Mobilizing New England vascular plant data to track environmental change

(NEVP)

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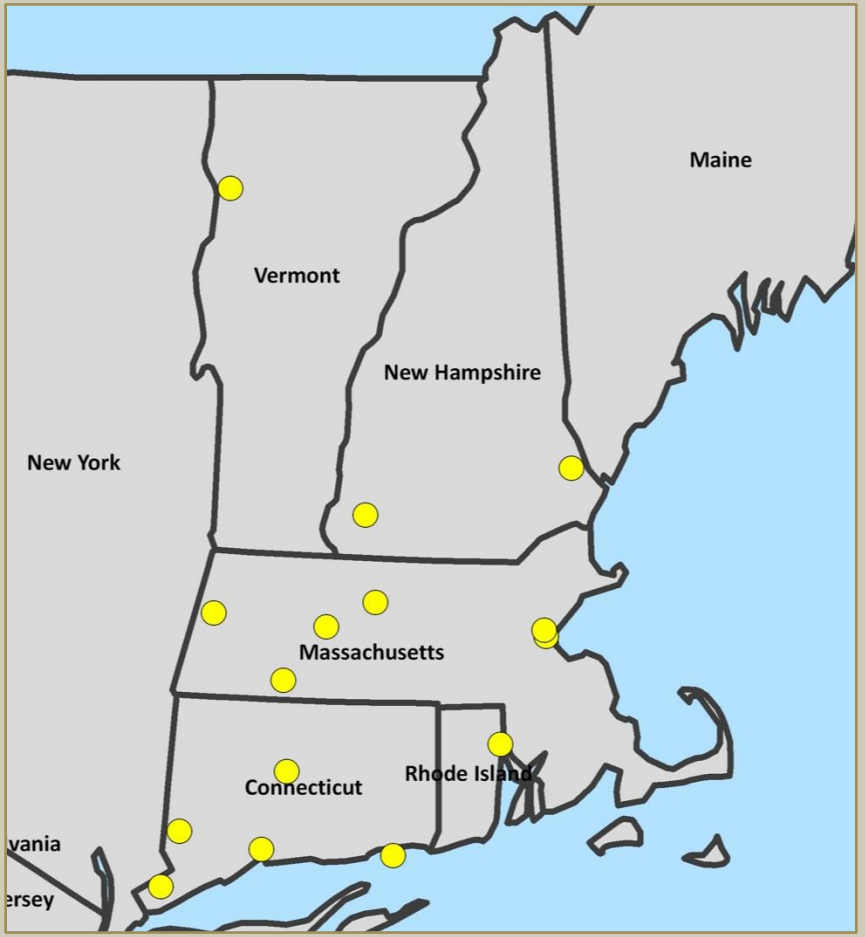
Yale Peabody Museum of Natural History

Mobilizing New England Vascular Plant Specimen Data to Track Environmental Changes

OBJECTIVES

- Digitize 1.3 million N.E. vascular plant specimens from 15 regional herbaria



DIGITIZATION PLAN: ORGANIZATION

- Brown University (BRU)
- Harvard University (HUH)
- U. of New Hampshire (NHA)
- U. of Massachusetts Amherst (MASS)
- U. of Vermont (VT)
- Yale University (YU)

- Bartlett Arboretum (BART)
- Berkshire Museum (BERK)
- Boston University (BSN)
- Central Connecticut State U. (CCSU)
- Connecticut College (CCNL)
- Harvard Forest (HF)
- Keene State (KESC)
- Western Connecticut State U. (WCSU)
- Westfield State U. (WSCH)

- University of Oklahoma
- North Carolina State U.

DIGITIZATION PLAN: WORKFLOW

DIGITIZATION PLAN: WORKFLOW

WORKFLOW: PRE-CAPTURE

- Capture data that reflects the physical storage structure of the collection before imaging and data basing individual specimens (e.g., Taxon & State)

WORKFLOW: PRE-CAPTURE

Cardamine concatenata (Michx.) Sw.
Connecticut
YU

{"m1p":"[NEVP
TCN]","m2v":"1.1","g":"Dryopteris","s":"palustris",
"ir":"variety","i":"pubescens","sn":"Dryopteris
palustris variety pubescens (Lawson)
Nakai","a":"(Lawson)
Nakai","st":"Massachusetts","sr":"3.9","cc":"YU"}

