

Database of Quantification Tools used in Biodiversity and Habitat Markets



Photo by USFWS



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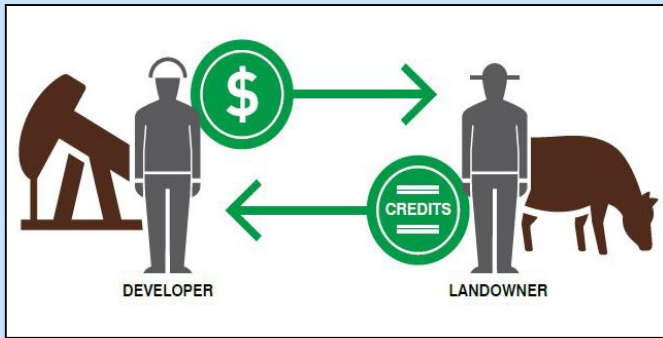
U.S. Geological Survey, Science & Decisions Center

Presentation outline

- 1. Market-based conservation mechanisms used in the US**
- 2. Role of quantification tools in markets**
- 3. Inventorying and describing quantification tools**
- 4. Ongoing work and conclusions**

Market-based mechanisms

...may incentivize conservation via:



Regulation

Image by Environmental Defense Fund

Landowner revenue



Image by USDA NRCS



<http://wildlifefriendly.org>

Consumer preference for 'green' products

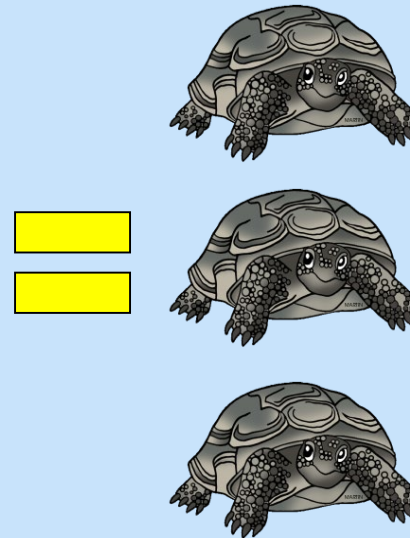
Market-based mechanisms also

...achieve environmental benefits with greater efficiency and at lower cost.



Biodiversity and habitat quantification

...is important for meeting conservation goals and promoting market success.



Recent findings on quantification tools

Biodiversity and Habitat Markets—Policy, Economic, and Ecological Implications of Market-Based Conservation



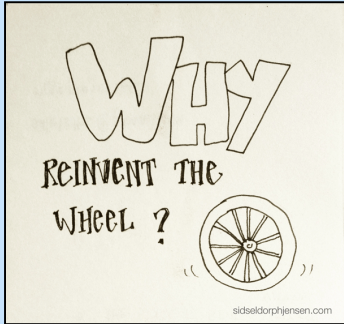
Circular 1414

1. Lack of standardization

2. Unclear what tools exist or are being developed

Tools can help with market transparency, reliability → promote activity and success

Developing a quantification tools database can:



Eliminate redundancy

Increase transparency and permit evaluation of tools

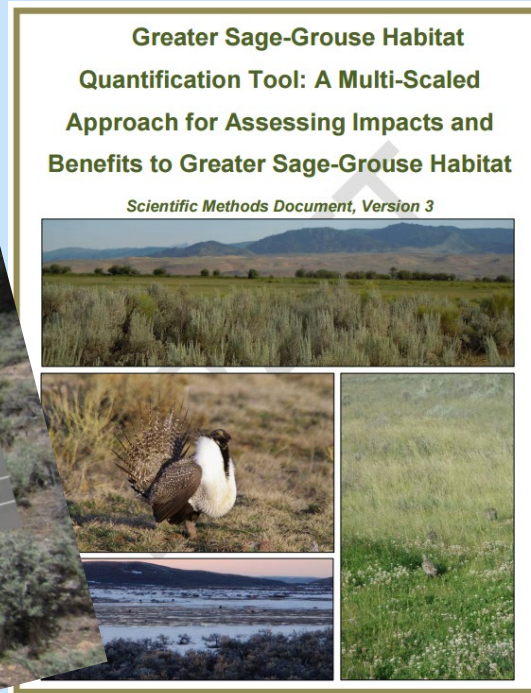
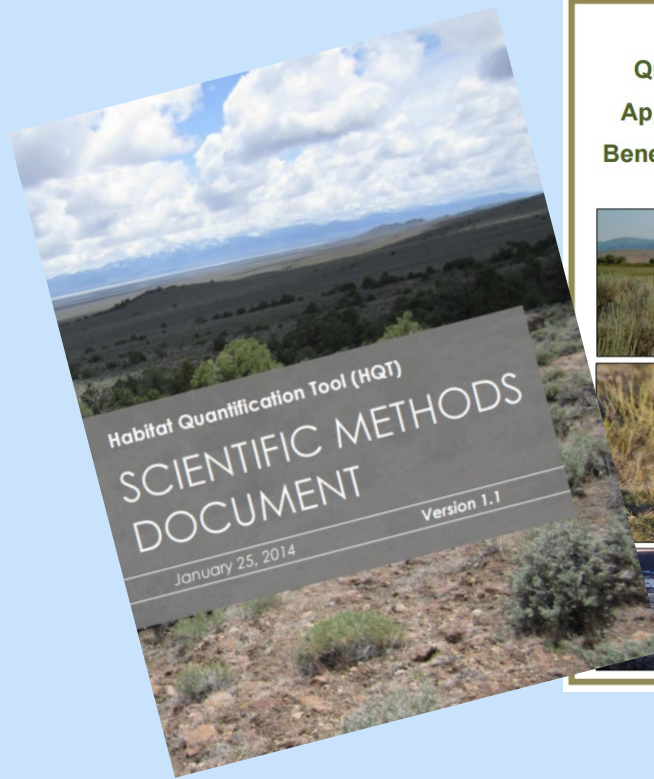


