

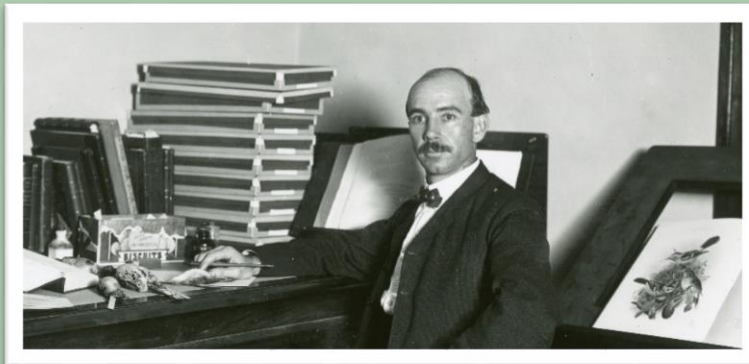
Digitizing Vertebrate Collections – Getting Started

# Bernice Pauahi Bishop Museum



Established in 1889

World's largest  
biological collections  
from the Pacific  
region



# Natural History Collections



Botany

750,000 specimens



Entomology

14,000,000 specimens



Ichthyology

102,000 specimens



Invertebrate Zoology

552,000 specimens



Malacology

6,000,000 specimens



Vertebrate Zoology

110,000 specimens

# Vertebrate Zoology



20,000  
REPTILES



17,000  
MAMMALS



50,000  
BIRDS

25,000  
AMPHIBIANS



~50,000  
SUB-FOSSILS



# VZ Digitization Status



100% basic  
data &  
georeferenced

Thousands of  
sound  
recordings and  
in-life photos  
of vouchered  
specimens



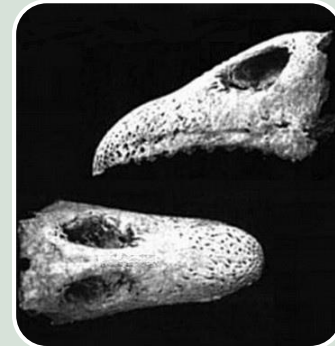
80% basic  
data & 30%  
georeferenced

No media  
specimens



70% basic  
data & 30%  
georeferenced

No media  
specimens



50% remain  
uncataloged

No media  
specimens

# Getting Started

Collaborating with others to create a Digitization Mission

Identify the goals for your institution, collection, or smaller subset of specimens

Planning Phase

Develop a realistic strategy for accomplishing the goals of your Digitization Mission

Execute the Plan

5 Common Task Clusters

# Digitization Mission

## A few things to consider...

To Image or not  
to Image?

Is your current  
database management  
system robust enough  
for higher level  
digitization?

Which specimens to image?

- Type Specimens?
- Fragile Specimens?
- Frequently Loaned Specimens?

How much  
money is  
available to  
you for  
digitization?

What do you want  
the digitization  
status of your  
collection to be in  
3-5 years?

# Digitization Mission

Create or join an  
iDigBio Working  
Group

[https://www.idigbio.org/wiki/index.php/IDigBio\\_Working\\_Groups](https://www.idigbio.org/wiki/index.php/IDigBio_Working_Groups)

iDigBio (and  
the people  
sitting next to  
you) are here  
to help



iDigBio Online  
resources  
[https://www.idigbio.org/wiki/index.php/Digitization\\_Resources](https://www.idigbio.org/wiki/index.php/Digitization_Resources)

