

**Serge THOMAS, Ph.D.**  
**Aquatic Ecologist**  
**Assistant Professor**

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**QUALIFICATIONS:** Shallow hydrosystems (wetland, marine, freshwater), algal ecology and physiology (photosynthesis), metabolism and interactions among aquatic primary producers (Alternative Stable States theory), eutrophication processes in shallow hydrosystems, water quality monitoring, bioindicators (algae), ecotoxicology (allelopathy, xenobiotics...), N<sub>2</sub> fixation, hydrosystem restoration & management, water treatment involving phytoremediation techniques, Pulse Amplitude Modulation (PAM), algal culturing, flow cytometry/high speed particle sorting.

**PERSONAL DATA**

Born September 15<sup>th</sup> 1971, Belley (Ain), France  
US permanent resident

**EDUCATION**

**Ph.D. 2000** Department of Biological Oceanology and of Marine Environment, Pierre and Marie Curie University, Paris, France.

*Dissertation:* The different primary producers in a small African tropical reservoir: time changes and interactions (L. Brobo, Ivory Coast).

*Advisor:* Dr. J Lemoalle, IRD-MSE BP 64501, 34394 Montpellier, France.

**DEA\* 1995** Department of Biological Oceanology and of Marine Environment, Pierre & Marie Curie University.

*Thesis:* Particulate organic matter fluxes in the Mediterranean Sea and in the Antarctic.

*Advisor:* Dr. JC Miquel, IAEA, Marine Environment Laboratory, BP 800, MC-98012, Monaco.

\* Diplôme d'Etudes Approfondies: French diploma required for a Ph.D. preparation

**M.S. 1994** Department of Organisms and Populations Biology, Pierre and Marie Curie University

*Thesis:* Biological data on the marine macroalga *Himantalia elongata*.

**B.S. 1993** Department of Organisms and Populations Biology, Pierre and Marie Curie University.

## PROFESSIONAL EXPERIENCE

**2007-now Assistant Professor.** Department of Environmental Sciences, Florida Gulf Coast University.

**2004-07 Assistant Scientist.** Southeast Environmental Research Center, Biology Department, Florida International University, Miami, FL, USA.

*Research theme “Florida Bay eutrophication and algal physiology” & “Nitrogen fixation in L. Jesup & Monroe”:* Phytoplankton response to nutrient enrichment. PHYTO-PAM calibration (www.walz.com). Marine phytoplankton isolation and culturing. Flow cytometry, high speed particle sorting.

*Contact:* Dr. J.N. Boyer, SERC/FIU OE-148, Miami FL, 33199. Phone: 305 348 4076.

**2001-03 Research Associate** SERC/FIU, Miami, FL, USA.

*Research theme “Periphyton in the Everglades/coastal environment”:* Development of periphyton-based phosphorus removal technology, periphyton as a bioindicator of pollution, interactions micro/macrophytes, wetland rehabilitation and protection, habitat analysis for endangered species. Cyanophyte allelopathy.

*Contact:* Dr. E.E. Gaiser, SERC/FIU OE-148, Miami FL, 33199. Phone: 305 348 6145.

**1995-00 Military service and Ph.D. student.** “Small reservoirs” program, Institut de Recherche pour le Développement (IRD), Bouaké, Ivory Coast (field work) and Montpellier, France (writing).

*Research theme (northern small reservoirs of Ivory Coast).*

## PUBLICATIONS

### Refereed publications in international journals or books

#### *Published or in press*

- 1- Gantar M., Berry J.P., Thomas S., Wong M., Rein K., Gawley R.E. (2008) Allelopathic activity among cyanobacteria and microalgae isolated from Florida freshwater habitats. *FEMS Microbiology Ecology*, **64**, 55-64.
- 2- Arfi R., Bouvy M., Cecchi P., Pagano M., Saint-Jean L., Thomas S. (2007) Facteurs limitant la productivité phytoplanctonique dans 49 petits barrages. In *L'eau en partage – Les petits barrages de Côte d'Ivoire*. P. Cecchi, Editor. Latitudes 23, IRD editions, Paris, France. 97-109.
- 3- Thomas S., Cecchi P., Corbin D., Assamoi J.-P. (2007) Distribution et évolution des biomasses végétales dans le petit barrage de Brobo (centre de la Côte d'Ivoire). In *L'eau en partage – Les petits barrages de Côte d'Ivoire*. P. Cecchi, Editor. Latitudes 23, IRD editions, Paris, France. 111-123.
- 4- Bouvy M., Arfi R., Cecchi P., Corbin D., Pagano M., Saint-Jean L., Thomas S. (2007) Métabolisme bactérien et phytoplanctonique de trios barrages de Côte d'Ivoire. In *L'eau en partage – Les petits barrages de Côte d'Ivoire*. P. Cecchi, Editor. Latitudes 23, IRD editions, Paris, France. 111-123.
- 5- Aka, M., Pagano M., Saint-Jean L., Arfi R., Bouvy M., Cecchi P., Corbin D., Thomas S. (2007) Variation spatiales des communautés et de biomasse du zooplankton dans 49 petits barrages. In *L'eau en partage – Les petits barrages de Côte d'Ivoire*. P. Cecchi, Editor. Latitudes 23, IRD editions, Paris, France. 111-123.

