

Lee E. Harris, Ph.D., P.E.

***Associate Professor & Consulting Engineer
Coastal, Ocean & Civil Engineering and Physical Oceanography***

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EDUCATION:

Ph.D. in Ocean Engineering – 1996, Florida Atlantic University, Boca Raton, FL. 4.0/4.0 GPA, Newell Doctoral Fellowship, Phi Kappa Phi Honor Society.

M.E. in Coastal and Oceanographic Engineering – 1975, University of Florida, Gainesville, FL, Minor: Civil Engineering, 3.9/4.0 GPA, Graduate Research Assistantship.

B.S. in Ocean Engineering – 1974, Florida Atlantic University, Boca Raton, FL. 3.9/4.0 GPA, Graduated 1st in Ocean Engineering Class, 1972-73 S.E. Wimberley Scholar, Ocean Engineering Scholarships, 1971 Grumman Aerospace Engineering Scholarship.

CERTIFICATIONS, AWARDS, & ORGANIZATIONS:

Registered Professional Engineer - Civil and Coastal Engineering: States of Florida (No. 26252), New York (No. 06315T-1), and South Carolina (No. 16981).

Memberships: American Society of Civil Engineers (ASCE); Association of Coastal Engineers (ACE); American and Florida Shore and Beach Preservation Association (ASBPA & FSBPA); Coastal Education & Research Foundation (CERF); Florida Oceanographic Society (FOS; past president); Surfrider.

1994 Florida Tech. College of Engineering Service Award.

1984/1985 Who's Who in Frontier Science and Technology.

PADI and NAUI Certified SCUBA Diver: Advanced, Rescue, Research, and Nitrox (EANX, Enriched Air).

U.S. Army Corps of Engineers Certified SCUBA diver. Dive team leader for R.I.B. project.

EXPERIENCE:

9/80-Present **Associate Professor of Ocean Engineering & Oceanography**, Florida Institute of Technology. Research, classes, and consulting in coastal & ocean structures, artificial reefs, port & harbor design, hydrographic surveying, ocean engineering design, and physical oceanography. Member, Divin g Control Board & advisor for human-powered submarines. Dept. Head (83-87), Director of the Vero Beach Marine Lab (97-01).

8/77-9/80 **Consulting Engineer and Surveyor**, Harris Engineering & Surveying, Stuart, FL. Managed and operated a civil, coastal and ocean engineering firm performing studies, designs & permits; hydrographic & land surveys, and data collection.

11/75-7/77 **Coastal Engineer**, U.S. Army Corps of Engineers, Project Planning Branch,
Jacksonville District, FL. Beach erosion control & inlet studies, engineering
plans & designs, feasibility reports, permit reviews, and project monitoring.

PUBLICATIONS:

- Harris, L.E. and Sample, J.W., 2006. The evolution of multi-celled sand-filled geosynthetic systems for coastal protection and surfing enhancement. *Journal of Coastal Research*, Special Issue (in press).
- Harris, L.E., Sample, J.W., and Mead, S., 2005. Design evolution and performance of coastal structures using geosynthetic materials for coastal protection and surfing enhancement. *Beach Preservation Technology 2005*, FSBPA.
- Harris, Turk, and Mead, 2004. Combined recreational amenities and coastal erosion protection using submerged breakwaters for shoreline stabilization. *Beach Preservation Technology 2004*, FSBPA.
- Harris, 2003. Submerged reef structures for beach erosion control. *Coastal Structures '03*. ASCE.
- Harris, 2003. Sand-filled container systems for coastal erosion control. *3rd International Surfing Reef Symposium*, ASR, Ltd., Raglan, New Zealand.
- Harris, 2003. Artificial reef structures for shoreline stabilization and habitat enhancement. *3rd International Surfing Reef Symposium*, ASR, Ltd., Raglan, New Zealand.
- Harris, 2003. Correlation between the physical structure of the nearshore reefs and the historical beach erosion/accretion in Indian River County, FL. *Coastal Sediments '03*, USGS, St. Petersburg, FL.
- Damon, Samuelson, and Harris, 2003. Wave, weather, and tide monitoring system at Sebastian Inlet, Florida. *Florida Academy of Sciences*, Orlando, FL.
- Samuelson, Harris, and Damon, 2003. Variation in the nearshore reefs and beach erosion/accretion in Indian River County, Florida. *Florida Academy of Sciences*, Orlando, FL.
- Harris, 2002. Submerged artificial reef structures for environmental enhancement and coastal erosion control. *California and World Ocean '02*, Coastal Zone Foundation, Middletown, CA.
- Harris, 2002. Submerged reef structures for habitat enhancement and shoreline erosion abatement. *U.S. Army Corps of Engineers Coastal & Hydraulic Engineering Technical Note (CHETN)*, Vicksburg, MS.
- Harris and Woodring, 2001. Artificial reefs for submerged and subaerial habitat protection, mitigation and restoration. *54th Institute of the Gulf and Caribbean Fisheries Institute (GCFI)*, Turks & Caicos, Islands, pp. 386-395.
- Harris and Zadikoff, 1999. Concrete tetrahedrons and sand-filled geotextile containers: shoreline stabilization and other uses in developing countries. *Fifth International Conference on Coastal and Port Engineering in Developing Countries (COPEDEC V)*, CSIR, Cape Town, South Africa, pp. 2245-2253.
- Zadikoff, Hachem, Skornick, and Harris, 1999. A project for sustainable development of inland waterway transport along the lower Niger River from Warri to Baro, Nigeria. *Fifth International Conference on Coastal and Port Engineering in Developing Countries (COPEDEC V)*, edited by Gary P. Mocke, Cape Town, South Africa, pp. 2133-2145.

Zadikoff, Covello, Harris, and Skornick, 1998. Concrete tetrahedrons and sand-filled geotextile containers: new technologies for shoreline stabilization. *International Coastal Symposium (ICS98), Journal of Coastal Research*, edited by Finkl and Per Bruun, Royal Palm Beach, FL, Special Issue No. 26, pp. 261-268.

PUBLICATIONS (continued):

Harris, 1998. Engineering design aspects of artificial reefs. *Florida Artificial Reef Summit '98*, edited by William Horn, Florida Department of Environmental Protection, Tallahassee, FL, pp. 104-110.

Smith, J.T., Harris, L.E., and Tabar, J., 1998. Preliminary evaluation of the Vero Beach, FL prefabricated submerged breakwater. *Beach Preservation Technology '98*, FSBPA, Tallahassee, FL.

Harris, 1998. Hydrographic surveying and water level variations in the vicinity of Sebastian Inlet. *4th International Symposium on Marine Positioning (INSMAP)*, Melbourne, FL.

Harris, Childress, Winder, and Perry, 1998. Real-time wave data collection system at Sebastian Inlet, Florida. *5th International Workshop on Wave Hindcasting and Forecasting*, Environment Canada, Downsview, Ontario, pp. 146-153.

Dally, W.R., Grosskopf, W.G., and Harris, L.E., 1998. Wave climate studies for Sebastian Inlet. *5th International Workshop on Wave Hindcasting and Forecasting*, Environment Canada, Downsview, Ontario, pp. 56-70.

Trainer, Thompson, Harris, and Mesa, 1997. Topic IV: Geotextile Characteristics, in *Proceedings of the National Workshop on Geotextile Tube Applications*, by Jack Davis and Mary C. Landin, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS, Wetlands Research Program Technical Report WRP-RE-17, pp. 17-25.

Harris, L.E., Mostkoff, B.J., and Zadikoff, G., 1996. Artificial reefs: from waste to resources. *Oceans '96*, Marine Technology Society, Washington, D.C.