Reduce administrative burden

Facilitate efficient conservation (e.g., establishment of banks)



Results: 69 tools evaluated thus far



Database features

Biodiversity and Habitat Quantification Tools Database

All Data

Definitions

Abbreviations

Citation: Chiavacci, Scott J, and Pindilli, Emily J, 2018, Database of biodiversity and habitat quantification tools used for market-based conservation in the United States: U.S. Geological Survey Data Release, <https://www.sciencebase.gov/catalog/item/5a8d828ae4b0699060586dd5>



Source: FWS

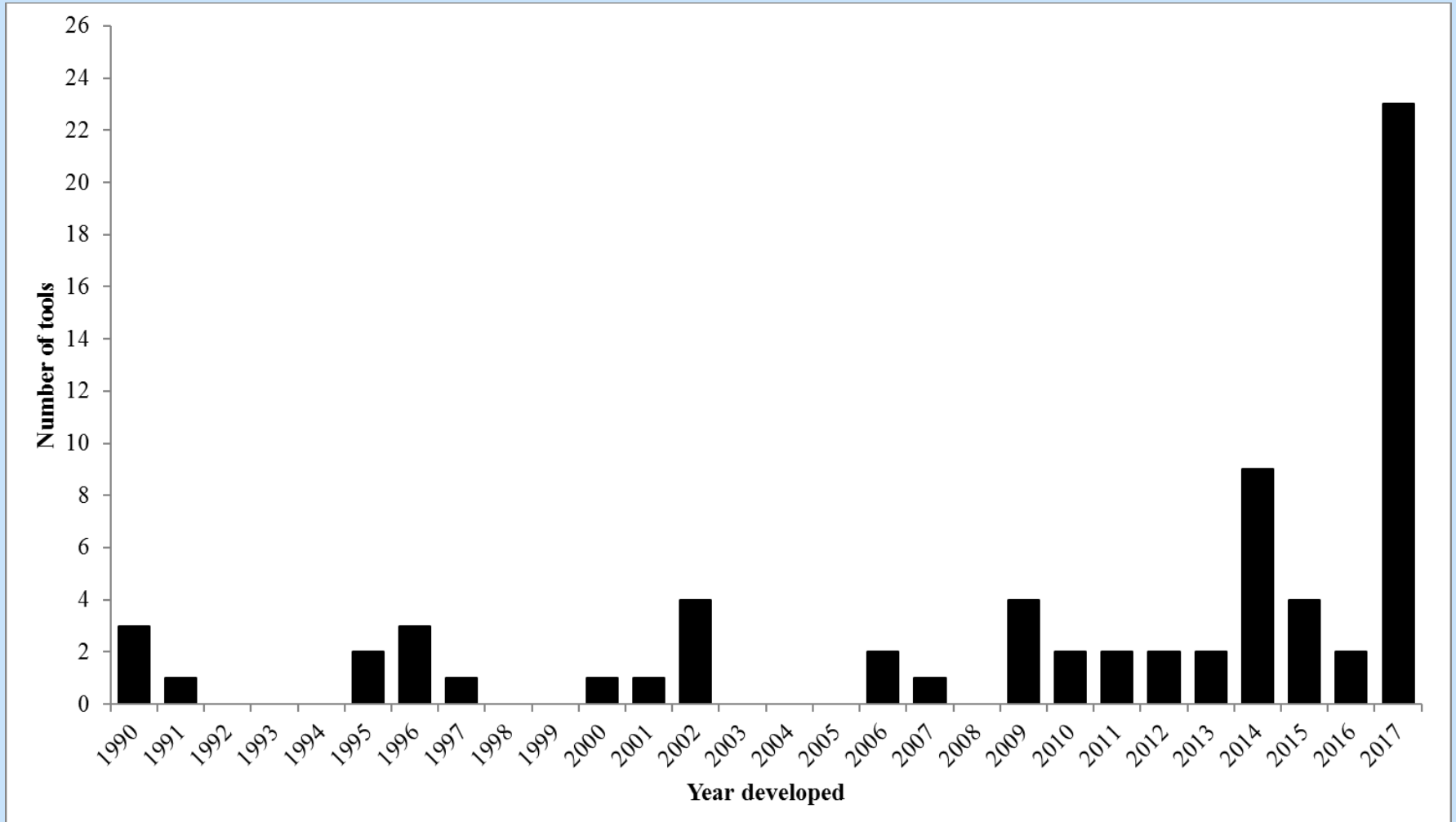
Database features

	Home				
	Tool Name	Brief Description	Pricing	Tool Status	Tool Owner(s)
1					
48	Puget Sound Nearshore Habitat Value Determination Model	Evaluates the capacity of the Puget Sound nearshore environment to support Puget Sound Chinook salmon and Hood Canal summer-run chum salmon.	Free	Draft	National Oceanic and Atmospheric Administration National Marine Fisheries Service
49	Recovery Credit System (RCS)	Designed to allow federal agencies to develop and store conservation credits that can be used at a later time to offset negative impacts to listed species.	Free	Finalized	US Fish and Wildlife Service
50	Regional Conservation Partnership Program (RCPP)	Program that helps agriculture producers install and maintain conservation activities to deliver environmental benefits.	Free	Finalized	US Dept. of Agriculture Natural Resources Conservation Service
51	Riparian Land Bird Habitat Quantification Tool (HQT)	Quantifies the habitat needs of riparian songbirds in California's Central Valley.	Free	Finalized	Environmental Defense Fund

