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Ecologist
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EDUCATION

Degree		Major	Dates
Ph.D.	Georgetown University, Washington, DC	Ecology	1993
B.A.	University of North Carolina, Greensboro, NC	Biology	1969
	Ohio University, Athens, OH	Botany	1971

DISSERTATION

Effects of nutrient availability on growth and herbivory of dwarf red mangrove (*Rhizophora mangle*).
Advisor: Edward M. Barrows

Dwarf *Rhizophora mangle* (red mangrove) responded quickly and grew vigorously when treated with P and NPK fertilizers. Leaf number, leaf area, branching, shoot length, and aerial root production increased dramatically over 2 yr. N-fertilized trees grew slowly and their responses were not different from Control. Some responses to P fertilization varied by water depth and tidal elevation, but physico-chemical factors associated with the soil did not explain the differences in growth responses. These results indicated that phosphorus availability is a major factor limiting the growth of dwarf *R. mangle*. Herbivory by specialized insect species increased in P- and NPK-fertilized trees only. Fertilization had no effect on feeding rates and standing damage by a leaf-feeding guild of generalist herbivores or on the frequency of shoots killed by stem borers. Herbivory by the two specialists was not related to C:N ratios, but was inversely related to concentrations of phenolic compounds. Neither nutrient ratios nor concentrations of phenolics affected rates of herbivory by the generalist folivores. Sclerophylly of *R. mangle* leaves decreased in P- and NPK-fertilized trees but not in N-fertilized and Control trees. However, there was no relationship between leaf toughness and herbivory by generalist folivores.

PROFESSIONAL APPOINTMENTS

- Ecologist (Federal position, GS-15), Smithsonian Environmental Research Center, Edgewater, MD 2000-current
- Ecologist (Trust, term appointment), Smithsonian Environmental Research Center, Edgewater, MD 1997-1999
- Postdoctoral Fellow, Smithsonian Environmental Research Center, Edgewater, MD 1994-1996
- Research Collaborator, Department of Entomology, National Museum of Natural History, Washington, DC 1986-1994
- Scientific Illustrator 1975-1986

RESEARCH PROFILE

Animal-plant interactions in coastal and estuarine ecosystems; effects of resource availability and climate change on animal-plant dynamics and food webs in coastal wetlands; within-stand nutrient cycling and adaptations for nutrient conservation in coastal and estuarine ecosystems; ecological stoichiometry in coastal and estuarine ecosystems; physiological ecology; conservation ecology; environmental education.

GRANTS and AWARDS

- 2011-2016: NASA/NSPIRES Climate and Biological Response Program: Feller as PI/PD with Co-PIs J Parker (SERC), D. Gruner (UMD), R. Osman (SERC), W. Rodriguez (SERC), J. Hamilton (UConn). Sensitivity of Coastal Zone Ecosystems to Climate Change; 4 years; Total \$1,232,213.
- 2011-2016: NSF Macrosystems Biology Program: Feller as PI/PD with Co-PIs J. Parker (SERC), D. Gruner (UMD), R. Osman (SERC), W. Rodriguez (SERC), J. Hamilton (UConn). Multi-Scale Drivers and Effects of Biotic Change in the Global Mangrove-Saltmarsh Ecotone, 4 years; Total \$1,364,286.
- 2012-2015: NASA ROSES 2011: Feller as Co-PI with PI Samantha Chapman (Villanova Univ.) and Co-PIs Adam Langley (Villanova Univ.) and Wayne Walker (WHOI). Mangroves Marching Northward: The Impacts of Rising Seas and Temperatures on Ecosystems at Kennedy Space Center, 3 years, Total \$298,228.
- 2014-2016: Smithsonian Grand Challenges Program: Feller as Co-PI with PI Melissa Songer and 10 others. Smithsonian Biodiversity Conservation for Sustaining the Natural Diversity of Myanmar. 2 years; Total \$100,000.
- 2009-2014. EUROPEAN COMMISSION, Seventh Framework Programme, Feller as Co-PI with PI U. Berger (Technische Universitaet Dresden) and 8 other co-PIs: S. Cannicci (University of Florence), F. Dahdouh-Guebas (Université Libre de Bruxelles), M. Menezes (University of Pará), N. Koedam (Vrije Universiteit Brussel), F. Porri (Rhodes University), C.E. Lovelock (University of Queensland), J. López-Portillo (Instituto de Ecología): Coastal Research Network On Environmental Changes, 5 years, Total €4,500,000.

- 2012-2014. Smithsonian Marine Science Network. Feller co-PI with PI D.F. Whigham and co-PIs H.J. (Riks) Laanbroek (Netherlands Institute of Ecology) and J.T.A. Verhoeven (Utrecht University). Effects of Mangroves on Carbon and Nitrogen Cycling in Salt Marshes – A Global Change Scenario, 2 years, Total \$12,500.
- 2010-2011. The University of Maryland, College Park and the Smithsonian Institution Seed Grants for Research Program, with John Parker (SERC) and Dan Gruner (UMD). Adjustment of Coastal Ecosystems to Climate-Change Driven Range Expansions and Biological Invasions.
- 2009-2011. Travel Grant. Associated Partner with SOWACOR funded by King Abdullah University of Science and Technology (KAUST Center-in-Development for Soil, Water and Coastal Resources).
- 2009-2011. OUSS Research Endowment Award: Understanding the Impact of Nutrient Over-Enrichment on Ecological Stoichiometry in Mangrove Ecosystems along Latitudinal and Tidal Gradients
- 2009-2011. OUSS Research Endowment Award, with John Parker (SERC). Do Vertebrate Consumers (Birds, Bats, and Lizards) Limit Arthropods and Herbivory in Mangrove Forests?
- 2009-2011. Smithsonian Marine Science Network, with Catherine Lovelock (University of Queensland), Dennis Whigham (SERC), Karen McKee (USGS). Patterns of Nutrient Limitation in Mangrove Ecosystems in the Caribbean at Three Field Stations in the Smithsonian's Marine Science Network.
- 2008-2010. Smithsonian Marine Science Network, with Eldredge Bermingham (STRI). A Long-Lost Mangrove Species Discovered in Bocas Del Toro: *Pelliciera rhizophorae* Is Alive and Well on the Atlantic Coast of Central America.
- 2008. University of Queensland, Travel Grant. Effects of Nutrient Availability on Plant Growth, Physiology, Nutrient Cycling Processes, and Animal-Plant Interactions in Mangrove Forest: A Biogeographic Comparison.
- 2008. Technische Universitaet Dresden, Travel Grant. Developing a Conceptual Mangrove Forest Model.
- 2007. Smithsonian Marine Station at Fort Pierce, with Catherine Lovelock (University of Queensland), Dennis Whigham (SERC), Karen McKee (USGS). Nutrient Limitation in Mangrove Ecosystems along the Indian River Lagoon.
- 2005. University of Queensland, Travel Grant. Effects of Nutrient Availability on Plant Growth, Physiology, Nutrient Cycling Processes, and Animal-Plant Interactions in Mangrove Forest: A Biogeographic Comparison.
- 2005: Smithsonian Marine Science Network, Workshop -- Effects of Nutrient Over-Enrichment on Structure and Function of Seagrass, & Mangrove, Ecosystems: Bocas del Toro Marine Laboratory in Panama.
- 2003-2004: AAAS, WISC program, with Catherine Lovelock (SERC). Effects of Nutrient Availability on Plant Growth, Physiology, Nutrient Cycling Processes, and Animal-Plant Interactions in Mangrove Forests: A Biogeographic Comparison.
- 2000-2006: NSF BIOCOMPLEXITY PROGRAM. Mangrove Biocomplexity: Microbial and Nutrient Controls on Mangrove Ecosystems. \$4,500,00. Feller PI/PD with 9 co-PIs.
- 1996-1997. U.S. Agency for International Development, Reconnaissance Trip to Survey Coastal Ecosystems in Bocas del Toro, Panama.
- 1995-1996. The John D. and Catherine T. MacArthur Foundation, Mangrove Education and Training Program for Belize.

- 1994-1996. Atherton Seidell Endowment Fund Grant, with K. Rützler (NMNH) and K. Smith (NMNH); Reprinting and producing CD-ROM of publications from research sponsored by the Caribbean Coral Reef Ecosystems Program.
- 1994-1996. Smithsonian Institution Postdoctoral Fellowship, Effects of light levels, gender, mineral nutrients, and elevated CO₂ on herbivory in the deciduous woody shrub *Lindera benzoin* (L.) Blume (Lauraceae) in riparian forests along the Chesapeake Bay.
- 1993-1994. The John D. and Catherine T. MacArthur Foundation Grant with M. Sitnik (NMNH) and K. Rützler (NMNH); *Mangrove Education and Training Program for Belize*.
- 1993. National Oceanic and Atmospheric Administration, Annual Award for Excellence in Coastal and Marine Graduate Study.
- 1992-1994. National Oceanic and Atmospheric Administration, Sanctuaries and Research Division Grants, with K.L. McKee (LSU); *Interaction among nutrients, chemical and structural defense, and herbivory in estuarine mangroves at Rookery Bay, Florida*.
- 1992. U.S. Agency for International Development, with M. Sitnik (NMNH) and K. Rützler (NMNH); Technical Assistance Grant, *Mangrove Education and Training Program for Belize*.
- 1990-1992. NSF Doctoral Dissertation Improvement Grant, The Effects of Nutrient Enrichment on Growth and Herbivory of Dwarf Red Mangrove.
- 1989-1993. Georgetown University *Predoctoral Fellowship*, Department of Biology, Georgetown University, Washington, DC.

