



Challenges and Solutions in Digitizing and Rejuvenating the Oregon State Ichthyology Collection

**Twelve students, two professors emeritus,
250,000 fishes, one database, the fire marshal, and me**

2013 iDigBio Workshop on Digitizing Wet Collections
Lawrence, Kansas

**Brian L. Sidlauskas, curator
with substantial support from graduate collections manager extraordinary Ben Frable**

A Long History of Ichthyology at OSU



Roland E. Dimick
Hired: 1931
Retired: 1966



Carl E. Bond
Hired: 1950
Retired: 1985



Douglas F. Markle
Hired: 1985
"Retired": 2008

New Curator, Hired in 2009

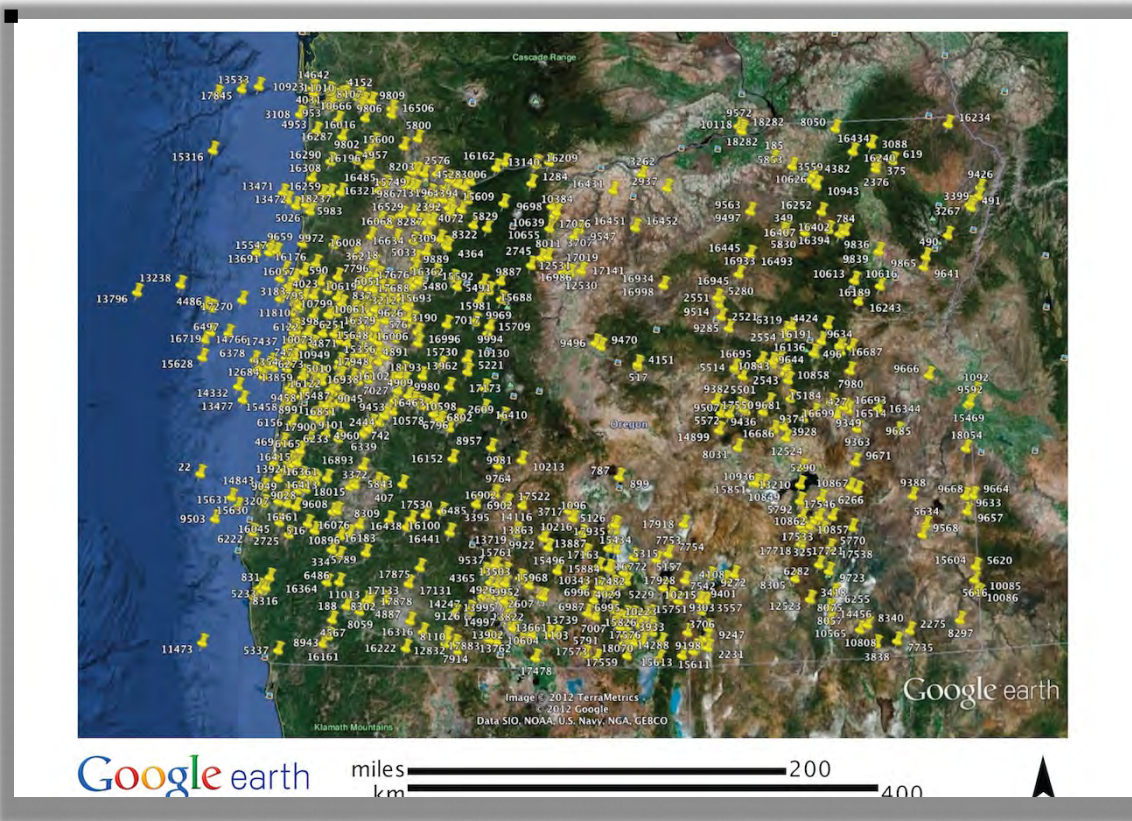




OSU's Ichthyology Collection: 2009



- About 19,000 cataloged lots
 - 10,000 backlog lots
 - 10,000 tissues
- Extensive freshwater and marine collections from the Pacific Northwest
- Additional material from around the world



9,500 cataloged lots from Oregon



Notable World Holdings



1905 to present

Far from a complete map

Currently working on digitizing and georeferencing holdings from beyond Oregon

Curatorial Challenges



Historically underfunded,
without sufficient space and
resources to acquire proper
storage for all specimens





Curatorial Challenges



In 2009, half the catalog was completely undigitized, with the other half in a flat Excel file.

