

Literature Cited

- Allen, K., J.M. Dupuy, M.G. Gei, C. Hulshof, D. Medvigy, C. Pizano, B. Salgado-Negret, C.M. Smith, A. Trierweiler, S.J. Van Bloem, and B.G. Waring. 2017. Will seasonally dry tropical forests be sensitive or resistant to future changes in rainfall regimes?. *Environmental Research Letters* 12:023001.
- Álvarez-Berrios, N.L., S. Soto-Bayó, E. Holupchinski, S.J. Fain, and W.A. Gould. 2018. Correlating drought conservation practices and drought vulnerability in a tropical agricultural system. *Renewable Agriculture and Food Systems* 33:279-291.
- Barrios, S. 2021. Email from Sara Barrios to Service biologist Carlos Pacheco, Caribbean Ecological Services Field Office, Boquerón Puerto Rico. (September 2021).
- Bárrios, S. and M.A. Hamilton. 2018. *Mitracarpus polycladus*. The IUCN Red List of Threatened Species 2018: e.T124635520A125648189. Downloaded on 18 July 2018. 10 pp.
- Brandeis, T.J. and C.W. Woodall. 2008. Assessment of Forest Fuel Loadings in Puerto Rico and US Virgin Islands. *Ambio*. 37:557-562.
- Bremer, B. 1996. Combined and separate analyses of morphological and molecular data in the plant family Rubiaceae. *Cladistics* 12:21-40.
- Bolding, I. 1906. *Mitracarpus polycladus* herbarium specimen, collection 1377, voucher NY00030751. New York Botanical Garden, New York, 1 p.
- Buitrago-Soto, K. 2002. Population and reproductive ecology of *Mitracarpus maxwelliae* Britton and P. Wilson (Rubiaceae) an endemic and endangered species from southwestern Puerto Rico. ProQuest Information and Learning Company. 97 pp.
- Cáceres-Charneco, R.I. 2018. Environmental variability, community interactions and conservation of the main natural population of Puerto Rican crested toad (*Peltoprhyne lemur*) in Southern Puerto Rico. A dissertation submitted to the Department of Biology, Faculty of Natural Science, University of Puerto Rico, Rio Piedras Campus. 222 pp.
- Cashman, A., L. Nurse, and C. John. 2010. Climate change in the Caribbean: the water management implications. *The Journal of Environment Development* 19: 42-67.
- Church, J.A., P.U. Clark, A. Cazenave, J.M. Gregory, S. Jevrejeva, A. Levermann, M.A. Merrifield, G.A. Milne, R.S. Nerem, P.D. Nunn, and A.J. Payne. 2013. Sea level change. PM Cambridge University Press.
- Collier, N. and A. Brown. 2008. Important Bird Areas in the Caribbean- Saba. Environmental Protection in the Caribbean. Informative brochure. 4 pp.

