

# Building a Community Around Your Taxonomic Needs

Moderated Discussion, TaxonWorks Together 2021

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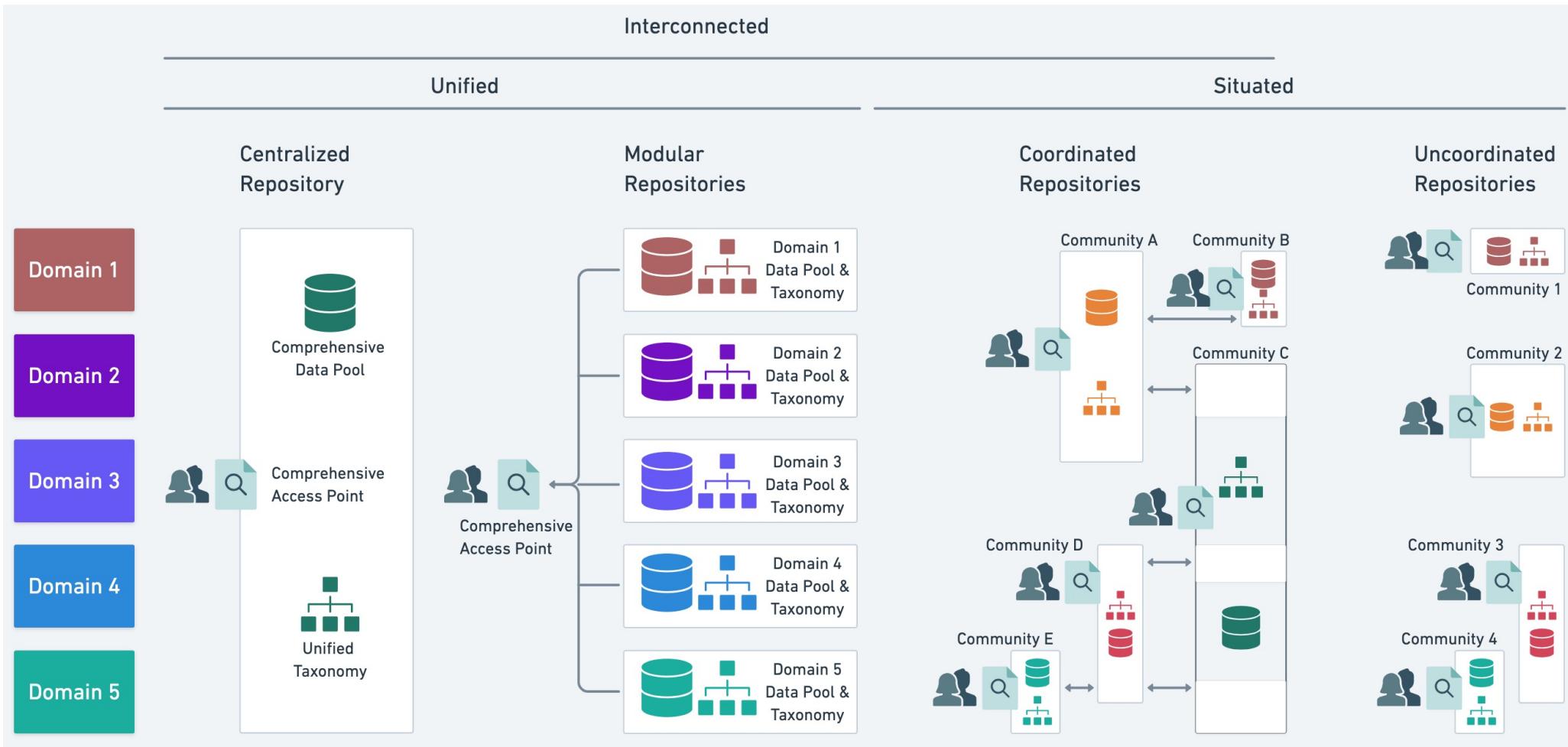
Arizona State University



# TaxonWorks

- So you need to do something? Are you a Taxonomist describing a species? An Ecologist making a material-examined section? A Collaboration building a nomenclatural authority? A Curator? A Collection Manager? A Developer working with these data? Come discuss what you need to do, and have the TW community give you feedback on how that intersects with TaxonWorks.
- A moderated discussion session, designed so that you can and add your insights and expertise into the world of what taxonomists, ecologists, collection managers, developers, and you need, from the software, from community, and each other.