The Biggest Curatorial Challenge

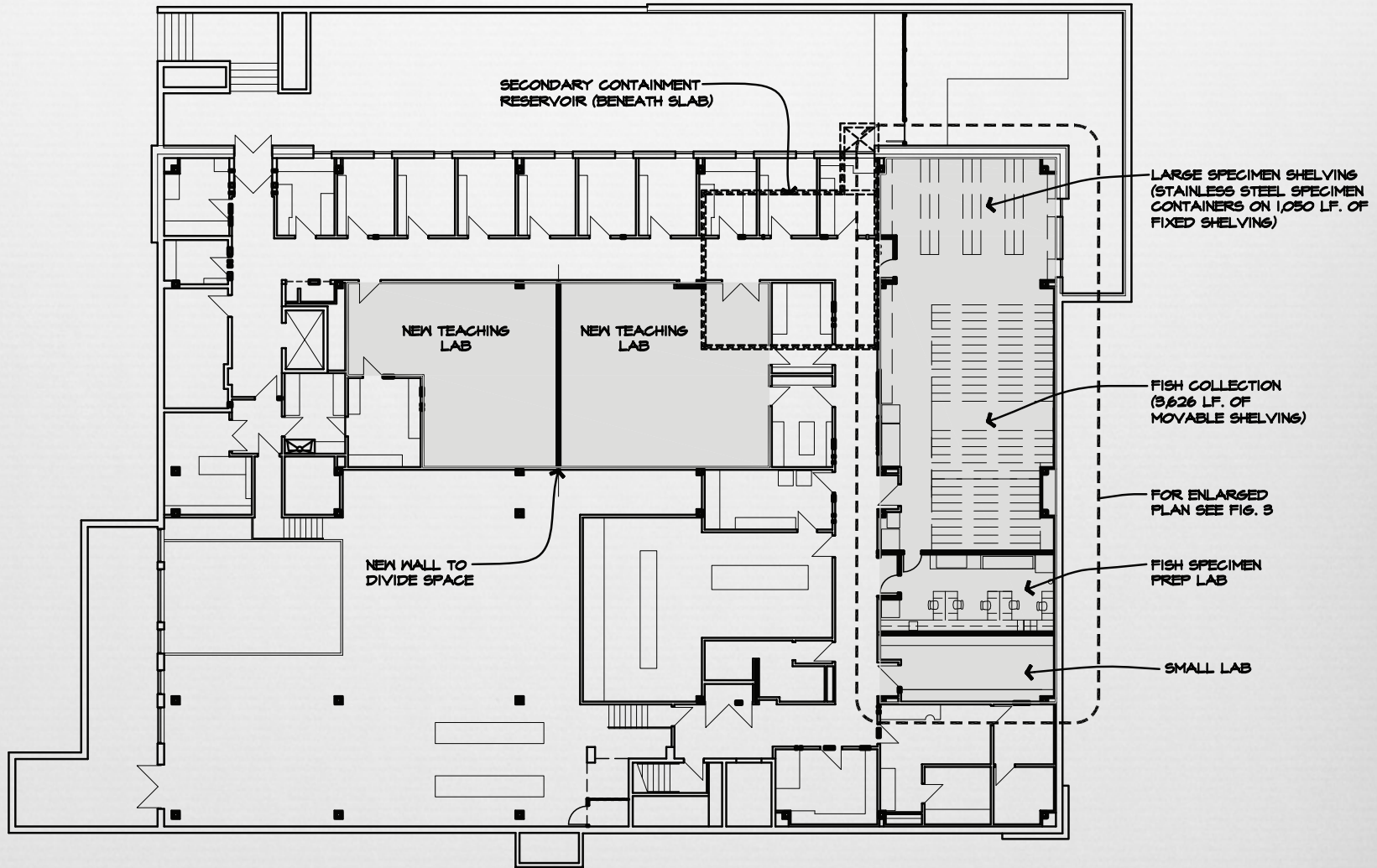


As the recent Butantan tragedy in Brazil illustrates, fire in an alcohol-based collection is no joke.

