Gulf Coast Ecosystem Restoration Science, Observation, Monitoring and Technology Program

NOAA RESTORE Science Program

RESTORE SCIENCE PROGRAM

2021 Program Review

Photo by USDA Risk Management Agency

November 17, 2021

RESTORE SCIENCE PROGRAM

Welcome Back!

Group Norms

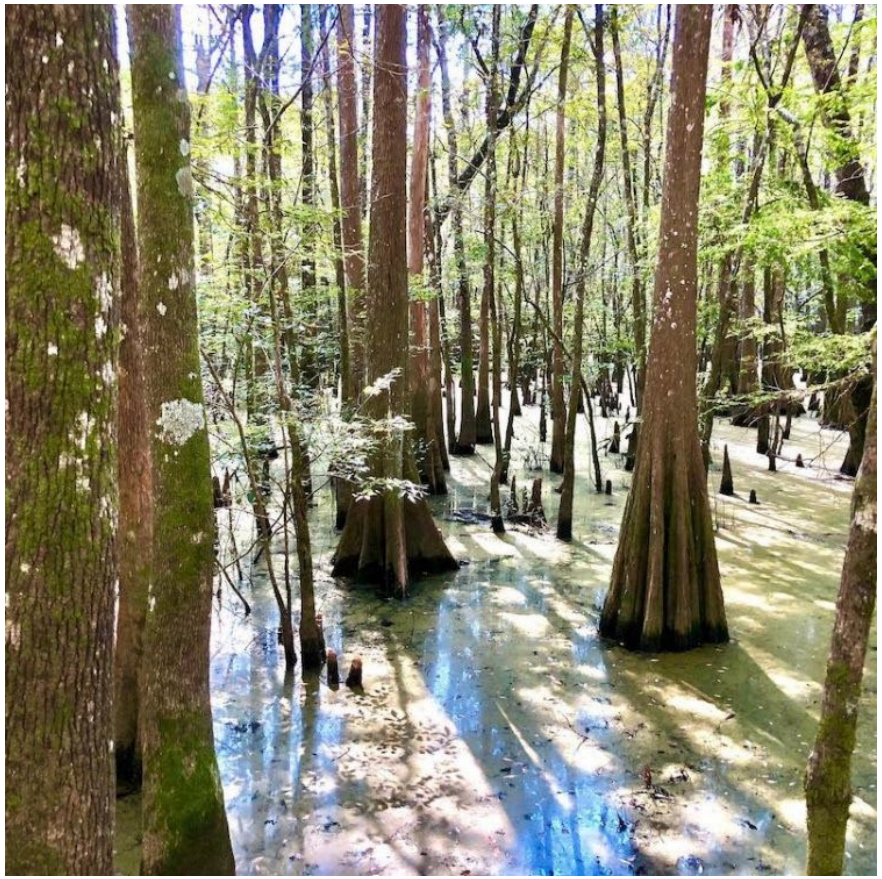
- Mute yourself when not talking.
- We encourage you to close internet tabs and mute your email and phone to give presenters your full attention.
- Please keep cameras on whenever possible.
- Use hand raise icon to signal that you have a question or comment.
- Notetakers are documenting verbal discussions and chat comments.
- Save questions for Q&A and roundtable times.

Tech Assistance

- If you have tech issues, drop a note in the chat or text me at **904-415-2105**.
- We have a tech assistant standing by.
- When in doubt, hop on the phone!
  - Dial-in information is provided for all sessions.

Today's Agenda

- Welcome
- Evaluating Application
- Promoting Co-Production
- *-Break-*
- Coordination and Collaboration
- Roundtable with Partner Programs
- Wrap-Up
- Executive Session II (1 hour)



Who Is In The Room Today

- RESTORE Science Program team
- Federal and state government
- Researchers
- Collaborating researchers
- Graduate students
- Partner programs

You have a list of all presenter names and affiliations in the most recent agenda you received.

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Questions before we begin?

Evaluating Application

Julien Lartigue and Kassie Ernst
November 17, 2021
NOAA RESTORE Science Program – Review

Why is application important?

"…priority shall be given to integrated, long-term projects that— (1) build on, or are coordinated with, related research activities; and (2) address current or anticipated marine ecosystem, fishery, or wildlife management information needs."

Output metrics

Type	Metric	Data Source	Frequency
Output ✔Research	% of publications in high impact journals	Web of Science	Semi-annual
Output ✔Application	Incidents of sharing findings and products	Project reports and technical monitors	Semi-annual
Output ✔Coordination	Joint activities	Science Program	Semi-annual
Output ✔Coordination	Leverage	Project reports and Science Program	Semi-annual

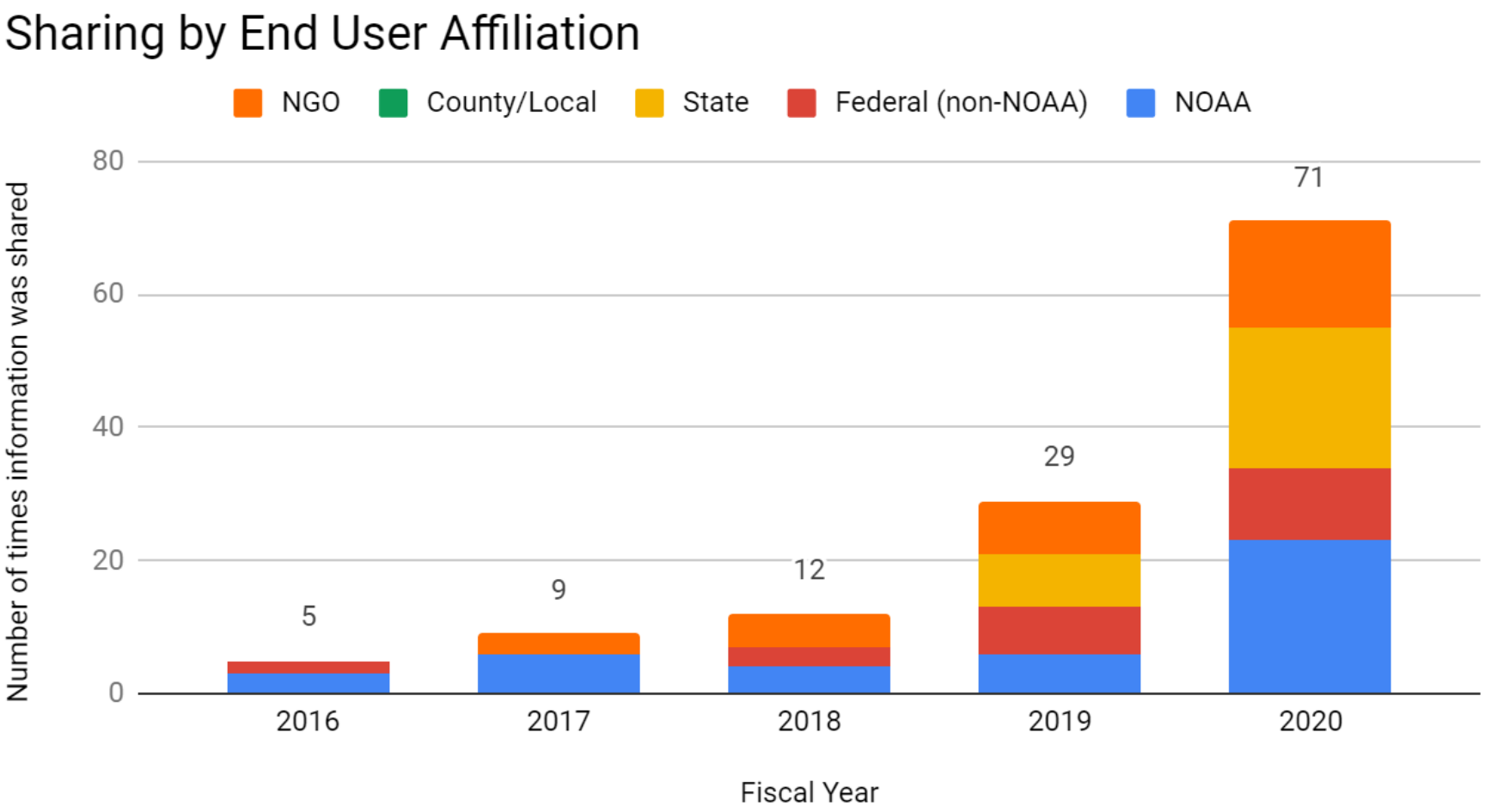
Outcome metrics

Type	Metric	Data Source	Frequency
Outcome long-term ✔Research ✔Application ✔Coordination	Knowledge and prevalence of ecosystem-based management	Survey	Every 5 years
Outcome medium-term ✔Application ✔Coordination	Management actions	Project reports, technical monitors, Science Program	Annual
Outcome medium-term ✔Research ✔Application ✔Coordination	Independent review	Independent review board	Every 5 years
Outcome short-term ✔Research ✔Application	Citations of publications	Web of Science	Semi-annual
Outcome short-term ✔Application	Use and quality of findings and products	Project reports, technical monitors, end of project survey	Semi-annual