# Regulative Ideals for Data Pooling



# What Is Biodiversity Data?



Global Data Portal

Event	Interpreted	Original	Remarks
Day	8	2017-06-08T09:41:00	Inferred
Month	6	2017-06	Inferred
Year	2017	2017	Inferred
Event date	2017-06-08T09:41:00	2017-06-08T09:41:00-05:00	Altered
Event time	14:41:00Z	14:41:00Z	
Verbatim event date	2017-06-08 9:41:00 AM CST	2017-06-08 9:41:00 AM CST	

Identification	Interpreted	Original	Remarks
Date identified	2017-06-19T03:42:16	2017-06-19T03:42:16Z	Altered
Identification ID	13857370	13857370	

Taxon	Interpreted	Original	Remarks
Term	Interpreted	Original	Remarks
Kingdom	Animals	Animals	
Phylum	Chordata	Chordata	
Class	Mammalia	Mammalia	
Order	Artiodactyla	Artiodactyla	
Family	Tayassuidae	Tayassuidae	
Genus	Pecari	Pecari	
Specific epithet	tajacu	tajacu	Inferred
Scientific name	Pecari tajacu (Linnaeus, 1758)	Pecari tajacu	Altered
Taxon ID	42113	42113	
Rank	Species	species	
Taxonomic status	Accepted		Inferred

Location	Interpreted	Original	Remarks
Term	Interpreted	Original	Remarks

Occurrence record: Minimal unit of information

iNaturalist



Community Repository  
[inaturalist.org/photos/13516288](https://inaturalist.org/photos/13516288)

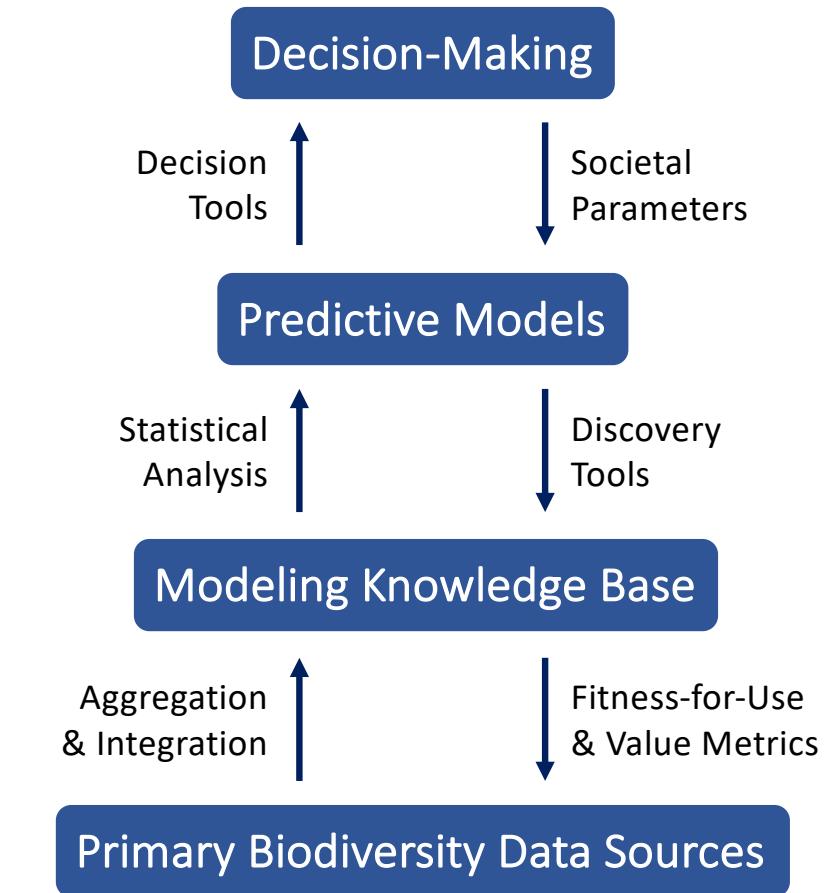
Bernard DuPont's 2008 Photo

# Integrating The Biodiversity Data Life Cycle

In addition to basic scientific research, biodiversity data is key to effective conservation, public health, and climate policy