- Department of Natural and Environmental Resources, Puerto Rico (DNR). 1976. The Master Plan for the Commonwealth Forest of Puerto Rico. San Juan, Puerto Rico. 258 pp.
- Department of Natural and Environmental Resources, Puerto Rico (DNR). 2005. Puerto Rico Critical Wildlife Areas. Commonwealth of Puerto Rico, DNER Bureau of Fish and Wildlife. San Juan, Puerto Rico. 394 pp.
- Departamento de Recursos Naturales y Ambientales (DRNA). 2004. Reglamento para regir las especies vulnerables y en peligro de extinción en el Estado Libre Asociado de Puerto Rico. Reglamento Número 6766. San Juan, Puerto Rico. 60 pp.
- Ewel, J.J. and J.L. Whitmore. 1973. The ecological life zones of Puerto Rico and U.S. Virgin Islands. Forest Service Research Publ. ITF-18, USDA. 72 pp.
- Freitas, J.A., A.C. Rojer, B.S.J. Nijhof and A.O. Debrot. 2016. A landscape ecological vegetation map of Saba (Lesser Antilles). IMARES report C195/15. 48 pp.
- Garcia-Cancel, J.G. 2013. Effects of native and non-native grasses on woody species regeneration in a Puerto Rican subtropical dry forest. Master's Thesis, University of Puerto Rico, Mayaguez, Campus. Mayaguez, PR. 72 pp.
- Gardner, L., J. Smith Abbott, and N. Woodfield-Pascoe. 2008. British Virgin Islands Protected Areas System Plan 2007-2017. BVI National Parks Trust, Tortola. 187 pp.
- Geelhoed, S.C.V., A.O. Debrot, J.C. Ligon, H. Madden, J.P. Verdaat, S.R. Williams, and K. Wulf. 2013. Important Bird Areas in the Caribbean Netherlands. IMARES-Report number C054/13. 51 pp.
- Glick, P. and B. A. Stein. 2010. Scanning the Conservation Horizon: A Guide to Climate Change Vulnerability Assessment. Draft. National Wildlife Federation, Washington, D.C. 164 pp.
- Gould, W.A., E.L. Díaz, (co-leads), N.L. Alvarez-Berríos, F. Aponte-González, W. Archibald, J.H. Bowden, L. Carrubba, W. Crespo, S.J. Fain, G. Gonzalez, A. Goulbourne, E. Harmsen, E. Holupchinski, A.H. Khalyani, J. Kossin, A.J. Leinberger, V.I. Marrero-Santiago, O. Martínez-Sánchez, K. McGinley, P. Méndez-Lázaro, J. Morell, M.M. Oyola, I.K. Parés-Ramos, R. Pulwarty, W.V. Sweet, A. Terando, and S. Torres-González. 2018. U.S. Caribbean. In Impacts, Risk, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 809-871.
- Hamilton, M.A. 2016. Boraginaceae, *Varronia rupicola* (Urb.) Britton: Biogeography, systematic placement and conservation genetics of a threatened species endemic to the Caribbean. PhD thesis, Brikceck, University of London, UK. 279 pp.

- Hamilton, M.A. and S. Barrios. 2017. Puerto Rican Bank (British Virgin Islands & Puerto Rico) June-July 2017 fieldwork report. Overseas Fieldwork Committee registration number 559-14. Royal Botanic Garden, Kew, Richmond, Surrey, UK. 6 pp.
- Hamilton, M.A. 2020. Email from Martin Hamilton to Service biologist Carlos Pacheco, Caribbean Ecological Services Field Office, Boquerón Puerto Rico. (November 2020).
- Hamilton, M.A. 2021. Email from Martin Hamilton to Service biologist Carlos Pacheco, Caribbean Ecological Services Field Office, Boquerón Puerto Rico. (September 2021).
- Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. [M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden, and C.E. Hanson (eds.)]. Cambridge University Press, Cambridge, UK. 987 pp.
- Intergovernmental Panel on Climate Change (IPCC). 2014. Climate Change 2014: Synthesis report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland. 151 pp.
- Island Resources Foundation (IRF). 2013. An Environmental Profile of the Island of Anegada, British Virgin Islands. Island Resources Foundation. Tortola, British Virgin Islands and Washington, D.C. 289 pp.
- Jennings, L.N., J. Douglas, E. Treasure, and G. González. 2014. Climate change effects in El Yunque National Forest, Puerto Rico, and the Caribbean region. Gen. Tech. Rep. SRS-193. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 47 pp.
- Keller, L.F. and D.M. Waller. 2002. Inbreeding effects in wild populations. *Trends in Ecology and Evolution* 17:230-241.
- Khalyani, A.H., W.A. Gould, E. Harmsen, A. Terando, M. Quinones, and J.A. Collazo. 2016. Climate change implications for Tropical Islands: interpolating and interpreting statistically downscaled GCM projections for management and planning. *Journal of Applied Meteorology and Climatology* 55:265-282.
- Khalyani, A.H., W.A. Gould, M.J. Falkowski, R. Muscarella, M. Uriarte, and F. Yousef. 2019. Climate change increases potential plant species richness on Puertan Rican uplands. *Climate change* 156:15-30.
- Lioger, A.H. 1997. Descriptive Flora of Puerto Rico and Adjacent Islands: Spermatophyta (Vol 4). Editorial de la Universidad de Puerto Rico, Rio Piedras, Puerto Rico. 481 pp.