Harris, L.E., 1995. Engineering design of artificial reefs. *Oceans '95*, Marine Technology Society, Washington, D.C., Vol. 2, pp. 1139-1148.

Harris, L.E., 1995. The ocean engineering design and marine fields project courses at Florida Tech. *Oceans '95*, Marine Technology Society, Washington, D.C.

Harris, L.E., 1994. Dredged material used in sand-filled containers for scour and erosion control. *Dredging '94*, American Society of Civil Engineers, N.Y., pp. 537-546.

Windsor, J.G. and Harris, L.E., 1990. SEEAS - Science and engineering education at sea. *MTS '90*, Marine Technology Society, Washington, D.C.

Harris, L.E., 1989. Developments in sand-filled container systems for erosion control in Florida. *Coastal Zone '89*, American Society of Civil Engineers, NY, pp. 2225-2233.

- Harris, L.E., 1988. Design of sand-filled container structures. *Beach Technology '88*, Florida Shore and Beach Preservation Association, Tallahassee, Florida, pp. 357-364.
- Harris, L.E., 1987. Evaluation of sand-filled containers for beach erosion control - an update of the technology. *Coastal Zone '87*, ASCE, NY, pp. 2479-2487.
- Harris, L.E., 1983. Physical and hydraulic analysis of the St. Lucie Inlet Improvement Project prior to and during construction. *Florida Scientist*, 46(3/4):233-238.

PROJECTS AND STUDIES Chronological Order: most recent to 1975

Date	Project	Client
2005-	Site investigations for beach restoration and artificial reef breakwater application for St. Lucia Golf & Country Club	CAP Estate Corp. Urban-Nicklaus Holdings New York, NYL
2005-	Current measurements and coastal processes evaluation for Conch Farm, marina, and upland development on Grand Turk, TCI	Pardee Ltd. Providenciales, TCI
2005-	Current measurements, jet probes and coastal beach surveys and processes evaluation for marina development on North Caicos, TCI	Pardee Ltd. Providenciales, TCI
2005-	Consultant for the St. Lucie County Artificial Reef Program – artificial reef installations & monitoring	St. Lucie County Engr. Dept. Ft. Perce, FL
2005-	Post-tsunami reef restoration in Thailand, fabrication & deployment of Reef Ball units	Reef Ball Foundation Athens, GA
2005-	Design & installation of additional artificial reef units for breakwater for Marriott, Grand Cayman	J.E. Robert Companies McLean, VA
2005-	Mount Manganui, NZ submerged breakwater deployment design consultant	ASR, Ltd. Raglan, New Zealand
2004-	Consultant for Brevard and Indian River County government and private property owners post-hurricane beach and dune restoration alternatives	Brevard County and Various Private Property Owners
2004-	Foundation Design for the Artificial Reef Site <i>Lost City of Atlantis</i> , offshore Miami, FL	G.M. Selby and Associates, Inc. Miami, FL
2004-	Beach erosion study and breakwater design for Oranjestad, St. Eustatius, Netherlands Antilles	STENAPA and the Island Government of St. Eustatius
2003-2005	Reef Ball™ artificial reef submerged breakwater design for Maiden Island, Antigua	Stanford Development, Ltd. Antigua
2003-	Reef Ball™ artificial reef submerged breakwater design for Miami Beach, FL	USACE Sec.227 and URS Corp Boca Raton, FL
2003-	Geosynthetic sand-filled container submerged breakwater designs for artificial surfing reefs for Miami Beach, FL and Ventura, CA	USACE Sec.227 and ASR, Ltd. Raglan, New Zealand
2003-	Reef Ball™ artificial reef submerged breakwater design for Hilton Coral Canoa, DR	EMPACA, Santo Domingo, Dominican Republic
2003-	Reef Ball artificial reef submerged breakwater	Nature Foundation SXM