WORKFLOW: PRE-CAPTURE

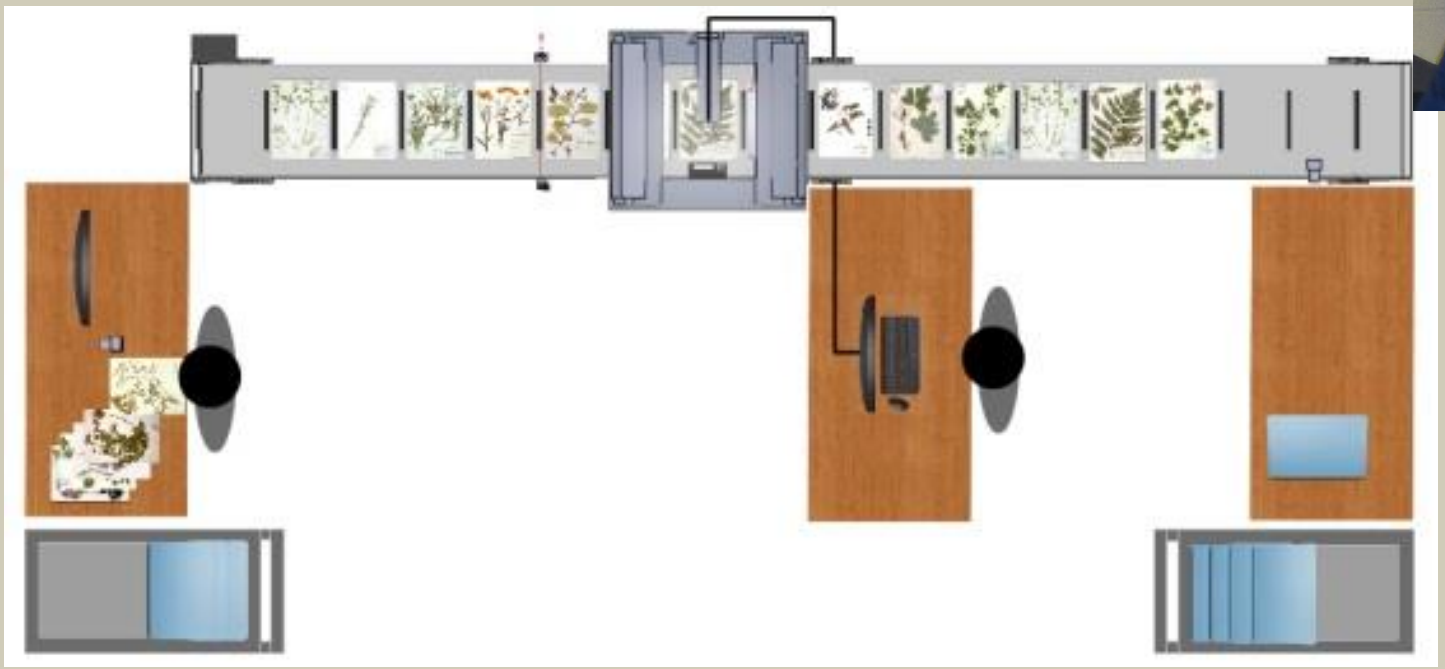
- Pre-capture complete at three institutions, ongoing at two - approximately **700,000** specimens with at taxon captured,400,000 with state or lower geographic level

WORKFLOW: PRIMARY DIGITIZATION

- Capture an image, a barcode number, a subset of label data & associate pre-capture data with specimen occurrence records