- Lorde, T. 2011. An assessment of the economic impact of climate change on the coastal and marine sector in the British Virgin Islands. Technical Report by the Economic Commission for Latin America and the Caribbean. 78 pp.
- Lugo, A.E., J.A. Gonzalez Liboy, B. Cintrón, and K. Dugger. 1978. Structure, productivity, and transpiration of a subtropical dry forest. *Biotropica* 10:278-291.
- Meddens, A.J., A.T. Hudak, J.S. Evans, W.A. Gould, and G. González. 2008. Characterizing forest fragments in boreal, temperate, and tropical ecosystems. *AMBIO: A Journal of the Human Environment* 37:569-576.
- Medina, E., E. Cuevas, S. Molina, A.E. Lugo, and O. Ramos. 2012. Structural variability and species diversity of a dwarf Caribbean dry forest. *Caribbean Journal of Science* 46:203-251.
- Monsegur, O. 2017. *Mitracarpus polycladus* surveys. U.S. Fish and Wildlife Service. Caribbean Ecological Services Field Office.
- Murphy, P.G. and A.E. Lugo. 1986. Structure and biomass of a subtropical dry forest in Puerto Rico. *Biotropica* 18:89-96.
- Núñez-Florentin, M., R.M. Salas, E. Bezerra de Souza, E.L. Cabral. 2017. A complete description of *Mitracarpus diversifolius* (Rubiaceae) reveals new characters for the genus. *Phytotaxa* 314:96-102.
- Penn, A.B. 2010. The Virgin Islands Climate Change Green Paper. Conservation and Fisheries Department, Ministry of Natural Resources and Labour. 276 pp.
- Proctor, G.R. 1991. Status report on *Mitracarpus polycladus*. In: Puerto Rican plant species of special concern, Status and Recommendations. Publicación Científica Miscelánea, Department of Natural and Environmental Resources of Puerto Rico. 129 pp.
- Purvis, A., J.L. Gittleman, G. Cowlishaw, and G.M. Mace. 2000. Predicting Extinction Risk in Declining Species. *Proceedings: Biological Sciences* 267:1947-1952.
- Rojas-Sandoval, J. and E. Meléndez-Ackerman. 2012. Effects of an invasive grass on the demography of the Caribbean cactus *Harrisia portoricensis*: implications for cacti conservation. *Acta Oecologica* 41:30-38.
- Rojas-Sandoval, J. and E. Meléndez-Ackerman. 2013. Population dynamics of a threatened cactus species: general assessment and effects of matrix dimensionality. *Population Ecology* 55(3):479-491.
- Rojas-Sandoval, J. and E. Meléndez-Ackerman. 2016. Assessing the impact of grass invasion on the population dynamics of a threatened Caribbean dry forest cactus. *Biological Conservation* 196:156- 164.

