assistant, University of Florida  
1993-Present: Fish Biologist, U.S. Fish and Wildlife Service, National Biological Survey,  
National Biological Service, U.S. Geological Survey

**RECENT WORK EXPERIENCE**

Howard is a full-time research fisheries biologist GS-11 assigned to the U.S. Geological Survey, Florida Integrated Science Center, 7920 NW 71<sup>st</sup> street, Gainesville, Florida, 32653. He is currently supervised by Dr. Kenneth Rice (352.264.3515). Howard is

responsible for assisting the in planning, organizing, coordinating, and reporting research on faunal surveys, distributional analyses, species biology, experimental field and laboratory ecology, limiting factors, and behavior of rare, threatened, and endangered freshwater fishes of the southeastern United States. He designs studies, collects and processes samples, compiles, and statistically analyzes data, and assists with interpretation of the results and preparation of written research findings as publishable additions to fisheries science and technical presentations at meetings. He has recently assisted in study design and analysis on a survey of cryptic fish at Buck Island National Monument, St. Croix, VI, completed a book on the life history and risk assessment of the black carp. Howard has been a leader in the research and recovery effort for the federally endangered Okaloosa darter at Eglin Air Force Base over the past decade. He led in coordinating and drafting the 1998 Revised Recovery Plan for the Okaloosa darter. Howard is completing a book on the Fishes of Eglin Air Force Base which details the distribution, life history, and identifying characteristics of the species that inhabit those waters. He regularly participates in meetings at Eglin to help guide management of aquatic systems and their upland watersheds. Howard is collaborating with Frank Jordan, of Loyola University New Orleans, and Robert Dorazio, USGS, in developing removal sampling methods and statistical analyses that permit the simultaneous estimation of the abundance and detection of darters at multiple sites across Eglin. These estimates will contribute toward the assessment of the Okaloosa darter. Howard has also participated in multi-species efforts to assess imperiled aquatic fauna both in the southeastern U.S. and throughout North America. His website at <http://fisc.er.usgs.gov/afs/> is useful to persons interested in aquatic biodiversity conservation.

### **OTHER JOB RELATED QUALIFICATIONS**

Department of Interior certified electrofishing boat operator  
Forklift Training  
Florida Prescribed Fire Basic Certification  
ArcGIS 9 Introduction I and II certified  
Adobe Flash I and II certified  
Received Star Awards in 1995, 1998, 2003, 2004, 2005, 2006, 2007, 2008

Graduate Committee 2001-2005; Jessica Noggle, successful Ph.D. candidate, Department of Physiological Sciences, College of Veterinary Medicine, University of Florida, "Effects of Paper Mill Effluent on the Reproductive Biology of Mosquitofish, *Gambusia holbrooki*."

### **PROFESSIONAL ACTIVITIES AND MEMBERSHIPS**

Member American Society of Ichthyologists and Herpetologists (1996 to present)  
Member American Fisheries Society (2003 to present, Endangered Species Committee)  
Southeastern Fishes Council (1996-present)  
Member of the Florida Native Plant Society (1983 to present)

Member of the Colonial Waterbird Society (1985-1993)  
Alachua Conservation Trust (2000-present, current President)

### **GRANTS OR CONTRACTS**

USDOD: Eglin Air Force Base Aquatic Faunal Survey \$88K, Monitoring the Okaloosa darter Population \$212K over 15 years.  
Georgia Department of Transportation: Imperiled faunal assessments at selected road improvement projects \$38K.  
USFWS: Draft Revised Recovery Plan for the Okaloosa darter \$15K. Assist on Eglin Aquatic Fauna Monitoring Program \$25K.