- 6- Hall R.O., Thomas S., Gaiser E.E. (2007) Measuring freshwater primary production and respiration. In *Principles and Standards for Measuring Primary Production*. T.J. Fahey and A.K. Knapp, editors. Oxford University Press, New York, USA. 175–203.
- 7- Thomas S., Gaiser E.E., Tobias F.A. (2006) Effects of shading on calcareous benthic periphyton in a short–hydroperiod oligotrophic alkaline wetland (Everglades, FL, U.S.A). *Hydrobiologia*, **569**, 209–221.
- 8- Thomas S., Gaiser E.E., Gantar M., Scinto L.J. (2006) Quantifying the responses of calcareous periphyton crusts to rehydration: a microcosm study (Florida Everglades). *Aquatic Botany*, **84**, 317-323.
- 9- Thomas S., Gaiser E.E., Gantar M., Pinowska A., Scinto L.J., Jones R.D. (2002) Growth of calcareous epilithic mats in the margin of the natural and polluted hydrosystems: phosphorus removal implications in the C-111 basin, Florida Everglades, USA. *Lake and Reservoir Management*, **18**, 324–330.
- 10- Arfi R., Bouvy M., Cecchi P., Pagano M., Saint-Jean L., Thomas S. (2001) Factors limiting phytoplankton productivity in 49 shallow reservoirs of North Côte d'Ivoire (West Africa). *Aquatic Ecosystem Health and Management*, **4**, 123-138.
- 11- Havens K.E., Hauxwell J., Tyler A.C., Thomas S., McGlathery K.J., Cebrian J., Valiela I., Steinman A.D., Hwang S.J. (2001) Complex interactions between autotrophs in shallow marine and freshwater ecosystems: implications for community responses to nutrient stress. *Environmental Pollution*, **113**, 95-107.
- 12- Aka M., Pagano M., Saint-Jean L., Arfi R., Bouvy M., Cecchi P., Corbin D., Thomas S. (2000) Zooplankton variability in 49 shallow tropical reservoirs of Ivory Coast (West Africa). *International Review of Hydrobiology*, **85**, 491–504.
- 13- Thomas S., Cecchi P., Corbin D., Lemoalle J. (2000) The different primary producers in a small African tropical reservoir during a drought: temporal changes and interactions. *Freshwater Biology*, **45**, 43–56.
- 14- Bouvy M., Arfi R., Cecchi P., Corbin D., Pagano M., Saint Jean L., Thomas S. (1998) Trophic coupling between bacterial and phytoplanktonic compartments in shallow tropical reservoirs (Ivory Coast, West Africa). *Aquatic Microbial Ecology*, **15**, 25-37.

#### ***In preparation***

- 1- Thomas S. & Gaiser E.E. Effects of fire on periphyton function in Everglades wetlands. *Wetlands*
- 2- Thomas S. Effects of nutrients on periphyton production and composition. (CRC Press)
- 3- Thomas S. & Boyer J. Unraveling phytoplanktonic dynamics in Florida bay (2002-2007).