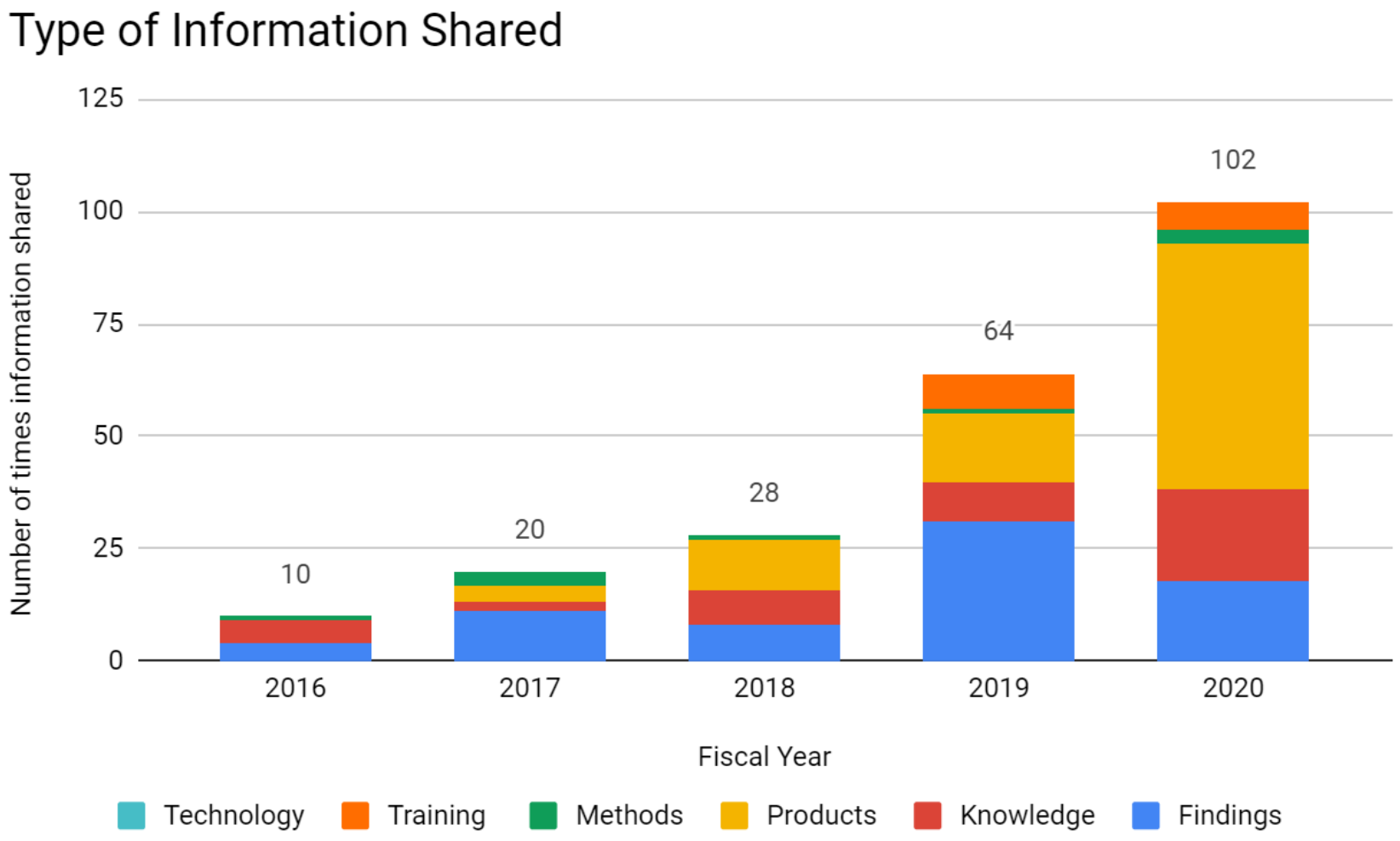
How do we measure it?

- Performance metrics
  - Outputs
    - Sharing
  - Outcomes
    - Use and quality - pilot (short-term)
    - Citation of publications (short-term)
    - Management actions (medium-term)
    - Independent review (medium-term)
    - Ecosystem-based management survey (long-term)
- Case studies

Sharing

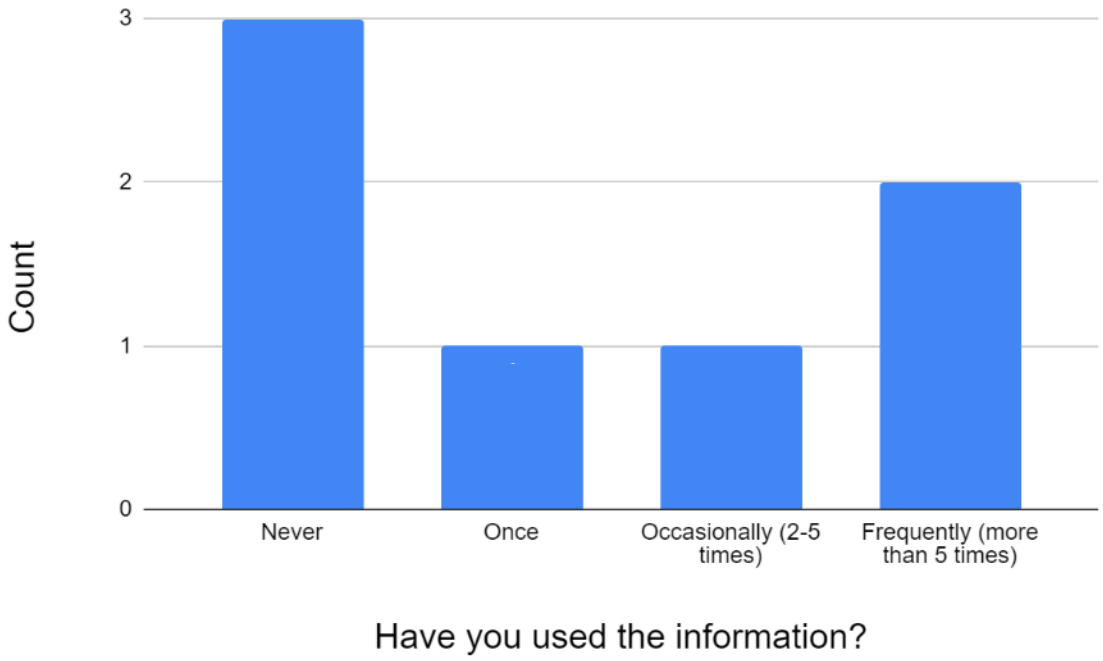

Sharing by End User Affiliation
NGO
County/Local
State
Federal (non-NOAA)
NOAA
Number of times information was shared
80
60
40
20
0
5
9
12
29
71
2016
2017
2018
2019
2020
Fiscal Year

