Tools for Landscape-Level Assessment and Planning: A Guide for the North Pacific Landscape Conservation Cooperative

EBM Tools Webinar
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Introductory remarks by
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About the NPLCC

- A self-directed partnership between federal agencies, states, Tribes/First Nations, non-governmental organizations, universities, and other entities

- The North Pacific Landscape Conservation Cooperative promotes development, coordination, and dissemination of science to inform landscape level conservation and sustainable resource management in the face of a changing climate and related stressors

- http://northpacificlcc.org/About

Omernik Level III Ecoregions
- Olympic Mountains
- Klamath Mountains
- Cascade Mountains
- Pacific Coast Mountains
- Coastal W. Hemlock-Sitka Spruce
- Pacific & Nass Ranges
- Strait of Georgia/Puget Lowland
- Coast Range
- Willamette Valley

USGS

About Us

- NatureServe
  - Nonprofit conservation organization
  - Dedicated to providing the scientific basis for effective conservation action

- EBM Tools Network
  - Alliance of over 5,700 conservation, resource managers, tool experts
 - Best known for webinar series, interactive listserve, tools database, technical toolset guides

About the Project

- Goal:

  – Help increase use of tools to facilitate landscape-scale planning in the face of climate change

    - First step: creating an easily-understandable guide to tools, targeted to NPLCC partners

- Key Aspects:

  – Build on previous research on decision support needs for NPLCC (Tillman and Siemann 2012)

  – Focus on tools already in use in the region

  – Supplemented with additional tools as necessary

Tools: what are they and what roles can they play?

- For the purposes of this study, tools are software/applications that facilitate:

  - **Gathering and distributing relevant data**
    - *Example: Regional data portals*
  - **Conducting analyses and modeling**
    - *Example: Tools for conducting vulnerability assessments*
  - **Visualizing data and analysis/modeling results**
    - *Example: online decision support systems/viewers*
  - **Integrating information into planning for conservation, land use, and land management**
    - *Example: planning decision support systems*

Importance of Tools in Landscape Planning

- Enable more people to participate

- Bring sophisticated capabilities to non technical experts

- Make processes more transparent and repeatable

- Support ongoing plan implementation and adaptive management

- Bottom line: it is infeasible to conduct this work without specialized tools

Process
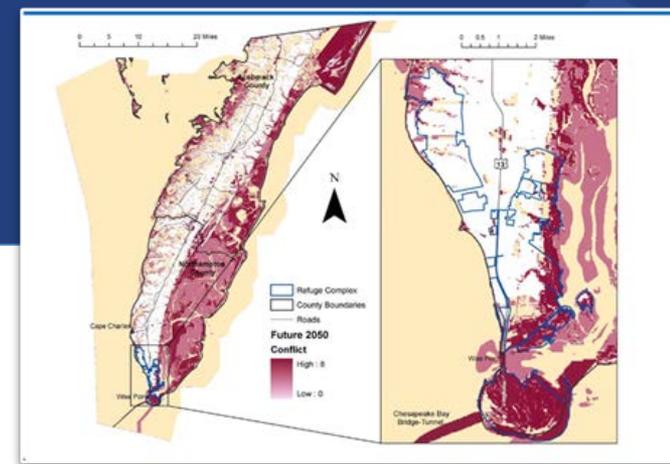
1. Utilized previous study on DSS needs to structure functional needs for tools

2. Surveyed NPLCC partners about past, current, planned, and desired tool use and specific tools of interest

3. Analyzed survey results and conducted additional research

4. Validated tools research with NPLCC partners

5. Collected featured tool information and case studies

6. Release final tool guide and host webinar to present guide

Tool Survey (SurveyMonkey, Nov-Dec 2013)

- Questions:

  - Who is using tools in the region

  - What tools they are using

  - What they are using tools to do

  - How well tools are meeting their needs

  - Partners for using tools

  - Key science and planning needs they haven't found tools for

  - Capacity (time, money, technical expertise, institutional support) available for using tools