### **SELECTED PUBLICATIONS**

- Collopy, M.W., and **H.L. Jelks**. 1987. Distribution of foraging wading birds in relation to the physical and biological characteristics of freshwater wetlands in southwest Florida. Report to Nongame Wildlife Program of the Florida Game and Fresh Water Fish Commission. 104 p.
- Maffei, M.D., and **H.L. Jelks**. 1991. The first successful nesting of wood storks on Arthur R. Marshall Loxahatchee National Wildlife Refuge. *Florida Field Naturalist* 19(1):12-14
- Jelks, H.L.**, F. Jordan, and W.M. Kitchens. 1992. Response of wading birds and aquatic macrofauna to hydrological conditions and vegetative structure of Loxahatchee National Wildlife Refuge. U.S. Fish and Wildlife Service Work Order 32 Final Report. 133 p.
- Jordan, F., **H.L. Jelks**, and W.M. Kitchens. 1994. Habitat use by the fishing spider, *Dolomedes triton* in a northern everglades wetland. *Wetlands* 14:239-242
- Burkhead, N.M., **H.L. Jelks**, F. Jordan, D.C. Weaver, and J.D. Williams. 1994. The comparative ecology of Okaloosa and brown darters in Boggy and Rocky Bayou stream systems, Choctawhatchee Bay, Florida. Final Report to Eglin Air Force Base. 90 p.
- Jordan, F., **H.L. Jelks**, and W.M. Kitchens. 1997. Habitat structure and plant community composition in a northern Everglades wetland landscape. *Wetlands* 17:275-283
- U.S. Fish and Wildlife Service. 1998. Okaloosa darter (*Etheostoma okaloosae*) Recovery Plan (Revised). Atlanta, Georgia. 42 p. **Jelks, H.L.**, and S. Alam authors.

- Burkhead, N.M. and **H.L. Jelks**. 2000. Essay 1. Diversity, levels of imperilment, and cryptic fishes in the southeastern United States. Pp. 30 - 32, in Abell, R.A., D.M. Olson, E. Dinerstein, P.T. Hurley, J.T. Diggs, W. Eichbaum, S. Walters, W. Wettengel, T. Allnutt, C.J. Loucks, and P. Hedao. Freshwater ecoregions of North America: a conservation assessment. Island Press, Covelo, CA.
- Burkhead, N.M. and **H.L. Jelks**. 2001. The effects of suspended sediment on the reproductive success of a crevice-spawning minnow, the Tricolor Shiner (*Cyprinella trichroistia*). Transactions of the American Fisheries Society 130:959-968.
- Smith-Vaniz, W.F., **H.L. Jelks**, and J.E. Randall. 2002. The gulf surgeonfish, *Acanthurus randalli*, a junior synonym of the ocean surgeon, *Acanthurus bahianus* (Teleostei: Acanthuridae). Gulf of Mexico Science 22 (2):15-20
- Nico, L.G., J.D. Williams, and **H.L. Jelks**. 2005. Black carp: Biological synopsis and risk assessment of an introduced fish. American Fisheries Society, Special Publication 32, Bethesda, Maryland. 337 pp.  
(see: <http://www.afsbooks.org/x51032xm.html>)
- Baber, M. J., K.J. Babbitt, F. Jordan, **H.L. Jelks**, and W.M. Kitchens. 2005. Relationships among habitat type, hydrology, predator composition, and distribution of larval anurans in the Florida Everglades. pages 154-160 in W.E, Meshaka, Jr. and K.J. Babbitt (eds) Amphibians and Reptiles: status and conservation in Florida. Krieger Publishing Company, Malabar, Florida.
- Dorazio, R.M., **H.L. Jelks**, and F. Jordan. 2005. Improving removal-based estimates of abundance by sampling a population of spatially distinct subpopulations. Biometrics 61:1093-1101.
- Nico, L.G. and **H.L. Jelks**. 2006. Non-Native Armored Catfishes in Florida: Description of Nest Burrows and Burrow Colonies with Preliminary Assessment of Shoreline Conditions. Report to U.S. Army Engineer Research and Development Center Waterways Experiment Station, Vicksburg, MS. 29 pp.
- Smith-Vaniz, W. F., **H. L. Jelks**, and L. A. Rocha. 2006. Relevance of cryptic fishes in biodiversity assessments: a case study at Buck Island Reef National Monument, St. Croix. Bulletin of Marine Science 79:17-48.
- Smith-Vaniz, W. F., and **H. L. Jelks**. 2006. Australian trevallies of the genus *Pseudocaranx* (Teleostei: Carangidae), with description of a new species from Western Australia. Memoirs of Museum Victoria 63(1): 97–106.
- Freeman, B., L.G. Nico, M. Osentoski, **H.L. Jelks**, and T.M. Collins. 2007. Molecular systematics of Serrasalminidae: Deciphering the identities of piranha species and

unraveling their evolutionary histories. *Zootaxa* 1484: 1-38. (Available online as: <http://www.mapress.com/zootaxa/2007f/zt01484p038.pdf>)

Jordan, F., **H.L. Jelks**, R.M. Dorazio, and S.A. Bortone. 2007. Comparison of visual survey and seining methods for sampling benthic stream fishes. *Environmental Biology of Fishes* 81:313-319.

