Documenting living collections:

A study of current plant records practices, challenges, and solutions for historic gardens

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Background & Objectives

A living plant collection is the physical manifestation a botanic garden's mission, and comprises the critical material that instills these institutions with relevance and purpose in our society. Value lies not only in the plants themselves but also in the information that accompanies them (Guthe, 1970). My work focuses on the plant records practices in **historic landscapes of the United States that have transitioned from private estates to public gardens** (termed ***preservation gardens*** by The Garden Conservancy).

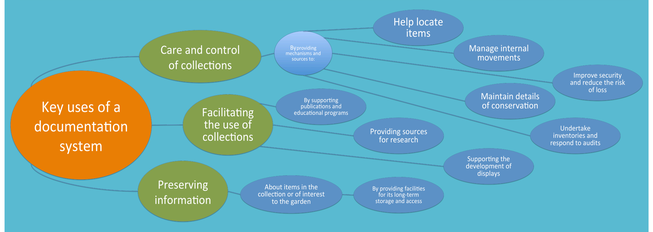
These collections often include rare plants, heritage cultivars, and unusual taxa that may not be represented elsewhere in cultivation or in the wild, offering untapped potential for conservation and research. Preservation gardens face a unique set of challenges, and resources detailing appropriate best practices for documenting historic collections are not readily available.

Primary objective: Investigate and describe current plant records practices, challenges, and solutions at preservation gardens.

Secondary objective: Based on findings, develop recommendations for plant records practices, with the intention to both improve internal organization and increase potential for historic gardens to contribute to larger-scale efforts by sharing data with researchers, other institutions, and the public.

Target 8 of the **Global Strategy for Plant Conservation** is to secure "*at least 75% of all threatened plant species in ex situ collections, preferably in the country of origin, and at least 20% available for recovery and restoration programs"* by 2020.

In 2013, **220 institutions with living plant collections worldwide contributed** information about their collections (BGCI, 2013). **There are nearly 800 botanic gardens in the United States** that could potentially contribute to this effort, but their ability to do so is contingent on their documentation practices.



Key Uses of a Documentation System. Adapted from Roberts (1988) as quoted by Hohn (2008)

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Methods

Through a mixed qualitative and quantitative design, this exploratory project followed the inductive process of **Grounded Theory Methodology** to observe, collect data, then code and sort themes describing current plant records practices, challenges, and solutions.

Filmed interviews were conducted on-site with staff of 10 preservation gardens located across the United States in the summer and fall of 2015. Five curatorial experts were also interviewed concerning overarching themes of plant records practices and challenges. Results of interviews informed the design of a **national, web-based survey** of a purposive sample of preservation gardens (n=61). Data was analyzed by cross tabulating quantitative and qualitative responses to reveal **substantive significance, convergence, and divergence of themes in order to develop grounded theory about practice.**

Criteria for selection of gardens

- Originally private estates that have transitioned to public gardens
- Maintain websites expressing mission and information about plant collections
- Affiliations with one or more of the following organizations: American Public Gardens Association, Botanic Garden Conservation International, The Garden Conservancy, The Trustees of Reservations, or The National Trust for Historic Preservation

Additionally, as a group, the interviewed gardens were selected to represent:

- Diverse geo-political regions across the United States (variety of states, near a range population densities (urban to rural), ecosystem types, and climate zones)
- A range of annual operating budgets, landscape sizes, and years open to the public
- Diverse collection foci (natural areas, rare plants, regional natives, etc.)

Results & Discussion

Fig. 1 Locations of preservation gardens identified for interviews and survey (plus Juneau, Alaska).

The survey was designed to collect data in 3 key areas: the general profile of preservation gardens, the transition period from private to public relative to plant records practices, and current plant records practices and challenges. Survey response was 62% (n=60).