Austin Gallagher/Marine PhotoBank

- **105 valid responses with tremendous amount of information!**
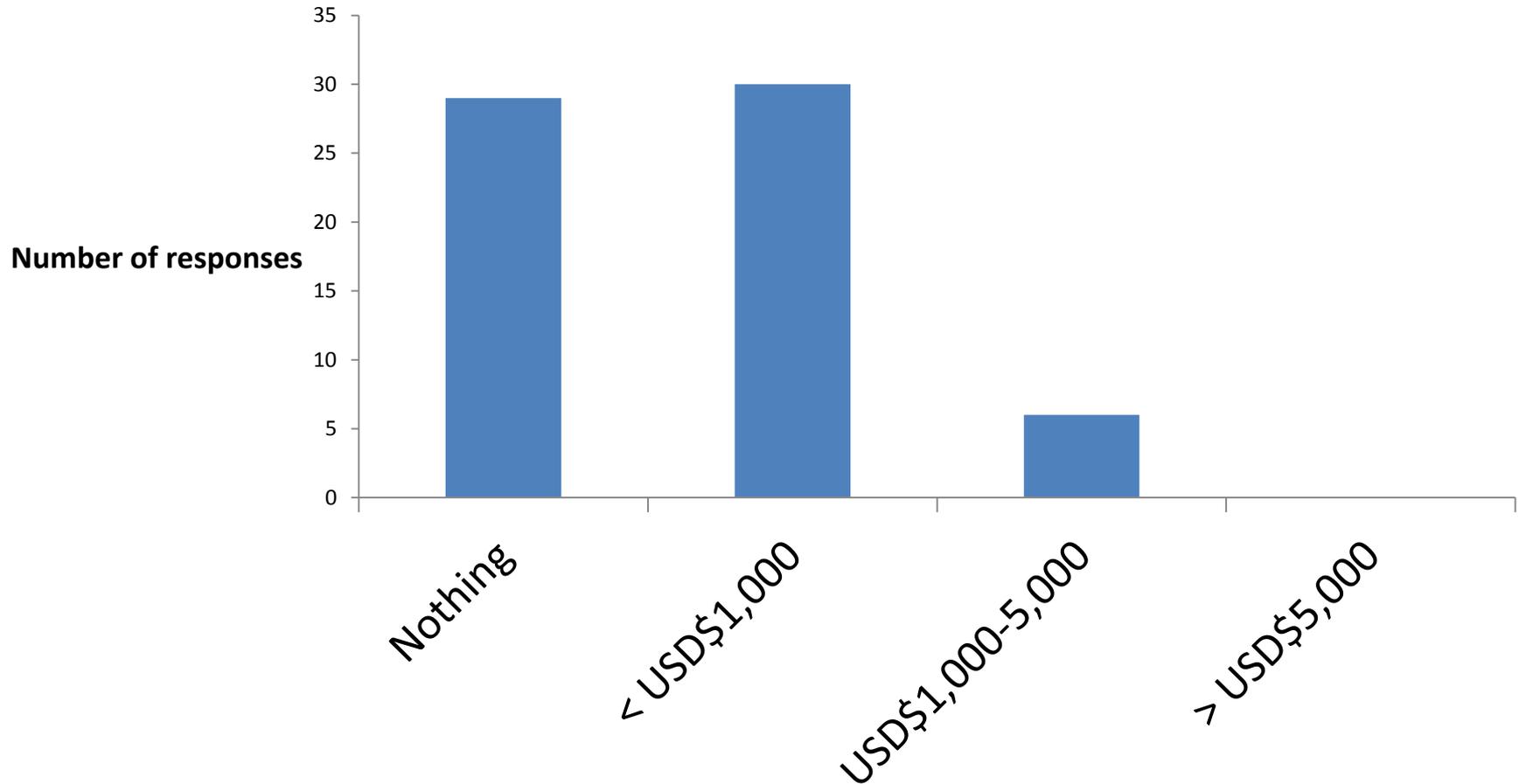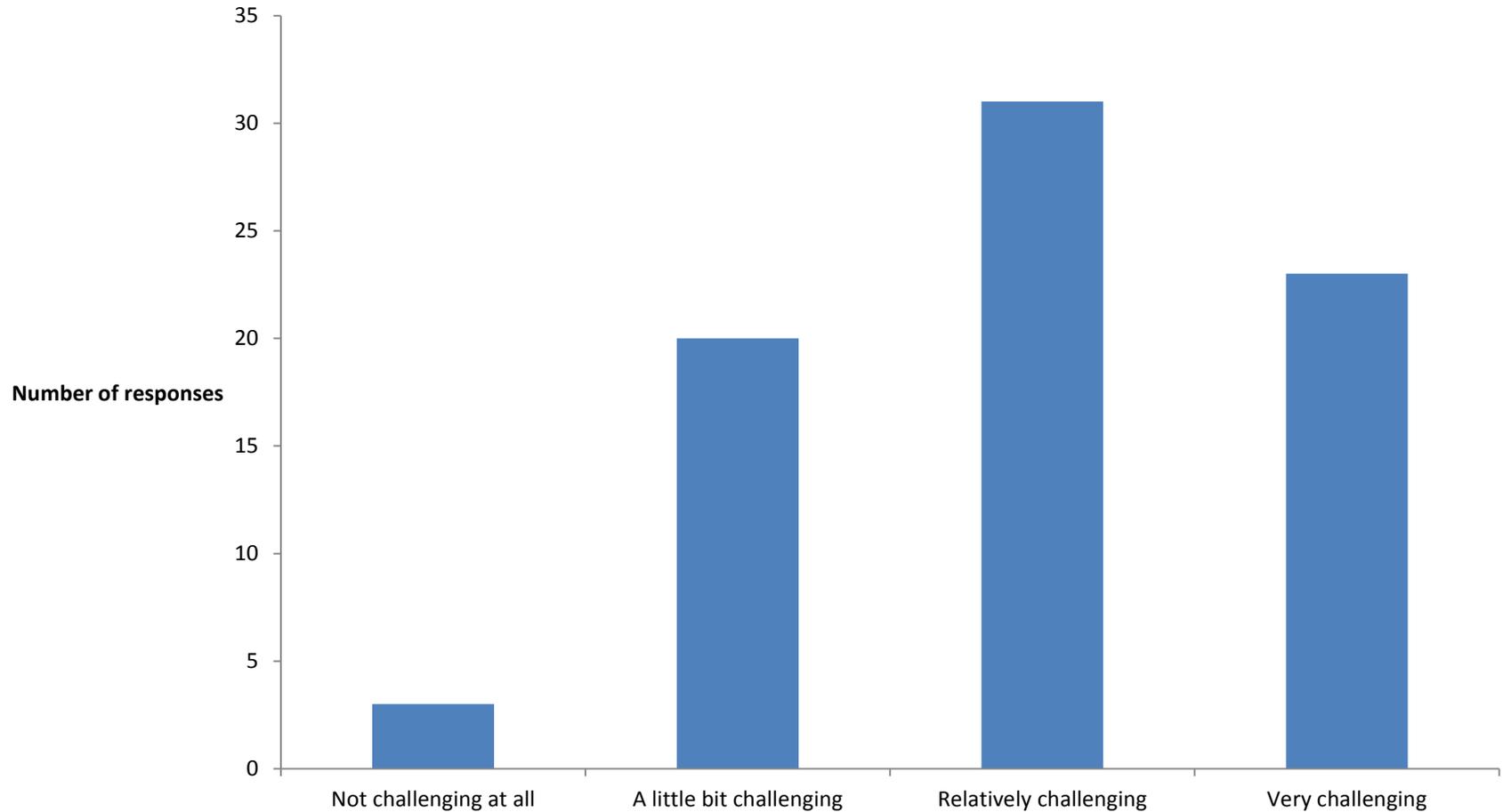
