



# CASTANEA

The Journal of the Southern Appalachian Botanical Society

## Biodiversity Data in the Information Age: Do 21st Century Floras Make the Grade?

Michael W. Palmer\* and J. Channing Richardson

Department of Botany, Oklahoma State University, Stillwater, Oklahoma 74078

# Biodiversity Data in the Information Age: Do 21st Century Floras Make the Grade?

Michael W. Palmer\* and J. Channing Richardson

Department of Botany, Oklahoma State University, Stillwater, Oklahoma 74078

---

**ABSTRACT** Floras, or documented lists of vascular plant species in a defined area, are widely used in biodiversity research and conservation, and represent a common type of publication in regional botanical and natural history journals. Although all floras present common types of information, there has not yet been a formal attempt to develop community standards for floristic data. As a consequence, published floras often lack basic data describing the study area, taxonomic sources, and criteria for inclusion of species. Here, we develop a grading scheme for floras and apply it to 145 articles in 5 leading journals (*Castanea*, *Rhodora*, *Sida/ Journal of the Botanical Research Institute of Texas*, *Journal of the Torrey Botanical Club*, and *Southeastern Naturalist*) published from 2000 through 2009. We found that the average ‘grade’ was 80%, and did not vary among journals. We also list common mistakes and confusions. We urge authors, editors, and reviewers to adopt (and adhere to) a set of standards that we provide, or to develop similar comprehensive standards of their own.

**Key words:** Biodiversity, data standards, floras, floristics, informatics, publishing.

---

**INTRODUCTION** Large biodiversity databases accompanied by progress in computation are allowing increased exploration of a wide range of macroecological questions (Michalcová et al. 2011, Manthey et al. 2011, Gerhold et al. 2011). Floras, or catalogs of vascular plant species in defined regions, have frequently served as primary data in such studies (e.g., McLaughlin 2007, Qian et al. 2007, Pyšek et al. 2011). Floras have particular promise for biodiversity studies in North America, where there is a centuries-old tradition of writing floras, in the form of books, theses, government documents, and scholarly articles. To date, we know of at least 3,200 published floras from the continent (Palmer 2011 and unpubl. data) in the form of journal articles, books, theses, and government documents. It is likely that, with the exception of descriptions of new taxa, floras represent the most common kind of scholarly publication relating to biodiversity.

Unfortunately, this heritage of floristic literature has not led to a set of community

standards. While the *content* (i.e., a list of vascular plant species) has widely been appreciated to be of comparative value, the *format* and *metadata* have been wildly inconsistent, even within the same issue of a journal. Differences in format (e.g., the order of species in a list, how exotic species are indicated, how data are summarized) are a major nuisance when it comes to comparing floras. However, differences in metadata (e.g., whether the site is adequately circumscribed, whether the source of nomenclature is given, whether criteria for inclusion or exclusion of taxa is provided) may preclude comparison entirely. Without a clearly defined nomenclature, there is limited ability to trace the taxonomic concept (*sensu* Franz and Peet 2009) and, thus, floras cannot readily be compared. Although a set of standards for writing proposals has been proposed at least once (Palmer et al. 1995), in effect the authors, reviewers, and editors of each new floristic publication ‘reinvent the wheel’ when deciding what basic descriptive information is considered worthy of inclusion.

Floristic research is, in many respects, much easier this century than in previous ones. Not only are study sites more accessible and

---

\*email address: mike.palmer@okstate.edu

Received August 31, 2011; Accepted December 14, 2011.

DOI: 10.2179/11-035

herbarium records more extensive, but the job of writing manuscripts is much simpler. For example, floristic literature is more readily available in electronic form. Geographic information, such as area, latitude, longitude, and elevation can be obtained without visiting a map room. Computer spreadsheets and databases facilitate the sorting of species and reformatting of lists. Thus, modern authors have few hindrances to providing basic descriptions of their data. Similarly, since there are only a few basic kinds of information that are necessary to describe regions or lists, editors and reviewers have few impediments to ensuring that submissions provide adequate information.

The purpose of this paper is twofold: (a) to assess whether floras published in North American journals in the first decade of the 21st century 'make the grade' with respect to providing adequate information to the reader and downstream users of floristic data; and (b) to promote a set of community standards for future floristic publications.

**MATERIALS AND METHODS** This report is part of the FloraS of North America Project (the capitalized 'S' distinguishes it from Flora of North America [1993]), which is an attempt to catalog vascular floras published from North America north of Mexico (Palmer 2005, 2007a; Qian et al. 2007; Palmer et al. 2008; Denslow et al. 2010). For this paper, we scanned the contents of five journals that regularly publish floras from North American locations: (*Castanea*, *Rhodora*, *Sida*/*Journal of the Botanical Research Institute of Texas (JBRIT)*, *Journal of the Torrey Botanical Society*, and *Southeastern Naturalist*) from the 10-year period spanning 2000 through 2009. We treat *Sida* and *JBRIT* as the same journal, as the latter superseded the former. We define a vascular flora as a list of plant species documented to occur within a defined area.

MacRoberts and MacRoberts (2010) make a strong case that meta-analyses of floristic data degrade the value of primary sources when such sources are not cited in the *Literature Cited* section. Thus, we cite all of our sources here (Abbott and Judd 2000; Edgin and Ebinger 2000; McMaster and McMaster 2000; Neyland et al. 2000; Stalter and Lamont 2000; Swanson and Vankat 2000; Wells and Brown 2000; Alford 2001;

Allison and Stevens 2001; Bailey and Coe 2001; Greller and Clemants 2001; Hoagland and Johnson 2001; Luken and Thieret 2001; Neill and Wilson 2001; Rundell and Woods 2001; Small and McCarthy 2001; Thompson and Jones 2001; Backus et al. 2002; Davis et al. 2002; Denley et al. 2002; Diamond et al. 2002; Fleming et al. 2002; Gullledge and Judd 2002; Leidolf et al. 2002; MacRoberts et al. 2002; Martin et al. 2002; McClain and Ebinger 2002; McClain et al. 2002; Morgan 2002; Schmidt and Barnwell 2002; Stalter and Lamont 2002; Stalter and Munir 2002; Towne 2002; Barringer and Clemants 2003; Barringer and Pannaman 2003; Diamond 2003; Hellquist and Crow 2003; Klips 2003; Muss et al. 2003; Myers and Wunderlin 2003; Rosen et al. 2003; Singhurst et al. 2003; Steury and Davis 2003; Bjork and Dunwiddie 2004; Crow and Fahey 2004; Dransfield and Woods 2004; Edgin et al. 2004; Feist et al. 2004; Fleming and Wofford 2004; Hoagland et al. 2004a, 2004b; Hoagland and Buthod 2004; Hoagland and Johnson 2004; Kabat et al. 2004; Krings and Franks 2004; Stalter and Kincaid 2004; Thompson and Fleming 2004; Warren et al. 2004; Zomlefer et al. 2004; Brown et al. 2005; Coxe et al. 2005; Edgin et al. 2005a, 2005b; Estes 2005; Estes and Walck 2005; Greene et al. 2005; Greller et al. 2005; Homoya and Abrell 2005; Jahr and Crow 2005; Jog et al. 2005; Leck and Leck 2005; Marsico 2005; McCauley and Crow 2005; McClain et al. 2005; McEwan et al. 2005; Rink 2005; Shelingoski et al. 2005; Stalter and Lamont 2005; Zomlefer and Giannasi 2005; Brown et al. 2006a, 2006b; Crandall and Tyril 2006; Furguson and Wunderlin 2006; Harrelson and Cantino 2006; Kabat et al. 2006; Kelly 2006; Loeb 2006; MacRoberts and MacRoberts 2006; McLaughlin 2006; Owens et al. 2006; Sorrie et al. 2006; Stalter and Lamont 2006; Talbot et al. 2006; Thompson and McKinney 2006; Thompson and Poindexter 2006; Barone and Hill 2007; Beck and Van Horn 2007; DeCandido et al. 2007; Harcombe et al. 2007; Hoagland and Buthod 2007; Majure 2007; Morton and Speedy 2007; Morton et al. 2007; Palmer 2007b; Rink and Cully 2007; Rosen 2007; Singhurst et al. 2007; Stalter et al. 2007; Terry and Hayden 2007; Thompson 2007; Zomlefer et al. 2007; Barger and Tenaglia 2008; Brown et al. 2008a, 2008b; Feist et al. 2008; Hoagland