Date	Project	Client
	design for Maho Beach, St. Maarten, N.A.	Philipsburg, Sint Maarten
2000-	Consultant for the Martin County Artificial Reef Program – artificial reef designs and monitoring	Martin County Engr. Dept. Stuart FL
1999-	Wave gage installation, operation and maintenance for Martin County, FL	Martin County Engr. Dept. Stuart FL
1996-	Sebastian Inlet Wave/Weather/Tide Station design, installation, operation, & data reporting	Sebastian Inlet District Indianalantic, FL
2003	Technical review of “Part VI Chapter 7” of the <i>Coastal Engineering Manual</i>	USACE Coastal Hydraulics Lab Vicksburg, MS
2002-2003	Evaluation of high frequency post-storm beach profile changes south of Sebastian Inlet, FL	Sebastian Inlet District Indianalantic, FL
2002-2003	Reef Ball™ artificial reef submerged breakwater design for Marriott Resort on Grand Cayman, C.I.	Columbia-Sussex Corporation Kentucky
2002-2003	Monitoring of XM2002 Rapidly Installed Breakwater (RIB) offshore Cape Canaveral, FL	USACE Coastal Hydraulics Lab Vicksburg, MS
2002	Geosynthetic ProtecTube™ sand-filled container system for Sans Souci Condo. Pensacola Beach, FL	Sans Souci Condominium Pensacola Beach, FL
2002	Beach survey & environmental assessment for Oasis development, Grace Bay Providenciales, TCI	Hall Tech. Ltd. Turks and Caicos Islands (TCI)
2001-2003	Consulting for Reef Ball artificial reef submerged breakwaters for Mayan Riviera, Q.R. Mexico	Marenter S.A. de C.V., Cancun Q.R. Mexico
2001-2003	Reef Transect Surveys in vicinity of Sebastian Inlet and Indian River County, FL	Sebastian Inlet District Indianalantic, FL
2001-2002	CHETN - Submerged reef structures for habitat enhancement and shoreline erosion abatement	USACE Coastal Hydraulics Lab Vicksburg, MS
2001-2002	Monitoring of XM2001 Rapidly Installed Breakwater (RIB) offshore Fort Pierce, FL	USACE Coastal Hydraulics Lab Vicksburg, MS
2001-2002	Current measurements offshore South Creek on Grand Turk, Turks and Caicos Islands	Cockburn Sound Ltd. Grand Turk, TCI
2001	Beach survey & environmental assessment for Somerset development, Providenciales, TCI	Pardee Ltd. Providenciales, TCI
2001	Current measurements and water depths for Walkin Marine facility expansion, Providenciales, TCI	Pardee Ltd. Providenciales, TCI
2001	Current measurements and reef surveys for development on West Caicos, TCI	Pardee Ltd. Providenciales, TCI

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2001	Wave force analysis for Sebastian Inlet north jetty pier structure and jet probes to rock	Bridge Design Associates, Inc West Palm Beach, FL
2000	Shoreline Stabilization for Indian Riverside Park Martin County, FL	Martin County Engr. Dept. Stuart FL
2000	Reef Ball Artificial Reef Installations assistance offshore Duval and St. Johns County, FL	Reef Ball Development Group Sarasota, FL
2000	Development of Shallow Water Alternatives for Rapidly Installed Breakwaters	Surfbreak Engineering Inc. Melbourne Beach, FL
2000	Evaluation of breakwater design alternatives for the East Coast of Australia	Sinclair Knight Merz, Brisbane, Australia
2000	Haulover Marina Expansion Project, Miami, FL	G.M. Selby & Assoc. Miami, FL
1999-2000	Current measurements and coastal processes evaluation for dock at Beaches Resort, Providenciales, TCI	Pardee Ltd. Providenciales, TCI
1999	Current measurements for Leeward Channel dock designs, Providenciales, TCI	Pardee Ltd. Providenciales, TCI
1999	Current measurements and artificial reef designs, TCI Visitors Center, Providenciales, TCI	Pardee Ltd. Providenciales, TCI
1999	Monitoring of XM99 Rapidly Installed Breakwater (RIB) offshore Cape Canaveral, FL	USACE Coastal Engineering Research Center (CERC) Vicksburg, MS
1998	Current and wave measurements for Cooper Jack Bight development, Providenciales, TCI	Pardee Ltd. Providenciales, TCI
1998	Current and wave data collection for PetroCaicos Port expansion, Providenciales, TCI	Pardee Ltd. Providenciales, TCI
1997-2003	Submerged Breakwater & Artificial Reef Designs for Gran Dominicus Resort, Dominican Republic	EMPACA, Santo Domingo, Dominican Republic
1997-1999	Wave gage installation, operation and maintenance for Martin County, FL	Woods Hole Group Cataumet, MA
1997	Hydrographic survey and river training and port development for the Niger River in Nigeria	G. M. Selby & Associates Miami, FL
1996-1999	PEP™ Reef Monitoring – Environmental & structural scour monitoring of the Prefabricated Erosion Prevention™ Reef , Vero Beach, FL	Indian River County Vero Beach. FL
1996-1997	Design permitting and construction monitoring of	Mr. Saul Steinberg