Demographics of Respondents
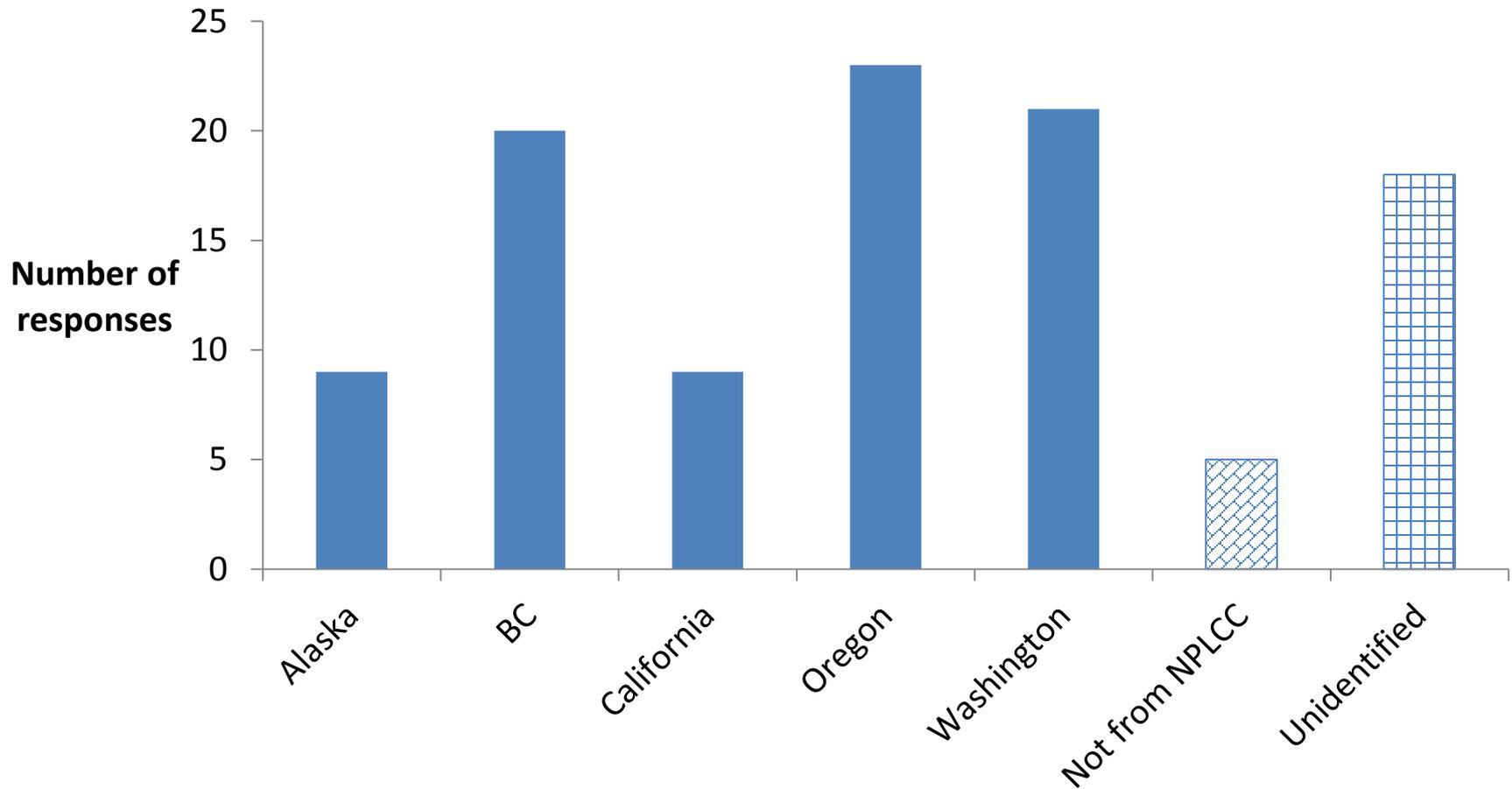
Staff Time Available for Tool Training