**Table 1. Grading rubric for 21st century floras. The number of possible points is 100. See Table 2 for items leading to penalty points being assigned**

	Points	Mean Score (%)
<b>Title</b>		
Site name included	3	91.3
General location included (e.g., state or province)	2	96.6
Taxonomic scope included (e.g., vascular)	2	73.4
The term "flora" or other unambiguous phrase in title (only "flora" gets full credit)	3	88.5
<b>Location information</b>		
Location unambiguously and completely identified	5	92.3
Site status (proper name for the site, ownership, jurisdiction)	4	85.9
Distribution: number of parcels, location, and area of each	1	83.4
<b>Geography</b>		
Area provided	5	90.1
Maximum and minimum elevation provided	5	53.9
Latitude and Longitude (if maximum extent >25 km, then extremes are needed)	5	52.6
<b>Taxonomy</b>		
Nomenclatural system stated and bibliographic information presented	7	93.6
Taxonomic scope stated	3	99.1
<b>Voucher specimens</b>		
Herbaria where vouchers are deposited stated	4	95.0
<b>Botanical effort</b>		
Years and seasons of expeditions	3	95.6
Main collector(s)	2	72.8
Whether herbaria or literature were used to help complete the list	2	61.0
<b>Exotic species</b>		
Exotic species indicated	5	93.8
Criteria given for "exotic" (e.g., to the state, to the continent, etc.)	4	64.3
Literature for determination cited	3	56.3
<b>The taxonomic list</b>		
Terms and symbols unambiguously assigned	4	92.8
Exotic status of species presented logically	4	87.2
Species alphabetically listed within families	1	98.6
Families in logical (and explained) order (e.g., alphabetic or a standard taxonomic system)	3	91.7
Authorities given (unless a fixed source is strictly followed)	2	99.3
<b>Summary</b>		
Summary table used	2	33.4
Number of families	2	89.0
Number of genera	2	84.8
Number of species	5	74.1
Total number of taxa (even if no extra infraspecific taxa)	2	53.4
Total taxa defined (i.e., "species plus infraspecific taxa")	1	29.7
Number of exotic species	4	72.4

and Buthod 2008a, 2008b; Horn 2008; Khan et al. 2008; MacRoberts et al. 2008; McClain et al. 2008, Morton and Speedy 2008, Nazaire and Crow 2008, Nichols and Nichols 2008, Peirson and Evans 2008, Phillippe et al. 2008, Poindexter and Murrell 2008, Rink and Cully 2008, Schiebout et al. 2008, Steury et al. 2008, Thompson 2008, Zomlefer et al. 2008, Corogin and Judd 2009, Elam et al. 2009, Franck and

Wunderlin 2009, Hoagland and Buthod 2009, Jenkins and McMillan 2009; MacRoberts and MacRoberts 2009; MacRoberts et al. 2009a, 2009b; Morgan 2009; Neyland 2009; Poindexter and Thompson 2009; Reif et al. 2009; Rink et al. 2009; Saghatelian 2009; Thompson et al. 2009; Wilder and Roche 2009).

We graded each flora using the criteria listed in Tables 1 and 2; we assigned the total

**Table 2. Problems in floras for which we applied penalty points (one for each instance)**


---

1. Metric units not used for measurements
2. "Species" and "taxa" used interchangeably
3. Species name misspelled
4. Species misplaced (excluding legitimate differences in systematic placement)
5. Ambiguity of nomenclatural source (e.g., multiple sources are cited, but it is not clear which source is used for which taxa)
6. Lack of precision in geography (e.g., "more than 100 hectares," "highest elevations exceed 800 m")
7. Taxonomic scope violated (e.g., charophytes are counted as vascular plants)
8. Ambiguity of species and infraspecific taxa (e.g., if a species without a variety is listed as a separate entity from a type variety)
9. Gross violations of convention (e.g., not capitalizing genus or family names)
10. Groups omitted or lumped without being clearly indicated in the abstract or title (e.g., pteridophytes, sedges, graminoids, exotic species)

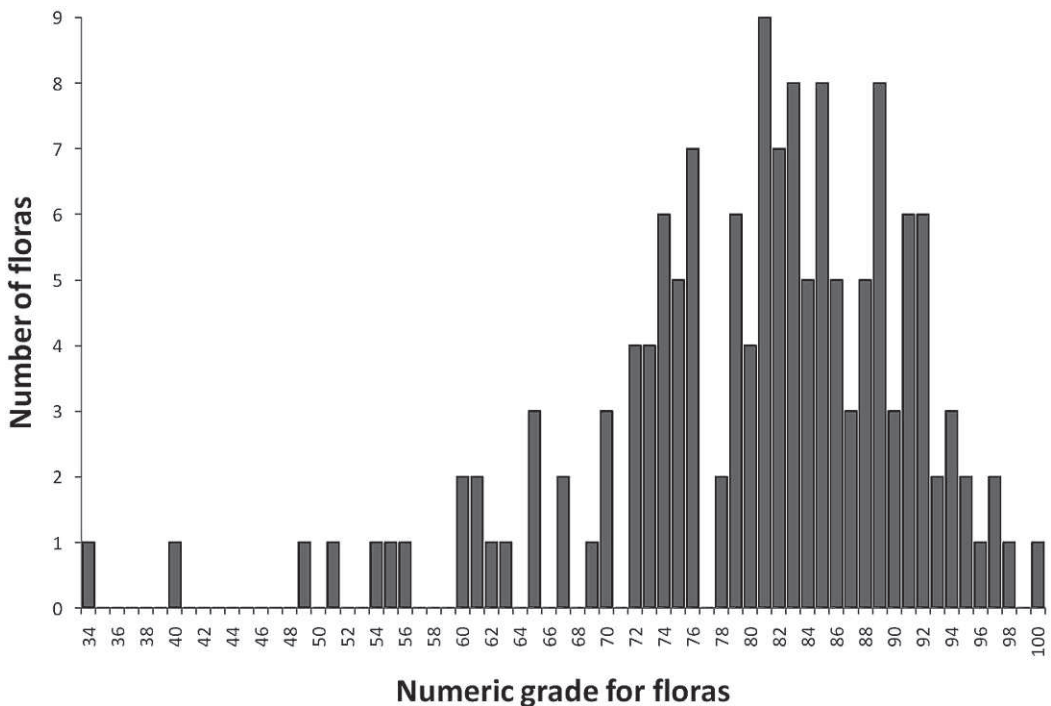
---

number of points, admittedly subjectively, according to our perceived importance of the information. We assigned partial credit when information was partially provided.