Enabling situated decision-making is a top priority for many biodiversity scientists

Entails an integrated data life cycle from primary sources to decision making and back



# Data Pooling

- A process involving:
  - Combining data from multiple sources into one harmonized body of information
  - Providing infrastructure to manage and provide access to the combined data
  - Governing the resulting resource for the benefit of a community of users and stakeholders beyond a single research project or lab
- Example: pooling digitized specimen records from multiple museum collections in the same database under a shared taxonomic classification

# Long-Term Data Needs Long-Term Care

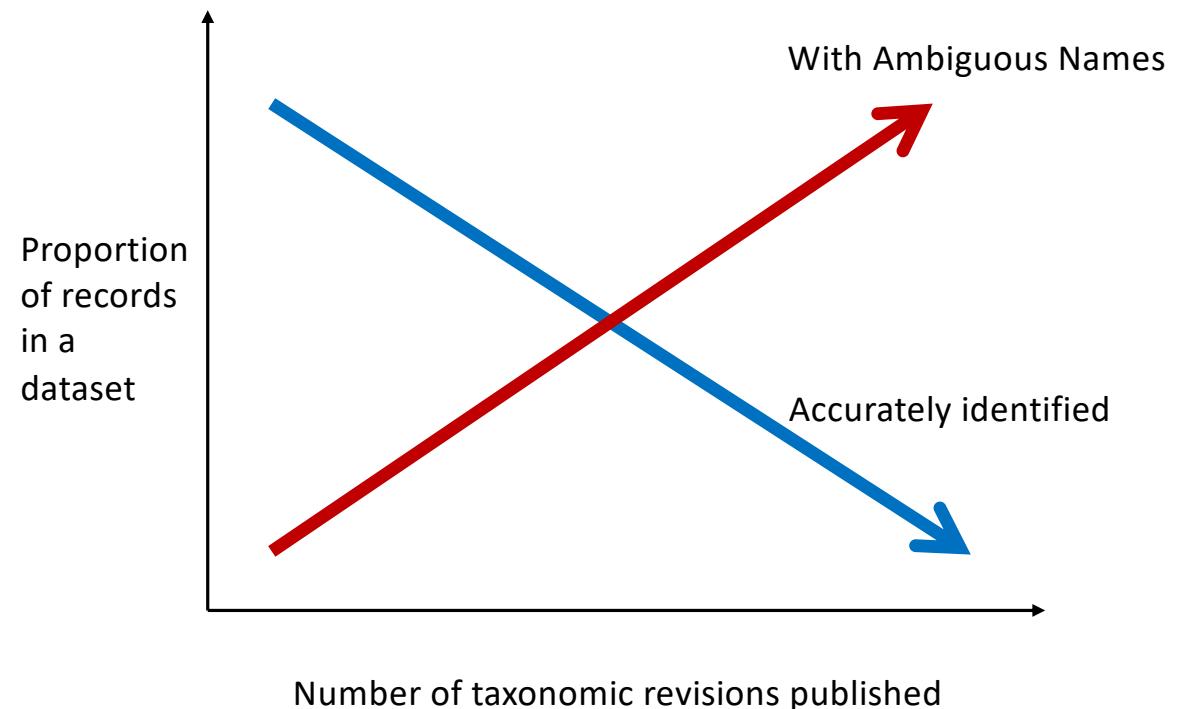
Biodiversity data records observations of species at a place and time

Every observation is labeled with metadata categories, especially a taxonomic name for the observed species

As categories get revised with time, datasets need their metadata labels updated

Otherwise names for categories tend to become increasingly ambiguous and incorrect