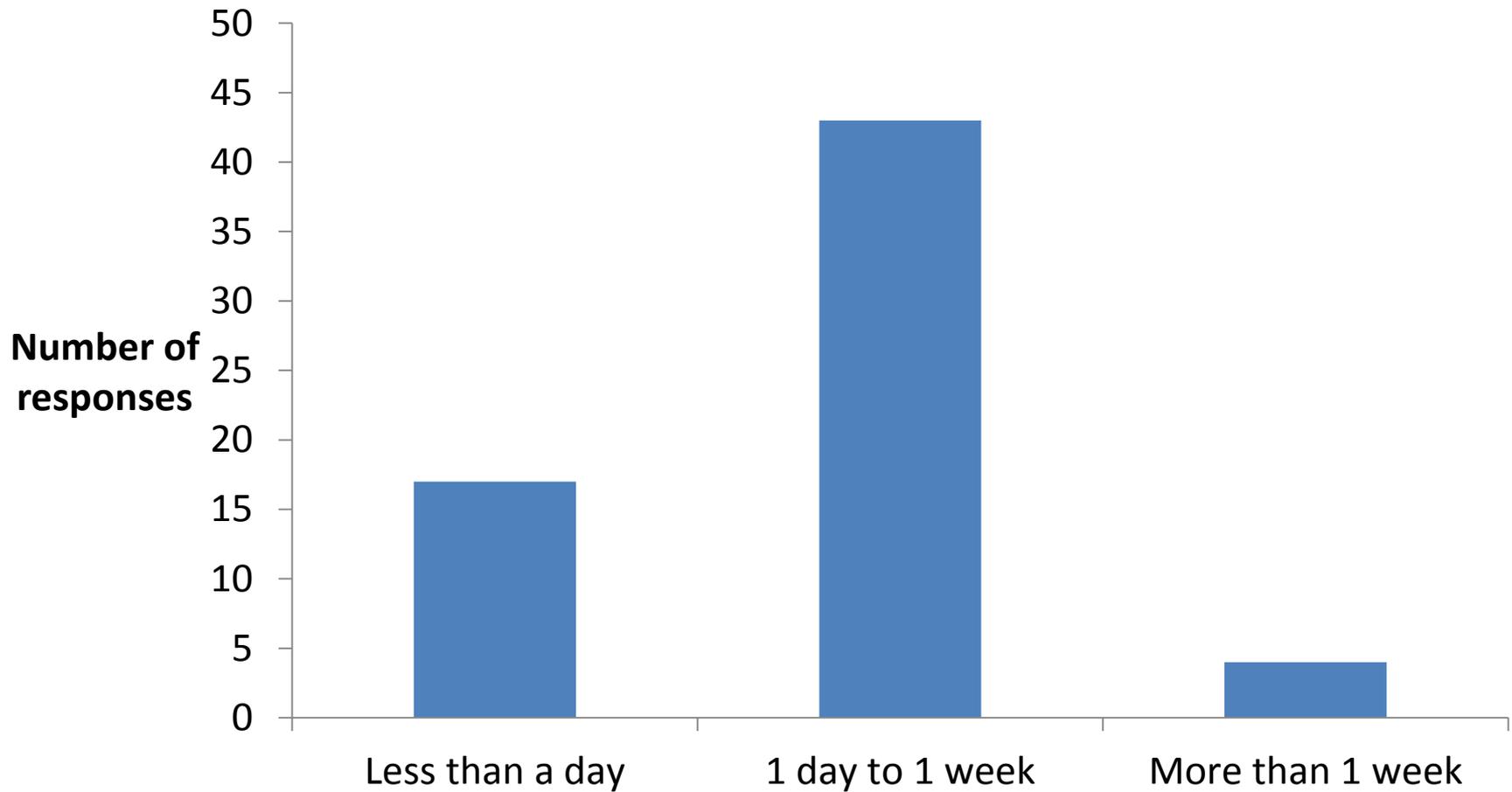
Ability to Pay for Training/Technical Support