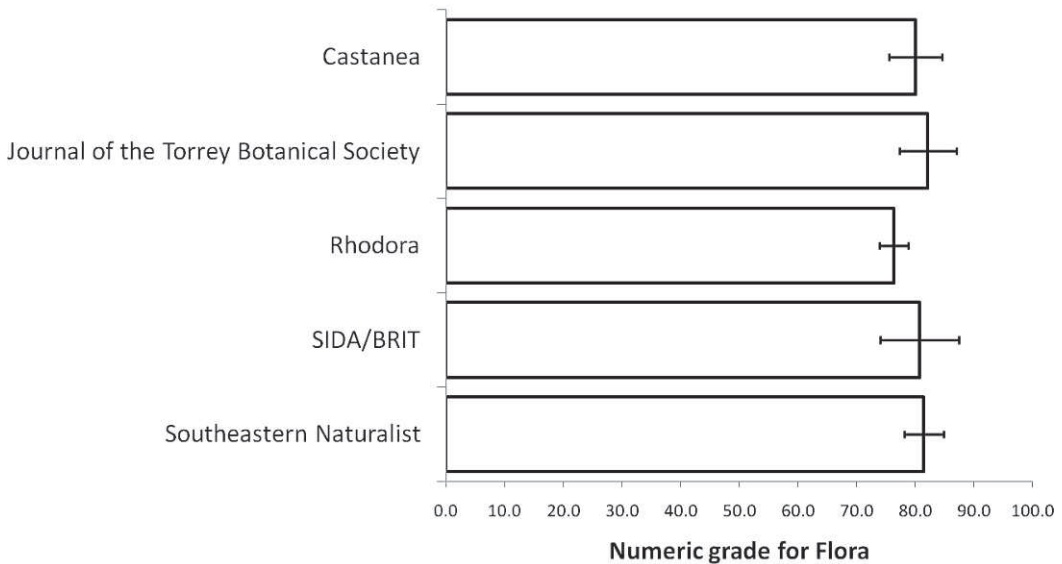
While we evaluated the nature of the data provided in each paper, we made no attempt to evaluate the completeness and correctness of the list itself. For example, we did not critique the highly improbable species records and suspected misidentifications. However, we feel that authors and reviewers should be especially vigilant in this regard, given the

critical importance of accurate biodiversity information for conservation and macroecology. Fortunately, floras that provide specimen numbers allow for the possibility of correcting such errors.

We also made no attempt to evaluate consistency in how floras present information on soils, geology, vegetation, land use history, rare species, and the like. While we consider such information to be relevant to interpreting floristic data, they are difficult to standardize and evaluate fairly.



**Figure 1.** Numeric grades for 145 floras, as assigned according to Table 1. The mean is 80.1, along with a standard deviation of 11.3 and a median of 82.0.



**Figure 2.** Mean numeric grade (out of 100 possible points) for floras in five leading journals. Error bars represent 95% confidence intervals.

As the purpose of this paper is to illustrate systemic issues in the publication of floras, we specifically wish to avoid reflecting negatively on particular authors. Therefore, we do not cite particular references when discussing shortcomings of modern floras.

**RESULTS** We identified 52 articles in *Castanea* as floras, as well as 20 in *Rhodora*, 42 in *JBRIT*, 9 in *Southeastern Naturalist*, and 22 in the *Journal of the Torrey Botanical Club*, for a total of 139 floras. Floras ranged in grade from 34 to 100, with an average of 80.4, a

standard deviation of 11.3, and a median of 82.0 (Figure 1). Most of the lower scores were due to incompleteness of presented information (Table 1), although 24 floras had penalty points (Table 2) applied (some more than one), leading to a mean penalty of 0.23%. The mean scores for the five journals did not differ significantly (Figure 2), and thus, in subsequent analysis and discussion, we do not distinguish among journals.

The mean grade for most subcategories exceeded 85% (Table 1). Categories with poorer average scores included providing data for

**Table 3. Common errors in published floras (including floras not surveyed herein)**

- The numbers of taxa or species in the abstract does not agree with the statistics in the text
- The numbers of taxa or species in the abstract or text does not agree with the number of entries in the list
- Scientific names (genera or epithets) ending with ‘-acea’ are misspelled as ‘-aceae’
- Species are placed in incorrect families (this is an unrelated issue to systematic placement; it typically occurs when families have similar sounding names, or when the incorrect families are directly preceding or following the correct families)
- The words ‘taxa’ and ‘species’ are used interchangeably with respect to a count, yet the list itself indicates there are more taxa than species
- Charophytes are listed as vascular plants
- Incorrect Latin suffix for specific epithets
- The species names in the text are not the correct synonyms in the source of nomenclature cited
- When more than one nomenclatural source is given, it is not stated which source is used for which group
- Status of species as exotic is not correct according to the literature source cited; in some floras, native ruderal species are listed as exotic—possibly based on false assumptions
- An infraspecific taxon is counted as a taxon separate from its species, even if no other infraspecific taxon is named within the same species

**Table 4.** Proposed Community Standards for the Writing of Floras, following Palmer et al. (1995) and Table 1. These represent the *minimum* standards; in most cases floras should include more information (e.g., on vegetation, physiognomy, soils, land use, rare species, etc.)

Category	Requirements
Title	Site name and general location (e.g., county, state, province) included The terms <i>vascular flora</i> or <i>vascular plant checklist</i> included
Location information	The location of the site under consideration must be unambiguously and completely identified (e.g., no undefined "and vicinity") The proper name for the site, ownership, and jurisdiction Distribution of the site if multiple parcels: number of parcels, location, and area of each Geographic: area of site (ha or km <sup>2</sup> ) to maximal feasible accuracy, minimum and maximum latitude, minimum and maximum longitude, minimum and maximum elevation in meters
Taxonomic scope	Sources used for nomenclature unambiguously stated Taxonomic scope stated (e.g., flowering plants only or all vascular plants) Criteria for inclusion or exclusion unambiguous (e.g., woody plants only, season of sampling, nativity, etc.)
Voucher specimens	Herbaria where specimens are deposited must be stated Reasons for not collecting species (e.g., toxicity, rarity) must be stated
Botanical effort	Years and seasons of expeditions Main collectors Which herbaria were searched, or unambiguously stated if none were Which already existing lists, if any, provided information on records
Exotic/native species	Criteria (e.g., nativity to North America, the biome, the state) by which exotic status is delineated Authority used to assess nativity
The list itself	The organization and symbols used in the list unambiguously described Exotic status of species clearly indicated Species alphabetically listed within families Families listed in logical and unambiguous order (alphabetic preferred) Conventions followed for botanical nomenclature Authorities must be included, and follow Brummitt and Powell (1992), unless a cited standardized source is strictly followed
Summary table	Number of families, genera, species, and infraspecific taxa Number of exotic species Taxonomic levels must be used correctly, and be consistent with the table (i.e., the word "taxa" should not be interchangeable with "species"; if there are no infraspecific taxa found, this must be unambiguously stated; if the study did not aim to resolve taxa at an infraspecific level, that must also be unambiguously stated)

elevation, geographical location, collection history, definition and source of information for determining 'exotic species,' and providing consistent summaries of total numbers of entities at different taxonomic levels. In this regard, a pervasive inconsistency is that many floras list the total number of species, and others list the total number of taxa, yet few summarize both. In many cases, these terms are used inconsistently in the text even when the numbers are not identical.

While we specifically did not evaluate floras with respect to the *correctness* of the data summaries and the floristic list, we encountered numerous mistakes in floras during our survey. We present these in Table 3, but without citations so as not to embarrass authors.