TEACHING/EDUCATIONAL EXPERIENCE

Mangrove Virtual Tour

(http://www.serc.si.edu/labs/animal_plant_interaction/Trail/VirtualTour.html)

STRI/OTS Graduate Tropical Marine Ecology Course, June-July 2003; in preparation for summer 2013

Mangrove Ecology Courses: Organized and designed course, curriculum and teaching manual for a mangrove/coastal ecology field course for graduate and undergraduate students, high school and college teachers, civil servants, and developers. 1992-Current

Science Advisor, Electronic Field Trip “Where the Land & Sea Intertwine”, for elementary and junior high school student at Calabash Cay, Belize, May 2003, in collaboration with the distance-learning program at Ball State University.

Graduate research and thesis supervisor

C. Piou, University of Bremen

F. Chi, University of Bremen

C. Thiem, University of Hamburg

Graduate Student Committees:

University of Bremen

University of Maryland

University of South Carolina

Villanova University

Florida Atlantic University

University of Hamburg

Technical University of Dresden

University of British Columbia

Invited Lecturer, Georgetown University:

Plants and Human Affairs

Marine Biology 1993

Graduate Teaching Assistant, Georgetown University (1989-1993):

Introductory Biology

Environmental Physiology

Plants and Human Affairs

Graduate Teaching Assistant, Ohio University (1969-1971):

Introductory Botany

Phycology

SOCIETY MEMBERSHIPS

Association for Tropical Biology and Conservation

Association for Women in Science

Ecological Society of America

INTECOL

Sigma Xi

Coastal & Estuarine Research Federation

Society for Wetland Scientists

PUBLICATIONS

- Keuskamp, JA, IC Feller, BJJ Dingemans, HJ Laanbroek, JTA Verhoeven, MM Hefting. *In review*. Increased decomposition rate below *Avicennia* stands as compared to *Rhizophora* dominated stands: A mechanism for cyclic succession in peat forming mangroves. *Ecology Letters*
- Doughty, C, JA Langley, W Walker, IC Feller, R Schaub, S Chapman. 2016. Mangrove range expansion rapidly increases coastal wetland carbon storage. *Estuaries and Coasts* 39: 385-396
- Lovelock, CE, L. Simpson, L. Duckett, IC Feller. 2015. Carbon budgets for Caribbean mangrove forests of varying structure and with phosphorus enrichment. *Forests* 6(10): 3528-3546
- Vaslet, A. DL Phillips, CAM France, IC Feller, CC. Baldwin. 2015. Trophic behaviour of juvenile reef fishes inhabiting interlinked mangrove-seagrass habitats in a Caribbean offshore mangrove islet. *Journal of Fish Biology* 87: 256-273
- Dangremond, EM, IC Feller, WP Sousa. 2015. Environmental tolerances of rare, common and invasive mangroves. *Oecologia* 179: 1187-1198
- Feller, IC, EM Dangremond, DJ Devlin, CE Lovelock, CE Proffitt, W. Rodriguez. 2015. Nutrient enrichment intensifies hurricane damage and prolongs recovery in mangrove ecosystems in the Indian River Lagoon. *Ecology* 96(11): 2960-2972
- Keuskamp, JA, MM Hefting BJJ Dingemans, HJ Laanbroek, JTA Verhoeven, IC Feller. 2015 Effects of nutrient enrichment on mangrove leaf litter decomposition. *Science of the Total Environment* 508:402-410
- Keuskamp, JA, IC Feller, HJ Laanbroek, JTA Verhoeven, MM Hefting. 2015. Short- and long-term effects of nutrient enrichment on microbial exoenzyme activity in mangrove peat. *Soil & Biogeochemistry* 81: 38-47
- Cavanaugh, KC, JD Parker, S Cook-Patton, IC Feller, A Williams, JR Kellner. 2015. Integrating physiological threshold experiments with climate modeling to project mangrove species' range expansion. *Global Change Biology* 21: 1928-1938
- Riley, M, CA Johnston, IC Feller, BD Griffen. 2014. Range expansion of *Aratus pisonii* (mangrove tree crab) into novel vegetative habitats. *Southeastern Naturalist* 4:N43-N48
- Cavanaugh, KC, JR Kellner, AJ Ford, DS Gruner, JD Parker, W Rodriguez, IC Feller. 2014 Poleward expansion of mangroves is a threshold response to decreased frequency of extreme cold events. *Proceedings of the National Academy of Sciences* 111: 723-727.
- Cavanaugh, KC, JR Kellner, AJ Ford, DS Gruner, JD Parker, W Rodriguez, IC Feller. 2014b. Reply to Giri and Long: Freeze-mediated expansion of mangroves does not depend on whether expansion is emergence or reemergence *Proceedings of the National Academy of Sciences*

111: E1449.

- Lovelock CE, IC Feller, R Reef, RW Ruess. 2014. Variable effects of nutrient enrichment on soil respiration in mangrove forests. *Plant and Soil* DOI 10.1007/s11104-014-2036-6
- R Reef, IC Feller, CE Lovelock. 2014. Mammalian herbivores in Australia transport nutrients from terrestrial to marine ecosystems via mangroves. *Journal of Tropical Ecology* 28: 179-188.
- Dangremond, EM, IC Feller. 2014. Functional traits and nutrient limitation in the rare mangrove *Pelliciera rhizophorae*. *Aquatic Botany* 116: 1-7
- Keuskamp, JA, IC Feller, HJ. Laanbroek, JTA Verhoeven, MM Hefting. 2015 Short- and long-term effects of nutrient enrichment on microbial exoenzyme activity in mangrove peat. *Soil Biology and Biochemistry* 81: 38–47
- Feller, I.C., A.H. Chamberlain, C. Piou, S.K. Chapman, & C.E. Lovelock. 2013. Latitudinal patterns of herbivory in mangrove forests: consequences of nutrient over-enrichment. *Ecosystems* 16: 1203-1215
- Simpson, LT, IC Feller, SK Chapman. 2013. Effects of competition and nutrient enrichment on *Avicennia germinans* in the salt marsh-mangrove ecotone. *Aquatic Botany* 104: 55-59
- Vaslet, A., C. France, C.C. Baldwin, I.C. Feller. 2012. Dietary habits of juveniles of the Mayan cichlid, *Cichlosoma urophthalmus*, in mangrove ponds of an offshore islet in Belize, Central America. *Neotropical Ichthyology* 10: 667-674.
- Vaslet, A., C. France, D.L. Phillips, I.C. Feller, & C.C. Baldwin. 2012. Influence of mangrove habitat type on the relative importance of mangroves and seagrass beds as feeding areas for fishes from Florida and Belize: evidence from dietary and stable-isotope analyses. *Journal of Experimental Marine Biology and Ecology* 434: 81-93
- Vogt, J., A. Skora, I.C. Feller, C. Piou, G. Coldren, U. Berger. 2012. Investigating the role of impoundment and forest structure on the resistance and resilience of mangrove forests to hurricanes. *Aquatic Botany* 97: 24-29.
- Lovelock, C.E., R. Ruess, & I.C. Feller. 2011. CO₂ efflux from cleared mangrove peat. *PLoS ONE* 6(6): e21279. Doi:10.1371/journal.pone.0021279
- Vaslet, A., C. France, D.L. Phillips, I.C. Feller, & C.C. Baldwin. 2011. Stable isotope analyses reveal the importance of seagrass beds as feeding areas for juvenile *Myrophis punctatus* in Florida. *Journal of Fish Biology* 79: 692-706.
- Lovelock, C.E., I.C. Feller, M.F.A. Adame, R.R. Reef, H.M. Penrose, L. Wei & M.C. Ball. 2011. Intense storms and the delivery of materials that relieve nutrient limitations in mangroves of an arid zone estuary. *Functional Plant Biology* 38: 514-522.
- Chapman, S.K., & I.C. Feller. 2011. Away-field advantage: mangrove seedlings grow best in litter from other mangrove species. *Oikos* 120: 1880-1888.
- Reef, R., I.C. Feller, & C.E. Lovelock. 2010. Nutrition of mangroves. *Tree Physiology* doi:10.1093/treephys/tpq048
- Reef, R., M.C. Ball, I.C. Feller, & C.E. Lovelock. 2010. Relationships among RNA:DNA ratio, growth and elemental stoichiometry in mangrove trees. *Functional Ecology*: doi: 10.1111/j.1365-2435.2010.01722.x.
- Martin, K.C., D. Bruhn, C.E. Lovelock, I.C. Feller, J.R. Evans, & M.C. Ball. 2010. Nitrogen fertilization enhances water use efficiency in a saline environment. *Plant, Cell, & Environment* 33: 344-357.