Sharing

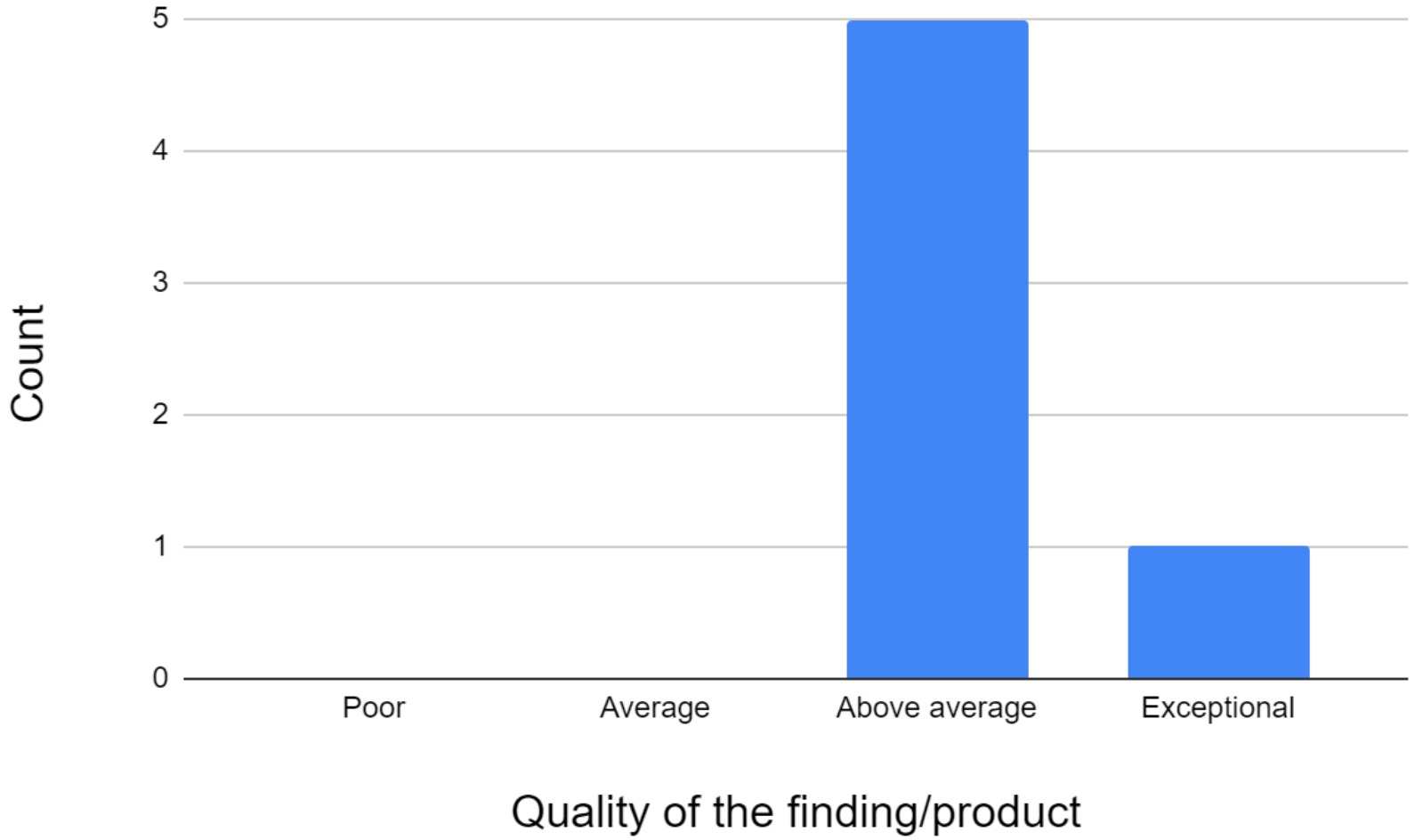

Type of Information Shared
Number of times information shared
125
100
75
50
25
0
10
20
28
64
102
2016
2017
2018
2019
2020
Fiscal Year
Technology
Training
Methods
Products
Knowledge
Findings

Use and Quality - Pilot

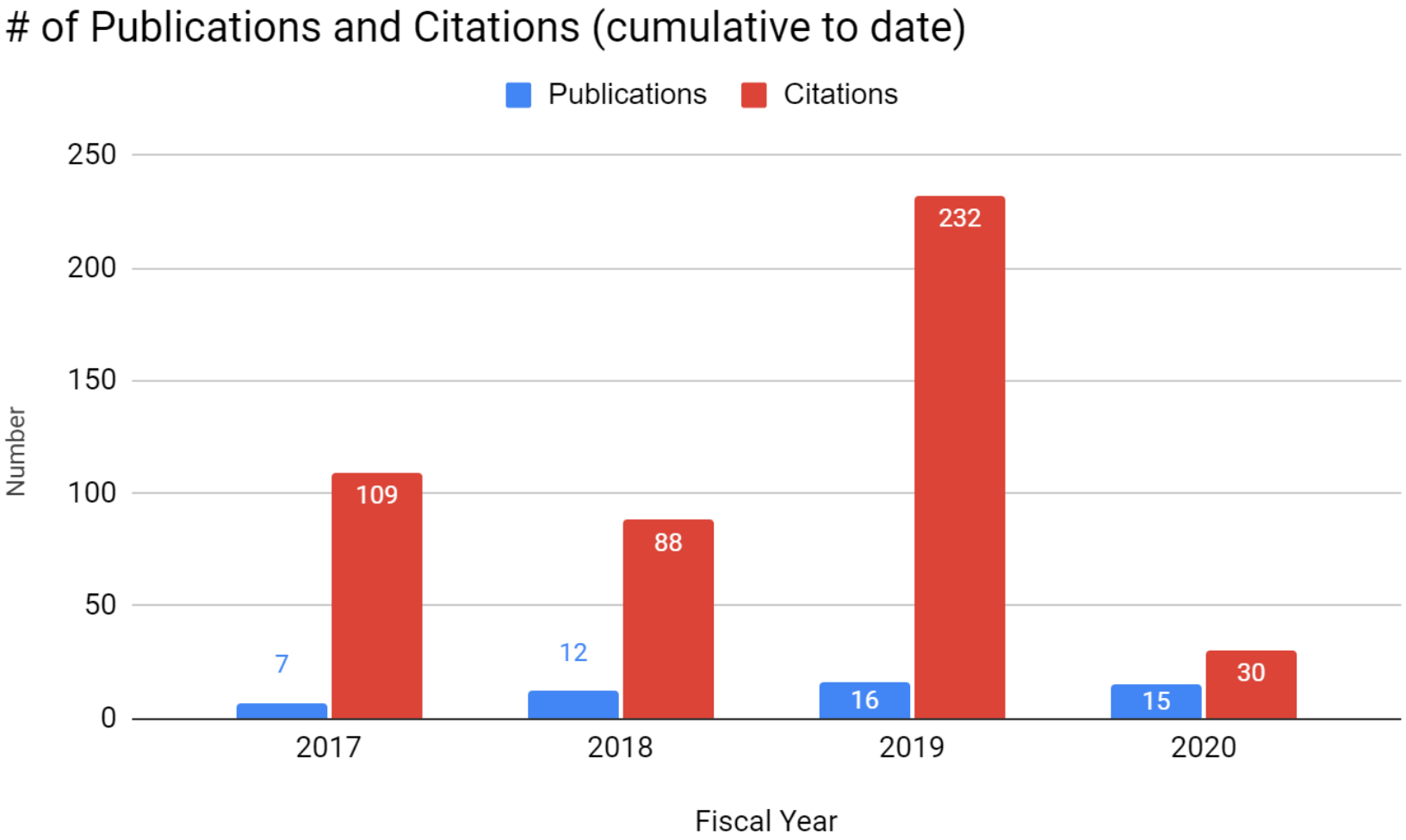
- 15 solicitations (2015 projects),
  - 8 responses
    - 7 remembered the exchange of information
  - 1 no response
  - 6 contact information was no longer accurate



Use and Quality - Pilot



Publication Citations



Management actions

Number of local, state, federal, or regional strategies, plans, regulations, policies, laws, or funding initiatives addressing Gulf of Mexico ecosystem science or management changed or adopted as a result of Science Program activities

- Alabama Center of Excellence funding of the Alabama Real-time Coastal Observing System – May 2021
- Boundary expansion of the Flower Garden Banks National Marine Sanctuary – Jan 2021

Independent Program Review

Rating of Science Program by independent and external review board for the quality of the science supported by the Program, the application of that science to management decisions/challenges, and the strength of coordination and collaboration with other entities

Ecosystem-based management practices in the Gulf of Mexico region

- 3 questions on professional role, institution, geographic scope
- 12 questions on familiarity with, use of, institutionalization, practices and barriers to conducting EBM
  - January-May 2021
  - 54 responses
  - 9 minute average response time

EBM Definition and Context

- Method for managing natural resources while taking the surrounding ecosystem into account
- Defined as “an integrated management approach that recognizes the full array of interactions within an ecosystem, including humans, rather than considering single issues, species, or ecosystem services in isolation”. EBM “works across sectors to manage species and habitats, economic activities, conflicting uses, and the sustainability of resources” and “allows for consideration of resource tradeoffs”

Ecosystem-Based Management 101

Responses

- Primarily resource managers and planners
- Federal and state government had greatest representation

Table 2. Respondent institutional affiliation.

Responses by breakdown of organization	Percent	Count
Local Government	3.7%	2
State Government	38.9%	21
Federal Government	35.2%	19
Non-profit Institution	9.3%	5
University/Primary Research Institution	3.7%	2
Private Industry	1.9%	1
Other (e.g., respondents indicated multiple agency affiliations)	7.4%	4

Table 3. Primary geographic region(s) of focus

Primary geographic area(s) where work is focused	Count
Alabama	7
Florida	18
Louisiana	9
Mississippi	9
Texas	10
Gulf of Mexico region	6
Southeastern United States	6

Managers are familiar with EBM

- 88% of respondents indicated regular engagement with, or active practice of, EBM
- Government (state, federal, local) indicated the greatest understanding of EBM

Table 4. Reported individual familiarity with EBM across local, federal, and state government respondents

Familiarity with EBM	I understand EBM, but not how to apply it at my work.	I engage in EBM practices.	I actively practice EBM and regularly apply it at work.
Local Government	0	2	0
State Government	0	11	9
Federal Government	1	10	6

EBM Efforts are Increasing

- 92% of respondents report EBM practices stayed the same or increased over the past five years
- State and federal employees indicated the greatest level of interaction with EBM and greatest increase in EBM practices

Table 5: Office EBM efforts organized by institutional scale.

In the past five years, your office's EBM efforts have:	Remained the same	Slightly increased (<50% increase)	Increased (≥50% increase)	Not applicable
Local Government	1	0	1	0
State Government	6	11	3	0
Federal Government	7	7	4	0
Non-profit Institution	1	0	2	2
University/Primary Research Institution	1	0	0	1
Private Industry	1	0	0	0
Other	0	2	1	1

NOTE: EBM decreased by ≥50% and slightly decreased by <50% were options that no respondents chose.