**DISCUSSION** We found that floras published in peer-reviewed journals in the first decade of the 21st Century vary tremendously in the quality of information presented. The mean score of 80.1 (or B- in conventional academic grading) is disappointing. If floristic research is perceived by the broader academic community to have lax standards, it may put a damper on calls for more research. Instances of sloppiness (Table 3) do little to advance the field. Even more discouraging to scholars comparing floras is that different works are incomplete or inadequate in different ways. We admit that our allotment of points and some of our criteria (e.g., 'presented logically') are subjective. However, we feel that we evaluated references relatively leniently, and that other grading schemes with different



emphases would lead to the same basic conclusions.

We strongly argue for rigor in describing the location of the study site(s) in regard to area, elevation, and geographic coordinates, since these are almost invariably easy for the author to obtain, and are all strong correlates of biodiversity (Huston 1994, Rosenzweig 1995, Murphy et al. 2011, Werenkraut and Ruggiero 2011). While an author may find it irrelevant to report minimum and maximum elevations of a flat area, such information may end up being necessary for readers using the flora in comparative analyses.

While the focus of this paper is to evaluate peer-reviewed journals, we observed similar problems in government documents, theses, and books. Poor standards for large works, such as books, are particularly frustrating, since they typically contain so many species—and thus are difficult for users to correct. We see no attempts to adhere to common standards in government-sponsored floristic research, despite an increasing call for applying metadata standards for federal data (Federal Geographic Data Committee 2000). There is widespread interest in standards for museum specimens and taxonomic information (e.g., Franz and Peet 2009, Darwin Core Task Group, Biodiversity Information Standards [TDWG 2011]), and an appreciation for consistent abbreviations of authorities (Brummitt and Powell 1992), but such efforts have little to say about standardizing the information presented in floras.

We hereby propose a set of minimum standards for the writing of floras (Table 4; slightly modified from Palmer et al. 1995 and Table 1). While some may disagree with our particular proposed standards, we hope there is consensus that consistently applied community standards are desirable. We propose that journals publishing floristic work, as a *matter of editorial policy*, establish a set of guidelines to authors as to what *must* be in submitted manuscripts. While we hope that journals will consider guidelines more stringent than those proposed in Table 4, we also hope the common denominator will be no weaker.

We suspect that most authors will be grateful for a framework of standards, as it will facilitate writing without hampering creativity. However, we are mindful that standards

will place an extra burden on reviewers and editors. If a framework, such as that described by Table 4, is made available to reviewers, it should make the task easier. We hope that a further appreciation for data quality will usher in a golden era of floristic research.

**ACKNOWLEDGMENTS** We thank Leticia Dadalt and Michael Denslow for critical reviews of the manuscript. We acknowledge the support of National Science Foundation-Office of Experimental Program to Stimulate Competitive Research grant EPS-0919466 and seed funding from the Oklahoma State University Institute for Sustainable Environments.

#### LITERATURE CITED

- Abbott, J.R. and W.S. Judd. 2000. Floristic Inventory of the Waccasassa Bay State Preserve, Levy County, Florida. *Rhodora* 102:439–513.
- Alford, M.H. 2001. The vascular flora of Amite County, Mississippi. *Sida* 19:645–699.
- Allison, R.R. and T.E. Stevens. 2001. Vascular flora of Ketona Dolomite outcrops in Bibb County, Alabama. *Castanea* 66:154–205.
- Backus, R.H., P.T. Polloni, B.L. Reid, P. Somers, and T.O. Hendrickson. 2002. The flora of Penikese Island, Massachusetts: the fifth survey (1998–1999), with emphasis on the woody vegetation. *Rhodora* 104:219–252.
- Bailey, C.J. and F.G. Coe. 2001. The vascular flora of the riparian zones of the Clear Fork River and the New River in the Big South Fork National River and Recreation Area (BSFNRR). *Castanea* 66:252–274.
- Barger, T.W. and D. Tenaglia. 2008. The vascular flora of the Coon Creek Forever Wild Tract, Tallapoosa County, Alabama. *Southeastern Naturalist* 7:527–540.
- Barone, J.A. and J.G. Hill. 2007. Herbaceous flora of Blackland prairie remnants in Mississippi and western Alabama. *Castanea* 72:226–234.
- Barringer, K. and S.E. Clemants. 2003. The vascular flora of Black Rock Forest, Cornwall, New York. *J. Torrey Bot. Soc.* 130:292–308.
- Barringer, K. and L. Pannaman. 2003. Vascular plants of the Fairview Lake watershed, Sussex County, New Jersey. *J. Torrey Bot. Soc.* 130:47–54.



- Beck, J.T. and G.S. Van Horn. 2007. The vascular flora of Prentice Cooper State Forest and Wildlife Management Area, Tennessee. *Castanea* 72:15–44.
- Bjork, C.R. and P.W. Dunwiddie. 2004. Floristics and distribution of vernal pools on the Columbia Plateau of eastern Washington. *Rhodora* 106:327–347.
- Brown, L.E., P.A. Harcombe, W.W. Pruess, I.S. Elsik, B.R. MacRoberts, M.H. MacRoberts, and S.D. Jones. 2006a. Annotated checklist of the vascular flora of the Lance Rosier Unit of the Big Thicket National Preserve, Hardin County, Texas. *Sida* 22:1175–1189.
- Brown, L.E., B.R. MacRoberts, M.H. MacRoberts, P.A. Harcombe, W.W. Pruess, I.S. Elsik, and D. Johnson. 2005. Annotated checklist of the vascular flora of the Turkey Creek Unit of the Big Thicket National Preserve, Tyler and Hardin counties, Texas. *Sida* 21:1807–1827.
- Brown, L.E., B.R. MacRoberts, M.H. MacRoberts, P.A. Harcombe, W.W. Pruess, I.S. Elsik, and S.D. Jones. 2006b. Annotated checklist of the vascular flora of the Big Sandy Creek Unit of the Big Thicket National Preserve, Texas. *Sida* 22:705–723.
- Brown, L.E., B.R. MacRoberts, M.H. MacRoberts, P.A. Harcombe, W.W. Pruess, I.S. Elsik, and S.B. Walker. 2008a. Annotated checklist of the vascular flora of the Beech Creek Unit of the Big Thicket National Preserve, Tyler County, Texas. *J. Bot. Res. Inst. Texas* 2:651–660.
- Brown, L.E., B.R. MacRoberts, M.H. MacRoberts, W.W. Pruess, I.S. Elsik, and S.B. Walker. 2008b. Annotated checklist of the vascular flora of the Loblolly Unit of the Big Thicket National Preserve, Liberty County, Texas. *J. Bot. Res. Inst. Texas* 2:1481–1489.
- Brummitt, R.K. and C.E. Powell (eds.). 1992. Authors of plant names: a list of authors of scientific names of plants, with recommended standard forms of their names, including abbreviations. Royal Botanic Gardens, Kew, UK.
- Corogin, P.T. and W.S. Judd. 2009. Floristic inventory of Tiger Creek Preserve and Saddle Blanket Scrub Preserve, Polk County, Florida. *Rhodora* 111:448–502.
- Coxe, R., C.M. Morton, M.J. Haywood, B.L. Isaac, and J.A. Isaac. 2005. Checklist of the vascular plants of Greene County, Pennsylvania. *Sida* 21:1829–1859.
- Crandall, R.M. and R.J. Tyrl. 2006. Vascular flora of the Pushmataha Wildlife Management Area, Pushmataha County, Oklahoma. *Castanea* 71:65–79.
- Crow, G.E. and L.L. Fahey. 2004. Floras of Pequawket and Heath Pond Bogs, Ossipee, New Hampshire. *Rhodora* 106:360–367.
- Darwin Core Task Group, Biodiversity Information Standards – TDWG. 2011. Darwin Core. <http://rs.tdwg.org/dwc>. (accessed 1 Dec 2011).
- Davis, J.E., C. McRae, B.L. Estep, L.S. Barden, and J.F. Matthews. 2002. Vascular flora of piedmont prairies: evidence from several prairie remnants. *Castanea* 67:1–12.
- DeCandido, R., N. Calvanese, and R.V. Alvarez. 2007. The naturally occurring historical and extant flora of Central Park, New York City, New York 1857–2007. *J. Torrey Bot. Soc.* 134:552–569.
- Denley, K.K., C.T. Bryson, and R.A. Stewart. 2002. Vascular flora of Yalobusha County, Mississippi. *Castanea* 67:402–415.
- Denslow, M.W., M.W. Palmer, and Z.E. Murrell. 2010. Patterns of native and exotic vascular plant richness along an elevational gradient from sea level to the summit of the Appalachian Mountains, USA. *J. Torrey Bot. Soc.* 137:67–80.
- Diamond, A.R., Jr. 2003. A checklist of the vascular flora of Pike County, Alabama. *Castanea* 68:143–159.
- Diamond, A.R., Jr. M. Woods, J.A. Hall, and B.H. Martin. 2002. The vascular flora of the Pike County Pocosin Nature Preserve, Alabama. *Southeastern Naturalist* 1:45–54.
- Dransfield, T.P. and M. Woods. 2004. The vascular flora of Dale County, Alabama. *Southeastern Naturalist* 3:495–516.
- Edgin, B. and J.E. Ebinger. 2000. Vegetation of a successional prairie at Prairie Ridge State Natural Area, Jasper County, Illinois. *Castanea* 65:139–146.
- Edgin, B., J. Shimp, D. Allen, J. Cawn, W.E. McClain, and J.E. Ebinger. 2004. Vascular flora