One month after I arrived, Nash Hall entered renovation, and the fire marshal visited the fish collection . . .



Fig. 2 GROUND FLOOR FISH COLLECTION RENOVATIONS - PROPOSED





Sometimes Desperation Pays



- “If funds are not available to support the compact shelving system, we will need to deaccession a portion of the collection”
- “There will never be a more ideal time to complete this upgrade”



Why We Learned to Love the Fire Marshal



\$400,000 from NSF BRC Program
\$450,000 matching from Oregon State
Compliance with fire code
30% expansion space



Curatorial Advances



Steel tanks represent a major upgrade to fire safety, earthquake safety and archival preservation of OSU's largest specimens.





Curatorial Advances



Recent migration to Specify 6 database
Purchase of thermal label printer
New prep room

So, what about digitizing
the collection's database?





First task was cleaning and migrating: Excel into Specify



Pain in the @\$\$

But could largely be accomplished by a single curator in a summer

18-13	Richardsonius balteatus	6166
(Group)	(Species)	(Cat. No.)
State or country: OREGON	Drainage: Willamette	
Locality: Gravel pit ponds off Coast Fork Willamette at Seginaw		
	Lat.: 43.83°	Long.: 123.05°
T. R. S.	County: Lane	
Water: clear		
Vegetation:		
Bottom: gravel to rubble	Temp.: 66°F	Air:
Shore:	Current: swift - slow	
Dist. off shore:	Width:	Tide:
Depth of capture:	Depth of water:	
Method of capture: frame net and 30' net		
Orig. preserv.: 20% Formalin	Time: 1500	
Collected by: Reimers & Wallace	Date: VI:24:1967	
Rec'd. from:	Date rec'd.:	
Obtained by:	Field no.: PER67-10	
	(over)	
COLLECTION OF FISHES, DEPT. FISHERIES AND WILDLIFE, OREGON STATE UNIVERSITY		

This is a whole other world of hurt



~ 9000 of these

Character 45% ISOP. Condition (when cat.): GOOD Number: 27

Sex: _____ Maturity: _____

Length to caudal in mm.: 32-58

Identified by: J. Long

Disposition of specimens: _____

Published record: _____

Remarks: Redside shiners in full spawning color collected along very fast riffle of mainstream and in quieter water off mainstream but with fast inlet. Eggs also found (sparse) under and on the rocks of the riffle

Catalogued by: J. Long

OSU 2293

(over)

Backsides too





Student Involvement



Collection depends upon undergraduate and graduate students to function.
Cataloging, specimen prep, outreach, etc.



Students do the darndest things . .