State-Level Variations

- Florida: indicated highest percentage (79%) of resource managers in their local offices who use EBM
  - Only users to indicate entire office engagement with EBM
- Alabama: indicated lowest percentage (46%) of resource managers in their local offices who use EBM

Barriers to EBM Implementation

- Data (nonexistent, unavailable, not readily available, inadequate models)
- Policy
  - Lack of supporting policies
  - Presence of limiting policies
  - EBM ineffectively integrated
  - Policy and funding timelines do not overlap
- Funding (lack of, consistency, multi-year, timeliness)
- Overworked/short-staffed

Science/Research Opportunities

Pervasive natural resource management issues

- Harmful algal blooms
- Imperiled species research
- Invasive species management

Fisheries management

- Integration of habitat needs
- Root sources of stress

Urban/Natural resources co-development

- Native habitat/wetland protections
- Nonpoint source mitigation and flooding

Science/Research Opportunities

EBM tools

- Easier to use
- More widely accepted

Management evaluation

- With climate change uncertainties

Coastal development management/planning

Case Study Analysis

- FFO 2017 Decision-Support Tools
- 6 projects
  - Living shoreline site suitability
  - Ecosystem modelling to improve fisheries management
  - Alabama Real-Time Coastal Observing System
  - Shellfish assessment
  - Coastal, urban and natural ecosystem adaptation
  - Red snapper management evaluation
    - Some still completing a no-cost extension

Applying an existing framework for analyzing knowledge products (decision-support tools)

Element Overview

- Typology, Description, Purpose
- Risks assessed, Intended uses, Stated value-added,
- Development, Implementation, Methods used, Availability

Scalar Assessment

- Decision-relevant scales: Spatial, Temporal, Jurisdictional,
- Biophysical, Economic, Institutional, Management, Risk,
- Ethical, Developmental, Networks, Knowledge

Ecosystem-Based Management Assessment

- Alignment to EBM
- Robustness (predictability, scalability, validation)

Use Assessment

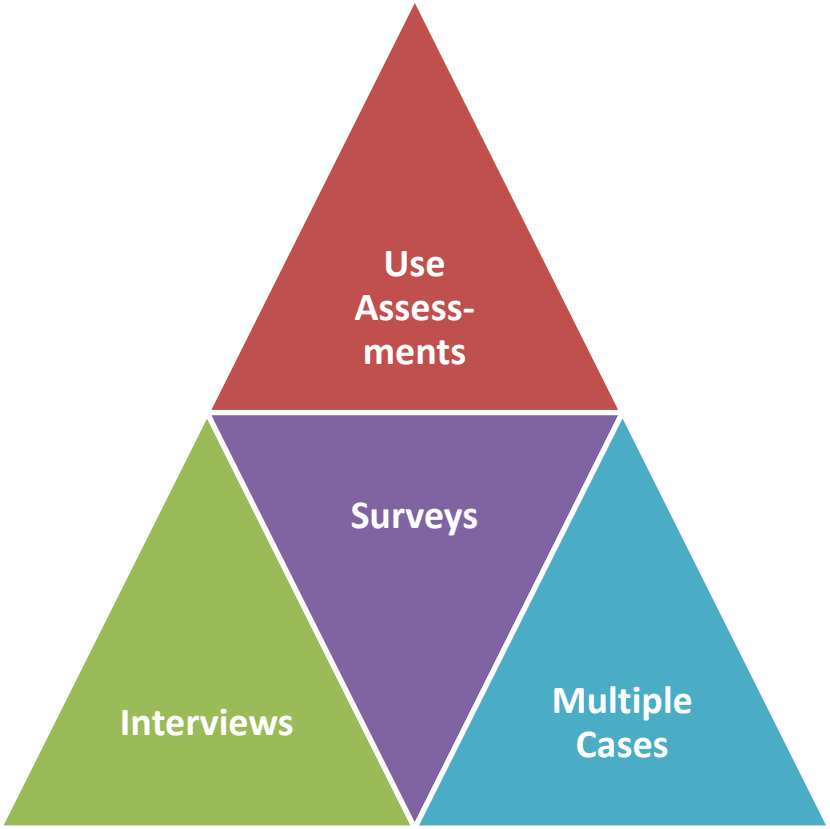
- Primary and secodary use-cases
- Outcomes, value-added, types of actions taken

Actualizing the Framework

- Unpacking decision-support tool
- Identifying scales analyzed
- Analyzing alignment to the concepts of EBM
- Investigating use
  - Primary use-cases
  - Secondary use-cases
  - Outcomes, value-added, types of actions taken, money spent, plans made…

Triangulating Results

- Generalizable findings persist across
  - Cases
  - Methods
  - Strategies
  - Data
- Anticipate case-specific and cross-case findings



Preliminary Thoughts

- Application not solely dependent on the tool; can be commentary on the role of relationships in application
- Some decision-making processes are difficult to bring new scientific information into
- Scientific information doesn't drive decision-making

Decision-support tool projects are not a waste of time at all, but it's like day-to-day little bits and pieces. The larger decision-support is like – ok, let's look at 100 miles of coastline and connect with the owners of that land and translate these findings to them.

— Interviewee June 2021

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Questions and Answers

Promoting Co-Production

Caitlin Young
November 17, 2021
NOAA RESTORE Science Program – Review

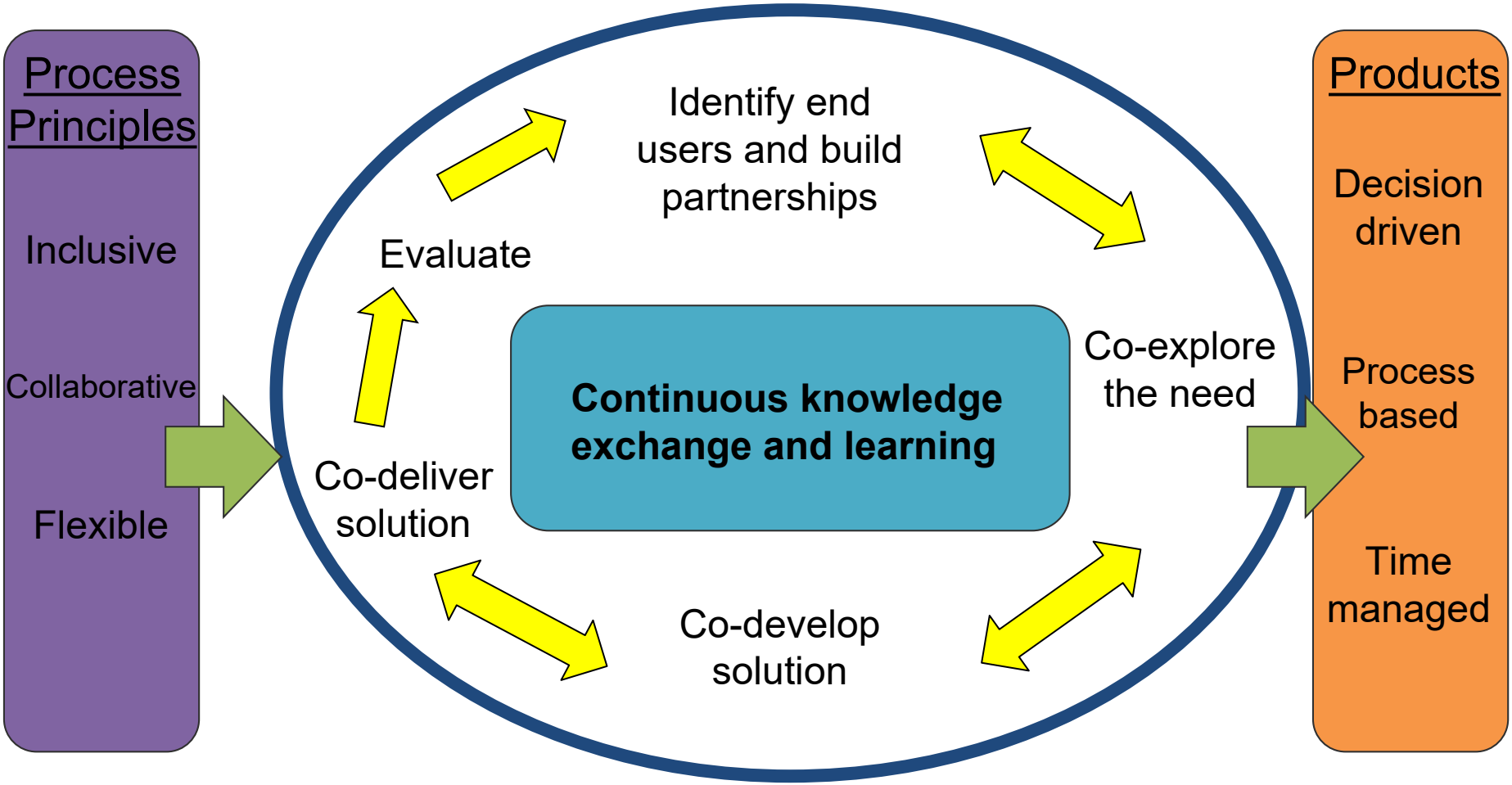
Co-Production of Science

Key Definitions

Co-production	A collaborative process among scientists, end users (*e.g.*, resource managers), and other stakeholders to jointly develop, produce, and disseminate actionable science to inform specific management decisions.
Stakeholder	A person, organization, or group with an interest or concern in a management issue
End User	A person, organization, or group that actively uses the outputs of the science
Actionable Science	Science and information (and guidance on the appropriate use of that information) that supports specific management decisions