**Taxonomic accuracy and ambiguity of biodiversity data records over time**



# What arrangement of data pooling methods, technology, and people best suits biodiversity data?

Off-the-shelf product



Assemble on demand



Personal chef



Theme potluck



DIY Dinner



Global aggregator



Infrastructure Standardization and Pre-Processing

Indexing Search Portal

Conservation NGO

Peer Data Commons

Custom Database

User Customization and Effort



# Helpful Concepts for Data Infrastructuring

- **Community of practice:** a group of people, often from different organizations or backgrounds, who meet to work and learn together to advance a topic of common concern (Wenger 2008)
- **Boundary object:** an object that mediates interactions between people from different social contexts by allowing local differences in understanding while remaining stable enough to support cooperation (Star and Griesemer 1989)

# Dreams of Hierarchical Data Pooling

Hierarchy for Occurrence Data (2000)

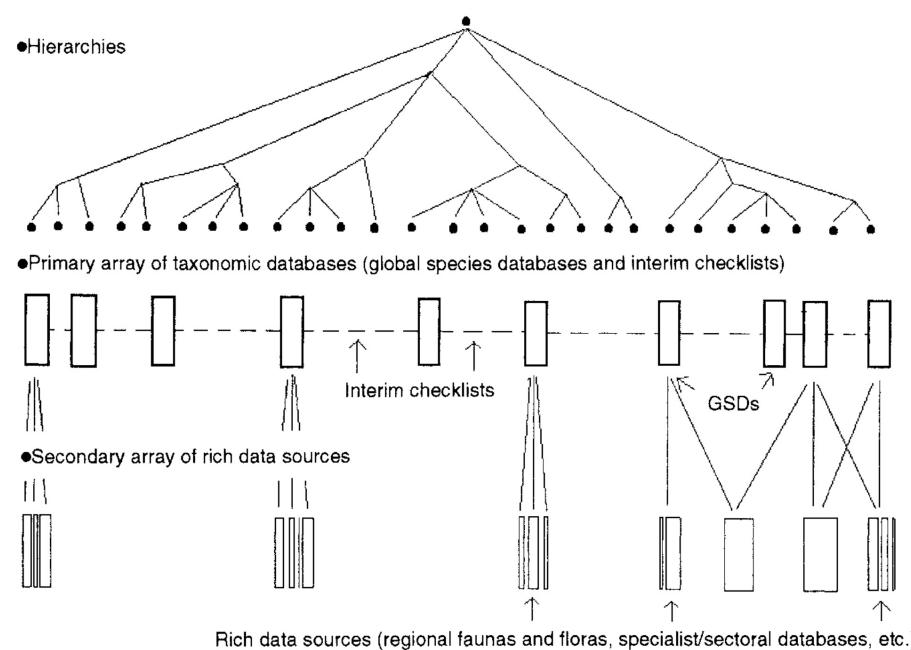


Figure 2, Bisby 2000

Hierarchy for Trait Data (2020)