- Feller, I.C., C.E. Lovelock, U. Berger, K.L. McKee, S.B. Joye, & M.C. Ball. 2010. The biocomplexity of mangrove ecosystems. *Annual Review of Marine Science* 2: 395-416.
- Feller, I.C., C.E. Lovelock, & C. Piou. 2009. Growth and nutrient conservation in *Rhizophora mangle* in response to fertilization along latitudinal and tidal gradients. *Smithsonian Contributions to Marine Science* 38: 345-358.
- Urish, D.W., R.M. Wright, I.C. Feller, & W. Rodriguez. 2009. Dynamic hydrology of a mangrove island: Twin Cays, Belize. *Smithsonian Contributions to Marine Science* 38: 473-490.
- Whigham, D.F., M.C. Whigham, W. Rodriguez, & I.C. Feller. 2009. Ecological characteristics of *Batis maritima* in Florida and Belize. *Smithsonian Contributions to Marine Science* 38: 491-500.
- Macintyre, I.G., M.A. Toscano, I.C. Feller, & M. Faust. 2009. Decimating mangrove forests for commercial development in the Pelican Cays, Belize: long-term ecological loss for short-term gain? *Smithsonian Contributions to Marine Science* 38: 281-290.
- Lovelock, C.E., M.C. Ball, K. Martin, & I.C. Feller. 2009. Nutrient enrichment increases mortality of mangroves. *PLoS One* 4 (5): e5600.
- Piou, C., Berger, U., & Feller, I. 2009. Spatial structure of a leaf-removing crab population in a mangrove of North-Brazil. *Wetland Ecology and Management* 17: 93-106.
- Rodriguez, W., D.W. Urish, I.C. Feller, & R.M. Wright. 2009. Relationships between frequency of ground exposure and forest cover in a mangrove island ecosystem. *Atoll Research Bulletin* 568: 1-21.
- Feller, I.C. & K. Ruetzler. 2008. Mangroves of the reef domain: a case study in Belize, in *International Commission on Tropical Biology and Natural Resources*, [Eds. K. Del Claro, P.S. Oliveira, V. Rico-Gray, A.A. Almeida Barbosa, A. Bonet, F.R. Scarano, F. J. Morales-Garzon, G. C. Villarnovo, L. Coelho, M. V. Sampaio, M. Quesada, M.R. Morris, N. Ramire, O. Marcal Jr, R.H. Ferraz Macedo, R.J. Marquis, R.P. Martins, S.C. Rodrigues, U. Luttge] in *Encyclopedia of Life Support Systems (EOLSS)*, Developed under the Auspices of the UNESCO, Eolss Publishers, Oxford, UK, [<http://www.eolss.net>] [Retrieved April 11, 2009]
- Lee, R. Y., W. P. Porubsky, I. C. Feller, K. L. McKee & S.B. Joye 2008. Porewater biogeochemistry and soil metabolism in dwarf red mangrove habitats (Twin Cays, Belize). *Biogeochemistry* 87: 181-198.
- Piou, C., U. Berger, H. Hildenbrandt, I.C. Feller. 2008. Testing the intermediate disturbance hypothesis in species-poor systems: a simulation experiment for mangrove forests. *Journal of Vegetation Science* 19: 417-424.
- Erickson, A.A., I.C. Feller, V.J. Paul, L.M. Kwiatkowski, & W. Lee. 2008. Selection of an omnivorous diet by the mangrove tree crab *Aratus pisonii*. *Journal of Sea Research* 59: 59-69.
- Feller I.C., C.E. Lovelock, & K.L. McKee. 2007. Nutrient addition differentially affects ecological processes of *Avicennia germinans* in nitrogen vs. phosphorus limited mangrove ecosystems. *Ecosystems* 10: 347-359.
- Lovelock, C.E., I.C. Feller, M.C. Ball, J. Ellis, A.M. Schwarz, B. Sorrell. 2007. Growth Rate Hypothesis vs Geochemical Hypothesis for variation in plant nutrients over latitude: a test using mangroves. *Ecology Letters* 10: 1154-1163.
- McKee, K.L., J.E. Rooth, & I.C. Feller. 2007. Mangrove recruitment after forest disturbance is facilitated by herbaceous species common to the Caribbean region. *Ecological Application* 17: 1678-1693.
- Feller, I.C. & A.H. Chamberlain. 2007. Herbivore responses to nutrient enrichment and

landscape heterogeneity in a mangrove ecosystem. *Oecologia* 153: 607-616.

- Lovelock, C.E., I.C. Feller, J. Ellis, A.M. Schwarz, N. Hancock, & Brian Sorrell. 2007. Mangrove growth in New Zealand estuaries: The role of nutrient enrichment at sites with contrasting rates of sedimentation. *Oecologia* 153: 633-641.
- McKee, K.L., D. Cahoon, & I.C. Feller. 2007. Caribbean mangroves adjust to rising sea-level through biotic controls on soil elevation change. *Global Ecology and Biogeography* 16: 546-556.
- Wanek, W. J. Hofmann, & I.C. Feller. 2007. Canopy interactions of rainfall in an off-shore mangrove ecosystem dominated by *Rhizophora mangle* (Belize). *Journal of Hydrology* 345: 70-79.
- Lovelock, C.E., M.C. Ball, B. Choat, B.M.J. Engelbrecht, N.M. Holbrook & I.C. Feller. 2006a. Linking physiological processes with mangrove forest structure: phosphorus deficiency limits canopy development, hydraulic conductivity and photosynthetic carbon gain in dwarf *Rhizophora mangle*. *Plant, Cell and Environment* 29: 793–802.
- Lovelock, C.E., M.C. Ball, I.C. Feller, B.M.J. Engelbrecht & M.L. Ewe. 2006b. Variation in hydraulic conductivity of mangroves: Influence of species, salinity, and nitrogen and phosphorus availability. *Physiologia Plantarum* 127: 457- 464.
- Lovelock, C.E., I.C. Feller, M. C. Ball, B. M. J. Engelbrecht & M.L. Ewe. 2006c. Differences in plant function in phosphorus and nitrogen limited mangrove ecosystems. *New Phytologist* 172: 514-522.
- Lovelock, C.E., R.W. Ruess & I.C. Feller. 2006d. Fine root respiration in the mangrove *Rhizophora mangle* over variation in forest stature and nutrient availability. *Tree Physiology* 26:1601–1606.
- Piou, C., I.C. Feller, U. Berger, & F. Chi. 2006. Zonation patterns of Belizean offshore mangrove forests 41 years after a catastrophic hurricane. *Biotropica* 38: 365-374.
- Lovelock, C.E., I.C. Feller, & K.L. McKee & R. Thompson. 2005. Forest structure of the extensive Caribbean mangrove forests of Bocas del Toro, Panama. *Caribbean Journal of Science* 41: 456-464.
- Guzman, H.M., P.A.G. Barnes, C.E. Lovelock, & I.C. Feller. 2005. CARICOMP Mangrove, Seagrass and Coral Reef Sites in Bocas del Toro, Panama. *Caribbean Journal of Science* 41: 430-440.
- Feller, I.C., G. Venable, & K. Rützler. 2005. Mangal Cay: A Caribbean Virtual Mangrove Island Tour. http://www.serc.si.edu/labs/animal_plant_interaction/Trail/VirtualTour.html
- Rodriguez, W. & I.C. Feller. 2004. Mangrove landscape characterization and change in Twin Cays, Belize using aerial photography and IKONOS satellite data. *Atoll Research Bulletin* 513: 1-22.
- McKeon, C.S. & I.C. Feller. 2004. The supratidal fauna of Twin Cays, Belize. *Atoll Research Bulletin* 526: 1-22.
- Mitten, S., C.S. McKeon, & I.C. Feller. 2004. Winter and summer bird communities of Twin Cays, Belize. *Atoll Research Bulletin* 527: 1-18.
- Rützler, K., I. Goodbody, M.C. Diaz, I.C. Feller, & I.G. Macintyre. 2004. The aquatic environment of Twin Cays, Belize. *Atoll Research Bulletin* 512: 1-31.
- Rivera-Monroy, V.H., R.R. Twilley, D. Bone, D.L. Childers, C. Coronado-Molina, I.C. Feller, J. Herrera-Silveira, R. Jaffe, E. Mancera, E. Rejmankova, J.E. Salisbury, & E. Weil. 2004. A biogeochemical conceptual framework to develop long term ecological research and sustain coastal management in the wider Caribbean Region. *BioScience* 54 (9): 843-856.
- Levine, M.T., & I.C. Feller. 2004. Effects of forest age and disturbance on population

persistence in the understory herb, *Arisaema triphyllum* (Araceae) *Plant Ecology* 172: 73-82.