# Obtaining the data to run the tools

Getting leadership support

Chart showing "Number of responses" (y-axis, 0 to 30) for the question about getting leadership support:
- Not challenging at all: 13
- A little bit challenging: 24
- Relatively challenging: 18
- Very challenging: 21
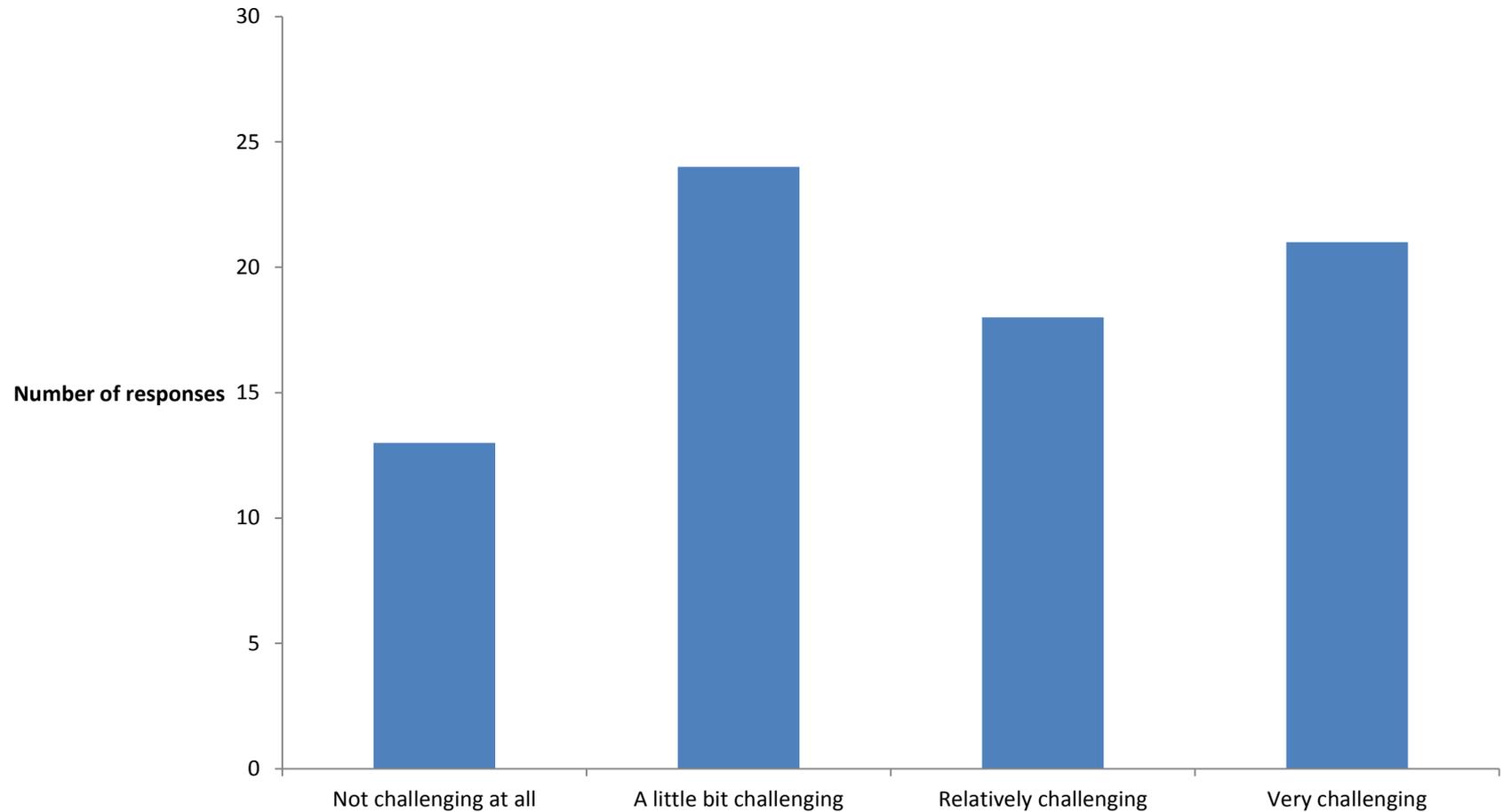
Very similar results for several questions