**Jelks, H.L.**, S.J. Walsh, N.M. Burkhead, S. Contreras-Balderas, E. Díaz-Pardo, D.A. Hendrickson, J. Lyons, N.E. Mandrak, F. McCormick, J.S. Nelson, S.P. Platania, B.A. Porter, C.B. Renaud, J.J. Schmitter-Soto, E.B. Taylor, and M.L. Warren, Jr. 2008. Conservation status of imperiled North American freshwater and diadromous fishes. *Fisheries* 33(8):372-389. (Available online as: [http://www.fisheries.org/afs/docs/fisheries/fisheries\\_3308.pdf](http://www.fisheries.org/afs/docs/fisheries/fisheries_3308.pdf))

Champagne, C.E., J. D. Austin, **H.L. Jelks**, and F. Jordan. 2008. Effects of fin clipping on survival and position-holding behavior of Brown Darters, *Etheostoma edwini*. *Copeia* 2008 (4): 916-919.

Nico, L.G., **H.L. Jelks**, and T. Tuten. 2009. Non-Native suckermouth armored catfishes in Florida: Description of nest burrows and burrow colonies with assessment of shoreline conditions. *Aquatic Nuisance Species Research Bulletin* 9: 1-30.

## **TECHNICAL PRESENTATIONS**

Southeastern Aquatic Endangered Species Workshop, 28 February – 1 March 1995 (PRESENTED)

World Wildlife Fund State of the Rivers Conference, Chattanooga, Tennessee, 14-17 March 1999 (INVITED)

**Jelks, H.L.** The Okaloosa darter, *Etheostoma okaloosae*, an endangered fish on Eglin Air Force Base, Choctawhatchee Basin Surface Water Improvement Technical Advisory Committee, May 1996 (INVITED)

Burkhead, N.M., R.L. Mayden, and **H.L. Jelks**. Rates of description, cryptic species, and conservation in darters (Percidae: Etheostomini). 76th Annual Meeting of the American Society of Ichthyologists and Herpetologists, New Orleans, Louisiana, 13-19 June 1996 (PRESENTED)

Burkhead, N.M., S.J. Walsh, and **H.L. Jelks**. Life history correlates of imperilment, with particular reference to sedimentation, in the southern Appalachian fish fauna. Watershed Restoration and Protection Conference,

Asheville, North Carolina, March 1999 (INVITED)

**Jelks, H.L.**, F. Jordan, and N.M. Burkhead. The geochronology of the Okaloosa darter (*Etheostoma okaloosae*) and its putative competitor, the brown darter (*E. edwini*). 80th Annual Meeting of the American Society of Ichthyologists and Herpetologists, Pennsylvania State University, State College, Pennsylvania, 24-30 June 1999 (PRESENTED)

Burkhead, N.M, and **H.L. Jelks**. Effects of Suspended Sediment on the Reproductive Success of a Crevice-Spawning Minnow, the Tricolor Shiner. Ethology, Evolutionary and Conservation Ecology of Fishes, Athens, Georgia, 20-25 May 2000 (PRESENTED)

Burkhead, N.M., and **H.L. Jelks**. The Effects of Suspended Sediment on the Reproductive Success of the Tricolor Shiner: Implications for Conservation in *Cyprinella* (Cyprinidae). Southern Division American Fisheries Society 2000 Midyear Meeting, Savannah, Georgia, 3-6 February 2000 (PRESENTED)

Desired Future Condition Workshop for Focal Conservation Targets at Eglin Air Force Base, Niceville, Florida, 5-8 September, 2000 (INVITED)

**Jelks, H.L.**, F. Jordan, and J. Jimeian. Microhabitat Use and Conservation Status of the Endangered Okaloosa Darter. Southern Division American Fisheries Society 2001 Midyear Meeting, Jacksonville, Florida, 22-25 February 2001 (PRESENTED)

**Jelks, H.L.**, W.F. Smith-Vaniz, L.G. Nico and J.D. Williams. 2002. Cichlids of Florida: an overview of a widespread and abundant group of nonindigenous fishes. American Society of Ichthyologists and Herpetologists Annual Meeting, Kansas City, Missouri (3-8 July 2002) (PRESENTED)

Jordan, F., **H.L. Jelks** and S.A. Bortone. 2002. Comparison of visual survey and seining methods for sampling benthic stream fishes. American Society of Ichthyologists and Herpetologists Annual Meeting, Kansas City, Missouri (3-8 July 2002) (PRESENTED)