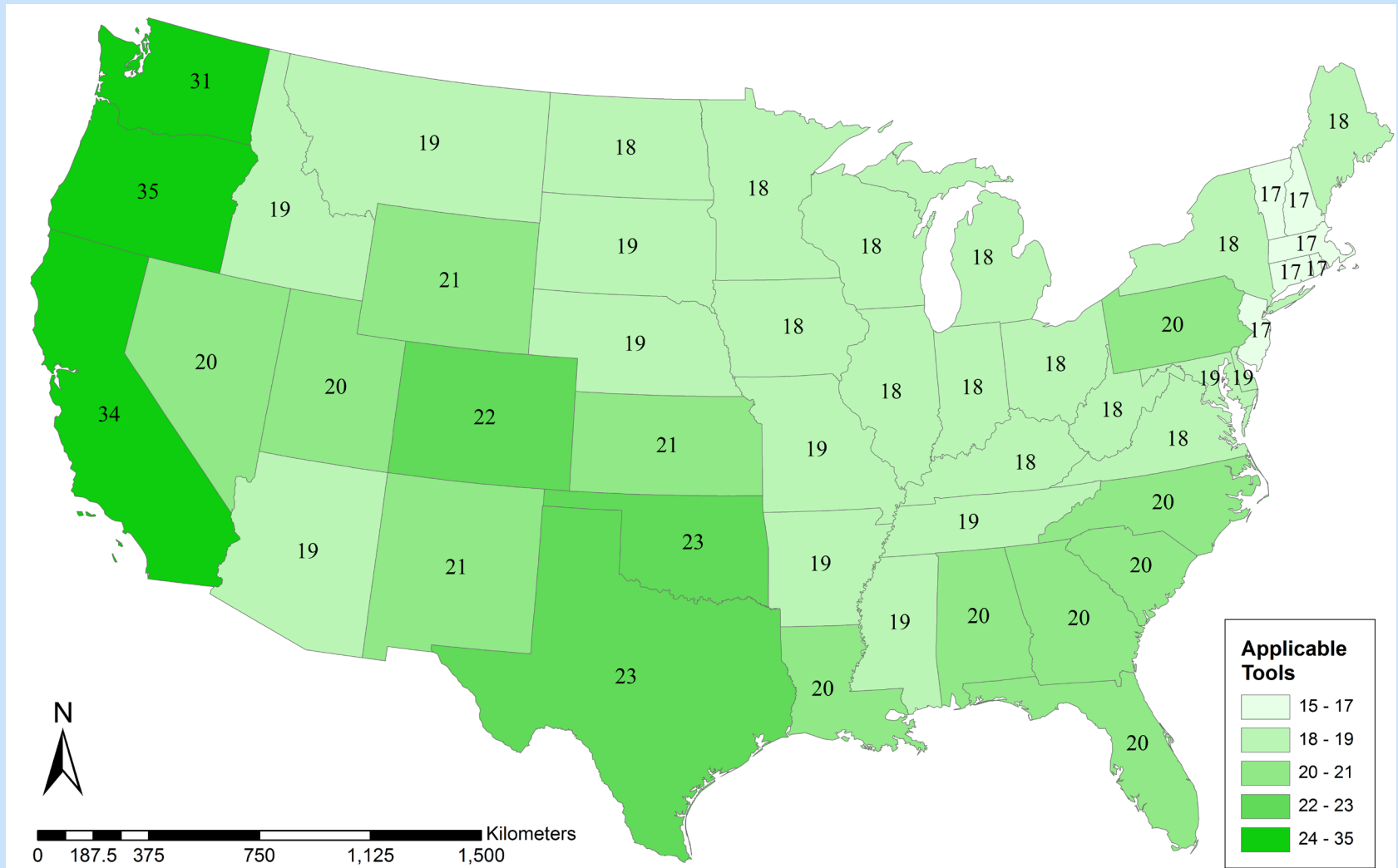
Database features

1	Home			
2	Criterion	Criterion Definition	Term	Term Definition
60	Focal Taxa	Taxa (e.g., species, group of organisms) the tool was designed to be used on	"#N/A"	Tool designed to assess, for example, system functions, value, or quality rather than benefits or impacts to organisms
61			"Varies"	Tool can be applied to a wide variety of organisms or was not originally designed to be applied to only specific organisms
62	Focal Habitat(s)	Habitats the tool was designed to be used in	"Agricultural lands"	Includes croplands, farmlands, pastures, rangelands, or other habitats supporting agricultural operations
63			"Varies"	Tool can be applied to a wide variety of habitat types or was not originally designed to be applied to a defined type or group of habitats
64	Location(s) of Use	States or specific regions for which the tool has been or could be used	"United States"	Tool can be applied to any state in the contiguous United States. NOTE: Some tool may also be applicable to areas outside of the contiguous United States - refer to associated documents or websites for information on applicability beyond contiguous United States.
65	Transferability	The degree to which a tool can be transferred to different taxa, habitats, or geographic locations	"High"	Tool was designed or can currently be applied to a wide geographic area (e.g., entire United States), any terrestrial or aquatic species, and any habitat type
66			"Moderate"	Tool was designed or can currently be applied to a relatively large geographic region (e.g., statewide, region of the United States), a group of species, or broad habitat type
67			"Low"	Tool was designed or can currently be applied to only a small geographic area (e.g., county or section of a state), a single species, or specific habitat type
68			"To be determined"	Transferability information not yet available - tool is still under development