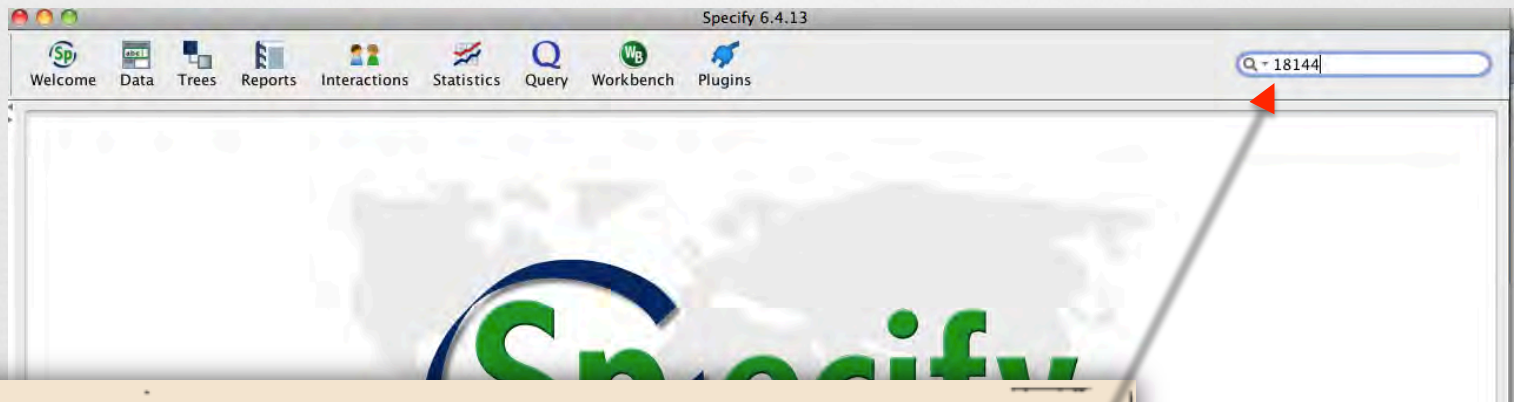


- ❧ “The jars needed to go back on the same spot on the shelves after I fill them?”
- ❧ “You wanted to keep those cards after I entered the data?”
- ❧ “I found these cards in my backpack from six months ago . . .”
- ❧ “I needed to keep track of which cards I finished?”
- ❧ “You needed to know which tank I put it in?”

You can't be too explicit



Step 1: Search Specify to see if this record has already been entered



18-13	Richardsonius balteatus	6166
(Group)	(Species)	(Cat. No.)
State or country: OREGON	Drainage: Willamette	
Locality: Gravel pit ponds off Coast Fork Willamette at Seginaw		

If nothing comes up, continue to step 2

Illustrate every step



Locality

Locality Name: Gravel pit ponds off coastal fork Willamette Riv. at Saginaw

Geography: North America, United States, Oregon, Lane County

Decimal Degrees

Latitude: 43.831879 N 43.831879° N (Source)

Longitude: 123.041336 W 123.041336° W (Source)

Datum: Lat/Long Method: Elev (m): 183.00 Lat/Long Accuracy:

▼ Locality Details

Section:

Drainage: Columbia, Willamette

UTM Easting: 496677.00

Remarks:

18-13 Richardsonius balteatus 6166
(Group) (Species) (Cat. No.)
State or country: OREGON Drainage: Willamette
Locality: Gravel pit ponds off coastal fork Willamette at Saginaw
Lat.: 43.83° Long.: 123.05°
T R S County: Lane
Water: near

(Front)

Controlled vocabularies



- ❧ Incredibly helpful to restrict the choices available to students
- ❧ Pull down lists:
 - ❧ Gear, preservative, prep type, type status, developmental stage, etc.
- ❧ Ontologies
 - ❧ Taxa, geography
- ❧ Some fields are just problematic
 - ❧ Localities, collecting events and agents (people)
 - ❧ Some students are lumpers, some are splitters, and most are unobservant
 - ❧ Expect to have to correct some of their work here
 - ❧ Strong tendency to duplicate historical collection events for which there is no recorded field number
 - ❧ Initials are the bane of agent records!

Supervision is key



- ❧ Initial training will take hours
- ❧ Expect upwards of 20 questions an hour when a student is just starting
- ❧ Be sure that the database records who entered or modified each entry
 - ❧ Allows you to track inconsistencies in a particular student's entries

Success is possible!



- ❧ A trained undergraduate can digitize 6 or 7 cards an hour with reasonable reliability
- ❧ Thrilled to work for \$10/hour (workstudy even cheaper)
- ❧ 5000 cards remaining = 800 hours = \$8000 + supervision
- ❧ Far more affordable and plentiful than curatorial time
- ❧ Direct benefit to the students and collection!



Next up: Imaging and Georeferencing



Really excited to get some help with workflows!



Acknowledgments



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