- of Gray's Post Oak Woodland, Saline County, Illinois. *Southeastern Naturalist* 3:733–744.
- Edgin, B., G.C. Tucker, and J.E. Ebinger. 2005b. Vegetation and flora of American Beech Woods Nature Preserve, Clark County, Illinois. *Sida* 21:1861–1878.
- Edgin, B.R., R. Beadles, and J.E. Ebinger. 2005a. Vascular flora of Beadles Barrens Nature Preserve, Edwards County, Illinois. *Castanea* 70:47–58.
- Elam, C.E., J.M. Stucky, T.R. Wentworth, and J.D. Gregory. 2009. Vascular flora, plant communities, and soils of a significant natural area in the middle Atlantic coastal plain (Craven County, North Carolina). *Castanea* 74:53–77.
- Estes, D. 2005. The vascular flora of Giles County, Tennessee. *Sida* 21:2343–2388.
- Estes, D. and J.L. Walck. 2005. The vascular flora of Rattlesnake Falls: a potential state natural area on the Western Highland Rim Escarpment in Tennessee. *Sida* 21:1753–1780.
- Feist, M.A., M.J. Morris, L.R. Phillippe, J.E. Ebinger, and W.E. McClain. 2008. Sand Prairie Communities of Matanzas Nature Preserve, Mason County, Illinois. *Castanea* 73:177–187.
- Feist, M.A., L.R. Phillippe, D.T. Busemeyer, and J.E. Ebinger. 2004. Vegetation survey of Dean Hills Nature Preserve, Fayette County, Illinois. *Castanea* 69:52–66.
- Federal Geographic Data Committee. 2000. Content standard for digital geospatial metadata workbook. Federal Geographic Data Committee, Reston, Virginia.
- Fleming, C.A. and B.E. Wofford. 2004. The vascular flora of Fall Creek Falls State Park, Van Buren and Bledsoe Counties, Tennessee. *Castanea* 69:164–184.
- Fleming, K.M., J.R. Singhurst, and W.C. Holmes. 2002. Vascular flora of Big Lake Bottom Wildlife Management Area, Anderson County, Texas. *Sida* 20:355–372.
- Flora of North America Editorial Committee. 1993. *Flora of North America north of Mexico*. Oxford University Press, New York, New York.
- Franck, A.R. and R.P. Wunderlin. 2009. Vascular flora of Churchill Ranch, Sarasota County, Florida. *J. Bot. Res. Inst. Texas* 3:339–348.
- Franz, N.M. and R.K. Peet. 2009. Towards a language for mapping relationships among taxonomic concepts. *Systematics and Biodiversity* 7:5–20.
- Ferguson, E. and R.P. Wunderlin. 2006. A vascular plant inventory of Starkey Wilderness Preserve, Pasco County, Florida. *Sida* 22:635–659.
- Gerhold, P., M. Pärtel, O. Tackenberg, S.M. Hennekens, I. Bartish, J.H.J. Schaminée, A.J.F. Fergus, W.A. Ozinga, and A. Prinzing. 2011. Phylogenetically poor plant communities receive more alien species, which more easily coexist with natives. *American Naturalist* 177:668–680.
- Greene, C.W., L.L. Gregory, G.H. Mittelhauser, S.C. Rooney, and J.E. Weber. 2005. Vascular flora of the Acadia National Park region, Maine. *Rhodora* 107:117–185.
- Greller, A.M. and S.E. Clemants. 2001. Flora of West Hills Park, Suffolk County, New York, with considerations of provenance of some long-distance disjuncts. *J. Torrey Bot. Soc.* 128:76–89.
- Greller, A.M., G.E. Lotowycz, G. Moore, E. Lamont, H. Binger, B. Conolly, V. Dankel, J. Hoar, C. Johnston, A. Mangiacapre, J. Schmidt, L. Zimmerman, V. Luisi, B. Quigley, M.L. Lamont, and S.E. Clemants. 2005. Vascular flora of Caumsett State Historic Park, Lloyd Neck, Long Island, New York, with notes on the vegetation. *J. Torrey Bot. Soc.* 132:149–168.
- Gulledge, K.J. and W.S. Judd. 2002. A floristic inventory of Manatee Springs State Park, Levy County, Florida. *Rhodora* 104:42–76.
- Harcombe, P.A., I.S. Elsik, W.W. Pruess, and L.E. Brown. 2007. The vascular flora of a woodland park site in east Harris County, Texas. *J. Bot. Res. Inst. Texas* 1:693–711.
- Harrelson, S.M. and P.D. Cantino. 2006. The terrestrial vascular flora of Strouds Run State Park, Athens County, Ohio. *Rhodora* 108:142–183.
- Hellquist, C.E. and G.E. Crow. 2003. The vascular flora of Mud Pond Peatland, Carroll County, New Hampshire. *Rhodora* 105:153–177.