#### **Dissertations**

- 1- Thomas S. (2000) The different primary producers in a small African tropical reservoir: dynamics and interactions (Brobo, Côte-d'Ivoire). Ph.D. thesis, Paris 6 University, Paris. (*In French*)
- 2- Thomas S. (1995) Particulate carbon flux in the Mediterranean Sea and in the Antarctic Ocean. DEA thesis. Paris 6 University, Paris. (*In French*)
- 3- Thomas S. (1994) Biological data on *Himantalia elongata*. III. Study of vegetative populations between July 1992 and July 1993. Master thesis. Paris 6 University, Paris. (*In French*)

## SCIENTIFIC MEETINGS (list shortened to the presentations as first author)

### Oral presentations

- 1- Thomas, S., P. Corcoran, E. M. Everham III. (2009). Sustainable Solutions to Environmental Issues: Cross-cultural sustainability training through interdisciplinary studies. Humanities and Sustainability conference, FGCU, Fort Myers, USA.
- 2- Thomas, S., L.J. Scinto, W. Anderson, M. Ikenaga, C. Sinigalliano, S. Brandt-Williams. (2008). Assessment of N<sub>2</sub>-Fixation in Lakes Jesup and Monroe, Florida. FLMS meeting, Sandestin, FL, USA
- 3- Thomas S., Scinto L.J. (2007) Monitoring, Assessment, Education and Management of Aquatic Resources in Miami Lakes Florida. City Hall, Town of Miami Lakes, FL, USA.
- 4- Thomas S., Gaiser E.E. (2006) How do flooding, fire and shade influence periphyton in the Everglades marl prairie? Greater Everglades Ecosystem Restoration (GEER), Lake Buena Vista, FL, USA.
- 5- Thomas S., Gaiser E.E., Gantar M., Scinto L.J., Jones R.D. (2003) Dry benthic periphyton recovery and phosphorus buffering upon wetting in the Everglades: a microcosm survey. ESA (Ecological Society of America), Savannah, GA, USA
- 6- Thomas S., Gaiser E.E., Gantar M., Scinto L.J., Jones R.D. (2003) Evaluation of a periphyton-based stormwater treatment area (PSTA) in the margin of the C-111 canal and the Everglades national park (ENP): Results of a two-year investigation (2001-2002). Greater Everglades and Florida Bay ecosystems restoration, Palm Harbor, FL, USA
- 7- Thomas S., Gaiser E.E., Gantar M., Scinto L.J., Jones R.D. (2002) Growth of calcareous epilithic mats in margin of the natural and polluted hydrosystems: phosphorus removal implications (C-111 basin, Everglades, Florida). ASLO (the American Society of Limnology and Oceanography), Victoria, BC, Canada.
- 8- Thomas S. (2002) The advantage of using an incubation chamber over light and dark BOD bottles in measuring periphyton productivity. Long Term Ecological Research meeting (LTER), FIU, Miami, FL, USA
- 9- Thomas S., Cecchi P., Corbin D., Lemoalle J. (2000) Impact of water-level fluctuations on the periphyton colonization of vertical artificial substrata in a tropical lake (Brobo, West Africa) ASLO, Copenhagen, Denmark.
- 10- Lemoalle J. & Thomas S. (2000) The effects of macrophytes on the water quality during a drought in a shallow tropical lake (L. Chad). ASLO, Copenhagen, Denmark.
- 11- Thomas S., Cecchi P., Corbin D., Lemoalle J. (1999) The minor importance of periphytic communities on total primary production in a small African tropical reservoir: an ecosystem study (Brobo, Ivory Coast). ASLO, Santa
- 12- Thomas S., Cecchi P., Corbin D., Lemoalle J. (1999) Periphyton Dynamics on artificial and natural substratum of a small tropical reservoir (Brobo, Côte d'Ivoire). IV Congrès International Limnologie – Océanographie, Bordeaux, France.

### Poster presentations

- 1- Thomas S., Gaiser E. (2004) Benthic periphyton recovery and phosphorus dynamics upon artificial flooding in a newly burned freshwater marl prairie (Everglades National Park, FL, USA). NCER (National Conference on Ecosystem Restoration), Orlando, FL, USA
- 2- Thomas S., Cecchi P., Corbin D., Lemoalle J. (1999) The different primary producers in a small African tropical reservoir during a drought period (Brobo, Ivory Coast, West Africa). SEFS (Symposium for European Freshwater Sciences), Antwerpen, Belgium.