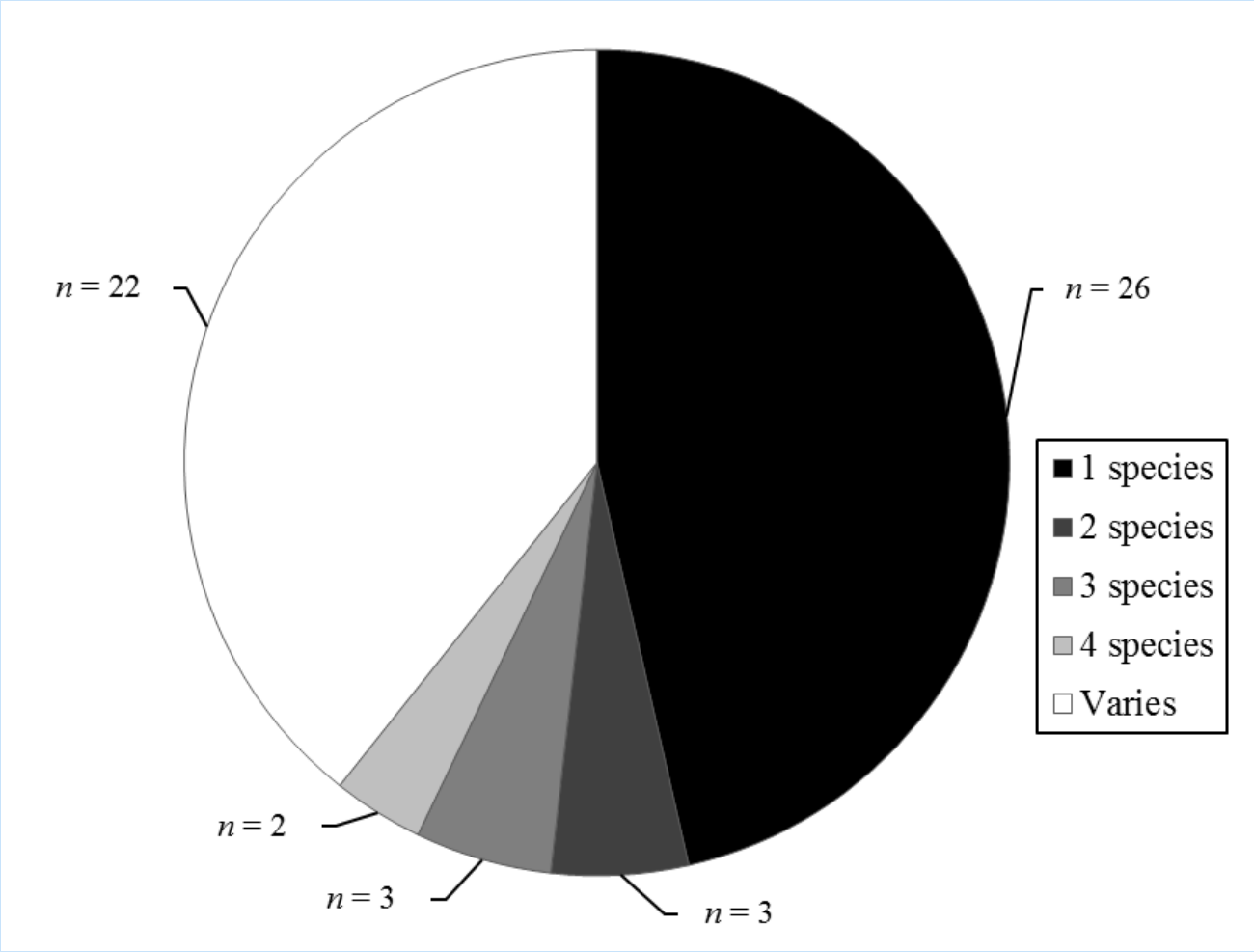
Tools developed through time



Tools by state

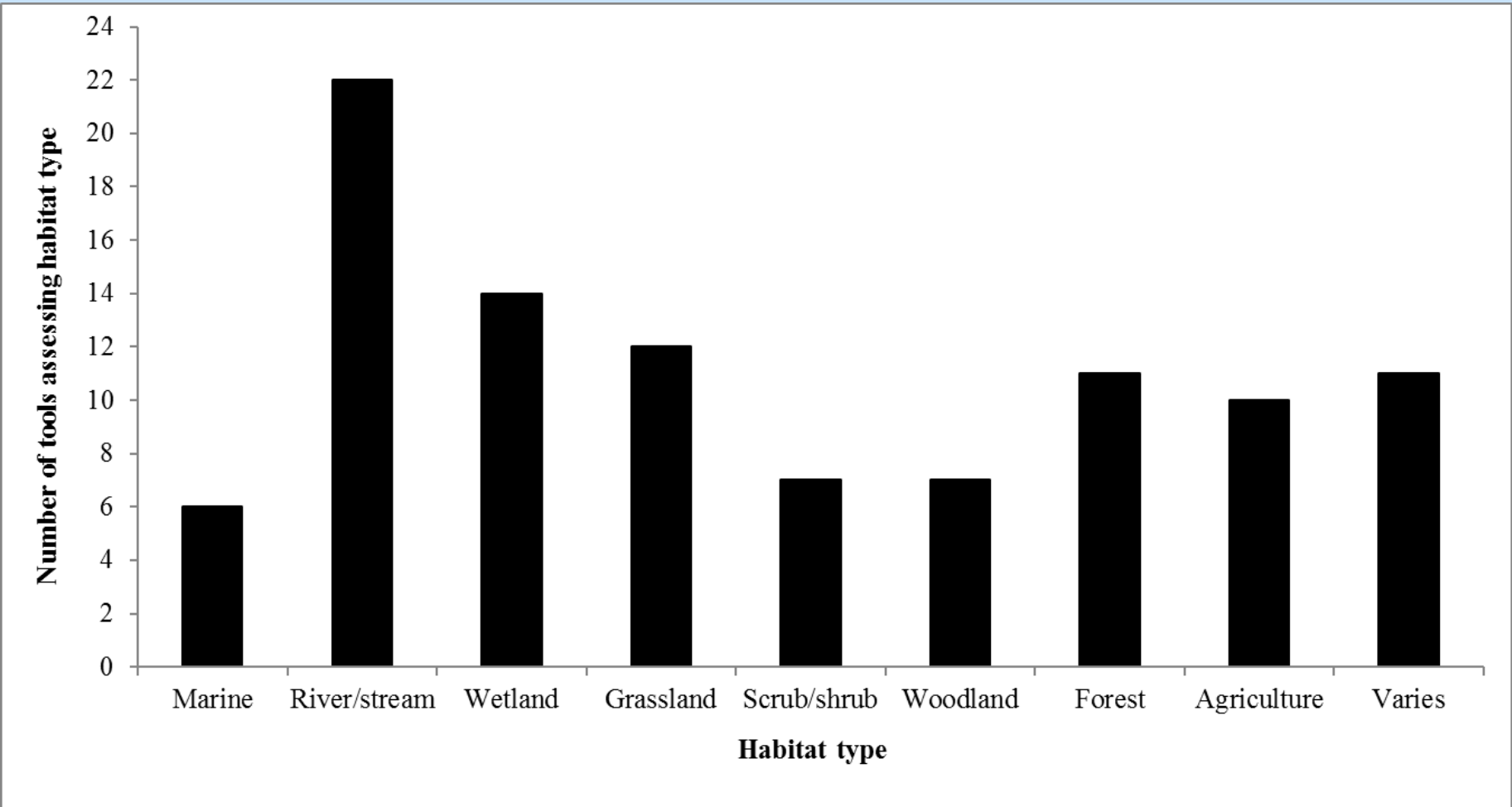


Number of species assessed by tools



*These data are preliminary and are subject to revision. They are being provided to meet the need for timely 'best science' information. The assessment is provided on the condition that neither the U.S. Geological Survey nor the United States Government may be held liable for any damages resulting from the authorized or unauthorized use of the assessment.