**Jelks, H.L.**, and L. G. Nico. Images of Venezuelan fishes: An ichthyophoto journey to the rivers Casiquiare-Negro and Orinoco Llanos. American Society of Ichthyologists and Herpetologists, 83rd annual meeting, Tropical Hotel Manaus, Manaus, Brazil (June 26-July 1, 2003). (PRESENTED)

Freeman, B., M. Osentoski, L. G. Nico, **H. Jelks**, and T. Collins. Species identification and systematics of *Serrasalmus manuelei* and *Serrasalmus gouldingi* (Characidae: Serrasalminae). American Society of Ichthyologists and Herpetologists, 83rd annual meeting, Tropical Hotel Manaus, Manaus, Brazil (June 26-July 1, 2003). (PRESENTED)

**Jelks, H.L.**, F. Jordan, and S.A. Bortone. Is seining appropriate for monitoring endangered benthic species? Southern Division American Fisheries Society Midyear Meeting, Kansas City, Kansas, 26-29 February 2004 (PRESENTED)

Nico, L.G., and **H.L. Jelks**. Life cycle, habitat requirements, and potential range of black carp. Asian Carp Working Group Meeting, Columbia, Missouri. Hosted by U.S. Fish and Wildlife Service. (May 24, 2004). (INVITED)

Nico, L.G., and **H.L. Jelks**. Life cycle, habitat requirements, and potential range of black carp. Canadian Asian Carp Risk Assessment Peer Review Workshop, Toronto, Ontario. Hosted by Fisheries and Oceans Canada. (September 7-8, 2004). (INVITED)

Walsh, S.J., and **H.L. Jelks**. Imperiled fishes of the southeastern United States: aquatic fauna in a rapidly changing landscape. USGS BRD Research Seminar, Reston, Virginia (15 September, 2004). (INVITED)

N.M. Burkhead, **H.L. Jelks**, S.J. Walsh, S. Contreras-Balderas, E. Díaz-Pardo, D. A. Hendrickson, J. Lyons, N. E. Mandrak, F. McCormick, J.S. Nelson, S.P. Platania, B.A. Porter, C.B. Renaud, J.J. Schmitter-Soto, E.B. Taylor, and M.L. Warren, Jr. Revision of the American Fisheries Society list of imperiled freshwater and diadromous fishes of North America. American Society of Ichthyologists and Herpetologists, 85th annual meeting, Tampa, Florida (July 6-12, 2005). (PRESENTED)

N.M. Burkhead, **H.L. Jelks**, S.J. Walsh, S. Contreras-Balderas, E. Díaz-Pardo, D. A. Hendrickson, J. Lyons, N. E. Mandrak, F. McCormick, J.S. Nelson, S.P. Platania, B.A. Porter, C.B. Renaud, J.J. Schmitter-Soto, E.B. Taylor, and M.L. Warren, Jr. Revision of the American Fisheries Society list of imperiled freshwater and diadromous fishes of North America. American Fisheries Society annual meeting, Anchorage, Alaska (September 11-15, 2005). (INVITED)

Holt, D., F. Jordan, C. Champagne, and **H.L. Jelks**. Marking studies of brown darters and endangered Okaloosa darters. American Society of Ichthyologists and Herpetologists, 85th annual meeting, Marriott Hotel Tampa, Florida (July 6-12, 2005). (PRESENTED)

**Jelks, H.L.**, F. Jordan and R.M. Dorazio. Removal sampling of an endangered darter: advantages for estimating populations. American Society of Ichthyologists and Herpetologists, 85th annual meeting, Marriott Hotel Tampa, Florida (July 6-12, 2005). (PRESENTED)

Nico, L.G., and **H.L. Jelks**. The Black Carp (*Mylopharyngodon piceus*) in North America: Probable establishment and potential ecological impacts of Black Carp (*Mylopharyngodon piceus*) in U.S. waters. American Society of Ichthyologists and Herpetologists, 85th annual meeting, Marriott Hotel Tampa, Florida (July 6-12, 2005). (PRESENTED)

Smith-Vaniz, W. F., **H. L. Jelks**, and L. A. Rocha. Relevance of cryptic fishes in biodiversity assessments: a case study at Buck Island Reef National Monument, St. Croix. American Society of Ichthyologists and Herpetologists, 86th annual meeting, Sheraton Hotel New Orleans, Louisiana (July 12-18, 2006). (PRESENTED)

Nico, L.G. and **H. L. Jelks**. Burrows of Loricariid Catfishes. Workshop on a Conceptual Model of Loricariid Establishment and Impacts in North America and Developing a Loricariid Risk Assessment Tool, held in Gainesville, Florida (May 30-31, 2006). (INVITED)