1. Profile of Preservation Gardens

Geographically, preservation gardens are primarily located on the east and west coasts (fig. 1), echoing the larger population of APGA members. Plants in their collections have significant preservation and conservation value in addition to display value (fig. 2). The majority of the gardens surveyed operate on less than $1 million annually (fig. 3), again echoing the larger population: 75% of the institutional members of the American Public Garden Association have annual budgets of less than $1 million (APGA, 2016). Preservation gardens have typically small land holdings, with 50% cultivating 6 acres or less, but some garden more than 200 acres (fig. 4).

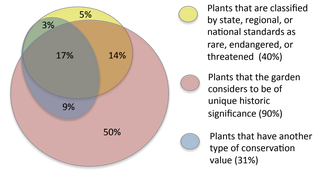


Fig. 2 Living collections holdings: preservation & conservation values

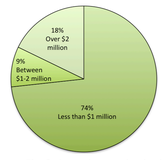


Fig. 3 Annual operating budget of surveyed gardens.

	Largest	Smallest	Mean	Median
Budget	Over $2 million (18%)	Less than $1 million (74%)	Less than $1 million	Less than $1 million
Acreage of cultivated gardens	200+ acres	1 acre	30 acres	6 acres
Years Open	150+ years	2 years	40 years	40 years

Fig. 4 Characteristics of surveyed gardens: budget, acreage, years open to the public.

2. Transition Period

Gardens that transition from private estates to public gardens undergo unique sequences of events that influence their organization's ability to maintain plant records, attitude toward the practice, and protocols for doing so. Surveyed gardens described what worked well for their gardens during the time of transition in regards to plant records practices (fig. 5).

Cause for success	Description
1. Preservation of historic records 57%	• Paper documents scanned and data manually input into database; original paper documents saved and archived • Presence of historic photos • Original directors of horticulture established methodical records practices and passed on knowledge of early record attempts in the garden • Grant obtained to support digitization of handwritten records and oral histories • Founders involved in development of database • Founders happened to be detail oriented: kept lists and records well organized, preserved, and passed on with estate • Relatives, friends, and staff of former owners available to answer questions • Historical societies curate archives of family correspondences and history and makes available as needed • Ownership of/access to records was transferred during transition
2. Records systems (methods, protocols, database) developed by skilled and knowledgeable personnel 37%	• Original directors of horticulture, landscape designers, and/or founders trained in curatorial practices, established methods • Curator and founder developed database jointly • Adoption of selected packaged database software well-received by staff, usable • Skilled staff developed system to verify plant ID when no labels present, map, and assess • Staff or volunteers exercise innovation, adaptability, time, and patience • Successful transition from older, simpler database to newer, more sophisticated package; migration supported by software company
3. Planning documents developed 17%	• Design Management Guide described plantings in terms of character and community • Map of Garden Maintenance Zones developed by graduate student created the structure for digitally recording inventories • Historic Landscape Report undertaken • Coincided new record keeping system with a garden redesign • New plantings strictly adhere to original planting plans
4. Inventories taken at time of transition 10%	• Staff performed cursory tree ID, assessment, and mapping • Professional contracted to perform inventory • No plants labeled; staff or volunteers developed system to identify many cultivated varieties of historic perennials

Fig. 5 What worked well for preservation gardens during transition period and percent of population citing each theme.

3a. Current Practices: Policies, Accessioning, & tracking

Just over one third of surveyed gardens currently have a collections policy. Of those, the majority also have a document detailing written guidelines for the maintenance of plant records (fig. 6). Developing detailed protocols for plant records practices (independent of a collections policy) was frequently cited by study participants as a critical factor in the efficiency and accuracy of plant records. The majority of gardens create accession records for "some" plants in their collections, and identified specific criteria guiding the selection (fig. 8 & 9).

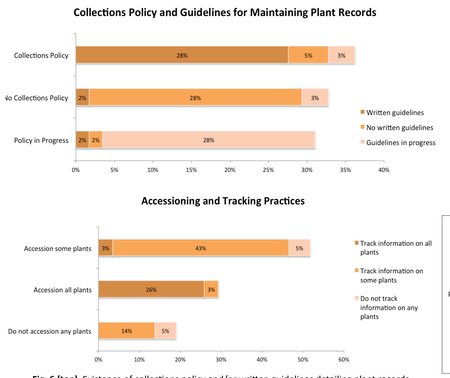


Fig. 6 (top) Existence of collections policy and/or written guidelines detailing plant records protocols. **Fig. 7** Practices for accessioning and tracking information on plants in collections.