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	the 20-row sand-filled container subsurface dune restoration system (SDRS) in Quogue	Quogue, NY
1996-1997	Design and permitting of proposed channel dredging of Sebastian Inlet and revetment design for Coconut Point for the SITD	Sebastian Inlet District Indialantic, FL
1996-1997	Design permitting & construction monitoring for sand placement from upland source by truck hauling to the beaches south of Sebastian Inlet	Sebastian Inlet District Indialantic, FL
1994-1995	Design and Stability of Artificial Reefs – Wave tank & wind tunnel testing	G. M. Selby & Associates Miami, FL
1995-1997	Evaluation of Wave Models – Evaluation testing and calibration of computer numerical models for wave prediction and transformation	USACE Coastal Engineering Research Center (CERC) Vicksburg, MS
1995-1996	Technical review of “Part II Hydrodynamics” of the <i>Coastal Engineering Manual</i>	USACE Coastal Engineering Research Center (CERC)
1995-1996	Inspection, design, plans & specifications, and construction supervision of repairs for the hurricane damaged splash apron at Sebastian Inlet north jetty	Sebastian Inlet District Indialantic, FL
1995	Invited presentation on sand-filled containers Workshop on Geotextile Tube Technology	USACE Coastal Engineering Research Center (CERC) Vicksburg, MS
1994-1995	Current and underwater visibility data collection & analysis for Dade County artificial reef site	G. M. Selby & Associates Miami, FL
1994	Assimilation of global wave information for the USACE Coastal Engineering Research Center	USACE Coastal Engineering Research Center (CERC)
1994	Artificial reef designs offshore of Cancun, Mexico for Atlantis Submarines	G. M. Selby & Associates Miami, FL
1994	Current data collection & analysis and dive site investigations offshore of Cancun and Xcaret, Mexico for Atlantis Submarines	G. M. Selby & Associates Miami, FL
1994	Dredging and shoreline stabilization and repairs to the south and north jetty structures	Sebastian Inlet District Indialantic, FL
1992-1993	Anchoring system design for a Boeing 727-100 as an artificial reef offshore of Miami, FL	G. M. Selby & Associates Miami, FL
1990-1993	Evaluation and testing of recycled plastics in	Florida Center for Hazardous