- Hoagland, B.W. and A. Buthod. 2008a. The vascular flora of the J. T. Nickel Family Nature and Wildlife Preserve, Cherokee County, Oklahoma. *Castanea* 73:16–28.
- Hoagland, B.W. and A. Buthod. 2009. The vascular flora of the Cucumber Creek Nature Preserve, LeFlore County, Oklahoma. *Castanea* 74:78–87.
- Hoagland, B.W., A. Buthod, and W. Elisens. 2004a. Vascular flora of Washita Battlefield National Historic Site, Roger Mills County, Oklahoma. *Sida* 21:1187–1197.
- Hoagland, B.W. and A.K. Buthod. 2004. Vascular flora of Hugo Lake Wildlife Management Area, Choctaw County, Oklahoma. *Southeastern Naturalist* 3:701–714.
- Hoagland, B.W. and A.K. Buthod. 2007. Vascular flora of the Four Canyons Preserve, Ellis County, Oklahoma. *J. Bot. Res. Inst. Texas* 1:655–664.
- Hoagland, B.W. and A.K. Buthod. 2008b. The vascular flora of an Ozark plateau site, Ottawa County, Oklahoma. *Southeastern Naturalist* 7:581–594.
- Hoagland, B.W., P.H.C. Crawford, P.T. Crawford, and F. Johnson. 2004b. Vascular flora of Hackberry Flat, Frederick Lake, and Suttle Creek, Tillman County, Oklahoma. *Sida* 21:429–445.
- Hoagland, B.W. and F. Johnson. 2004. The vascular flora of Red Slough and Grassy Slough Wildlife Management Areas, Gulf coastal plain, McCurtain County, Oklahoma. *Castanea* 69:284–296.
- Hoagland, B.W. and F.L. Johnson. 2001. Vascular flora of the Chickasaw National Recreation Area, Murray County, Oklahoma. *Castanea* 66:383–400.
- Homoya, M.A. and D.B. Abrell. 2005. A natural occurrence of the federally endangered Short's goldenrod (*Solidago shortii* T. & G.) [Asteraceae] in Indiana: its discovery, habitat, and associated flora. *Castanea* 70:255–262.
- Horn, C.N. 2008. A vascular flora of Lynch's Woods Park, Newberry County, South Carolina. *Castanea* 73:111–122.
- Huston, M.A. 1994. Biological diversity. Cambridge University Press, Cambridge, UK.
- Jahr, K.J. and G.E. Crow. 2005. Floristic reevaluation of a created wetland in Portsmouth, New Hampshire. *Rhodora* 107:87–102.
- Jenkins, R.A. and P.D. McMillan. 2009. Vascular flora of Sandhill Research and Education Center, Richland County, South Carolina. *Castanea* 74:168–180.
- Jog, S.K., J.T. Kartesz, J.R. Johansen, and G.J. Wilder. 2005. Floristic study of Highland Heights Community Park, Cuyahoga County, Ohio. *Castanea* 70:136–145.
- Kabat, C.A., S.M. Kabat, and W.S. Judd. 2004. An inventory of the vascular flora of Morningside Nature Center, Alachua County, Florida. *Rhodora* 927:226–253.
- Kabat, C.A., S.M. Kabat, W.S. Judd, and G.M. Ionta. 2006. Floristic inventory of the remnant pinelands of the U.S.D.A. Subtropical Horticultural Research Station at Chapman Field, Miami-Dade County, Florida. *Rhodora* 108:387–399.
- Kelly, L. 2006. The vascular flora of Huggins Island, Onslow County, North Carolina. *Castanea* 71:295–311.
- Khan, N.R., T.A. Block, and A.F. Rhoads. 2008. Vascular flora and community assemblages of Evansburg State Park, Montgomery County, Pennsylvania. *J. Torrey Bot. Soc.* 135:438–458.
- Klips, R.A. 2003. Vegetation of Claridon Railroad Prairie, a remnant of the Sandusky Plains of central Ohio. *Castanea* 68:135–142.
- Krings, A. and C. Franks. 2004. An annotated, preliminary checklist of the vascular flora of Camp Butner, North Carolina. *Sida* 21:1131–1139.
- Leck, M.A. and C.F. Leck. 2005. Vascular plants of a Delaware River tidal freshwater wetland and adjacent terrestrial areas: seed bank and vegetation comparisons of reference and constructed marshes and annotated species list. *J. Torrey Bot. Soc.* 132:323–354.
- Leidolf, A., S. McDaniel, and T. Nuttle. 2002. The flora of Oktibbeha County, Mississippi. *Sida* 20:691–765.
- Loeb, R.E. 2006. A comparative flora of large urban parks: intraurban and interurban similarity in the megalopolis of the northeastern United States. *J. Torrey Bot. Soc.* 133:601–625.

- Luken, J.O. and J.W. Thieret. 2001. Floristic relationships of mud flats and shorelines at Cave Run Lake, Kentucky. *Castanea* 66: 336–351.
- MacRoberts, B.R. and M.H. MacRoberts. 2006. An updated, annotated vascular flora of Caddo Parish, Louisiana, with notes on regional phytogeography and ecology. *Sida* 22:1191–1219.
- MacRoberts, B.R. and M.H. MacRoberts. 2009. Floristics of upland shortleaf pine/oak-hickory forest in northwestern Louisiana. *J. Bot. Res. Inst. Texas* 3:367–374.
- MacRoberts, B.R., M.H. MacRoberts, and L.E. Brown. 2002. Annotated checklist of the vascular flora of the Hickory Creek Unit of the Big Thicket National Preserve, Tyler County, Texas. *Sida* 20:781–795.
- MacRoberts, B.R., M.H. MacRoberts, C.S. Reid, and P.L. Faulkner. 2009a. Vascular flora of a saline prairie in Winn Parish, Louisiana. *J. Bot. Res. Inst. Texas* 3:349–354.
- MacRoberts, B.R., M.H. MacRoberts, C.S. Reid, and P.L. Faulkner. 2009b. Vascular flora of Morse Clay Prairies in northwestern Louisiana. *J. Bot. Res. Inst. Texas* 3:355–366.
- MacRoberts, M.H. and B.R. MacRoberts. 2010. Problems of citation analysis: a study of uncited and seldom-cited influences. *J. Amer. Soc. Info. Sci. Tech.* 16:1–12.
- MacRoberts, M.H., B.R. MacRoberts, and G.M. Hanson. 2008. Vascular flora of C. Bickham-Dickson/Red River Education and Research Park, Caddo Parish, Louisiana: an oxbow lake community, with comments on exotic/native species ratios. *J. Bot. Res. Inst. Texas* 2:1389–1406.
- Majure, L.C. 2007. The vascular flora of the Chunky River (Mississippi). *J. Bot. Res. Inst. Texas* 1:1179–1202.
- Manthey, M., J.D. Fridley, and R.K. Peet. 2011. Niche expansion after competitor extinction? A comparative assessment of habitat generalists and specialists in the tree floras of south-eastern North America and south-eastern Europe. *J. Biogeog.* 38:840–853.
- Marsico, T.D. 2005. The vascular flora of Montgomery County, Arkansas. *Sida* 21: 2389–2423.
- Martin, B.H., M. Woods, and A.R. Diamond, Jr. 2002. The vascular flora of Coffee County, Alabama. *Castanea* 67:227–246.
- McCauley, K.M. and G.E. Crow. 2005. The vegetation and flora of Platt Park, Southbury, Connecticut. *Rhodora* 107:186–230.
- McClain, W.E. and J.E. Ebinger. 2002. A comparison of the vegetation of three limestone glades in Calhoun County, Illinois. *Southeastern Naturalist* 1:179–188.
- McClain, W.E., L.R. Phillippe, and J.E. Ebinger. 2005. Floristic assessment of the Henry Allan Gleason Nature Preserve, Mason County, Illinois. *Castanea* 70:146–154.
- McClain, W.E., M.A. Phipps, H.H. Eilers, and J.E. Ebinger. 2002. Vascular plants of glacial drift prairies in Macoupin County, Illinois. *Castanea* 67:54–60.
- McClain, W.E., J.E. Schwegman, T.A. Strole, L.R. Phillippe, and J.E. Ebinger. 2008. Floristic study of Sand Prairie-Scrub Oak Nature Preserve, Mason County, Illinois. *Castanea* 73:29–39.
- McEwan, R.W., R.D. Paratley, R.N. Muller, and C.L. Riccardi. 2005. The vascular flora of an old-growth mixed mesophytic forest in southeastern Kentucky. *J. Torrey Bot. Soc.* 132:618–627.
- McLaughlin, S.P. 2006. Vascular floras of Sonoita Creek State Natural Area and San Rafael State Park: Arizona's first natural-area parks. *Sida* 22:661–704.
- McLaughlin, S.P. 2007. Tundra to tropics: the floristic plant geography of North America. Botanical Research Institute of Texas, Fort Worth, Texas.
- McMaster, R.T. and N.D. McMaster. 2000. Vascular flora of beaver wetlands in western Massachusetts. *Rhodora* 102:175–197.
- Michalcová, D., S. Lvončík, M. Chytrý, and O. Hájek. 2011. Bias in vegetation databases? A comparison of stratified-random and preferential sampling. *J. Veg. Sci.* 22:281–291.
- Morgan, E.C. 2002. The vascular flora of the Hempstead Harbor Shoreline Trail Natural Area, Long Island, New York. *J. Torrey Bot. Soc.* 129:359–362.
- Morgan, E.C. 2009. The vegetation and vascular flora of the Bartlett Arboretum Forest. *J. Torrey Bot. Soc.* 136:532–540.