- **Obtaining the technical expertise to run tools (in-house or externally)**
- **Getting staff acceptance of using tools and new approaches**
- **Getting public/stakeholder understanding and acceptance of tool results**
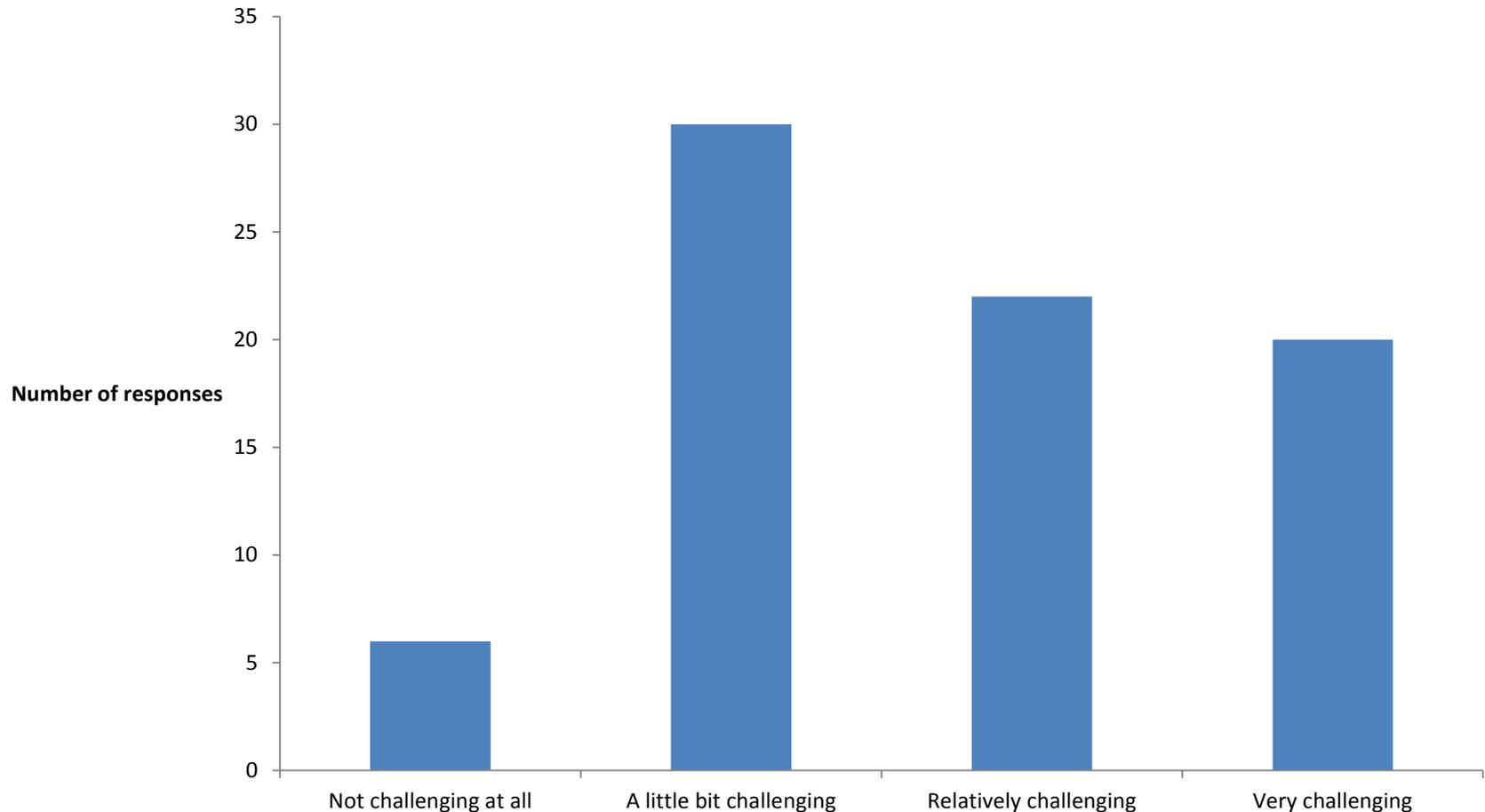
Survey Analysis/Tool Selection Matrix Assumptions