Adapted from Beier et al. (2016)

Co-Production Process



Adapted from Vincent et al. (2018)

Stages of Co-Production

1. Pre-scoping and scoping - Identifying a specific management decision to be informed by science
2. Design - Jointly defining the scope and context of the problem, research questions, methods, and outputs
3. Research and development - Working together to produce the science in an iterative and adaptive manner
4. Transfer and application of findings and products - Developing strategies for the appropriate use of the science
5. Post-project - Making sure data/information is being used and updated, generating new grant ideas and applications for funding

Co-Production Activities

- Conference Sessions
  - 2015 and 2017 projects
- End User workshops
  - Organized and facilitated by project teams
  - Organized and facilitated by Science Program Staff
- Trainings - In person (Texas) and virtual seminar series
- Funding Opportunities
  - 2021 Planning for Actionable Science
  - 2023 Implementing Actionable Science

Conference Sessions

AGU 2021 - Natural Resource Management needs for a changing Gulf of Mexico

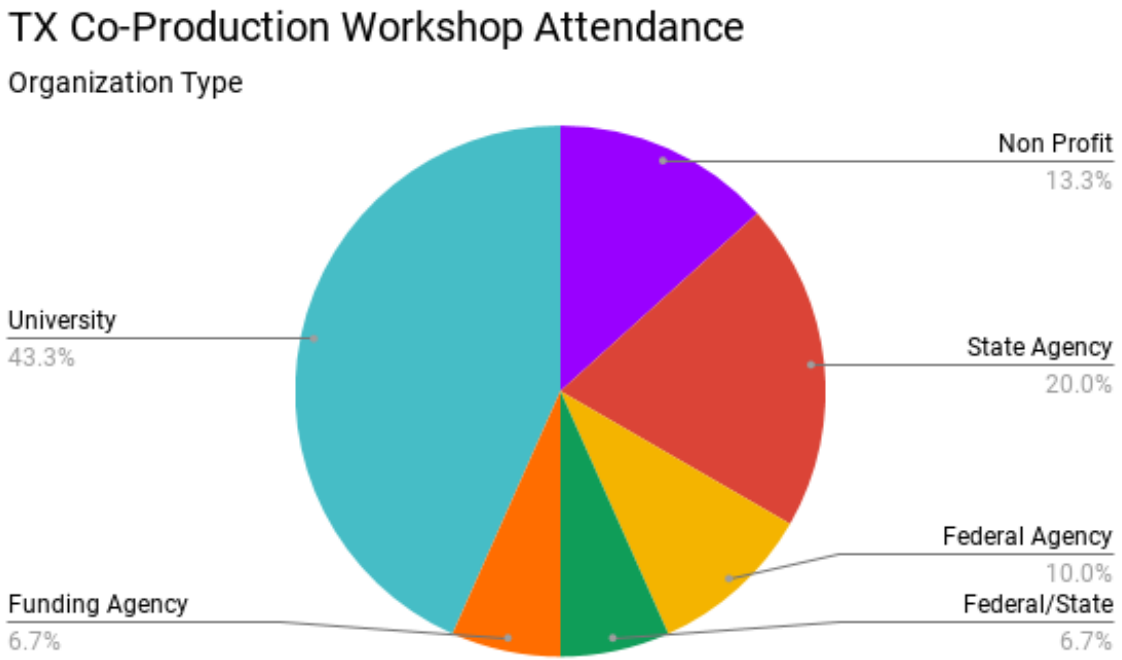
GOMOSES 2020 - Science to Action: Co-Production of Science to Support Resource Management in the Gulf of Mexico

AGU 2019 - Science to Action: The role of boundary organizations in advancing knowledge co-production

GOMOSES 2019- Science to Action: Building Partnerships and Developing Collaborations to Support Living Coastal and Marine Resource Management

Pilot Workshop Overview

- September 2019
- Co-hosted with Texas OneGulf Center of Excellence
- 30 participants (managers & researchers)
- Led to 2021 planning grants