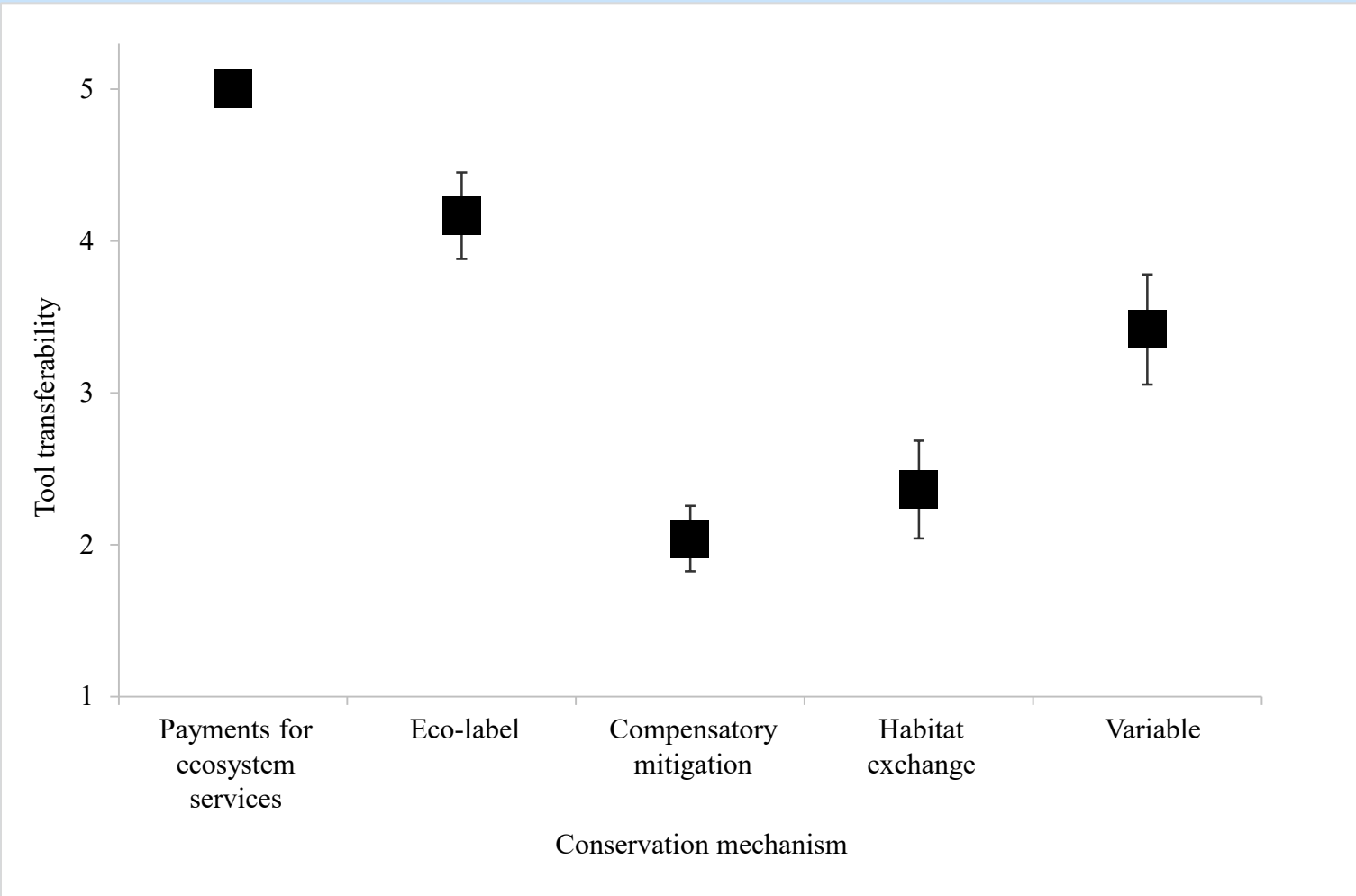
Habitat types assessed by tools