- Lovelock, C.E., I.C. Feller, K.L. McKee, B.M.J. Engelbrecht & M.C. Ball. 2004. The effect of nutrient enrichment on growth, photosynthesis and hydraulic conductance of dwarf mangroves in Panama. *Functional Ecology* 18: 25-33.
- Feller, I.C., D.F. Whigham, K.L. McKee, & C.E. Lovelock. 2003. Nitrogen limitation of growth and nutrient dynamics in a disturbed mangrove forest, Indian River Lagoon, Florida. *Oecologia* 134: 405-414.
- Feller, I.C., K.L. McKee, D.F. Whigham, & J.P. O'Neill. 2003. Nitrogen vs. phosphorus limitation across and ecotonal gradient in a mangrove forest. *Biogeochemistry* 62: 145-175.
- Lovelock, C.E. & I.C. Feller. 2003. Photosynthetic performance and resource utilization of two mangrove species coexisting in hypersaline scrub forest. *Oecologia* 134: 455-462.
- Feller, I.C., H. Kudoh, C.E. Tanner, & D.F. Whigham. 2002. Sex-biased herbivory in Jack-in-the-Pulpit (*Arisaema triphyllum*) by a specialist thrips. Pages 163-172 in Thrips and Tospoviruses. R. Marullo & L. Mound (Eds.). *Proceeding of the 7th International Conference on Thysanoptera. Australian National Insect Collection, Canberra.*
- Feller, I.C. 2002. The role of herbivory by wood-boring insects in mangrove ecosystems in Belize. *Oikos* 97:167-176.
- McKee, K.L. I.C. Feller, M. Popp, & W. Wanek. 2002. Mangrove isotopic fractionation ($\delta^{15}\text{N}$ and $\delta^{13}\text{C}$) across a nitrogen versus phosphorus limitation gradient. *Ecology* 83: 1065-1075.
- Feller, I.C. & M. Sitnik (Editors). 2002. Mangrove Ecology: A Manual for a Field Course. http://www.serc.si.edu/labs/animal_plant_interaction/Manual.pdf.
- Feller, I.C. 2002. Biodiversity in the mangrove supratidal zone. Pages 15-22 in Mangrove Ecology: A Manual for a Field Course. I.C. Feller & M. Sitnik (Eds.). http://www.serc.si.edu/labs/animal_plant_interaction/Manual.pdf.
- Tanner, C.E., I.C. Feller, & A.M. Ellison. 2002. Biodiversity in the mangrove intertidal and subtidal: algal and seagrass communities. Pages 23-28 in Mangrove Ecology: A Manual for a Field Course. I.C. Feller & M. Sitnik (Eds.). http://www.serc.si.edu/labs/animal_plant_interaction/Manual.pdf.
- Feller, I.C. & K.L. McKee. 1999. Light-gap creation in a Belizean red-mangrove forest by a wood-boring insect. *Biotropica* 31: 607-617.
- Feller, I.C., D.F. Whigham, J.P. O'Neill, & K.M. McKee. 1999. Effects of nutrient enrichment on within-stand nutrient cycling in mangrove ecosystems in Belize. *Ecology*. 80: 2193-2205.
- Whigham, D.F. & I.C. Feller. (Eds.) 1999. Within-stand nutrient cycling in wetland ecosystems. *Ecology* (Special Feature Section) 80: 2137-2138.
- Rützler, K. & C. Feller. 1999. Mangrove swamp communities: an approach in Belize. In A. Yañez-Arancibia and L. Lara-Dominguez (Eds.), *Mangrove ecosystems in tropical America*. Institute of Ecology A.C. Xalapa, IUCN Central America, and NOAA-NMFS-US Beaufort.
- Koltés, K., J. Tschirky, & I.C. Feller. 1998. Carrie Bow Cay, Belize. Pp. 79-94 in B. Kjerfve (Ed.), *CARICOMP - Caribbean coral reef, seagrass and mangrove sites. Coastal Region and Small Island Papers 3*, UNESCO, Paris.
- Feller, I.C. 1997. Ecology of mud-poor mangrove systems. Pp. 33-35 in B.W. Flemming, M. T. Delafontaine, and G. Liebezeit (Eds.), *Muddy Coasts '97*. Forschungszentrum Terramare

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- Feller, I.C. & W.N. Mathis. 1997. Primary herbivory by wood-boring insects along a tree-height architectural gradient of *Rhizophora mangle* L. in Belizean mangrove swamps. *Biotropica* 29: 440-451.
- Feller, I.C. 1996. Effects of nutrient enrichment on leaf anatomy in red mangrove. *Biotropica* 28: 13-22.
- Rützler, K. & I.C. Feller. 1996. Caribbean swamp communities. *Scientific American* 274(3): 70-75.
- Rützler, K. & I.C. Feller. 1996. Ein Mangrovenbiotop im Barriere-Riff vor Belize. *Spektrum der Wissenschaft*. May 1996: 60-66.
- Tyler, J. & I.C. Feller. 1996. A freshwater fish in a hypersaline mangrove environment. *Gulf of Mexico Science* 14: 26-30.
- Feller, I.C. 1995. Effects of nutrient enrichment on growth and herbivory in dwarf red mangrove (*Rhizophora mangle*). *Ecological Monographs*. 65: 477-505.
- Rützler, K. & C. Feller. 1988. Mangrove swamp communities. *Oceanus* 30: 16-24.
- Chemsak, J.A. & C. Feller. 1988. New species of Cerambycidae from Twin Cays, Belize (Coleoptera). *Proceedings of the Entomological Society of Washington* 90: 179-188.

SEMINARS and POSTER PRESENTATIONS

- Feller, I.C. International Mangrove & Macrobenthos Meeting (Organizer and Conference Chair). St. Augustine, FL, July 18-22, 2016
- Feller, I.C. Mangrove Range Shifts Impact Ecological Interactions. Annual Conference, Ecological Society of America, Baltimore, MD, August 6, 2015
- Feller, I.C. (Session Organizer) Coastal Plant Range Shifts- Causes and Consequences. ESA 2015 Annual Conference, Baltimore, MD, August 2015
- Feller, I.C. Mangrove Range Shifts: Impact on Ecological Interactions. *Invited*. University of Texas Rio Grande Valley, October 2, 2015
- Feller, I.C. Trekking Through Mangroves: How Nutrient Enrichment and Climate Change Are Altering the Tropics. *Invited*. Smithsonian Environmental Research Center, Public Seminar Series, October 8, 2015
- Feller, I.C. Mangroves Ecosystems: Consequences of Climate Change. *Invited*. Smithsonian Marine Station, Fort Pierce, FL, Public Seminar Series February 12, 2015
- Feller, I.C. Sensitivity of Mangrove Ecosystems to Climate Change. *Invited*. *Symposium: Future Challenges to Mangrove Research*, Center for Tropical Marine Studies, Liebnitz Association, Bremen, Germany, March 14, 2014
- Feller, I.C. The Sensitivity of Coastal Ecosystems to Climate Change. *Invited*. *The State of the Reserve Conference*, Guana-Tolomata-Matanzas National Estuarine Research Reserve, Ponte Vedra, FL March 7, 2014.
- Feller, I.C. Historical Perspective in the Sensitivity of Mangrove Ecosystems to Climate Change. *Invited*. Florida Atlantic University, Harbor Branch, FL. October 3, 2014
- Feller, I.C. (Session Organizer) Mangrove Expansion into Salt Marsh Habitats: Causes and Consequences. *CERF2013 San Diego, CA Nov. 2013*

- Ronnie Baker & IC Feller. Untangling the Web: the Importance of Wetland Production to Aquatic Food Webs across a Saltmarsh-Mangrove Ecotone. *CERF2013 San Diego, CA Nov. 2013*
- Feller, I.C. Biodiversity and Trophic Interactions in Mangrove Ecosystems. Invited. USAID Workshop on Response of Mangrove Wetland to Sea Level Rise. Bali, Indonesia August 2013
- Feller, I.C. Mangroves and Climate Change in MesoAmerica. Invited. LightHawk 2013 Fly In. Kennebunkport, ME, September 2013
- Baker, R. & C. Feller. Untangling the Web: Is Mangrove Production Really Important in Aquatic Food Webs. *Australian Marine Science Association, Gold Coast, Broadbeach Island, QLD, July 7-11, 2013.*
- Feller, I.C. Florida Marine Science Educators Association, Fort Pierce, FL, May 2013: *Tangled Roots: Sensitivity of Coastal Ecosystems to Climate Change*
- Feller, I.C. Sensitivity of Coastal Zone Ecosystems to Climate Change. *Invited. Blue Carbon Group Visit to SERC. October 11, 2012*
- Feller, I.C, A.H. Chamberlain, C.E. Lovelock, R. Reef & M.C. Ball. Patterns Growth and Herbivory in Mangrove Forests along Latitudinal Gradients and the Consequences of Nutrient Over-Enrichment. *Meeting on Mangrove Ecology, Functioning and Management, Galle, Sri Lanka, July 2-6, 2012.*
- Feller, I.C. Latitudinal Variations in Ecological Stoichiometry in Mangrove Communities: What is the Impact of Nutrient Loading on Canopy and Benthic Food Webs? *Invited. INTECOL 9 Wetlands Conference, Orlando, FL, June 3-8, 2012.*
- Feller, I.C. Patterns of Growth and Herbivory in Mangroves along Latitudinal Gradients: Atlantic-Caribbean East Pacific vs. Indo-West Pacific. *Invited. Center for Tropical Marine Studies (ZMT), University of Bremen, Bremen, Germany, June 12, 2012.*
- Feller, I.C. Tangled Roots: Sensitivity of Mangrove Ecosystems to Climate Change. *Invited: Haus der Wissenschaft, Bremen, Germany. June 11, 2012.*
- Feller, I.C. Nutrient Enrichment Intensifies Hurricane Damage and Prolongs Recovery in Mangrove Ecosystems in the Indian River Lagoon. *Indian River Lagoon Symposium. Harbor Branch, Fort Pierce, FL, February 9, 2012.*
- Feller, I.C. Patterns of Growth and Herbivory in Mangrove Forests along Latitudinal Gradients. *Invited. Florida Atlantic University, Vero Beach, FL, February 8, 2012.*
- Feller, I.C., Ronald Baker, & Matthew Kimball. Session Organizers) *Session I. Climate Change Effects on Structure and Function of Coastal Wetlands. Session II. Climate Change Effects on Carbon and Nutrient Cycling Coastal Wetlands. INTECOL 9 Wetlands Conference, Orlando, FL, June 3-8, 2012.*
- Feller, I.C. Nutrient Enrichment Intensifies Hurricane Damage and Prolongs Recovery in Mangrove Ecosystems in the Indian River Lagoon. *Indian River Lagoon Symposium. Harbor Branch, Fort Pierce, FL, February 9, 2012.*
- Feller, I.C. Tangled Roots: Sensitivity of Mangrove Ecosystems to Climate Change. *Invited. SERC Advisory Board Winter Meeting, Miami, FL, February 3-4, 2012.*
- Feller, I.C. Patterns of Growth and Herbivory in Mangrove Forests along Latitudinal Gradients: Atlantic-Caribbean East Pacific vs. Indo-West Pacific: Consequences of nutrient over-enrichment. *CERF 2011, Daytona Beach, FL, November 6-11, 2011.*
- Feller, I.C. Coastal ecosystems. *Invited. Earth to Sky V Workshop: Communicating Climate*