Pilot Workshop Activities

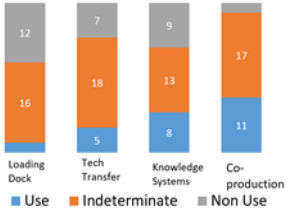
Day 1 | Day 2

Defining Co-Production

Putting Co-production into practice: Project Design

Co-Production in Action

EVIDENCE OF USE



Communicating Results through Boundary Organizations

Sea Grant Texas AT TEXAS A&M UNIVERSITY

COASTAL CONSERVATION ASSOCIATION TEXAS

Texas Management Landscape

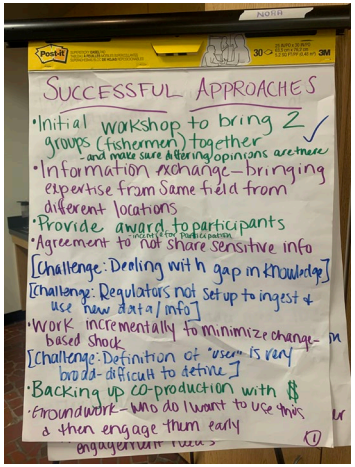
TCEQ

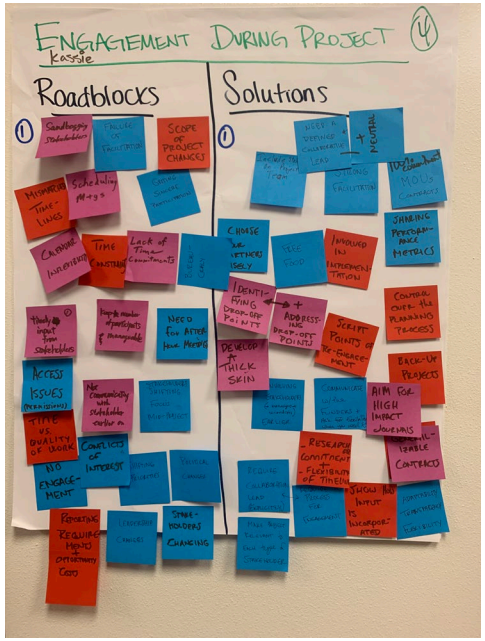
TEXAS GENERAL LAND OFFICE

Texas Water Development Board

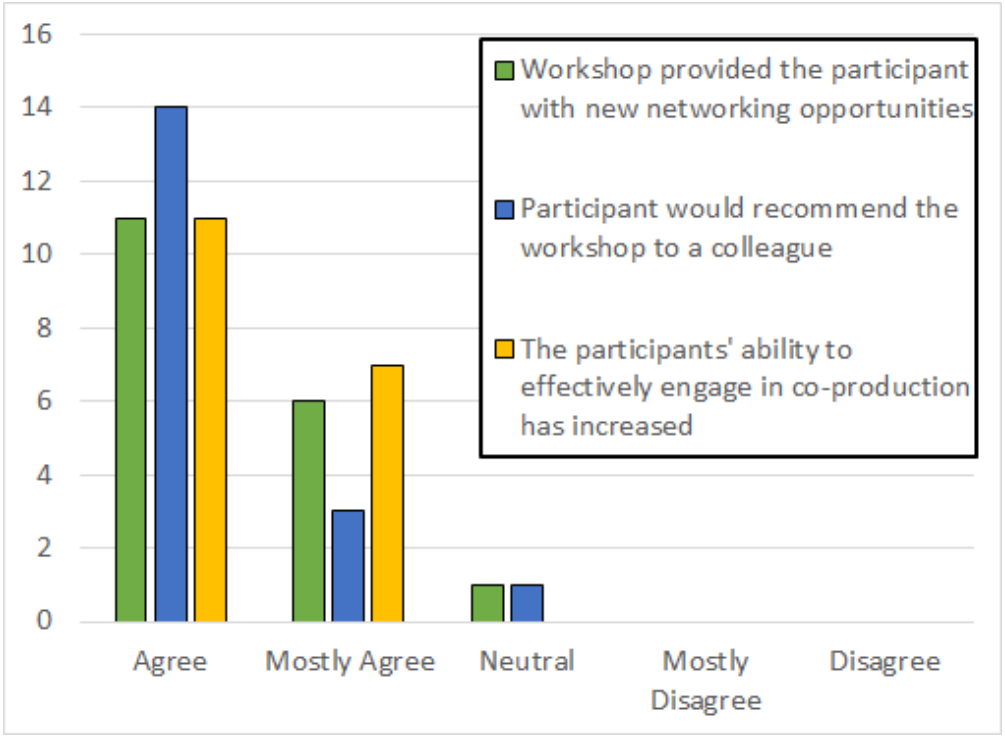
Next Steps

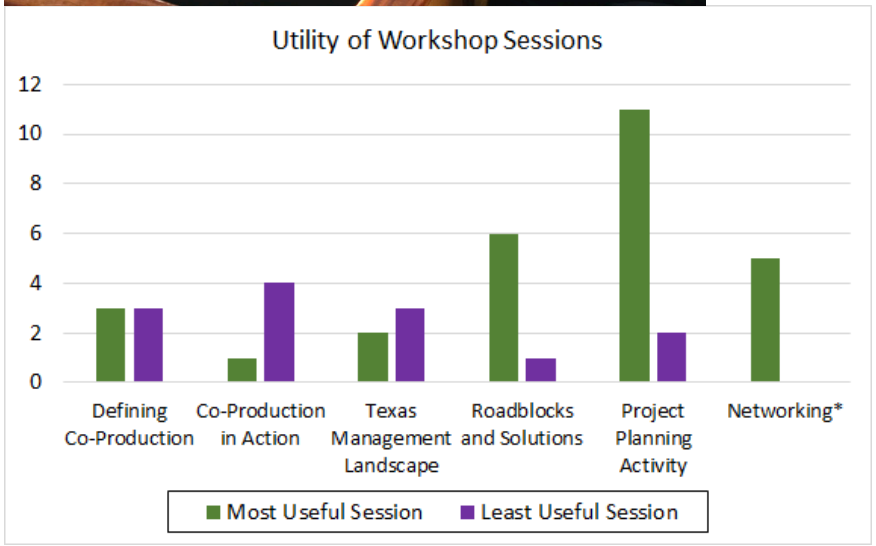
Roadblocks and Solutions





Pilot Workshop- Lessons Learned





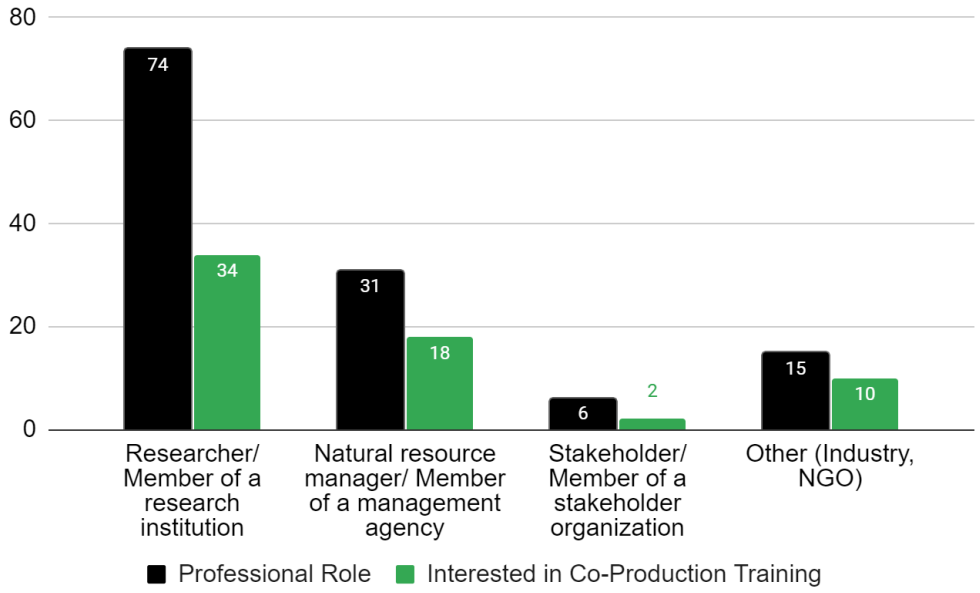
Seminar Series

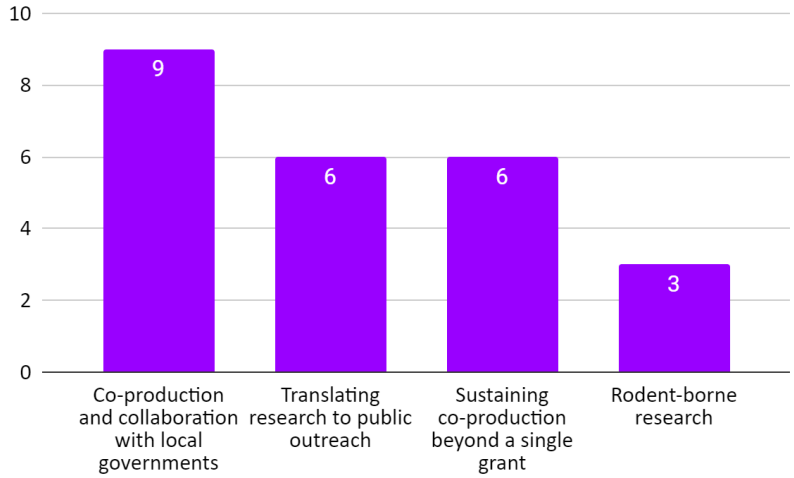
- How to Co-Produce seminar series
- Two seminars so far…
  - Scoping and Design
  - Post project Building partnerships beyond a grant.

Seminar Series - Lessons Learned

Scoping and Design

- 305 attendees
- 106 planned to submit a letter of intent for FFO-2021
- Strong interest in further co-production training





Post Project

- 30 attendees
- ~50% local, state, federal, or private resource manager
- 40% Researcher
- 10% Stakeholder/Other

Future Opportunities

What co-production activities should the Science Program make future investments in?

- Trainings (in person vs virtual)
- Connecting researchers and natural resource managers

What does the Science Program bring to the co-production process?

- Research funding
- Trained facilitators
- Others?

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Questions and Answers

Break until 2:50 pm ET

Coordination and Collaboration

Julien Lartigue
November 17, 2021
NOAA RESTORE Science Program – Review

Why is it important?

Required by the RESTORE Act, encouraged by stakeholders, and necessary to achieve program outcomes

RESTORE Act language:

"…in consultation with the [U.S. Fish and Wildlife Service] Director, shall establish the Gulf Coast Ecosystem Restoration Science, Observation, Monitoring, and Technology program…"

"…consult with the Regional Gulf of Mexico Fishery Management Council and the [Gulf States Marine Fisheries] Commission in carrying out the program."

"…shall seek to avoid duplication of other research and monitoring activities."

"…coordination of projects and activities between the program and other existing Federal and State science and technology programs in the States of Alabama, Florida, Louisiana, Mississippi, and Texas, as well as between the centers of excellence."

What are our objectives?

- Avoid duplication
- Address shared issues
- Promote complementary and joint activities
- Facilitate sharing and synthesis of research results

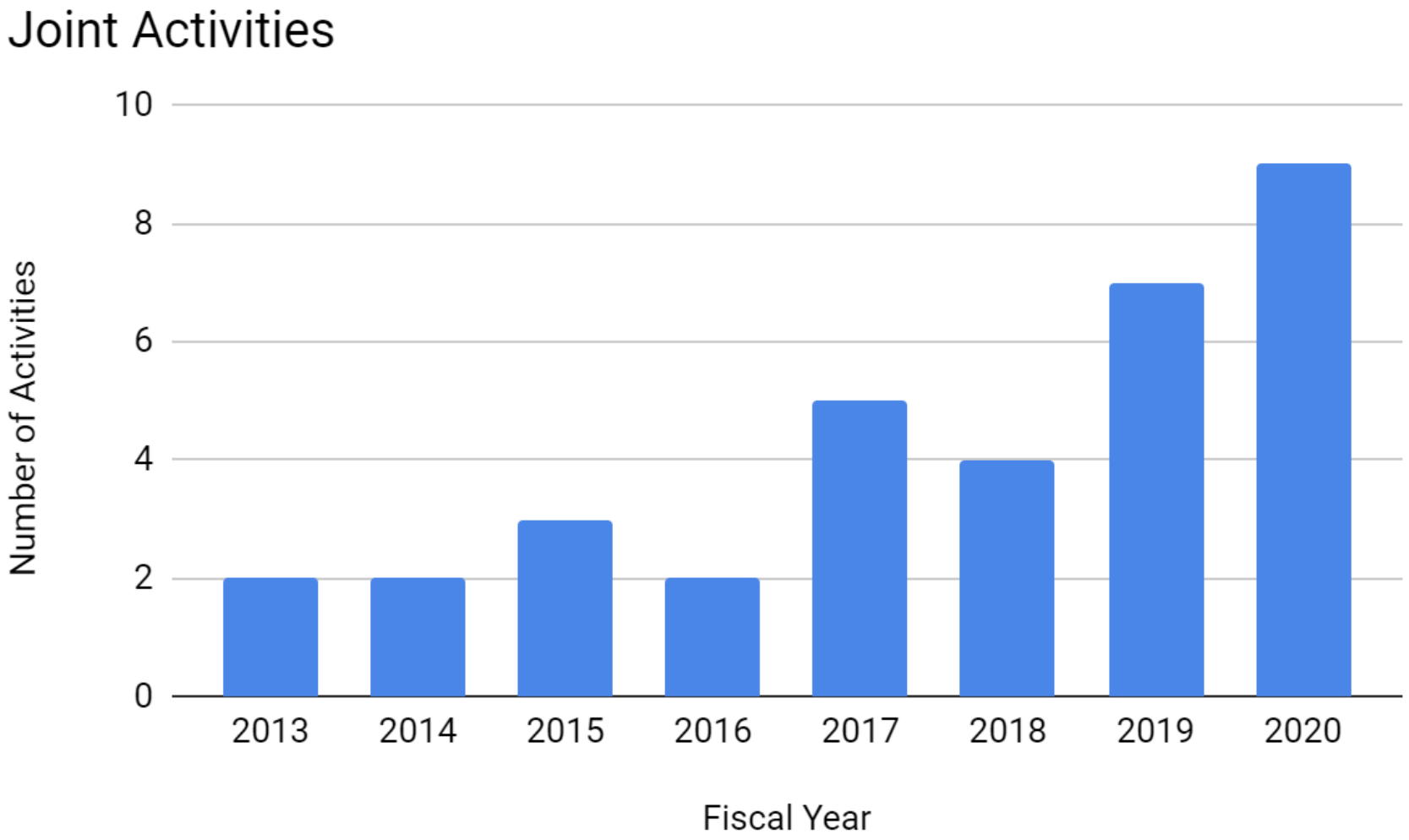
How and where do we do it?