WORKFLOW: PRIMARY DIGITIZATION

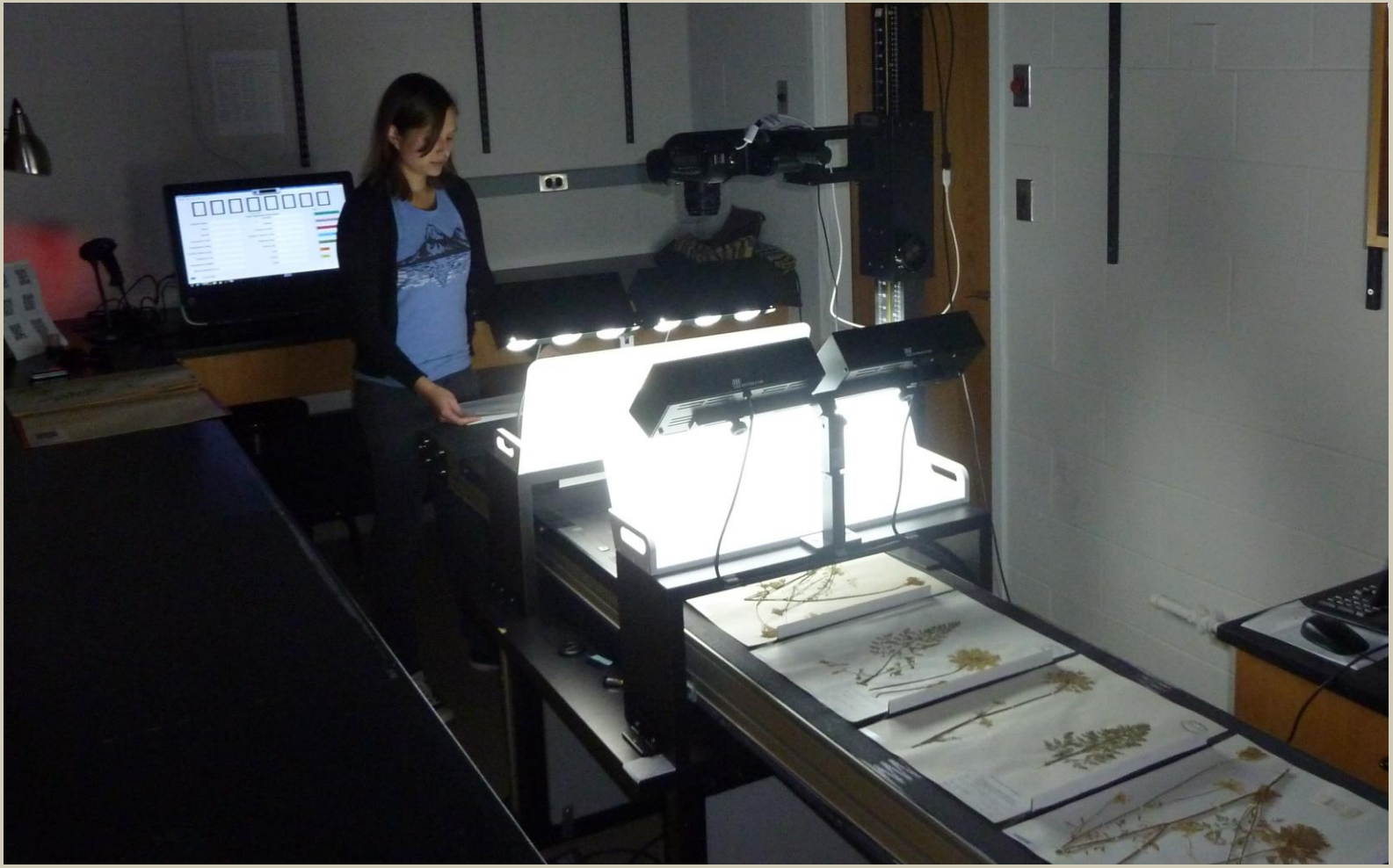
- To increase the efficiency of capturing an image and specimen-level data, we are developing a high throughput digitization apparatus