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	marine construction	Waste Management & Recycling
1992	Wave data collection & analysis and dive site investigations off Nassau Harbor Bahamas for Atlantis Submarines	G. M. Selby & Associates Miami, FL
1991-1994	Monitoring of artificial reefs offshore of Sunny Isles, Miami Beach, FL for Metro-Dade Department of Environmental Resources Management (DERM)	G. M. Selby & Associates Miami, FL
1991	Meteorological data collection at the Abaco harbor site, Bahamas	Premier Cruise Lines Port Canaveral, FL
1990-1991	Feasibility study for underwater habitat restaurant and hotel design and construction using FRP composites	Braswell Services Port Canaveral, FL
1990	Current measurements at Pinellis County artificial reef sites	sponsored by HDR Engineering Tampa, FL
1990	United Nations consultant in physical oceanography and coastal zone management to the Institute of Marine Affairs (IMA), Trinidad and Tobago	United Nations Development Group (UNDP)
1990	Beach outfall designs for Thailand aquaculture projects	Bechtel International San Francisco, CA
1990	Hydrographic study of tides and currents for the entrance channel & turning basin, Great Guana Cay, Abacos, Bahamas	Premier Cruise Lines Port Canaveral, FL
1990	Evaluation of the existing Club Nautico Marina in San Miguel de Cozumel	Environmental Planning Team Miami, FL
1990	Hydrographic studies & evaluation of proposed port & marina sites, Playa del Carmen & Cozumel, MX	Environmental Planning Team Miami, FL
1989	Core borings and sediment analysis for Ft. Pierce Harbor dredging	Marcona Ocean Industries and Florida Sun Cement Company
1988-1989	ProtecTube sand-filled container system for Seaplace Condo. in Long Boat Key, FL	Seaplace Condominium Long Boat Key, FL
1988-1989	14-row sand-filled container subsurface dune restoration system (SDRS) for Caledon Shores Condo. in Vero Beach, FL	Caledon Shores Condominium Vero Beach, FL
1986	St. Lucie Inlet hydrodynamic monitoring – current	U.S. Army Corps of Engineers

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	and tide data collection and analysis, Stuart, FL	Jacksonville, FL District
1986	Willoughby Creek Inlet study and modifications	Port Sewall Property Owners Association, Stuart, FL
1985	Beach nourishment feasibility for New Port Providence, Nassau, Bahamas	Sassoon Property Developments Nassau, Bahamas
1981	Littoral Environmental Observations (LEO) of the shoreline erosion control demonstration projects for the Stuart and Jensen Causeways	U.S. Army Corps of Engineers Jacksonville, FL District
1980	St. Lucie Inlet pre-construction hydraulic monitoring study, Stuart, FL	U.S. Army Corps of Engineers Jacksonville, FL District
1979	Fort Pierce Inlet hydraulic monitoring study – current and tide data collection and analysis	U.S. Army Corps of Engineers Jacksonville, FL District
1977-1980	Subdivision design & layout, land & hydrographic surveys, dock & coastal construction designs & permits and misc. civil and coastal engineering	Harris Engr.& Surveying - Private practice with numerous clients (companies and individuals)
1975-1977	Project manager for beach erosion control studies for Charlotte, Sarasota, Nassau, St. Johns, Volusia, & Indian River Counties Florida; and inlet studies for Matanzas, Ponce de Leon, and New Pass Inlet Improvement Projects	Coastal engineer with the Jacksonville, FL District U.S. Army Corps of Engineers

UNIVERSITY COURSES TAUGHT:

Florida Institute of Technology, Melbourne, FL Campus, 1987-Present

[Bold typeface indicates current courses.]

coastal engineering structures
advanced coastal engineering structures
port and harbor engineering
coastal engineering processes – team taught
introduction to ocean engineering – team taught
fundamentals of offshore engineering – team taught
hydromechanics and ocean wave theory
hydrographic surveying/bathymetry
surveying
physical oceanography
ocean engineering design
ocean engineering systems design
marine field projects
ocean engineering data analysis

Florida Atlantic University, Boca Raton Campus, FL 1990-1992

physical aspects of oceanography
statics and dynamics

Florida Institute of Technology, Jensen Beach Campus, 1980-1986

physical oceanography I
physical oceanography II
geological oceanography
meteorology
ocean structures
fluid dynamics
vector calculus
introduction to oceanography
practical oceanography
physics
oceanographic equipment
ocean project I
ocean project II
oceanographic engineering
marine geophysics