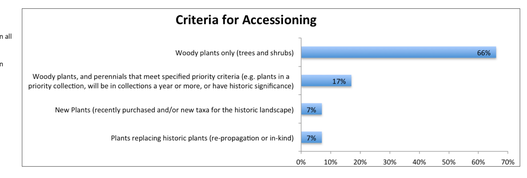


Fig. 8 Criteria used to determine for which plants in collections accession records will be created

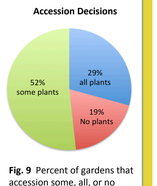


Fig. 9 Percent of gardens that accession some, all, or no plants in their collections

3b. Current Practices: Staff & Board

Staff at preservation gardens perceive plant records as a higher priority than do board members (fig. 10). Several interviewed gardens cited challenges in educating non-plant records staff and board about the value of documentation. Most (57%) of preservation gardens do not have curatorial positions; of those that do, half of those are internships (fig. 11). Overall, most plant records tasks are performed by non-permanent positions, underlining the perception of low priority level (fig. 12).

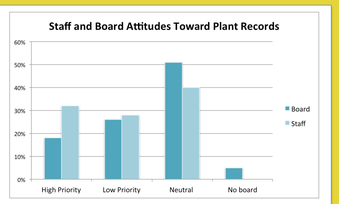


Fig. 10 Staff and board attitudes toward priority level of plant records.

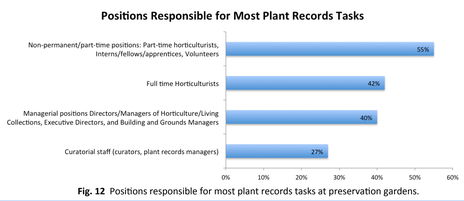


Fig. 12 Positions responsible for most plant records tasks at preservation gardens.

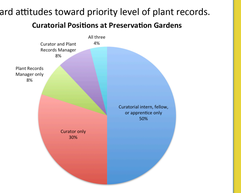
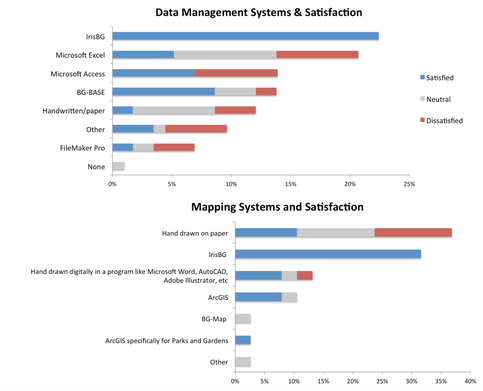
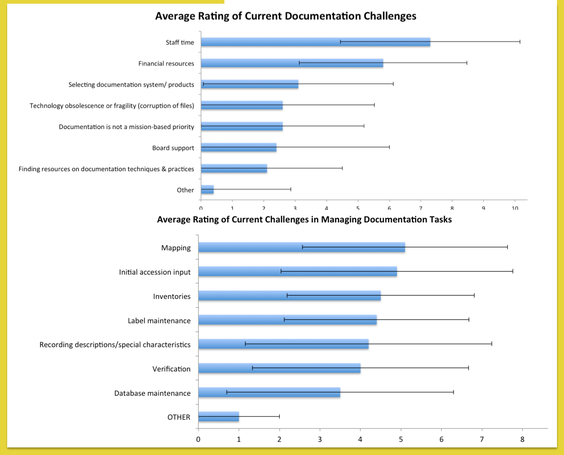


Fig. 11 Distribution of titles at the 43% of preservation gardens with curatorial positions.

3c. Current Practices: Database and Mapping



3d. Current Practices: Challenges



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