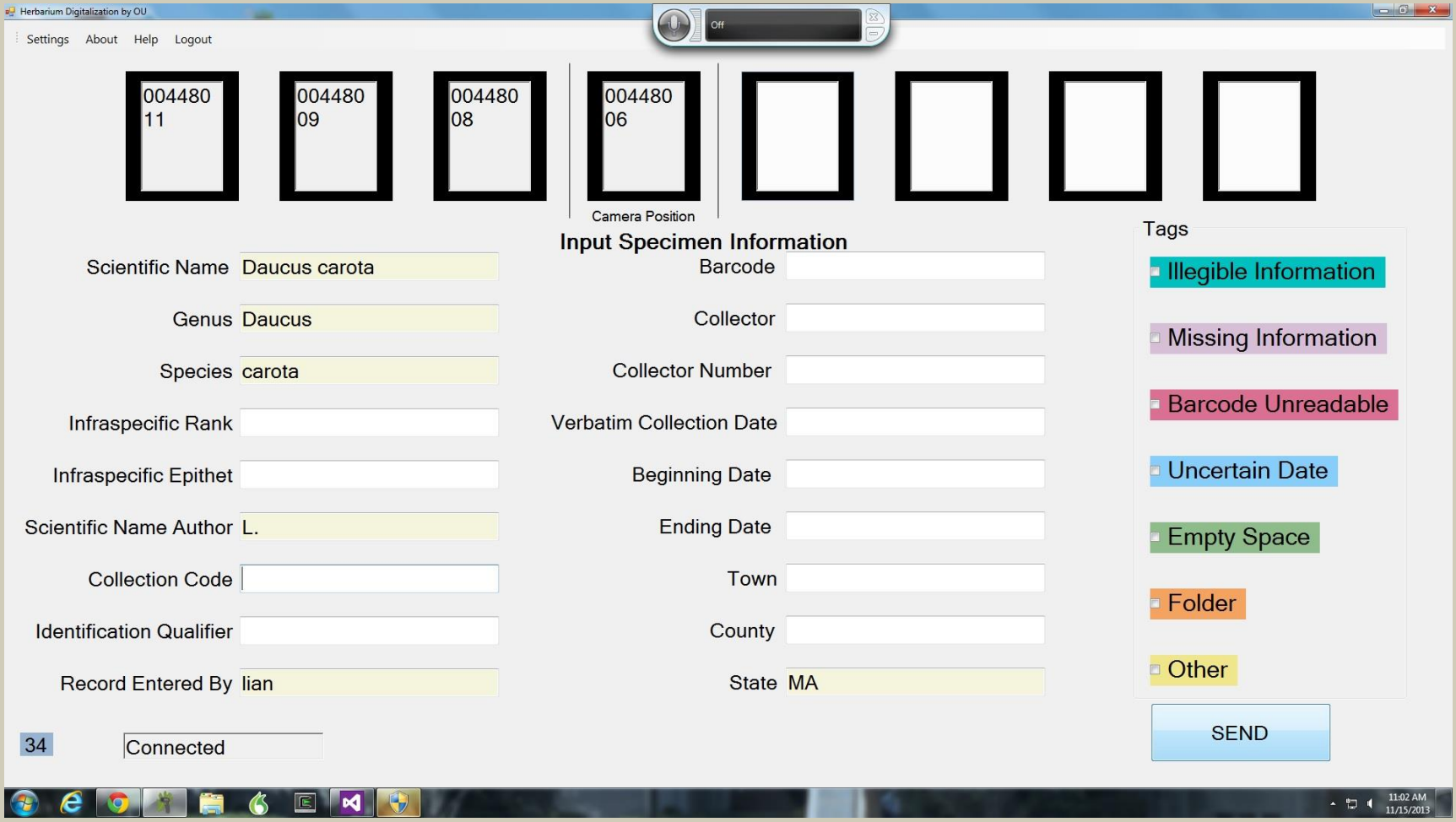
WORKFLOW: PRIMARY DIGITIZATION

- Development complete, 1st installed at Harvard.
- Aug.-Oct. refinement and testing
- In beta-testing phase, with production runs
  - per specimen throughput rates are about 35s