### EXPERIENCE IN SUCCESSFUL RESEARCH PROPOSAL WRITING (GRANTS)

- 1- Thomas, S. (PI). Lake Apopka Sediment Analyses. St. John's River Water management District, \$36,980. Contract #25378
- 2- Thomas, S. (PI) & D. Fugate (co-PI). Assessment of the cycling and compartmentalization of nitrogen and phosphorus in saturated soils, sediments and the water column in Lake Jesup, Florida. \$25,501. #subcontract with FIU 205002524-01
- 3- L.J. Scinto (PI) & S. Thomas (co-PI). Monitoring, Assessment, Education and Management of Aquatic Resources in Miami Lakes Florida. The City of Miami Lakes, \$50,000. 01/2007-11/2007
- 4- L.J. Scinto (PI), W. Anderson, M. Ikenaga, C. Sinigalliano & S. Thomas (co-PI). Assessment of N<sub>2</sub>-fixation in Lakes Jesup and Monroe, Florida. St. John's River Water management District, \$249,953. Contract #SK42812, 10/2006–01/2008
- 5- E. Gaiser (PI) & S. Thomas (co-PI) – Modeling periphyton linkages to hydrology, salinity and phosphorus regimes within the C-111 and Taylor Slough basins. Everglades National Park, National Park Services, DOI. *A large portion of this proposal is granted:* E. Gaiser (PI), R. Price, L.J. Scinto & J. Trexler – Phosphorus retention and sub-surface movement through the S-332 detention basins on the eastern boundary of Everglades National Park. DOI, National Park Service. \$418,320. 07/2005-12/2008.
- 6- S. Thomas (PI) – Primary productivity of ranching reservoirs in the Ivory Coast - Ph.D. Research Grant, French Ministère de la Recherche et de la Technologie. 1997-2000, \$100,000.

### TEACHING EXPERIENCE

- 1- FGCU at the rank of assistant professor (General ecology, Limnology, Marine Systems, African environments, Green Technologies to clean water)
- 2- Job offer at Miami Dade College at the rank of Assistant Professor in Marine Biology/Oceanography (tenure track line, teaching position). Dec. 2006. Contact: Biology Chair, R. Kaufman, rkaufma1@mdc.edu
- 3- Spring 2005, FIU: Graduate and undergraduate level (5000-level): Ichthyology (2.5 hrs a week) [www.serc.fiu.edu/periphyton/serge/ichthyology.htm](http://www.serc.fiu.edu/periphyton/serge/ichthyology.htm); (evaluation: 71% excellent, 29% very good). Contact: Joel Trexler, trexlerj@fiu.edu
- 4- October 2000, CIRAD, France: Graduate level: Alternative stable states in shallow hydrosystems.

## **PROFESSIONAL RESEARCH SERVICE**

### **Manuscript Reviewer**

Hydrobiologia  
Archiv für Hydrobiologie  
Biogeochemistry  
Ecological Engineering  
Journal of the North American Benthological Society

### **External Proposal Reviewer**

NSF, CAREER, NIWR and NERC ([www.nerc.ac.uk](http://www.nerc.ac.uk)) proposals

## **LANGUAGES, INFORMATICS, CERTIFICATIONS**

### **Languages**

French: Mother tongue, English: Fluent (written and oral), German: High school level

### **Informatics**

#### ***Operating systems:***

- MS-DOS, - MS Windows 95 through Vista, Linux (Mandriva, Ubuntu, backtrack 2...), UNIX, Mac OS

#### ***Software:***

- Microsoft Office XP professional  
- Statistics: ADE 4, PRIMER, SPSS, SAS, VSN/GenStat  
- Modeling: Vensim (= Stella)  
- Mapping: Unimap (Unix OS), Surfer 7.0  
- Imaging: Corel Draw, Adobe Illustrator, Image J

***PC maintenance:*** software et hardware

***Programming*** (basic knowledge):

- Basic  
- Visual basic  
- Pascal  
- Fortran

### **Certifications**

- Radiation safety  
- Laser safety class 3B and 4 (Member of the FIU laser committee)  
- Fire, laboratory and biohazard safety  
- B-3 basic aviation

## **EXTRACURRICULAR INFORMATIONS**

### **Flyfishing** ([www.kayakflatfishing.com](http://www.kayakflatfishing.com))

- Consultant and field tester for various fly-fishing companies  
- Flyfishing flies design  
- Outdoor writer and fly-fishing, kayaking seminar presenter  
- Kayak flyfishing (field tester for Legacy Paddlesports, Greensboro, NC).

### **International exposure**

- As a resident: since 2001 in Florida, USA; 15 years in The Ivory Coast (1971-1981, 1995–1999), 11 years in France and 3 years in Madagascar (1987-1990)  
- As a visitor: Gabon, Mali, Burkina Faso, Seychelles, Comorian Islands, La reunion, Maldives, India, Sri Lanka, Pakistan...

September, 23<sup>th</sup> 2009