- Coordination Forum
  - Chair
- Executive Oversight Board
- Technical monitors
- Individual partnerships

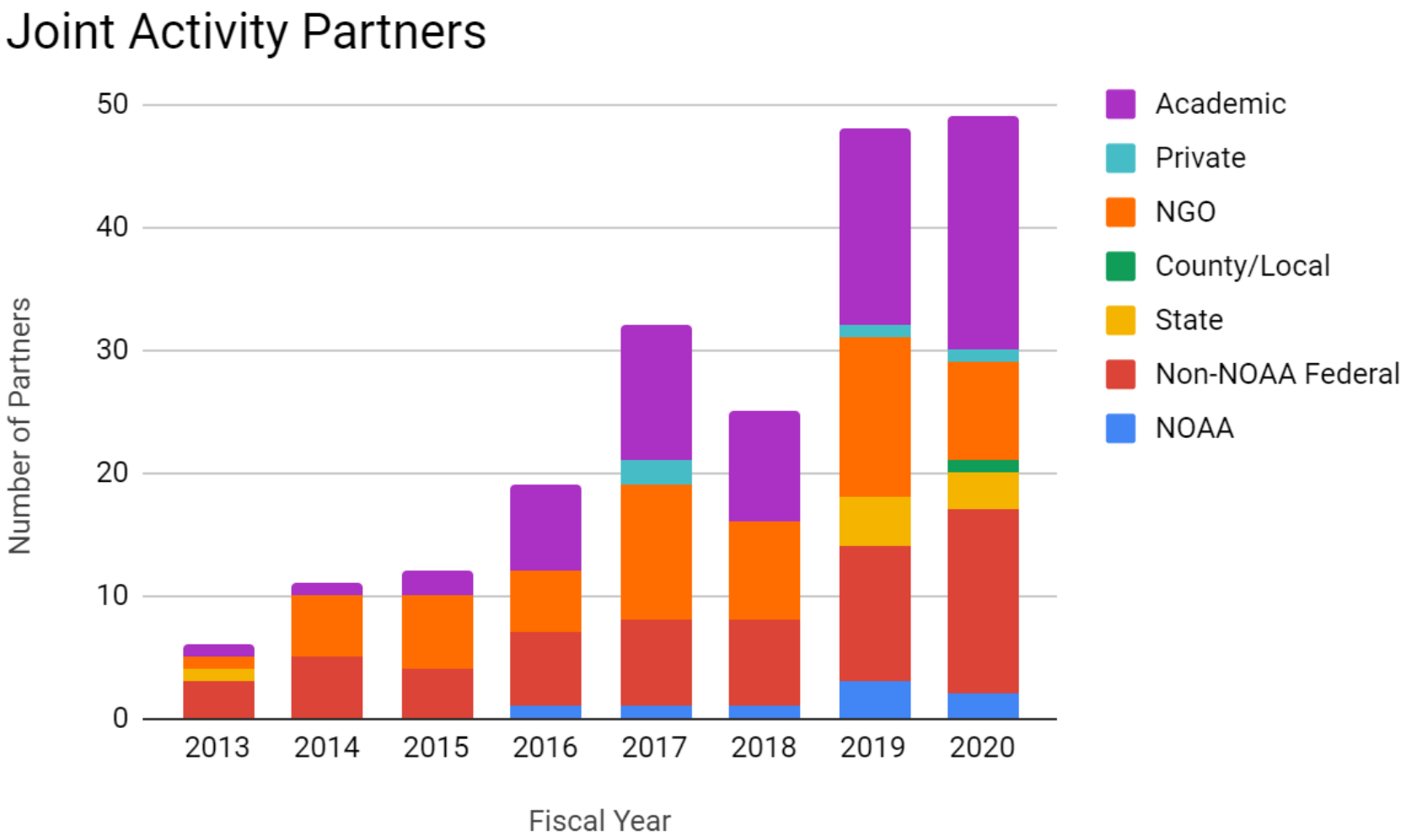
What do we do?

- Co-host webinars and conference sessions
- Co-production workshop
- Funding calendar
- Coordinate projects
  - Passive acoustics and NRDA Open Ocean Trustee Implementation Group

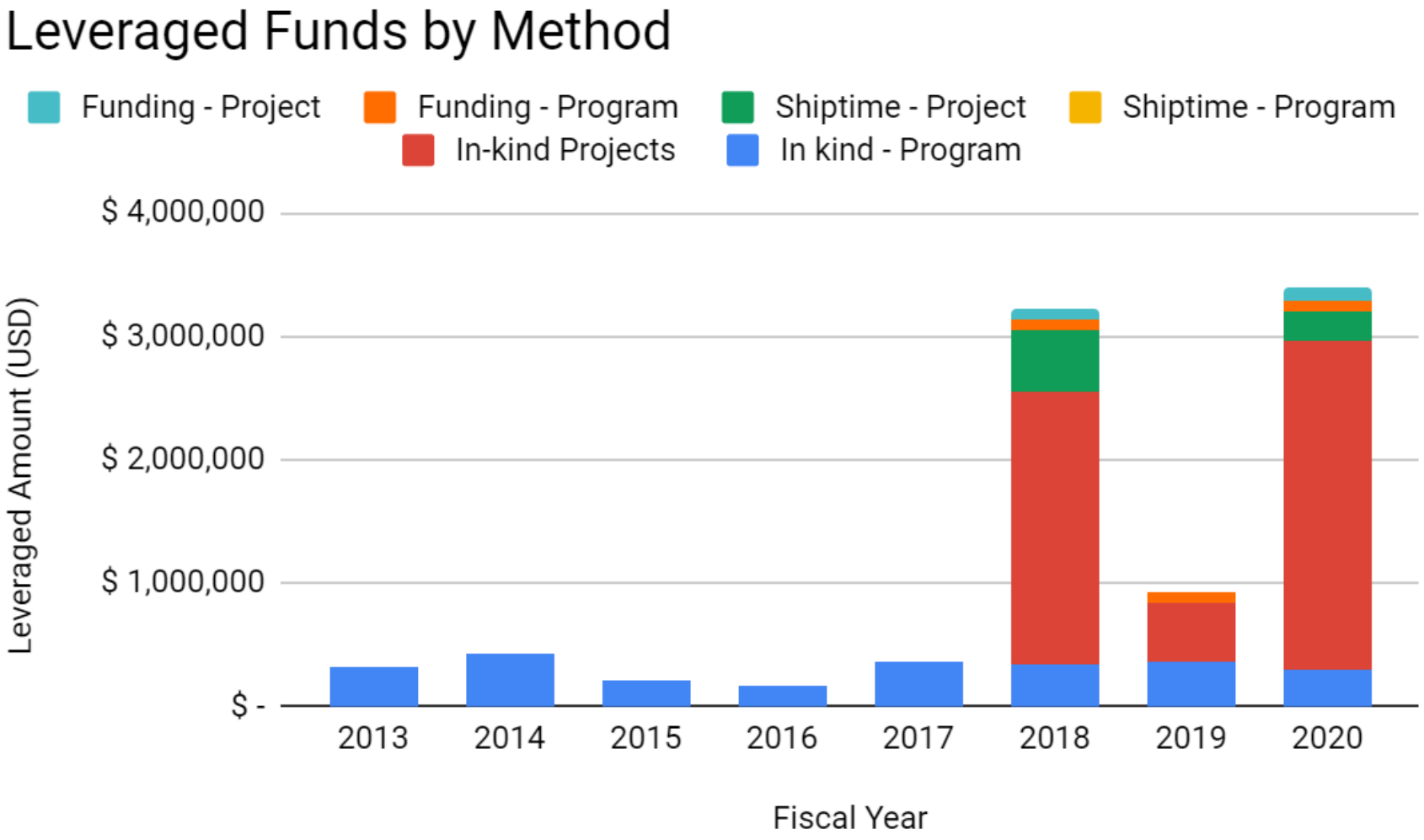
How do we measure it?