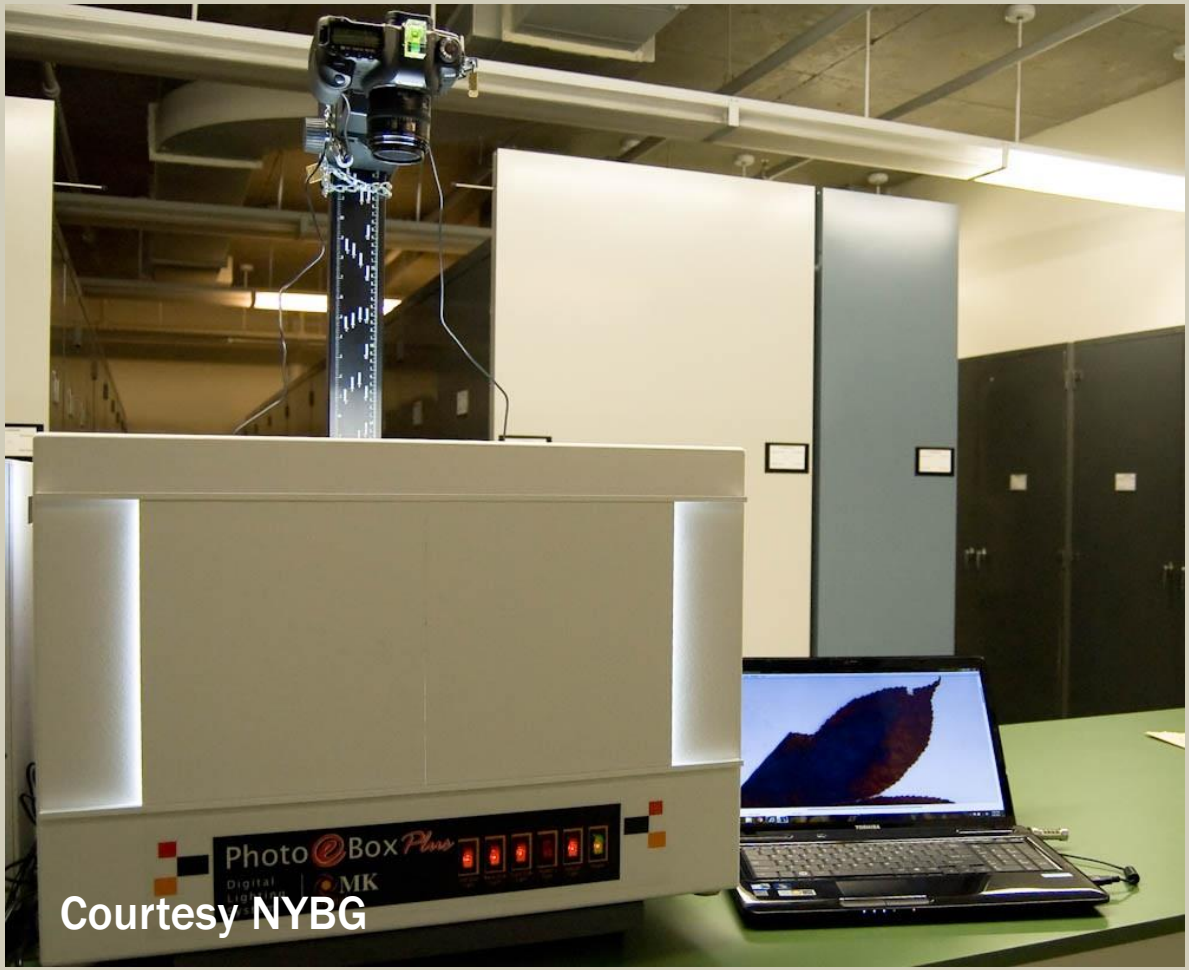
WORKFLOW: PRIMARY DIGITIZATION



WORKFLOW: PRIMARY DIGITIZATION

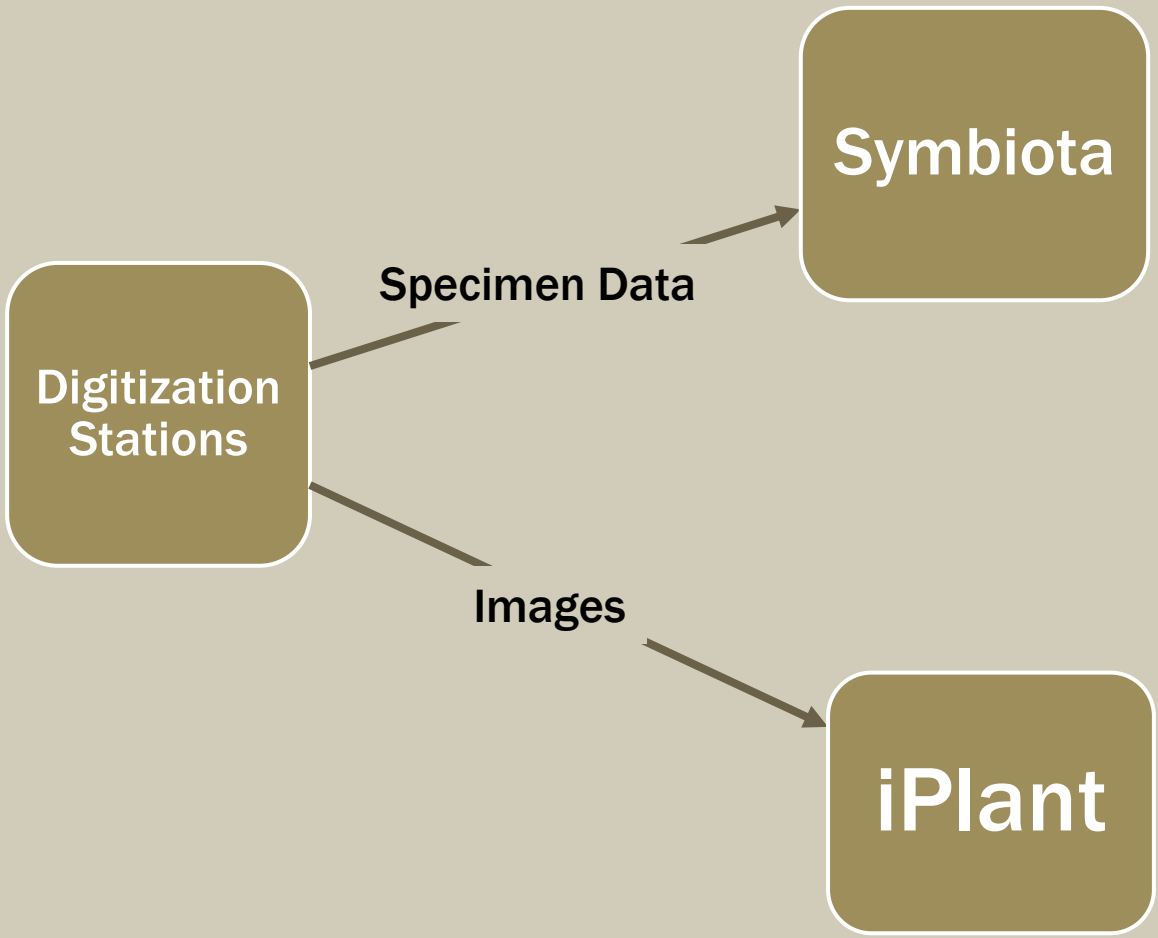


WORKFLOW: PRIMARY DIGITIZATION



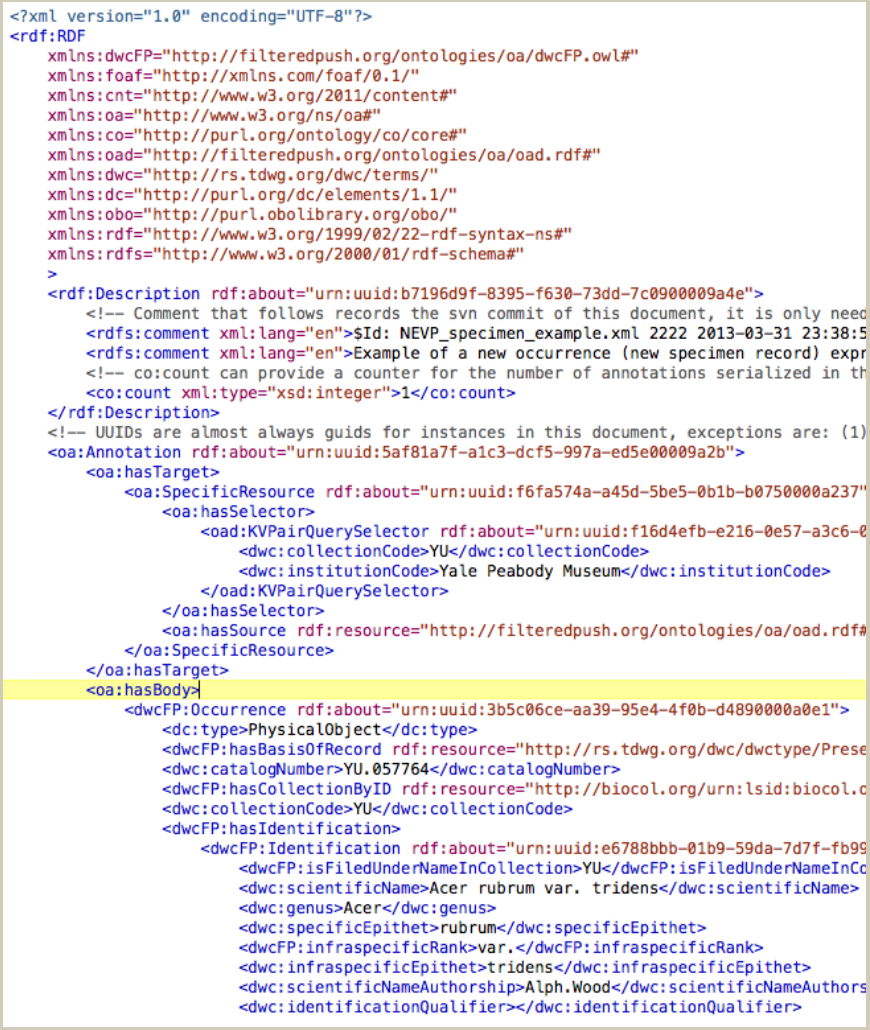
Courtesy NYBG

WORKFLOW: PRIMARY DIGITIZATION



WORKFLOW: PRIMARY DIGITIZATION

- interchange standard using RDF/XML, the W3C OpenAnnotationOntology, and DarwinCore was defined, and code was added to Symbiota to support the ingest of these documents into Symbiota.