Change. *USFWS National Conservation Training Center, September 26-30, 2011.*

- Feller, I.C. Sensitivity of Coastal Ecosystems to Climate Change. Invited. NASA Biodiversity and Ecological Forecasting Team, October 6, 2011
- Feller, I.C. Patterns of Growth and Herbivory in Mangrove Forests: Consequences of Climate Change and Nutrient Over-Enrichment. *Smithsonian Climate Change Research Symposium, May 24-25, 2011, Washington, DC.*
- Whigham, D.F., I.C. Feller, Z. Batang, N. Alikunhi, J.T.A. Verhoeven, H.J. Laanbroek, J. Keuskamp, M. Hefting, M. Balk. Nutrient Limitation of *Avicennia Marina* Near Its Northern Limit in the Red Sea, Saudi Arabia. *SWS, Prague, Czech Republic. July 3-8, 2011, Poster.*
- Keuskamp, J., I.C. Feller, J.T.A. Verhoeven, & M. Hefting. Effects of Nutrients on Decomposition of Mangrove Organic Matter. *SWS, Prague, Czech Republic. July 3-8, 2011, Poster.*
- Feller, I.C. Patterns of Herbivory in Mangrove Forests along Latitudinal Gradients: Atlantic-East Pacific vs. Indo-West Pacific--consequences of nutrient enrichment. *SERC Weekly Science Seminar. October 28, 2011.*
- Feller, I.C. Patterns of Herbivory in Mangrove Forests along Latitudinal Gradients. *Invited. Entomological Colloquium, University of Maryland, October 6, 2010.*
- Feller, I.C. Patterns of Herbivory in Mangrove Forests along Latitudinal Gradients: Consequences of Nutrient Enrichment. *Invited. UMCES, Horn Point, MD October 1, 2010.*
- Feller, I.C., D. Whigham, J.T.A. Verhoeven, R. Laanbroek, J. Keuskamp, M. Balk, M. Hefting, N. Alikunhi & Z. Batang. What are the Consequences of Excess Nutrients and Climate Change on the Structure and Function of Mangrove Ecosystems? *Annual SOWACOR Conference, KAUST, Saudi Arabia. August 2010. Poster*
- Feller, I.C. Patterns of Herbivory in Mangrove Forests along Latitudinal Gradients: Atlantic-East Pacific vs. Indo-West Pacific--consequences of nutrient enrichment. *Invited. University of Central Florida, December 2010.*
- Feller, I.C. Tangled Roots: Animal-Plant Interactions in Mangrove Ecosystems. Invited. Smithsonian Marine Station Public Seminar Series, Fort Pierce Yacht Club. February 10, 2010.
- Feller, I.C. Does Nutrient Enrichment Influence Patterns of Herbivory in the Grey Mangrove, *Avicennia marina*, along a Climatic Gradient? *Invited. 11th Gordon Research Conference on Plant-Herbivore Interactions, February 21-26, 2010, Galveston, TX, USA.*
- Feller, I.C. An Introduction to Mangrove Ecosystems. *Invited. Smithsonian Public Seminar Series in Bocas del Toro. March 9, 2010. Bocas del Toro, Panama.*
- Feller, I.C., & S.K. Chapman. (Symposium Organizers) Dynamics of Mangrove-Saltmarsh Ecosystems in the Face of Climate Change Estuaries and Coasts in a Changing World. *CERF 2009 Conference, Portland, Oregon, 1-5 November 2009.*
- Feller, I.C. Nutrient Over-Enrichment Alters Community Structure and Herbivory in Mangrove Forests Over Latitudinal and Tidal Gradients. *CERF 2009 Conference, Portland, Oregon, 1-5 November 2009.*
- Feller, I.C. Herbivore Responses to Nutrient Over-Enrichment in Mangrove Forests Over Latitudinal and Tidal Gradients. *Invited. INTECOL 10, Brisbane, Australia, August 2009.*
- Feller, I.C. Mangrove Restoration: Hope for the World's Tropical Coasts? Invited. May 20, 2009. Beyond the Obituaries: Success Stories in Ocean Conservation. A workshop of the International Marine Conservation Congress, Smithsonian National Museum of Natural

History.

- Feller, I.C. Animal-Plant Interactions in Mangrove Ecosystems. *Invited. April 29, 2009. University of Belize, Belmopan, Belize*
- Feller, I.C. Animal-Plant Interactions in Mangrove Ecosystems. *Invited. April 4, 2009. University of Maryland Scholars Program, College Park, MD.*
- Feller, I.C. Nutrient Loading Differentially Affects Mangrove Ecosystems along Latitudinal and Tidal Gradients. *Invited. February 2008. Helmholtz Centre for Environmental Research, University of Leipzig, Germany.*
- Feller, I.C. Impact of Nutrient Loading on Mangrove Growth and Herbivory along Latitudinal and Tidal Gradients. *Invited. January 2008. Institute of Forest Growth and Forest Computer Sciences, Department of Forest Biometry and Systems Analysis, Technical University of Dresden, Germany.*
- Feller, I.C. Guidelines for Preparing and Staging Scientific Presentations: Oral Presentations. *Invited. January 2008. Institute of Forest Growth and Forest Computer Sciences, Department of Forest Biometry and Systems Analysis, Technical University of Dresden, Germany.*
- Feller, I.C. Nutrient Over-Enrichment Differentially Affects Mangrove Growth and Herbivory along Latitudinal and Tidal Gradients. *Smithsonian Marine Science Network Symposium, Washington, D.C., October 2007.*
- Macintyre, I.G., M.A. Toscano, I.C. Feller, M. Faust. Decimating Mangrove Forests for Commercial Development in the Pelican Cays, Belize: Long-Term Ecological Loss for Short-Term Gain? *Smithsonian Marine Science Network Symposium, Washington, D.C., October 2007.*
- Feller, I.C. 2006 (Symposium Organizer). Where Temperate Meets Tropical: Habitat Stability and Functional Response of Coastal Wetlands to Nutrient Enrichment. *SWS Conference, July 2006, Cairns, Australia.*
- Feller, I.C. Herbivore Responses to Nutrient Enrichment along Ecotonal Gradients in Mangrove Ecosystems In Two Biogeographic Provinces. *SWS Conference, July 2006, Cairns, Australia.*
- Feller, I.C. Impact of Nutrient Over-Enrichment on Mangrove Ecosystems: Evidence from the Smithsonian Marine Science Network. *Belize National Marine Science Symposium, January 2006, Belize City.*
- Chi, F., I.C. Feller, M. Wolff. Long Term Effect of Hurricane Disturbance, and Recovery Based on Vegetation Coverage, Biomass and Productivity Estimates of Turneffe Mangrove Forests in Belize. *Belize National Marine Science Symposium, January 2006, Belize City.*
- Feller, I.C. Patterns of Growth and Herbivory in Mangrove Forests in Relation to Nutrient Availability. *Invited. February 2006. Texas A & M University, College Station TX.*
- Feller, I.C. & W.C. Dennison 2005 (Symposium Organizers). Interdisciplinary Approach to Research in Tropical Seagrass and Mangrove Ecosystems. *ERF 2005 Conference, October 2005, Norfolk, VA.*
- Feller, I.C. & C.E. Lovelock Responses to Nutrient Enrichment in Nitrogen- vs. Phosphorus-Limited Mangrove Forests. *ERF 2005 Conference, October 2005. Norfolk, VA.*
- McKee, K.L., I.C. Feller, & C.E. Lovelock. A Global Comparison of Belowground Responses by Mangroves to Nutrient Enrichment. *ERF 2005 Conference, October 2005. Norfolk, VA.*