- Morton, C.M. and L. Speedy. 2007. Checklist of the vascular plants of Washington County, Pennsylvania. *J. Bot. Res. Inst. Texas* 1:1229–1249.
- Morton, C.M. and L. Speedy. 2008. Checklist of the vascular plants of Fayette County, Pennsylvania. *J. Bot. Res. Inst. Texas* 2:1449–1474.
- Morton, C.M., L. Speedy, and J.K. Bissell. 2007. Checklist of the vascular plants of Crawford County, Pennsylvania. *J. Bot. Res. Inst. Texas* 1:631–653.
- Murphy, H.T., J. VanDerWal, and J. Lovett-Doust. 2011. One, two, and three-dimensional geometric constraints and climatic correlates of North American tree species richness. *Ecography* 34:267–275.
- Muss, J.D., D.F. Austin, and J.R. Snyder. 2003. Plants of the Big Cypress National Preserve, Florida. *J. Torrey Bot. Soc.* 130:119–142.
- Myers, J.H., Jr. and R.P. Wunderlin. 2003. Vascular flora of Little Manatee River State Park, Hillsborough County, Florida. *Castanea* 68:56–74.
- Nazaire, M. and G.E. Crow. 2008. A study of the vegetation and floristic diversity of two peatland complexes of post-settlement origin in Lake Umbagog National Wildlife Refuge, Coos County, New Hampshire. *Rhodora* 110:296–344.
- Neill, A.K. and H.D. Wilson. 2001. The vascular flora of Madison County, Texas. *Sida* 19:1083–1121.
- Neyland, R. 2009. A revision to the vascular flora of Calcasieu Parish, Louisiana. *J. Bot. Res. Inst. Texas* 3:375–377.
- Neyland, R., B.J. Hoffman, M. Mayfield, and L.E. Urbatsch. 2000. A vascular flora survey of Calcasieu Parish, Louisiana. *Sida* 19: 361–386.
- Nichols, W.F. and V.C. Nichols. 2008. The land use history, flora, and natural communities of the Isles of Shoals, Rye, New Hampshire and Kittery, Maine. *Rhodora* 110:245–295.
- Owens, N.L., G.C. Tucker, and J.E. Ebinger. 2006. Flora and vegetation of Coneflower Glacial Drift Hill Prairie Natural Area, Moultrie County, Illinois. *Rhodora* 108: 370–386.
- Palmer, M.W. 2005. Temporal trends of exotic species richness in North American floras: an overview. *Ecoscience* 12:386–390.
- Palmer, M.W. 2007a. Species-area curves and the geometry of nature. p. 15–31. *In*: Storch, D., P.A. Marquet, and J.H. Brown (eds.). *Scaling biodiversity*. Cambridge University Press, Cambridge, UK.
- Palmer, M.W. 2007b. The vascular flora of the Tallgrass Prairie Preserve, Osage County, Oklahoma. *Castanea* 72:235–246.
- Palmer, M.W. 2011. Floras of North America Project (<http://botany.okstate.edu/floras/>). Department of Botany, Oklahoma State University, Stillwater, Oklahoma.
- Palmer, M.W., J.D. Fridley, and D.J. McGlenn. 2008. Artifacts and artifications in biodiversity research. *Folia Geobotanica* 43:245–257.
- Palmer, M.W., G.L. Wade, and P.R. Neal. 1995. Standards for the writing of floras. *BioScience* 45:339–345.
- Peirson, J.A. and D.K. Evans. 2008. The vascular flora of Sayres Pond, a remnant prairie fen in Champaign County, Ohio. *Rhodora* 110:178–209.
- Phillippe, L.R., D.T. Busemeyer, P.B. Marcum, M.A. Feist, and J.E. Ebinger. 2008. Prairie and savanna vegetation of Braidwood Dunes and Savanna Nature Preserve, Will County, Illinois. *Castanea* 73:1–15.
- Poindexter, D.B. and Z.E. Murrell. 2008. Vascular flora of Mount Jefferson State Natural Area and environs, Ashe County, North Carolina. *Castanea* 73:283–327.
- Poindexter, D.B. and R.L. Thompson. 2009. Vascular flora and plant habitats of Wallace Woods, a hemlock-northern hardwoods palustrine forest, Crawford County, Pennsylvania. *Rhodora* 111:231–260.
- Pyšek, P., V. Jarošík, J. Pergl, and J. Wild. 2011. Colonization of high altitudes by alien plants over the last two centuries. *Proc. Natl. Acad. Sci. U.S.A.* 108:439–440.
- Qian, H., J.D. Fridley, and M.W. Palmer. 2007. The latitudinal gradient of species-area relationships for vascular plants of North America. *Am. Nat.* 170:690–701.