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    xmlns:dc="http://purl.org/dc/elements/1.1/"
    xmlns:obo="http://purl.obolibrary.org/obo/"
    xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
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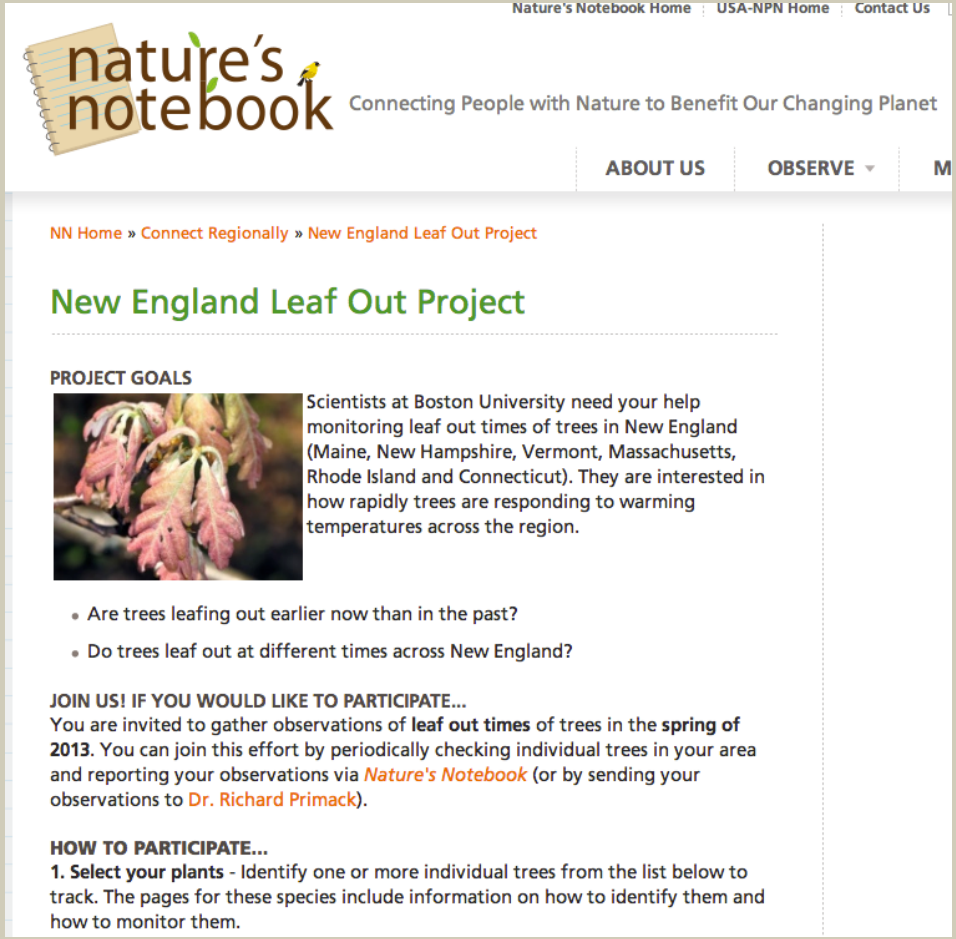
TRAINING & OUTREACH

- Richard Primack's team at Boston University (BU) established the New England Leaf Out Project (NELOP).
- 200 volunteers last year



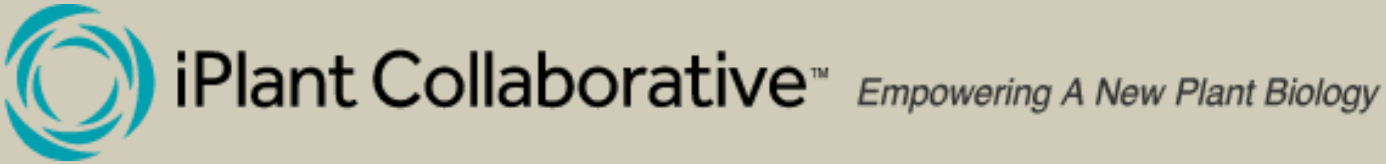
www.usanpn.org/nn/nelop

ACKNOWLEDGEMENTS

National Science Foundation (EF1208829, EF1208835, EF1208972, EF1208973, EF1208975, EF1208989, EF1209149).