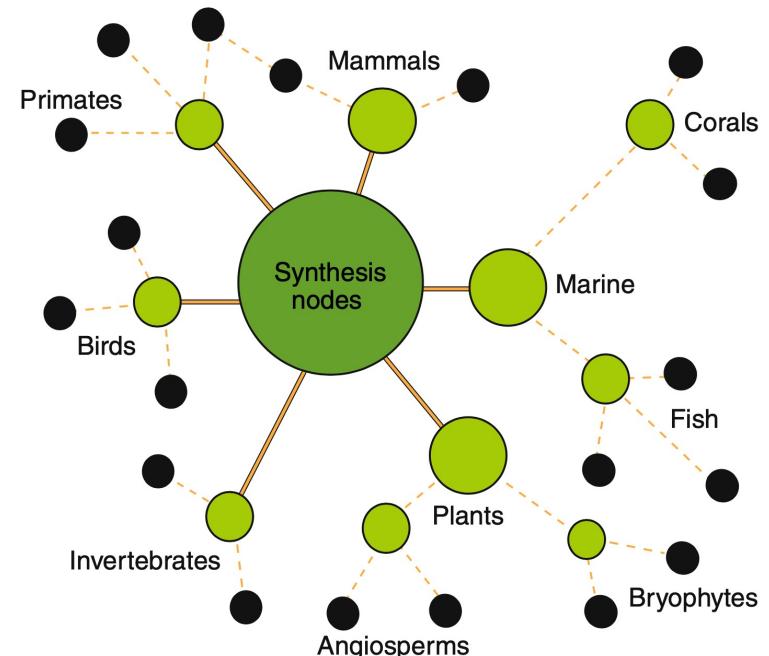
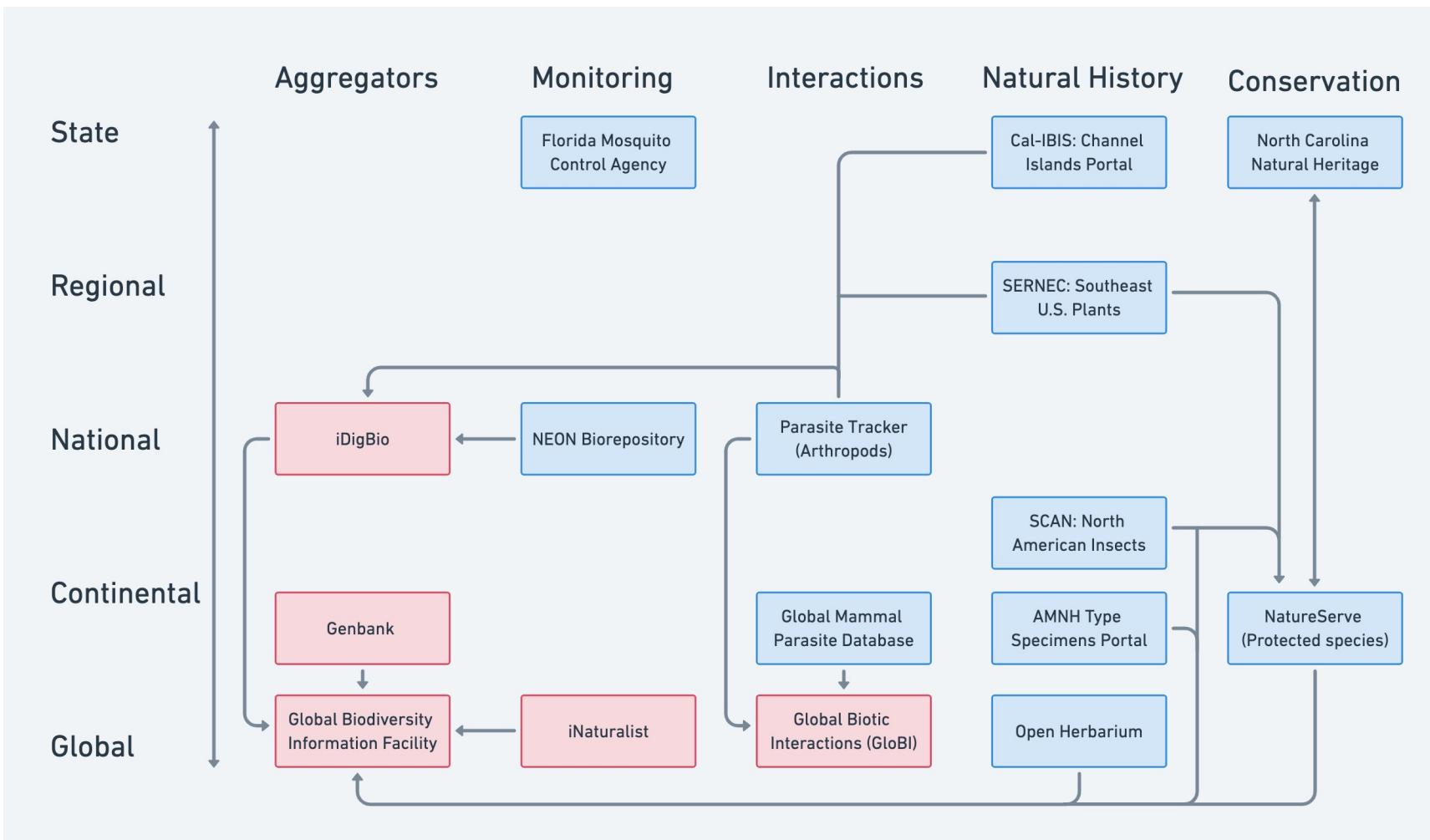
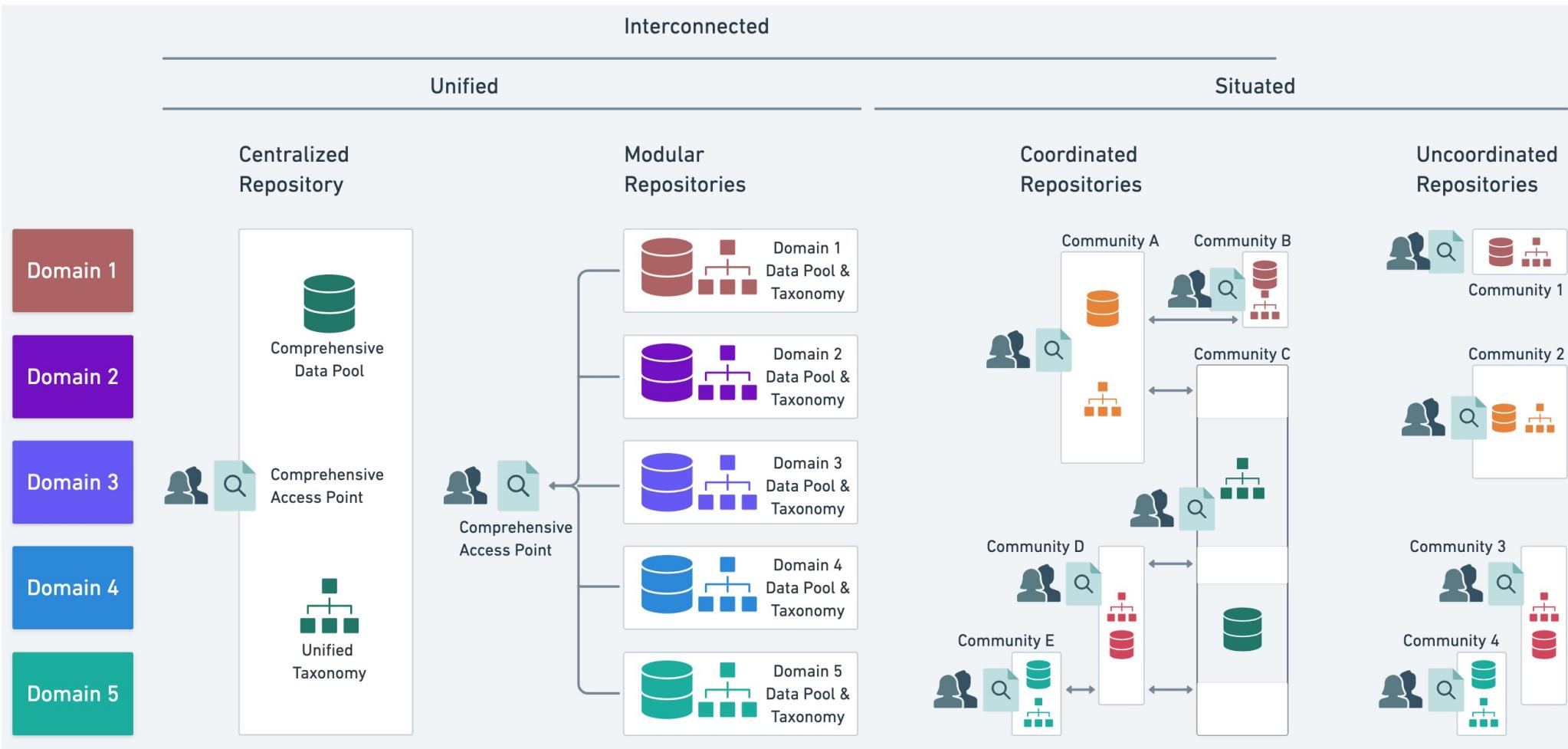


Figure 2c, Gallagher et al. 2020

# Biodiversity Data Pooling: Selected Examples



# Regulative Ideals for Data Pooling





# TaxonWorks

Building a community around your taxonomic needs

- What type of data pooling infrastructure do you have or want?
- What boundary object(s) captures how people share interest in the data?
- What organizations can sustain a corresponding community of practice?

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## Biodiversity Knowledge Integration Center @ ASU



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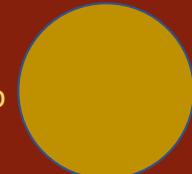
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