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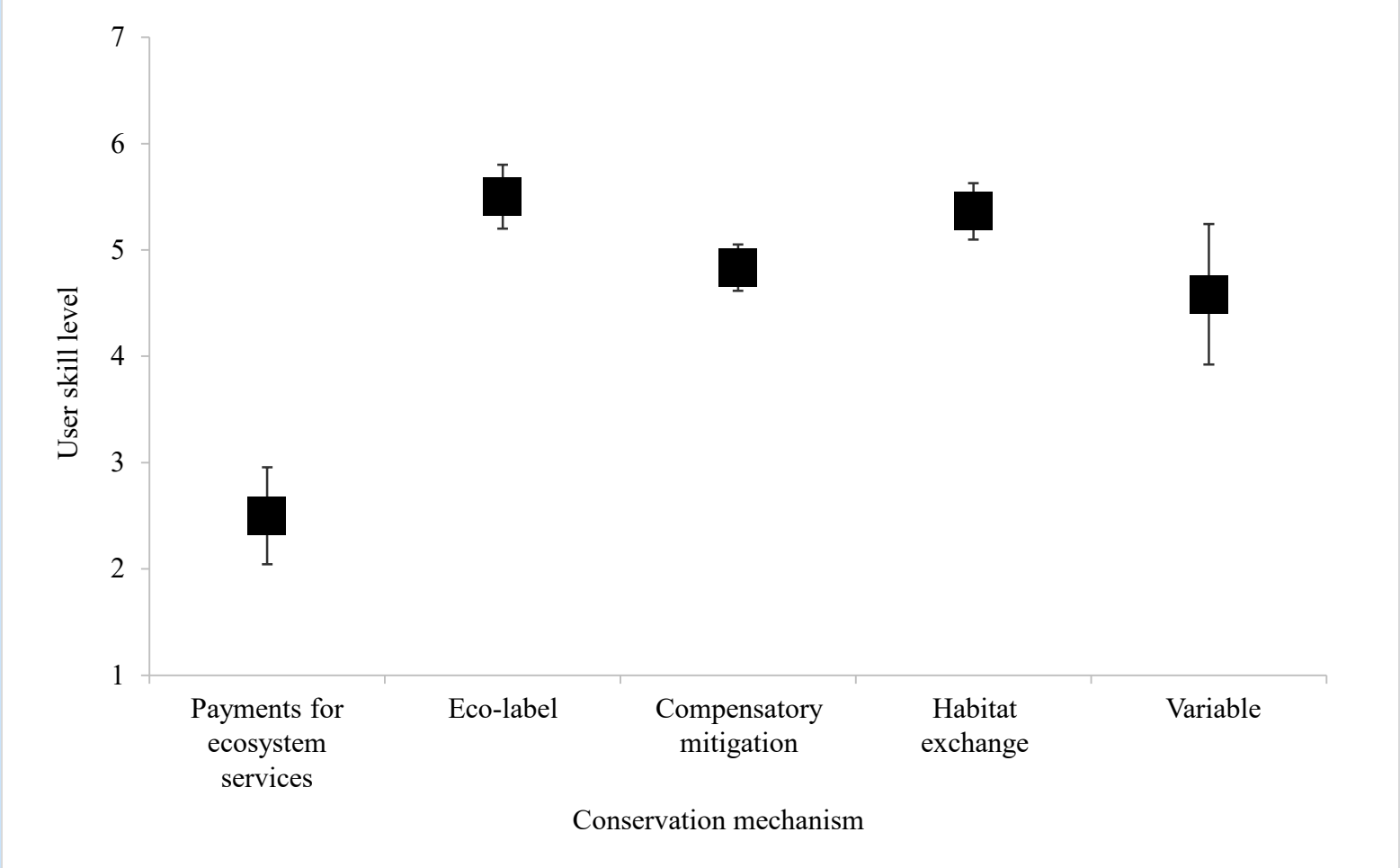
Level of tool transferability