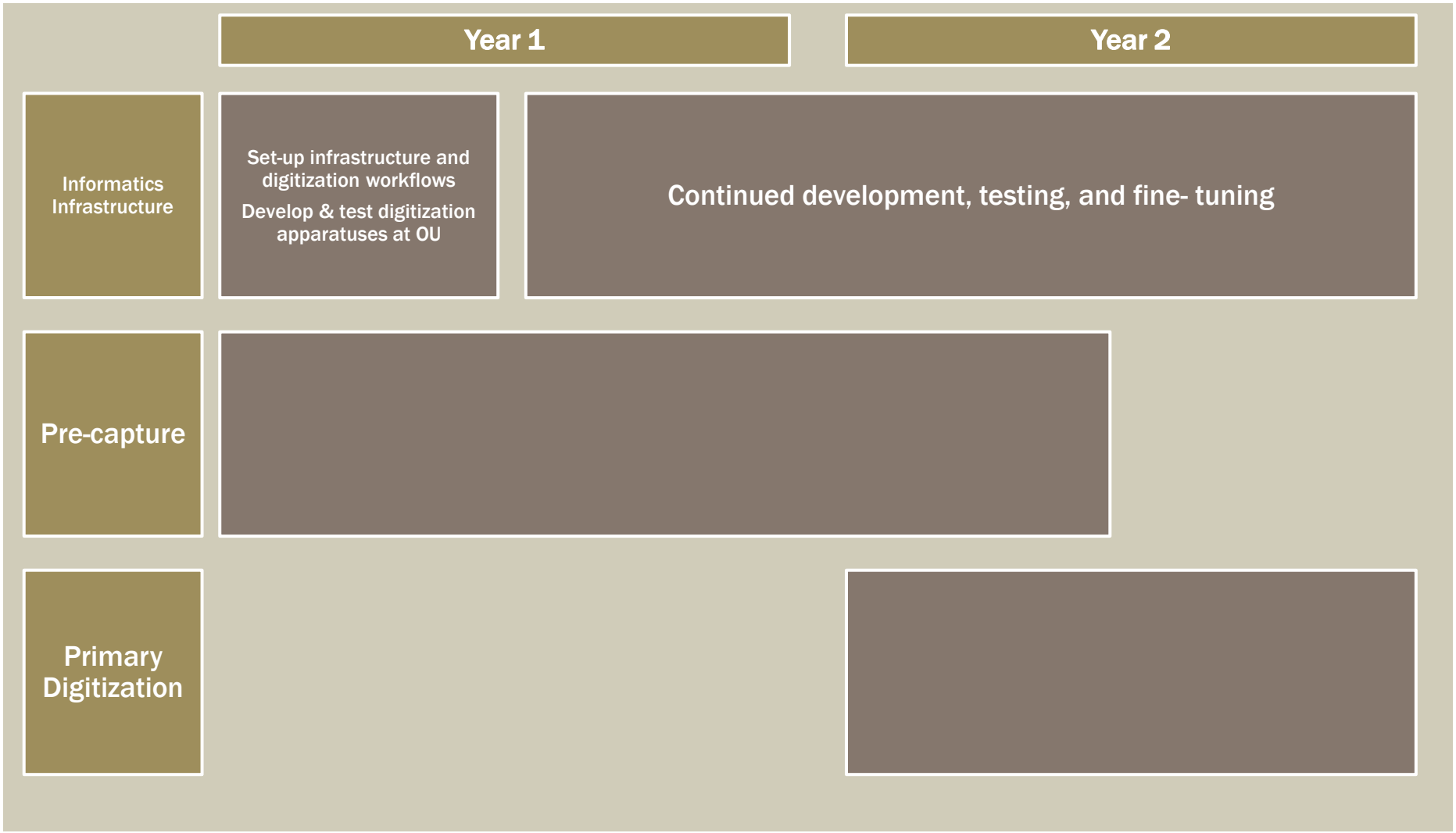
Symbiota Project

FilteredPush



Biota of North America

TIMELINE


Year 1
Year 2
Informatics Infrastructure
Set-up infrastructure and digitization workflows
Develop & test digitization apparatuses at OU
Continued development, testing, and fine- tuning
Pre-capture
Primary Digitization

WORKFLOW: ENHANCEMENT