- Lovelock, C.E., I.C. Feller, J. Ellis, J., A. Schwarz, K.L. McKee, N. Hancock, P. Nicholls, & B. Sorrell. Contrasting Responses of Two New Zealand Mangroves to Nutrient Enrichment. *ERF 2005 Conference, October 2005. Norfolk, VA*
- Borgatti, R., J.M. O'Neil, W.C. Dennison, & I.C. Feller. Effects of Nutrient Enrichment on Nitrogen Fixation in the Mangrove Microbial Communities in Bocas Del Toro, Panama. *ERF 2005 Conference, October 2005. Norfolk, VA.*
- Joye, S.B., I.C. Feller, R.Y. Lee. Primary Production and Nutrient Fluxes in Mangrove Soils and Microbial Mats. *ERF 2005 Conference, October 2005. Norfolk, VA.*
- Feller, I.C. 2005 (Workshop Organizer). Impact of Nutrient Over-Enrichment on Nutrient Dynamics and Ecological Processes of Mangrove and Seagrass Communities. *Smithsonian Marine Science Network. Bocas del Toro, Panama, October 21-November 4, 2005.*
- Feller, I.C. 2005. Tangled Roots: The Commingling of Ecological, Economic, and Societal Values of Mangrove Ecosystems. *SERC Evening Seminar, October 12, 2005.*
- Feller, I.C. 2005. Growth and Herbivory in Mangrove Ecosystems in Relation to Nutrient Availability. Invited. Department of Integrative Biology, University of Queensland, Brisbane, Australia. September 7, 2005.
- Feller, I.C. 2005 Patterns of Herbivory in Mangrove Canopies in Relation to Nutrient Availability. *4th International Canopy Conference, Leipzig, Germany. July 2005.*
- Feller, I.C. 2005 Herbivory in Mangrove Forests: Indo-West Pacific vs. Atlantic-East Pacific. *Invited. Smithsonian Marine Station. May 27, 2005.*
- Feller, I.C. 2005 Biocomplexity of Mangrove Forests: Indo-West Pacific vs. Atlantic-East Pacific. *Invited. University of Maryland, Horn Point. May 25, 2005.*
- Rodriguez, W., & I.C. Feller. Land Cover Change in a Mangrove Forest, Belize: Application of Multi-spectral IKONOS Satellite Data. *ASPRS 2004 Fall Specialty Conference Images to Decisions; Remote Sensing Foundations for GIS September 2004 Kansas City, Missouri.*
- Feller, I.C. 2004 (Symposium Organizer). Microbial and Nutrient Controls on the Biocomplexity and Emergent Properties of Mangrove Ecosystems. *INTECOL 7th International Wetlands Conference. Utrecht, The Netherlands, July 2004.*
- Feller, I.C., C.E. Lovelock, K.L. McKee, & M.C. Ball. Impact of Nutrient Over-Enrichment on Mangrove Ecosystems: Evidence from Two Biogeographic Regions. Poster presentation. *INTECOL 7th International Wetlands Conference. Utrecht, The Netherlands, July 2004.*
- Martin, K.C., D. Bruhn, C.E. Lovelock, I.C. Feller, & M.C. Ball 2004. Interactive Effects of Salinity and Nutrients on Carbon Gain in Relation to Water Use: Implications for Responses of Mangroves to Nutrient Enrichment. *ECSA/ERF International Conference: "Estuaries and Change", Southern Cross University, Ballina, Australia, June 2004.*
- Lovelock, C.E., I.C. Feller, M.C. Ball, J. Ellis, & K.L. McKee. 2004. Nutrient Limitations to Mangrove Growth over Multiple Sites in Two Biogeographic Provinces. *ECSA/ERF International Conference: "Estuaries and Change", Southern Cross University, Ballina, Australia, June 2004.*
- Feller, I.C. 2004. Functions and Benefits of Managing Mangroves: Ecological, Physical (Coastal Stability & Storm Mitigation), Economic. *Belize Coastal Zone Management Authority: "Sustainable Mangrove Management Workshop", March 30-31, 2004.*
- Rodriguez, W., & I.C. Feller. Establishment of a Geodatabase to Investigate Tidal Influence on the Growth of Mangrove Forests in Twin Cays, Belize. *AWRA 2004 Spring Specialty Conference Geographic Information Systems (GIS) and Water Resources III May 2004, Nashville,*

Tennessee.

- Rodriguez, W., & I.C. Feller. Classification and Change of Mangrove Communities in Twin Cays, Belize, Central America. The Twin Cays Mangrove Ecosystem, Belize: Biodiversity, Geological History and two Decades of Change, December 2003 Fort Pierce, Florida.
- Rodriguez, W., & I.C. Feller. Tidal Influence on the Growth of a Mangrove Forest. The Twin Cays Mangrove Ecosystem, Belize: Biodiversity, Geological History and Two Decades of Change, December 2003 Fort-Pierce, Florida.
- Lovelock, C.E., M.C. Ball, & I.C. Feller. 2003. Impact of Nutrient Availability on Mangrove Forest Structure and Tree Function. *The Twin Cays Mangrove Ecosystem, Belize: Biodiversity, Geological History and Two Decades of Change, December 2003 Fort Pierce, Florida.*
- Feller, I.C. Effects of Nutrient Over-Enrichment on Plant Growth and Herbivory in Mangrove Ecosystems. *MarCuba Marine Congress, Havana, CUBA, December 2003.*
- Feller I.C. & N. Duke 2003. (Symposium Organizers). Symposium on Biocomplexity in Mangrove Forests: an Indo-West Pacific vs. Atlantic-East Pacific Comparison. *ERF 2003 Conference, September 2003. Seattle, WA.*
- Feller, I.C. Biocomplexity in Mangrove Forests: Indo-West Pacific vs. Atlantic-East Pacific Comparison of the Effects of Nutrient Availability on Growth and Herbivory. *ERF 2003 Conference, September 2003. Seattle, WA.*
- Lovelock, C.E., I.C. Feller, M.C. Ball, & J.C. Ellis. 2003. Patterns in Photosynthetic Carbon Gain and Resource Allocation under Nutrient Enrichment in Mangrove Forests in Two Biogeographic Regions. *ERF 2003 Conference, September 2003. Seattle, WA.*
- Ewe, M.L., C.E. Lovelock, & I.C. Feller. 2003. Growth and Gas Exchange Responses to the Interaction of Nutrients and Salinity in Three Mangrove Species. *ERF 2003 Conference, September 2003. Seattle, WA.*
- Chamberlain, A.H. & I.C. Feller. Effects of Nutrient Enrichment on Decomposition in a Mangrove Ecosystem in the Indian River Lagoon, Florida. Poster presentation. *ERF 2003 Conference, September 2003. Seattle, WA.*
- Borgatti, A.R. & I.C. Feller. The Effects of Nutrient Enrichment on Seedling Herbivory and Survival along a Tree-Height Gradient. Poster presentation. *ERF 2003 Conference, September 2003. Seattle, WA.*
- McKee, K.L., D.R. Cahoon, & I.C. Feller. 2003. Surface and Subsurface Controls on Elevation Change and Habitat Stability of a Biogenic Mangrove Ecosystem in Belize. *ERF 2003 Conference, September 2003. Seattle, WA.*
- McKee, K.L. & I.C. Feller. 2003. Effects of Nutrient Enrichment on Root Production in an Oligotrophic Mangrove Ecosystem and Interactions with Flooding. *Society for Wetland Scientists, New Orleans, LA, June 2003.*
- Feller, I.C. & M. Sitnik. Science and Education in Belize: An International Partnership for Biodiversity and Conservation. *Invited. Center for Biodiversity Conservation Conference. Washington DC, April 28, 2003.*
- Feller, I.C. Mangrove Ecosystems: Nutrient Controls on Ecological Processes. *Invited. Dynamac Corp., Kennedy Space Center, Merritt Island, Florida, April 2003.*
- Feller, I.C. 2003 (Symposium Organizer). Symposium on Emergent Properties and Biocomplexity of Mangrove Ecosystems – How Will They Respond to Nutrient Over-Enrichment? *ASLO 2003, Salt Lake City, UT, February 2003.*
- Feller, I.C., C.E. Lovelock, & K.L. McKee. Mangrove Ecosystems: Nutrient Controls on