- Rojer, A. 1997. Biological Inventory of Saba. KNAP project 96-10. Carmabi Foundation. 86 pp.
- Santiago-García, R.J., S. Molina Colón, P. Sollins and S.J. Van Bloem. 2008. The Role of Nurse Trees in Mitigating Fire Effects on Tropical Dry Forest Restoration: a case study. *Ambio* 37:604-608.
- Sintensis, P. 1886. *Mitracarpus polycladus* herbarium specimen, collection 3750, voucher BM001009068. British Museum of Natural History, London. 1p.
- Sloan, S.A., J.K. Zimmerman and A.M. Sabar. 2006. Phenology of *Plumeria alba* and its Herbivores in a Tropical Dry Forest. *Biotropica* 39(2):195-201.
- Strauss, B. and S. Kulp. 2018. Sea-Level Rise Threats in the Caribbean, Data, tools, and analysis for more resilient future. Inter-American Development Bank, Climate Central, Princeton, N.J. 28 pp.
- Sweet, W.V., R.E. Kopp, C.P. Weaver, J. Obeysekera, R.M. Horton, E.R. Thieler, and C. Zervas, 2017: Global and Regional Sea Level Rise Scenarios for the United States. NOAA Tech. Rep. NOS CO-OPS 083. National Oceanic and Atmospheric Administration, National Ocean Service, Silver Spring, MD. 75 pp
- Thaxton, J.M., S.J. Van Bloem, and S. Whitmire. 2012. Fuel conditions associated with native and exotic grasses in a subtropical dry forest in Puerto Rico. *Fire Ecology* 8(3):9-17.
- Thomson, D. 2005. Measuring the effects of invasive species on the demography of a rare endemic plant. *Biological Invasion* 7:615-624.
- Urban, I. 1903. *Symbolae Antillanae seu Fundamenta Florae Indiae Occidentalis*. Vol III. Lipsiae Fratres Borntraeger. pp. 389-390.
- U.S. Global Change Research Program (USGCRP). 2018. Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II: Report-in-Brief [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA. 186 pp.
- U.S. Fish and Wildlife Service (Service). 1998. *Mitracarpus maxwelliae*, *Mitracarpus polycladus*, and *Eugenia woodburyana* Recovery Plan. Atlanta, Georgia. 19 pp.
- U.S. Fish and Wildlife Service (Service). 2007. *Mitracarpus polycladus* survey by Caribbean Ecological Services Field Office staff.
- U.S. Fish and Wildlife Service (Service). 2011. Five-year status review on the endangered species *Mitracarpus maxwelliae* and *Mitracarpus polycladus*. Atlanta, Georgia. 19 pp.

- U.S. Fish and Wildlife Service (Service). 2013. Amendments to San Francisco Wind Farm, LLC Incidental Take Permit (ITP) TE104073-2, Set of Findings and Lift of Partial Suspension for the ITP. Caribbean Ecological Service Field Office. 15 pp.
- U.S. Fish and Wildlife Service (Service). 2017. *Mitracarpus polycladus* survey by Caribbean Ecological Services Field Office staff.
- U.S. Fish and Wildlife Service (Service). 2018a. Update to the 5-year status review on the endangered species *Mitracarpus maxwelliae* and *Mitracarpus polycladus*. Atlanta, Georgia. 29 pp.
- U.S. Fish and Wildlife Service (Service). 2018b. Report on the Population Status of *Mitracarpus polycladus* in Southern Karst Region of Puerto Rico. Caribbean Ecological Services Field Office 17pp.
- U.S. Fish and Wildlife Service (Service). 2019. Amended Recovery plan *Mitracarpus maxwelliae* and *Mitracarpus polycladus*. Atlanta, Georgia. 29 pp.
- Walther, G.R., E. Post, P. Convey, A. Menzel, C. Parmesan, T.J.C. Beebee, J.M. Fromentin, O. Hoegh-Guldberg, and F. Bairlein. 2002. Ecological responses to recent climate change. *Nature* 416:389–395.
- Wolfe, B.T. 2009. Post-fire regeneration in subtropical dry forest of Puerto Rico. Master's Thesis. University of Puerto Rico, Mayagüez Campus. 75 pp.
- Wolfe, B.T. and S.J. Van Bloem. 2012. Subtropical dry forest regeneration in grass-invaded areas of Puerto Rico: Understanding why *Leucaena leucocephala* dominates and native species fail. *Forest Ecology and Management* 267:253-261.
- Woodbury, R.O. 1970. *Mitracarpus polycladus* herbarium specimen, collection 3941, voucher UPRRP010083. University of Puerto Rico, Rio Piedras. p. 1