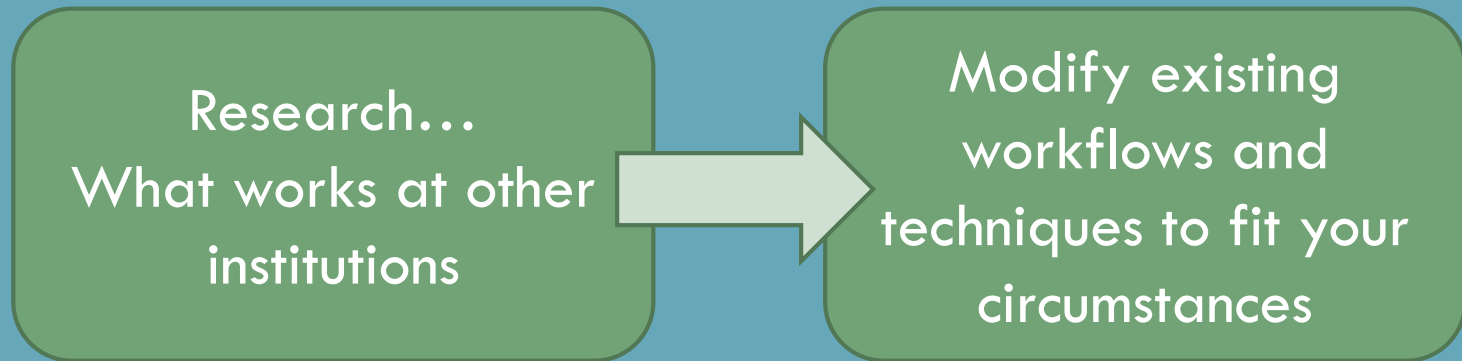




# Planning Phase

“Plans are worthless, but planning is everything.”

- Dwight D. Eisenhower



- How to bridge potential knowledge gaps between collections staff and IT staff
- How to measure & maintain quality control

# Making Your Goals a Reality

## 5 Common Task Clusters

- Pre-digitization curation and staging
- Specimen image capture
- Specimen image processing
- Electronic data capture
- Georeferencing specimen data

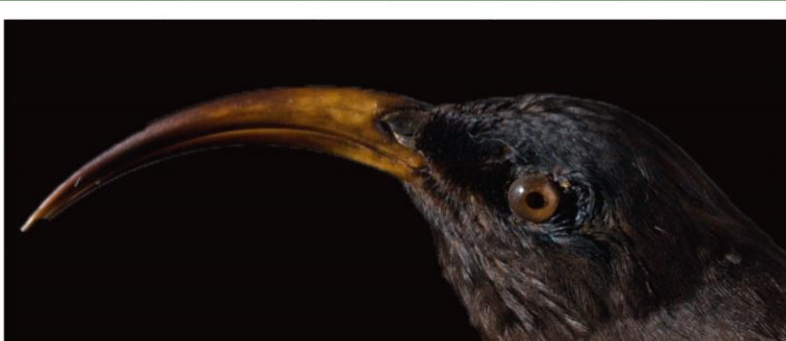
# Pre-digitization Curation & Staging

- Inspect for and repair specimen damage and evaluate collection health

- Update nomenclature and taxonomic interpretation

- Attach a unique identifier to a specimen, drawer, or cabinet

- Treat specimens for pests



# Specimen Image Capture

- Imaging requires significant specimen handling with attendant opportunities for damage



- Images for morphological study are usually taken at 17 megapixels and above

- Image wet specimens while submerged in alcohol

- Color bar and scale should be visible in all images

# Specimen Image Processing

Altering color balance,  
saturation, sharpness, or  
other image features =  
**NOT OK**



Slight adjustments of light levels  
and cropping = OK

Native Camera  
Raw



dng OR tif  
(NOT jpeg)

# Electronic Data Capture

Manual Keystroke entry

Voice recognition software

Optical Character Recognition

Electronic transfer from spreadsheets or other delimited lists



# Georeferencing Specimen Data

Georeferencing = transforming textual descriptions of geographical data into a pair of X, Y coordinates, with an accompanying estimation of precision.

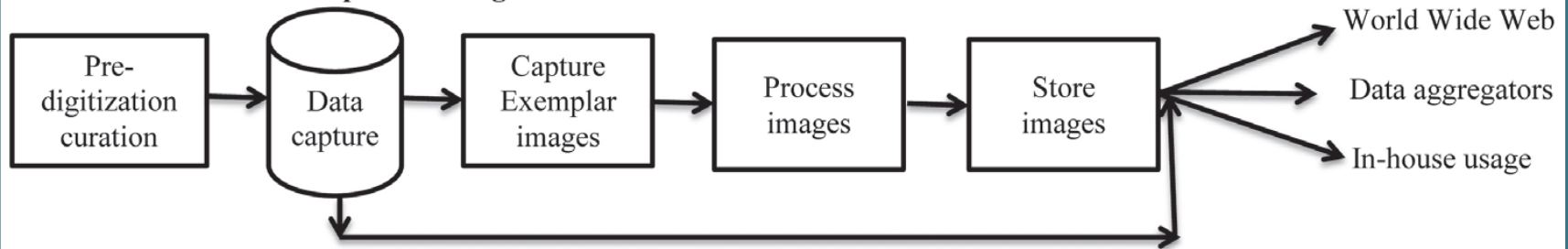


Geolocate (desktop and web-based interfaces, and web services;  
<http://www.museum.tulane.edu/geolocate/>) and Biogeomancer (webbased;  
<http://bg.berkeley.edu/latest/>)