Growth and Herbivory. *ASLO 2003, February 2003.*

- Lovelock, C.E., & I.C. Feller. Productivity in Mangrove Canopies across Environmental Gradients. *ASLO 2003. March 2003, Salt Lake City, Utah.*
- Feller, I.C. Nutrient Controls on Growth and Herbivory in Mangrove Ecosystems. Invited. Department of Entomology Seminar Colloquium, University of Maryland, October 18, 2002.
- Feller, I.C. Effects of Nutrient Availability on Mangrove Growth and Herbivory across a Tree-Height Gradient. *3rd International Canopy Conference. Cairns, Australia. June, 2002.*
- Feller, I.C. Nutrient Controls on Ecological Processes in Mangrove Ecosystems. Invited. Workshop on LTER-Based Tropical Coastal Research across the Caribbean. LTER Network Support for Coordinating Collaborative Research. Florida Coastal Everglades LTER Program. University of Louisiana, Lafayette, LA. March 2002.
- Feller, I.C. Mangroves in the Indian River Lagoon: Patterns of Nutrient Availability. *ERF 2001: An Estuarine Odyssey, St. Pete Beach, FL. November 4-8, 2001.*
- McKee, K.L., I.C. Feller, M. Popp, & W. Wanek. Mangrove Isotopic Fractionation ($\delta_{15}\text{N}$ & $\delta_{13}\text{C}$) across a Nitrogen vs. Phosphorus Limitation Gradient. *ERF 2001: An Estuarine Odyssey, St. Pete Beach, FL. November 4-8, 2001.*
- Feller, I.C. Sex-Biased Herbivory in *Arisaema triphyllum* (Jack-in-the-Pulpit) by Heterothrips *arisaemae*, a Specialist Thrips. Invited. 7th International Symposium on Thysanoptera, Reggio Calabria, Italy, July 2-7, 2001.
- Feller, I.C. Effects of Nutrient Enrichment on Ecological Processes in Mangrove Ecosystems. Invited. *NIWA, Hamilton, New Zealand, July 30, 2001*
- Feller, I.C. Mangrove Research within the Smithsonian Institution's Marine Science Network. Invited. Workshop on LTER-Based Tropical Coastal Research across the Caribbean. *LTER Network Support for Coordinating Collaborative Research. Florida Coastal Everglades LTER Program. Florida International University, Miami, FL. March 20-25, 2001.*
- Feller, I.C. Species Richness and Abundance of Insects in Mangroves. Symposium on Caribbean Clades and Their Distributions. the Smithsonian Institution, *Invited. Conservation International, the Center for Marine Conservation, March 27-28, 2001.*
- Feller, I.C. Ecology of Mangrove Ecosystems. Invited. Indian River Community College, March 1, 2001, Fort Pierce, FL.
- Feller, I.C. Wood-Feeding Insects As Ecosystem Engineers in Mangrove Ecosystems. Invited. Biology Department, South Florida University, Tampa, FL, November. 15, 2000.
- Feller, I.C., D.F. Whigham, K.L. McKee, C.E. Lovelock, & J.P. O'Neill. Decomposition and Nutrient Limitations in Tropical Mangroves. *INTECOL 6th International Wetland Symposium. Quebec City, Quebec. August 6-12, 2000.*
- Feller, I.C. Ecology of Mangrove Ecosystems. Invited. Indian River Community College, February 24, 2000, Fort Pierce, FL.
- Feller, I.C. Tangled Roots: the Ecology of Mangrove Ecosystems. *SERC Evening Lecture Series, February 16, 2000, Edgewater, MD.*
- Feller, I.C. Wood-Feeding Insects as Ecosystem Engineers in Mangrove Ecosystems. Invited. Biology Department, George Mason University, February 11, 2000, Fairfax, VA.
- Feller, I.C. Wood-Feeding Insects as Ecosystem Engineers in Mangrove Ecosystems. Invited. Biology Department, Tokyo Metropolitan University, June 24, 1999, Tokyo, Japan.
- Feller, I.C. Animals as Eco-Engineers: the Role of Insects in Mangrove Forests. Invited.

Biology Department, Georgetown University, December 4, 1998, Washington, DC.

- Feller, I.C., D.F. Whigham, J.P. O'Neill, & K.L. McKee. Effects of Nutrient Availability on Growth of Red Mangrove and Within-Stand Nutrient Cycling across Mangrove Forest Ecotones. *ESA 1998 Annual Meeting, August 1998, Baltimore, MD.*
- Feller, I.C. Patterns of Nutrient Dynamics and Herbivory in Mangrove Forests in Belize. *Invited. College of Marine Sciences, University of Delaware, October 14, 1997, Lewes, DE.*
- Feller, I.C. Keynote Speaker: Ecological Processes in Tropical Non-Muddy Coasts, Invited 1997 International Conference on Muddy Coasts. September 1-5, 1997, Wilhelmshaven, Germany.
- Feller, I.C. Effects of Nutrient Enrichment on Within-Stand Nutrient Cycling in Mud-Poor Mangrove Forests. *Invited. Dauphin Island Sea Lab, June 24, 1997, Dauphin Island, AL.*
- Feller, I.C. & D.F. Whigham 1996 (Symposium Organizers). Within-Stand Nutrient Cycling in Wetland Ecosystems. *INTECOL V Wetlands Conference 1996. September 1996, Perth, WA*
- Feller, I.C., D.F. Whigham, J. P. O'Neill, & K.L. McKee. Within-Stand Nutrient Cycling in Neotropical Mangrove Ecosystems. *INTECOL V Wetlands Conference 1996. September 1996, Perth, Western Australia.*
- McKee, K.L., B. Middleton, I.C. Feller, & W.D. Heyman. 1996. Variation in Mangrove Physiognomy and Sediment Physicochemistry in Southern Belize. *INTECOL V Wetlands Conference 1996. September 1996, Perth, Western Australia.*
- Feller, I.C., H. Kudoh, C.E. Tanner, & D.F. Whigham. Sex-Biased Herbivory in Jack-In-The-Pulpit (*Arisaema triphyllum*) by a Specialist Thrips. *ESA 1996, August 1996, Providence, RI.*
- Feller, I.C. the Impact of Insect Herbivory on Nutrient Cycling in Mangrove Ecosystems. Annual Meeting of the Trustees of the Chesapeake Research Consortium. June 14, 1996. Smithsonian Environmental Research Center, Edgewater, MD.
- Feller, I.C. the Importance of Wood-Boring Insects in the Ecology of Mangrove Forests in Belize. *Invited. Dept. of Biology, Old Dominion University, March 6, 1996, Norfolk, VA.*
- Feller, I.C. Mangrove Conservation Through Environmental Education. *November 13, 1995. Invited. Nacional Acuario, Dominican Republic.*
- Middleton, B., K.L. McKee, I.C. Feller, & W.D. Heyman. 1995. Nutrient Limitation of Above- and Below-Ground Decomposition in Ecotones of Mangrove Swamps At Twin Cays and Punta Yacos Lagoon, Belize. *80th Annual Ecological Society of America Meeting: Snowbird, Utah. August.*
- Feller, I.C. the Role of Wood-Boring Insects in Mangrove Forests in Belize. The Second Coastal Ecology and Management Symposium. December 6-8, 1994. Key Largo, FL.
- McKee, K.L., & I.C. Feller. Effects of Nutrient Enrichment on Leaf Herbivory in Mangrove Forests. *The Second Coastal Wetland Ecology and Management Symposium. December 6-8, 1994. Key Largo, FL.*
- Feller, I.C. Effects of Nutrient Enrichment on Growth and Herbivory in Dwarf Red Mangrove. *October 21, 1994. Invited. National Wetland Center, Lafayette, LA.*
- Feller, I.C. Wood-Boring Insects in Mangrove Forests. October 20, 1994. Invited. Department of Biology, University of Southwestern Louisiana, Lafayette, LA.
- Feller, I.C. Herbivory in Mangrove Forests. September 20, 1994. *Invited. The Nature Conservancy, Roslyn, VA.*
- McKee, K.L., & I.C. Feller. Effects of Nutrients and Shading on Growth and Architecture of Mangroves in Belize. *August 8, 1994. Annual ESA Meeting, Knoxville, TN.*

- Feller, I.C. Effects of Nutrient Enrichment on Growth and Herbivory in Dwarf Red Mangrove. *February 1994. Invited. Department of Biology, St. Mary's College, St. Mary's, MD.*
- McKee, K.L. & I.C. Feller. 1992. Factors Influencing Rates of Mangrove Leaf Litter Removal by Crabs in Belize. *77th Annual Ecological Society of America Meeting; Honolulu, Hawaii. August 1992.*
- Feller, I.C. Evidence of an Unusual Insect-Plant Mutualism in Mangrove (*Atylostagma polita* (Cerambycidae) in *Laguncularia racemosa* (Combretaceae)). Entomological Society of America Annual Meeting, December 1991, Reno, NV.
- Feller, I.C. Interactions of Controlled Nutrient Enrichment, Plant Growth, and Insect Herbivory in Red Mangrove. *Invited. Department of Biology, Georgetown University, November 1991, Washington, DC.*
- Feller, I.C. Mangrove Communities: an Intertidal Paradise. *Invited. Public Seminar Series, Biodiversity Program, Baird Auditorium, Smithsonian Institution, May 1991, Washington, DC.*
- Feller, I.C. Mangrove Insects and Island Architecture. *Invited. Biodiversity Seminar Series, Biodiversity Program, Smithsonian Institution, March 1991, Washington, DC.*
- Feller, I.C. Ecology of Mangrove Insects. *Invited. Department of Entomology, Smithsonian Institution, February 1991, Washington, DC.*
- Feller, I.C. Mangrove Communities in Belize. *Invited. Belize Audubon Society, Bliss Auditorium, January 1991, Belize City, Belize.*

SMITHSONIAN SERVICE

Member, SI/NOAA Ocean Web Portal Working Group, NMNH

Member, Smithsonian Science Commission

Science Advisor, Mangrove Exhibit at the National Zoo

Smithsonian Science Coordinator, Mpala Research Center, Nanyuki, Kenya, 1999-2003

Mangrove coordinator in Belize for Caribbean Coastal Marine Productivity Program (CARICOMP) for the Smithsonian Institution, 1989 to present

Co-host with K. Rützler and I.M. Macintyre, The Twin Cays Mangrove Ecosystem, Belize: Biodiversity, Geological History, and Two Decades of Change. December 14-17, 2003. Smithsonian Marine Station, Fort Pierce, Florida.

