



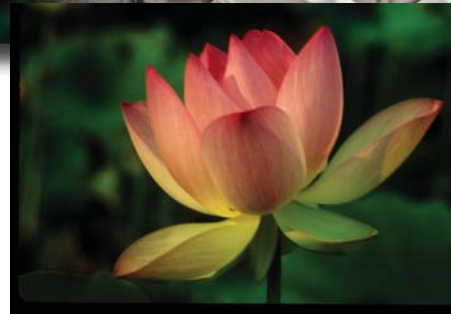
Phytogeography and Taxonomy of the North American Flora: Recent Advances in Digital Technology and the Development of Digital Floras as Research Tools with John Kartesz

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Our knowledge of North American floristics is predicated upon four centuries of vouchered collections that number some 80 million records. Therefore, our basic knowledge of floristics is no longer a mystery. By using even antiquated floristic practices, we can generate informative traditional floras with a great deal of precision regarding where our 23,000 species occur within North America, how we identify them, which ones are rare, which ones are exotic, what characteristics do they share, etc. However, by applying many new and readily available alternative technologies to these antiquated floristic practices, new and wholly different paradigms can be produced. From our vast herbarium records, we know that there are 23,714 species of vascular plants in North America, of which 19,402 are native, 4,366 are exotic, 2,748 are trees, 6,429 are shrubs, etc. However, by incorporating Digital Technology, it is also possible to show richness and similarity coefficients of floras from different elevations, from different ecoregions, from different heat and hardiness zones and from different physiographic zones. Digital Technology can also produce species area curves, illustrate density gradation patterns and compare floras with similar rainfall, heat and hardiness zone patterns. It is also possible to monitor floristic shifts due to climate factors such as global warming and other factors. Moreover, by using random access keys and digital imagery, we can produce more effective identification systems and more accurately pinpoint locations of individual plant populations, or even individual plants that grow in parks, forests or along roadsides.

John Kartesz (jkartesz@bonap.org) received his Bachelor's and Master's Degrees in Biology from West Virginia University and his PhD from the University of Nevada. His area of interest includes the development of a National floristic database and accompanying county-level digital atlas for the vascular flora of the North America. Dr. Kartesz worked for the North Carolina Botanical Garden at Chapel Hill for 17 years and currently serves

as Director of the Biota of North America Program (BONAP). The BONAP database has tracked all vascular plant species (native, naturalized, and recently adventive) over the last 40 years in North America, north of Mexico. BONAP's plant distribution data represents the most comprehensive currently available for the North America continent. BONAP also tracks and maintains current names, classifications, and related fields for all North American plants.



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Institute

PO Box 9, Steuben, ME 04680-0009

207-546-2821, Fax 207-546-3042

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