# Three Example Workflows

## Data to Occasional or Optional Image to Distribution

a. Data to Occasional or Optional Image to Distribution

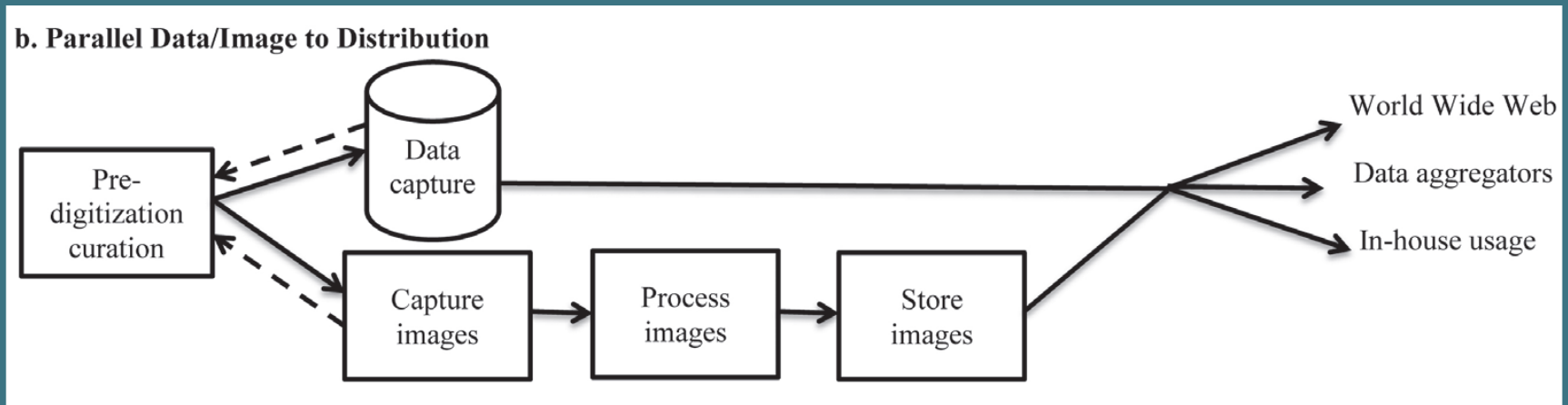


Most often used in collections in which few or no specimens have been imaged, Probably what most of us are familiar with



# Three Example Workflows

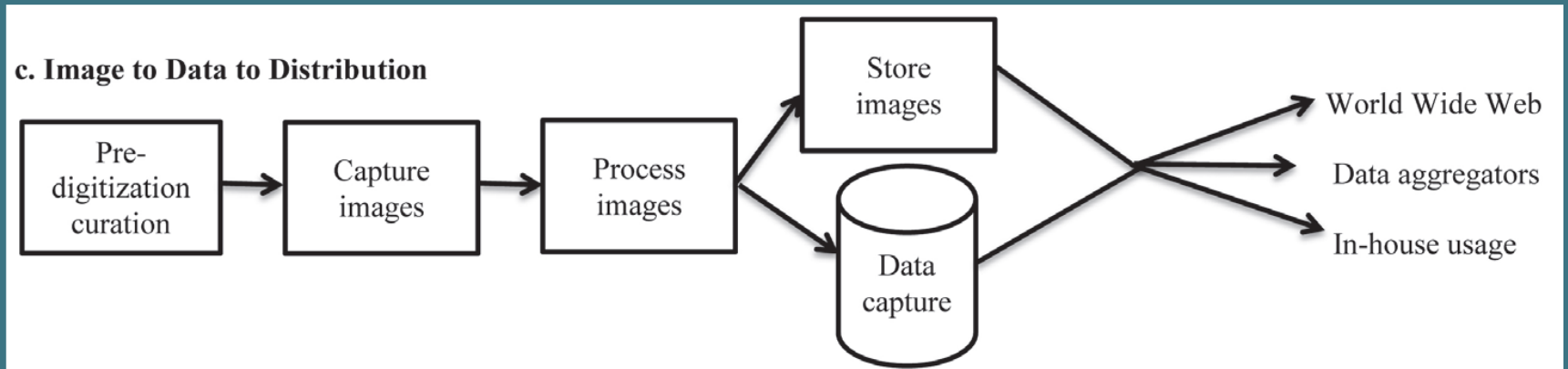
## Parallel Data/Image to Distribution



Most labor intensive of the three examples  
Increased specimen handling

# Three Example Workflows

## Image to Data to Distribution



Fits institutions that image all specimens and capture data from those images