- Reif, B., J. Larson, B.F. Jacobs, B.E. Nelson, and R.L. Hartman. 2009. Floristic studies in the north central New Mexico, U.S.A. The Tusas Mountains and the Jemez Mountains. *J. Bot. Res. Inst. Texas* 3:921–961.
- Rink, G. 2005. A checklist of the vascular flora of Canyon de Chelly National Monument, Apache County, Arizona. *J. Torrey Bot. Soc.* 132:510–532.
- Rink, G. and A. Cully. 2008. A checklist of the vascular flora of Aztec Ruins National Monument, San Juan County, New Mexico. *J. Torrey Bot. Soc.* 135:571–584.
- Rink, G.R. and A.C. Cully. 2007. A checklist of the vascular flora of Yucca House National Monument and surrounding lands, Montezuma County, Colorado. *J. Torrey Bot. Soc.* 134:289–300.
- Rink, G.R., A.C. Cully, and D.A. McCallum. 2009. A checklist of the vascular flora of El Morro National Monument, Cibola County, New Mexico. *J. Torrey Bot. Soc.* 136:403–421.
- Rosen, D.J. 2007. The vascular flora of Nash Prairie: a coastal prairie remnant in Brazoria County, Texas. *J. Bot. Res. Inst. Texas* 1:679–692.
- Rosen, D.J., S.D. Jones, and V.E. Rettig. 2003. A floristic survey of Big Branch Marsh National Wildlife Refuge, St. Tammany Parish, Louisiana. *Sida* 20:1189–1216.
- Rosenzweig, M.L. 1995. Species diversity in space and time. Cambridge University Press, Cambridge, UK.
- Rundell, H. and M. Woods. 2001. The vascular flora of Ech Lake, Alabama. *Castanea* 66:352–362.
- Saghatelian, A. 2009. A classification of geographic elements and analysis of the flora of Big Bend Region of Texas. *J. Bot. Res. Inst. Texas* 3:407–441.
- Schiebout, M.H., D.L. Hazlett, and N. Snow. 2008. A floristic survey of vascular plants over parts of northeastern New Mexico. *J. Bot. Res. Inst. Texas* 2:1407–1447.
- Schmidt, J.M. and J.A. Barnwell. 2002. A flora of the Rock Hill Blackjacks Heritage Preserve, York County, South Carolina. *Castanea* 69:247–279.
- Shelingoski, S., R.J. LeBlond, J.M. Stucky, and T.R. Wentworth. 2005. Flora and soils of Wells Savannah, an example of a unique savanna type. *Castanea* 70:101–114.
- Singhurst, J.R., J.C. Cathy, D. Prochaska, H. Haucke, G.C. Kroh, and W.C. Holmes. 2003. The vascular flora of Gus Engeling Wildlife Management Area, Anderson County, Texas. *Southeastern Naturalist* 2:347–368.
- Singhurst, J.R., L.L. Sanchez, D. Frels, Jr, T.W. Schwertner, M. Mitchell, S. Moren, and W.C. Holmes. 2007. The vascular flora of Mason Mountain Wildlife Management Area, Mason County, Texas. *Southeastern Naturalist* 6:683–692.
- Small, C.J. and B.C. McCarthy. 2001. Vascular flora of the Waterloo Wildlife Research Station, Athens County, Ohio. *Castanea* 66:363–382.
- Sorrie, B.A., J.B. Gray, and P.J. Crutchfield. 2006. The vascular flora of the longleaf pine ecosystem of Fort Bragg and Weymouth Woods, North Carolina. *Castanea* 71:129–161.
- Stalter, R. and D. Kincaid. 2004. The vascular flora of five Florida shell middens. *J. Torrey Bot. Soc.* 131:93–103.
- Stalter, R., J. Baden, and D. Kincaid. 2007. The vascular flora of three abandoned rice fields, Georgetown, South Carolina: a 39-year comparison. *J. Bot. Res. Inst. Texas* 1:665–677.
- Stalter, R. and E.E. Lamont. 2000. Vascular flora of Fisherman Island, Virginia. *J. Torrey Bot. Soc.* 127:324–332.
- Stalter, R. and E.E. Lamont. 2002. Vascular flora of Jamaica Bay Wildlife Refuge, Long Island, New York. *J. Torrey Bot. Soc.* 129:346–358.
- Stalter, R. and E.E. Lamont. 2005. The historical and extant flora of Great Gull Island, New York. *J. Torrey Bot. Soc.* 132:628–634.
- Stalter, R. and E.E. Lamont. 2006. The historical and extant flora of Sable Island, Nova Scotia, Canada. *J. Torrey Bot. Soc.* 113:362–374.
- Stalter, R. and A. Munir. 2002. The vascular flora of Hoffman and Swinburne Islands,



- New York Harbor, New York. *J. Torrey Bot. Soc.* 129:77–82.
- Steury, B.W. and C.A. Davis. 2003. The vascular flora of Piscataway and Fort Washington National Parks, Prince Georges and Charles Counties, Maryland. *Castanea* 68:271–299.
- Steury, B.W., G.P. Fleming, and M.T. Strong. 2008. An emendation of the vascular flora of Great Falls Park, Fairfax County, Virginia. *Castanea* 73:123–149.
- Swanson, A.M. and J.L. Vankat. 2000. Woody vegetation and vascular flora of an old-growth mixed-mesophytic forest in southwestern Ohio. *Castanea* 65:36–55.
- Talbot, S.S., S.L. Talbot, and W.B. Schofield. 2006. Vascular flora of Izembek National Wildlife Refuge, Westernmost Alaska Peninsula, Alaska. *Rhodora* 108:249–293.
- Terry, M.A. and W.J. Hayden. 2007. Vascular flora of Powhatan County, Virginia. *Castanea* 72:138–158.
- Thompson, J.D., W.R. Norris, and D.Q. Lewis. 2009. The vascular flora of Ledges State Park (Boone County, Iowa) revisited: revelations and recommendations. *Castanea* 74:390–423.
- Thompson, R.L. 2007. The vascular flora of the Hancock Biological Station, Murray State University, Calloway County, Kentucky. *J. Bot. Res. Inst. Texas* 1:609–630.
- Thompson, R.L. 2008. The vascular plants of the Berea College Forest in Madison, Jackson, and Rockcastle Counties, Kentucky. *Castanea* 73:188–209.
- Thompson, R.L. and C.A. Fleming. 2004. Vascular flora and plant communities of the John B. Stephenson Memorial Forest State Nature Preserve (Anglin Falls Ravine), Rockcastle County, Kentucky. *Castanea* 69:125–138.
- Thompson, R.L. and R.L. Jones. 2001. Woody plants of Rock Creek Research Natural Area and Watershed Uplands, Laurel County, Kentucky. *Castanea* 66:275–287.
- Thompson, R.L. and L.E. McKinney. 2006. Vascular flora and plant habitats of an abandoned limestone quarry at Center Hill Dam, DeKalb County, Tennessee. *Castanea* 71:54–64.
- Thompson, R.L. and D.B. Poindexter. 2006. Vascular flora of the Elk and Bison Prairie, Land Between the Lakes National Recreation Area, Trigg County, Kentucky. *Castanea* 71:105–123.
- Towne, E.G. 2002. Vascular plants of Konza Prairie Biological Station: an annotated checklist of species in a Kansas tallgrass prairie. *Sida* 20:269–294.
- Warren, R.J., II, J.D. Pittillo, and I.M. Rossell. 2004. Vascular flora of a Southern Appalachian fen and floodplain complex. *Castanea* 69:116–124.
- Wells, E.F. and R.L. Brown. 2000. An annotated checklist of the vascular plants in the forest at Historic Mount Vernon, Virginia: a legacy from the past. *Castanea* 65:242–257.
- Werenkraut, V. and A. Ruggiero. 2011. Quality of basic data and method to identify shape affect richness-altitude relationships in meta-analysis. *Ecology* 92:253–260.
- Wilder, G.J. and B.J. Roche. 2009. A floristic inventory of Marco Island (Collier County), Florida. *J. Bot. Res. Inst. Texas* 3:873–899.
- Zomlefer, W.B. and D.E. Giannasi. 2005. Floristic survey of Castillo de San Marcos National Monument, St. Augustine, Florida. *Castanea* 70:222–236.
- Zomlefer, W.B., D.E. Giannasi, K.A. Bettinger, S.L. Echols, and L.M. Kruse. 2008. Vascular plant survey of Cumberland Island National Seashore, Camden County, Georgia. *Castanea* 73:251–282.
- Zomlefer, W.B., D.E. Giannasi, and W.S. Judd. 2007. A floristic survey of National Park Service areas of Timucuan Ecological and Historic Preserve (including Fort Caroline National Memorial), Duval County, Florida. *J. Bot. Res. Inst. Texas* 1:1157–1178.
- Zomlefer, W.B., D.E. Giannasi, W.S. Judd, L.M. Kruse, and K.A. Bettinger. 2004. A floristic survey of Fort Matanzas National Monument, St. Johns County, Florida. *Sida* 21:1081–1106.