Steering Committee Member, Smithsonian's Caribbean Coral Reef Ecosystems Program

Education Committee Member, Smithsonian Environmental Research Center

Science Committee Member, Smithsonian Environmental Research Center

Intern Advisor, Smithsonian Environmental Research Center

Graduate Fellow Advisor, Smithsonian Marine Station at Fort Pierce, FL

Study Leader, Smithsonian Associates Tours

Co-host with K. Rützler, Biology and Geology of the Pelican Cays, Belize. A Caribbean Coral Reef Ecosystems Program Workshop. November 20-22, 1994. Smithsonian Environmental Research Center, Edgewater, MD.

Smithsonian Representative, Tropical Forest Action Plan conference, sponsored by UNDP and FAO, Belmopan, Belize

Co-host with K. Rützler, A mangrove and coral reef workshop by Smithsonian's Caribbean Coral Reef Ecosystems Program for the Policy and Research Division of the World Bank

Exhibit Committee Member, Marine Hall, National Museum of Natural History

Consultant, Orkin Insect Zoo, National Museum of Natural History

Exhibitor, Congressional Night, National Museum of Natural History

PROFESSIONAL SERVICE

Member: NASA's Biodiversity and Ecological Forecasting Team

Advisor, NASA's DEVELOP program for undergraduate and graduate students

Member: International Scientific Advisory Board for the Center for Tropical Marine Studies (ZMT) at the University of Bremen, Germany

Scientific Committee, International Meeting on Mangrove Ecology, Functioning and Management (MMM3), Galle, Sri Lanka, 2-6 July 2012

Conference Chair (elect), International Meeting on Mangrove Ecology (MMM4), 2016, Fort Pierce, FL

Member: IUCN Mangrove Specialists Group

Member: Graduate Faculty, Florida Atlantic University; elected September 2012

Peer-review or edit 6 professional documents (manuscripts, grant proposals, and/or promotion packages).

Session Organizer for INTECOL 9: Feller, I.C., Ronald Baker, & Matthew Kimball. *Session I.*

Climate Change Effects on Structure and Function of Coastal Wetlands. *Session II*. Climate Change Effects on Carbon and Nutrient Cycling Coastal Wetlands. *INTECOL 9 Wetlands Conference, Orlando, FL, June 3-8, 2012*.

Member: University of Maryland, SESYNC Focus Group, Annapolis, MD, August 2012.

Member: Expert Working Group, National Biodiversity Monitoring Program, Environmental Research Institute of the University of Belize, since August 2012

NATIONAL SERVICE

Scientific Committee, International Meeting on Mangrove Ecology, Functioning and Management (MMM3), Galle, Sri Lanka, 2-6 July 2012

Conference Chair (elect), International Meeting on Mangrove Ecology (MMM4), 2018, Fort Pierce, FL

Member, NASA Biodiversity and Ecological Forecasting Team

NASA-USFWS-NPS “Earth to Sky” Workshop, September 2011

Long-term Monitoring of Coastal Ecosystem Responses to the Deepwater Horizon Oil Spill Workshop, September 2010, Florida State University

NSF Ecology Advisory Panel, October 2006

Member, Consortium Development Committee, NEON Inc.

NeoNEON, regional co-chair and representative to COREO

Instructor for a joint marine ecology course (University of Georgia and University of Belize) at the Institute of Marine Sciences, May 13-19, 2005.

Delegate, LTER Meeting of 100, November 2004

NEON Regional Congress, North Bonneville, WA, October 2004

Developed a public website

(http://www.serc.si.edu/labs/animal_plant_interaction/biocomplexity.jsp) that includes a web-based mangrove ecology course, a teaching manual, and outline and description of mangrove field courses. A Virtual Mangrove Nature Trail was added to this site in January 2005. This Virtual Trail provides in depth and detailed descriptions, images, and illustrations of the habitats, flora, and fauna of mangrove ecosystems in the Caribbean. A Spanish version of the Virtual Tour will be added to this site in December 2005.

Conducted an electronic field trip “Where the Land & Sea Intertwine”, for elementary and junior high school student at Calabash Cay, Belize, in collaboration with Ball State University, May 2003. An estimated 13 million students in 45 states viewed this EFT. The URL for the Mangrove Biocomplexity EFT website is: www.bsu.edu/eft/belize.

Conducted a mangrove ecology field course at the University of Puerto Rico for undergraduates in collaboration with Smithsonian’s and UPR’s NSF’s LSAMP Programs, June 2003. Students studied mangrove, seagrass, and coral reef ecosystem in the laboratory and field and conducted group and independent research projects. They received 3 semester hours credit for the course.

Coordinated and taught along with Penelope Barnes a 5-wk STRI-OTS graduate course in tropical marine ecology at the Bocas del Toro Marine Field Station, Panama, June-July 2003. Graduate students from five countries studied mangrove, seagrass, and coral reef ecosystem in the laboratory and field and conducted group and independent research projects. I have agreed to organize and teach this course again in 2013.

Coordinated and conducted a mangrove ecology field course at the Institute of Marine Sciences (IMS), University of Belize, on Calabash Cay, Turneffe Islands Atoll, for U.S. and Belizean undergraduate students in collaboration with Eden Garcia (University of Belize) and Steve Davis (Texas A & M University), July 2002.

COLLABORATORS/CO-AUTHORS

Marilyn Ball, Australian National University, Canberra, Australia

Uta Berger, University of Bremen, Bremen, Germany

David Bone, Universidad Simón Bolívar, Caracas

John Cheeseman, University of Illinois

Daniel L. Childers, Florida International University

Carlos Corona-Domolina, South Florida Water Management District

Farid Dahdouh-Guebas, Université Libre de Bruxelles

Steve Davis, Texas A & M University

Donna Devlin, Florida Atlantic University

Norm Duke, University of Queensland, Brisbane, Australia

Joanne Ellis, National Institute of Water and Atmospheric Science, Hamilton, New Zealand

Dan Gruner, UMDCP

John Hamilton, UConn

Jorge Herrera-Silveira, Unidad Mérida, Mérida, Mexico

Myrna Jacobson, University of Southern California

Rudolf Jaffe, Florida International University

Samantha Joye, University of Georgia

Matthew Kimball, GTMNERR, NOAA

Mia Levine, University of California, Davis

Catherine Lovelock, University of Queensland, Brisbane, Australia

Ernesto Mancera, Universidad del Magdalena, Santa Marta, Colombia.

Karen McKee, National Wetlands Research Center, USGS

J.P. O'Neill, SERC

Rick Osman, SERC

John Parker, SERC

Ed Proffitt, Florida Atlantic University

Eliska Rejmankova, University of California, Davis

Victor Rivera-Monroy, Louisiana State University

Wilfrid Rodriguez, University of Rhode Island

Joseph E. Salisbury, Ocean Processes Analysis Laboratory, University of New Hampshire

John Paul Schmit, National Park Service

Carol Shearer, University of Illinois

Robert Twilley, Louisiana State University

Robert Ulanowicz, University of Maryland

Daniel Urish, University of Rhode Island

Ernesto Weil, University of Puerto Rico

Dennis Whigham, SERC

GRADUATE and THESIS ADVISORS

Edward Barrows (Georgetown University)

Wayne Mathis (Smithsonian Institution)

Daniel Simberloff (University of Tennessee)

Philip Sze (Georgetown University)

POSTDOCTORAL ADVISORS

Dennis Whigham (SERC); James F. Lynch (deceased)

THESIS ADVISEES and POSTDOCTORAL SCHOLARS

Ph.D. Students: Cyril Piou, University of Bremen (2003-2008); Faustino Chi, University of British Columbia (2005-2012); Juliane Vogt, University of Dresden (2006-2012); Glenn Coldren, Florida Atlantic University (2010-2013); Emily Dangremond, University of California, Berkeley (2011-2013); Cora Johnston, University of Maryland (2011-present); Megan Riley, University of South Carolina (beginning 2012), Zac Cannizzo, University of South Carolina

M.S. Students: Jonathan Pahlas, University of Georgia (2007); Rachel Borgatti, University of Maryland (2003-2007); Stephen Mitten, University of Missouri (2003-2005), Faustino Chi, University of Bremen (2001-2003); Cyril Piou, University of Bremen (2001-2003); Mary Pittek, University of Maryland (2003); Loraé Simpson, Villanova University (2008-2011); Annegret Skore, University of Dresden (2009); Caroline Thiem, University of Hamburg (2011); Cheryl Doughty, Villanova University (2013-2015); Heather Tham, Villanova University (2014-2016).

Postgraduate Scholars: Dr. Jennifer Apple (2000-2002); Dr. Wilfrid Rodriguez (2003-2006); Dr. Amy Erickson (2004-2006); Dr. Samantha Chapman (2005-2007); Dr. Eric Lind (2008-2010); Dr. Sarah Wittman (2008-2010); Dr. Amandine Vaslet (2009-2011); Dr. Ronald Baker (2010-2011); Dr. Adolphe Nfotabong Atheull (2011); Dr. Kyle Cavanaugh (2012-2015); Dr. Emily Dangremond (2014-2017).