**Jelks, H.L.**, L.G. Nico, W.F. Smith-Vaniz, W.F. Loftus, and J.D. Williams. Cichlids in Florida: Nonindigenous Fishes Invading a Changing Landscape. 14th International Conference on Aquatic Invasive Species, held in Key Biscayne, Florida (May 14-19, 2006). (INVITED) [see [http://www.icaais.org/html/info\\_intro.html](http://www.icaais.org/html/info_intro.html)]

Nico, L.G. and **H. L. Jelks**. The Black Carp (*Mylopharyngodon piceus*) in North America: Probable Establishment and Potential Ecological Impacts. 14th International Conference on Aquatic Invasive Species, held in Key Biscayne, Florida (May 14-19, 2006). (INVITED) [see [http://www.icaais.org/html/info\\_intro.html](http://www.icaais.org/html/info_intro.html)]

Nico, L.G. and **H. L. Jelks**. "The Black Carp in North America: An Update."

Symposium entitled The Invasive Asian Carps in North America: A Forum to Understand the Biology and Manage the Problem (August 22-23, 2006, Peoria, IL). (INVITED)

Burkhead, N.M., **H.L. Jelks**, and S.J. Walsh. Status of the Imperiled Freshwater Fishes of North America: Report of the American Fisheries Society's Endangered Species Committee. American Society of Ichthyologists and Herpetologists, 87th annual meeting, St. Louis, Missouri, 11-16 July 2007 (PRESENTED)

Nico, L.G. and **H. L. Jelks**. "Nest Burrows and Burrow Colonies of Introduced Loricariid Catfishes (Genus *Pterygoplichthys*) in Florida." Joint Meeting of Ichthyologists and Herpetologists, including 87th annual meeting of the American Society of Ichthyologists and Herpetologists, St. Louis, Missouri (July 11-16, 2007). (PRESENTED)

Nico, L.G. and **H.L. Jelks**. Non-Native Armored Catfishes in Florida: Description of Nest Burrows and Burrow Colonies with Preliminary Assessment of Shoreline Impacts. 15th International Conference on Aquatic Invasive Species, Nijmegen, The Netherlands, 23-27 September 2007 (INVITED)  
[[http://www.icaais.org/html/info\\_intro.html](http://www.icaais.org/html/info_intro.html)]

Austin, J.D., A. Johnson, **H.L. Jelks**, B. Tate, and F. Jordan. Conservation genetics of the Okaloosa darter: integrating pattern and process in endangered species management. Florida Genetics Symposium, Gainesville, Florida, 7-8 November 2007 (PRESENTED)

Austin, J.D., A. Johnson, **H.L. Jelks**, B. Tate, and F. Jordan. Conservation genetics of the Okaloosa darter: integrating pattern and process in endangered species management. Southeastern Fishes Council, Chattanooga, Tennessee, 8-9 November 2007 (PRESENTED)

Burkhead, N.M., **H.L. Jelks**, and S.J. Walsh. Status of the Imperiled Freshwater Fishes of North America: Report of the American Fisheries Society's Endangered Species Committee. Southeastern Fishes Council, Chattanooga, Tennessee, 8-9 November 2007 (PRESENTED)

Austin, J.D., **H.L. Jelks**, A. Johnson, B. Tate, and F. Jordan. Genetic estimates of population structure of the endangered Okaloosa darter. American Society of Ichthyologists and Herpetologists, 88th annual meeting, Montreal, Quebec, 23-28

July 2008 (PRESENTED)

**Jelks, H.L.** Flow and biotic response: panel discussion. Georgia Water Conference 2009, Athens, Georgia, 27-29 April 2009 (INVITED)

Burkhead, N.M., **H.L. Jelks**, and S.J. Walsh. Silent Streams: current extinction rates of North American freshwater fishes. American Fisheries Society, 139th Annual Meeting, Nashville, Tennessee, 30 August – 3 September 2009 (INVITED)

**Jelks, H.L.**, S.J. Walsh, and N.M. Burkhead. North American Inland Fish Distributional Database: Needs, Obstacles, and a Strategy. American Fisheries Society, 139th Annual Meeting, Nashville, Tennessee, 30 August – 3 September 2009 (INVITED)

Walsh, S.J., **H.L. Jelks**, and N.M. Burkhead. Imperiled North American inland fishes: diversity, distribution, threats. American Fisheries Society, 139th Annual Meeting, Nashville, Tennessee, 30 August – 3 September 2009 (INVITED)