- Focused on spatial tools, several criteria presented later

- Did not include:
  - GIS platforms (too general)
  - Documents for processes, methods, frameworks, methods, etc. (e.g. EBM, MSP)
  - People resources (e.g. science lab groups, consulting groups)
  - Data sets (data portals, esp. with analytical functionality, considered however)
  - State and local tools/portals that didn't look extensible to landscape-level/region
  - Tools under development/not publicly available or not actively maintained

- Did not generally include tools, that must be customized by the developer such that the end user can't run them on their own or has to pay considerable amount to get them customized by an expert (unless already operational in region)

- In cases with multiple tools with very similar functionality, we selected ones we considered best for NPLCC needs

Tool Selection Checklist

Necessary Attributes:

- ❑ Addresses key regional needs
- ❑ Facilitates landscape-level planning
- ❑ Can incorporate climate change considerations with other goals
- ❑ Has attainable data requirements
- ❑ Has attainable capacity requirements and cost
- ❑ Has been validated
- ❑ Has appropriate guidance for use (e.g. manuals, case studies, user groups, training)

Desirable Attributes:

- ❑ Presents information in visual and interactive formats
- ❑ Has been used in the NPLCC region
- ❑ Works across ecosystems
- ❑ Reflects a dynamic environment
- ❑ Incorporates uncertainty
- ❑ Integrates TEK and western science

Tool selection results

- 100 tools in the matrix (aligned with functions and users)

- 75 additional tools, portals, web resources

- 11 featured tools in an integrated toolkit

- 4 case studies of within-region tool use

Selecting Featured Tools

- **Most Cited Tools in Survey (in use in NPLCC or partners interested in learning about, not a vote!)**

  - Marxan
  - InVEST
  - NetMap
  - WGA CHAT
  - Avian Knowledge Network data/tools
  - BLM Aquatic Priorities Tool
  - Conservation Registry
  - Regional Aquatic Prioritization and Mapping Tool

- **Most Cited Tools in Tool Selection Matrix (provides most diverse functionality)**

  - NatureServe Vista (10)
  - Envision (8)
  - EMDS (7)
  - Coastal Resilience 2.0 (5, including Puget Sound tool)
  - Regional Aquatic Prioritization and Mapping Tool (4)
  - CommunityViz (3)
  - Connectivity Analysis Toolkit (3)
  - MIMES (3)
  - NOAA Sea Level Rise and Coastal Flooding Impacts Viewer (3)
  - SeaSketch (3)
  - SLAMM (3)
  - RAMAS (3)
  - West Coast Fish Habitat Assessments (3)

Explore the Guide

The Live Tour

Concluding thoughts

- The guide has high applicability to other coastal regions and LCC landscape conservation design work in general

- Represents a leveraging opportunity for other efforts (particularly LCCs') to inventory tools and build new tools to consolidate guidance in one location

- The EBM Tools program offers the infrastructure to host tool surveys and links to the large tools database

Download the Guide
Coming soon, watch for EBM Tools Notice

Questions, Comments?

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