(1) Species; (2) Habitats; (3) Geographic range



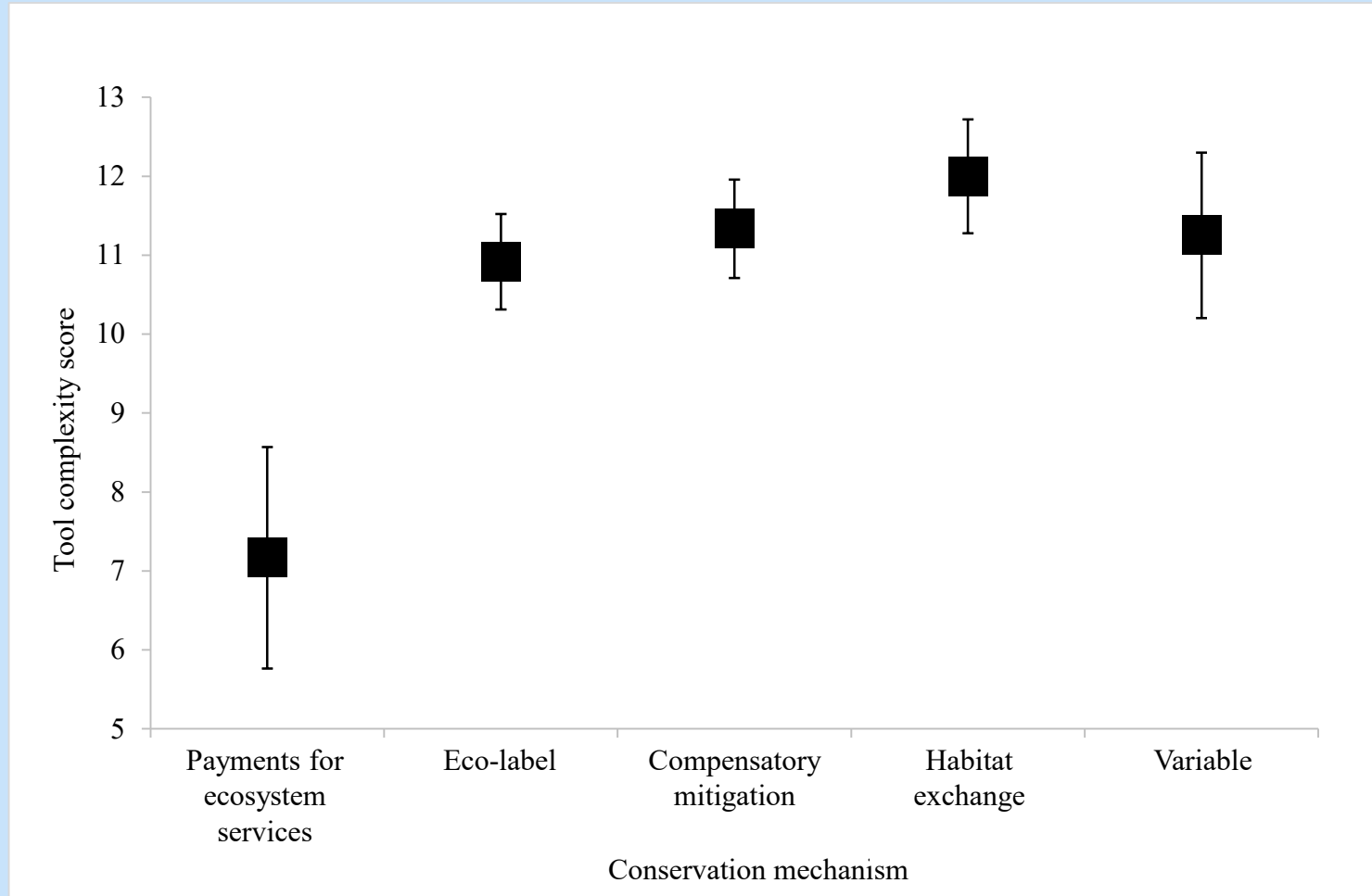
User skill level required by tools

(1) Subject matter expertise; (2) Technical abilities; (3) Training needs



Tool complexity score

(1) User skill level; (2) # Spatial scales assessed; (3) # Risks to site viability assessed; (4) Connectivity; (5) Species presence/abundance



Enhancements and ongoing work

Enhancements:

- Map layer of tool availability – EnviroAtlas
- Link to market-associated sites (e.g., RIBITS)
- Regular maintenance



Ongoing work:

- Database website
 - Improve searchability via drop-down menus, tool comparison
 - Easy access to tool documents
- Manuscript on findings
- Exploring merger with CWA 404 mitigation database

Brief conclusions

- Database allows examination of tool features and patterns
 - Tool complexity and required skill level; Tool development over time; Spatial concentration of tools
- Allows for easier identification of habitats/species/regions for which tools could be developed
- Assessing commonalities in tools can inform standardization strategies
- Tool information must be easier to find
- Guidance on tool development needed

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