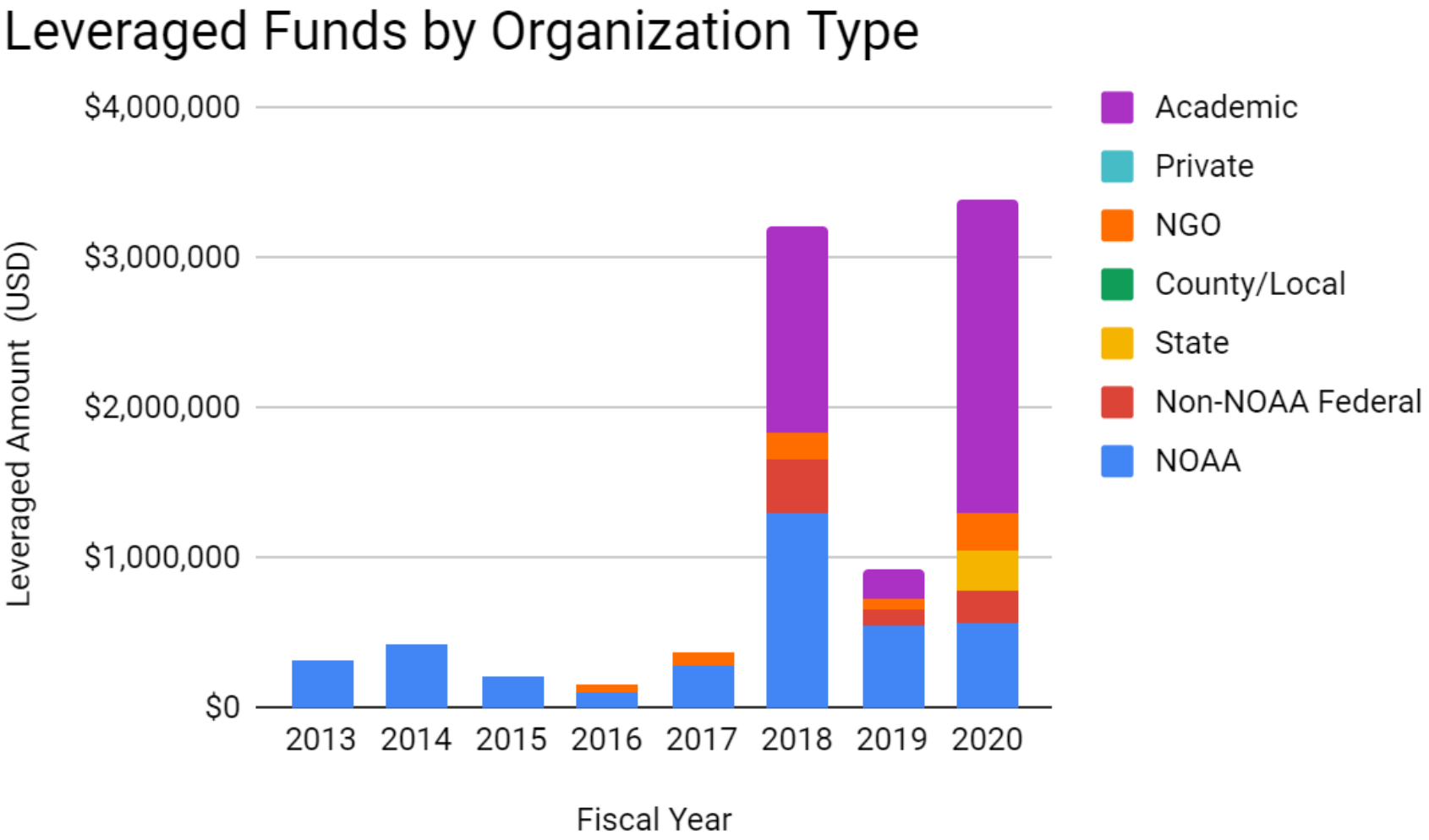
Joint Activities



Leverage


Leveraged Funds by Method
Funding - Project
Funding - Program
Shiptime - Project
Shiptime - Program
In-kind Projects
In kind - Program
$ 4,000,000
$ 3,000,000
$ 2,000,000
$ 1,000,000
$ -
Leveraged Amount (USD)
2013
2014
2015
2016
2017
2018
2019
2020
Fiscal Year

Leverage


Leveraged Funds by Organization Type
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
Leveraged Amount (USD)
2013
2014
2015
2016
2017
2018
2019
2020
Fiscal Year
Academic
Private
NGO
County/Local
State
Non-NOAA Federal
NOAA

Challenges

- Prohibition on funding previous or planned NOAA (federal) research and application
- Decentralized structure to post-Deepwater Horizon research and restoration initiatives

Next Steps

- Synthesis initiative
- Co-production workshops
- Common language and metrics on the impact of research
- Co-production seminar series
- Funding calendar
- Explore more concrete collaborations

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Questions and Answers

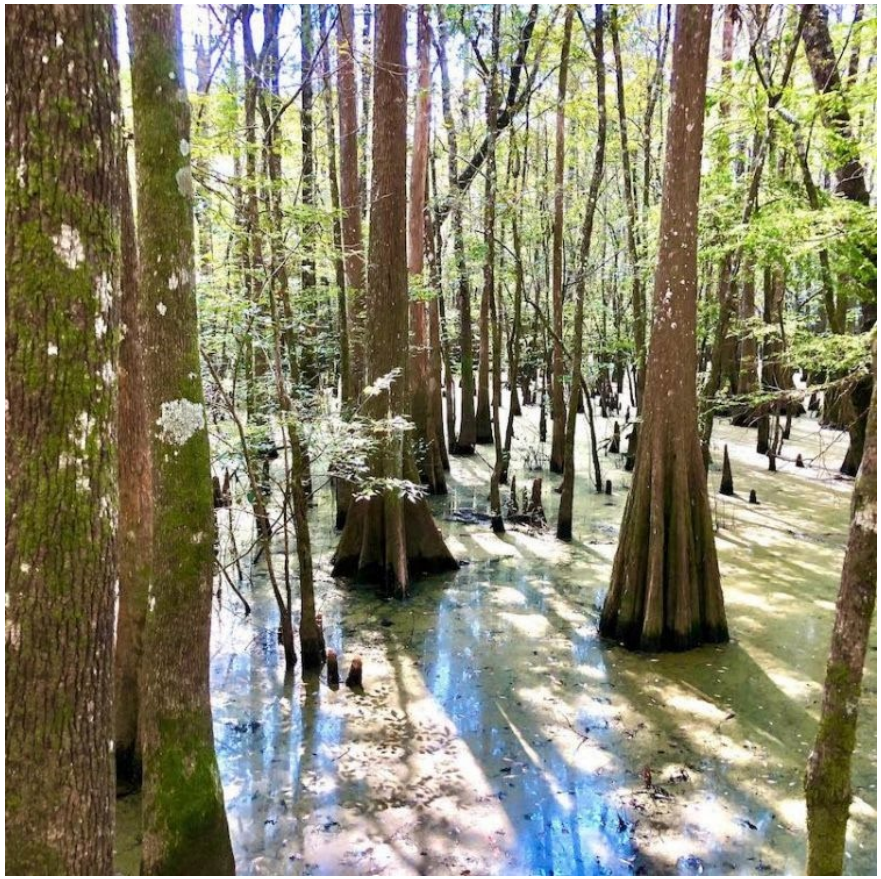
Roundtable Discussion

Partner Programs:

- Katya Wowk, HRI
- John Hemming, USFWS
- Kelly Darnell, USM
- Eric Weissberger, NOAA

Day 2 Summary

- Evaluating Application
- Promoting Co-Production
- Coordination and Collaboration
- Roundtable with Partner Programs



UP NEXT:

- **Executive Session II (1 hour)**
  - **See separate video call link**

Day 3 Preview: 1 pm – 5 pm ET

- Welcome
- Communications and Engagement
- Planning and Executing Actionable Science
- Synthesis Initiative
- *-Break-*
- Long-Term Budget and Program Outlook
- Wrap-Up
- Executive Session III (1 hour)
- Review Panel Report (30 minutes)

Please use the same video link you used today to join for Day 3.