



FEGS Community Scoping Tool

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Outline

- What are Final Ecosystem Goods and Services (FEGS) and why do they matter for restoration?
- What is the FEGS Scoping Tool?
- Tool Overview and Potential Utility for Ecosystem Restoration



What are FEGS? (final ecosystem goods & services)

“components of nature, directly enjoyed, consumed, or used to yield human well-being” *(Boyd & Banzhaf 2007)*

Environment Type



Wetland

+

Beneficiary



Adjacent community
needing water supply

=

FEGS



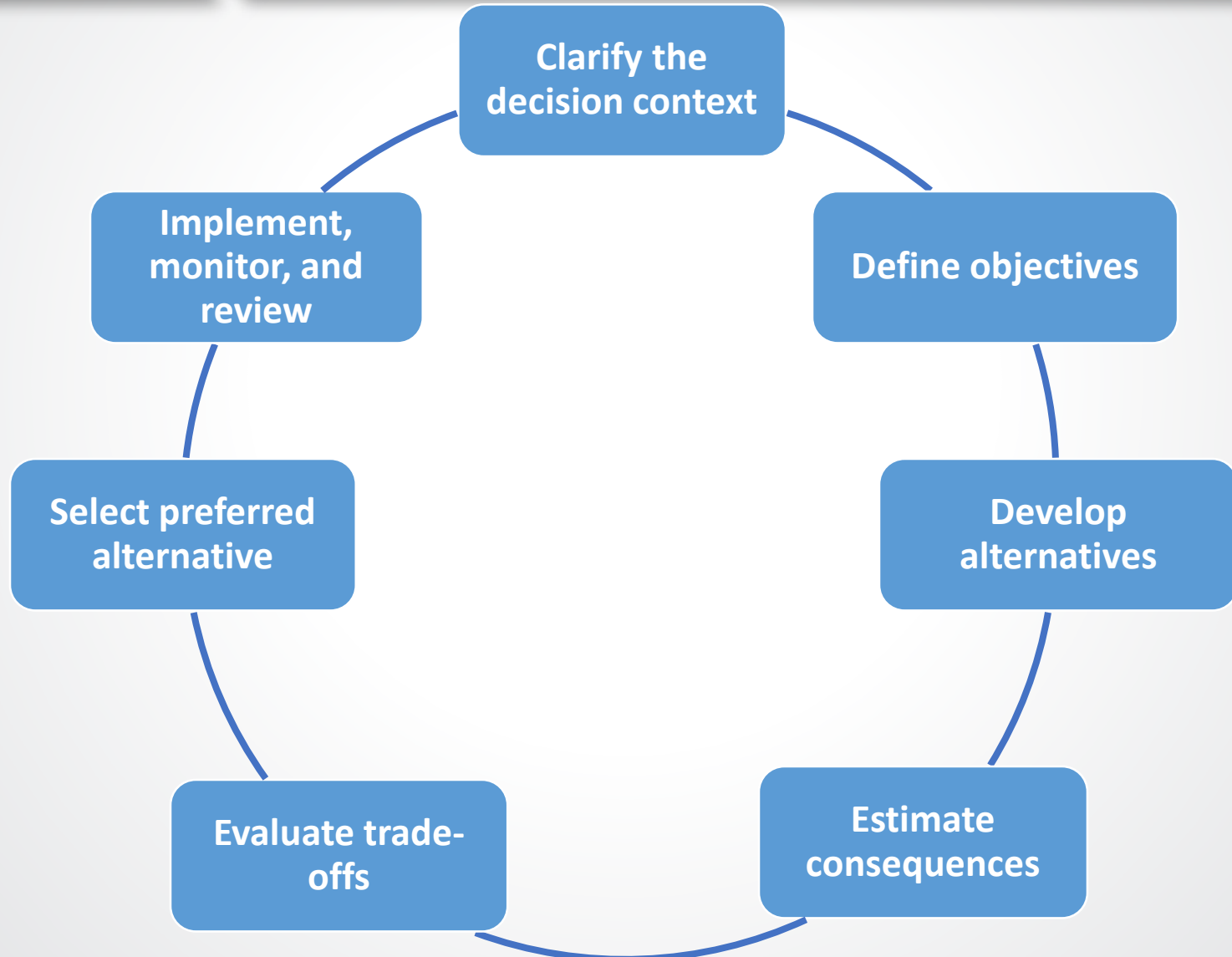
Clean water



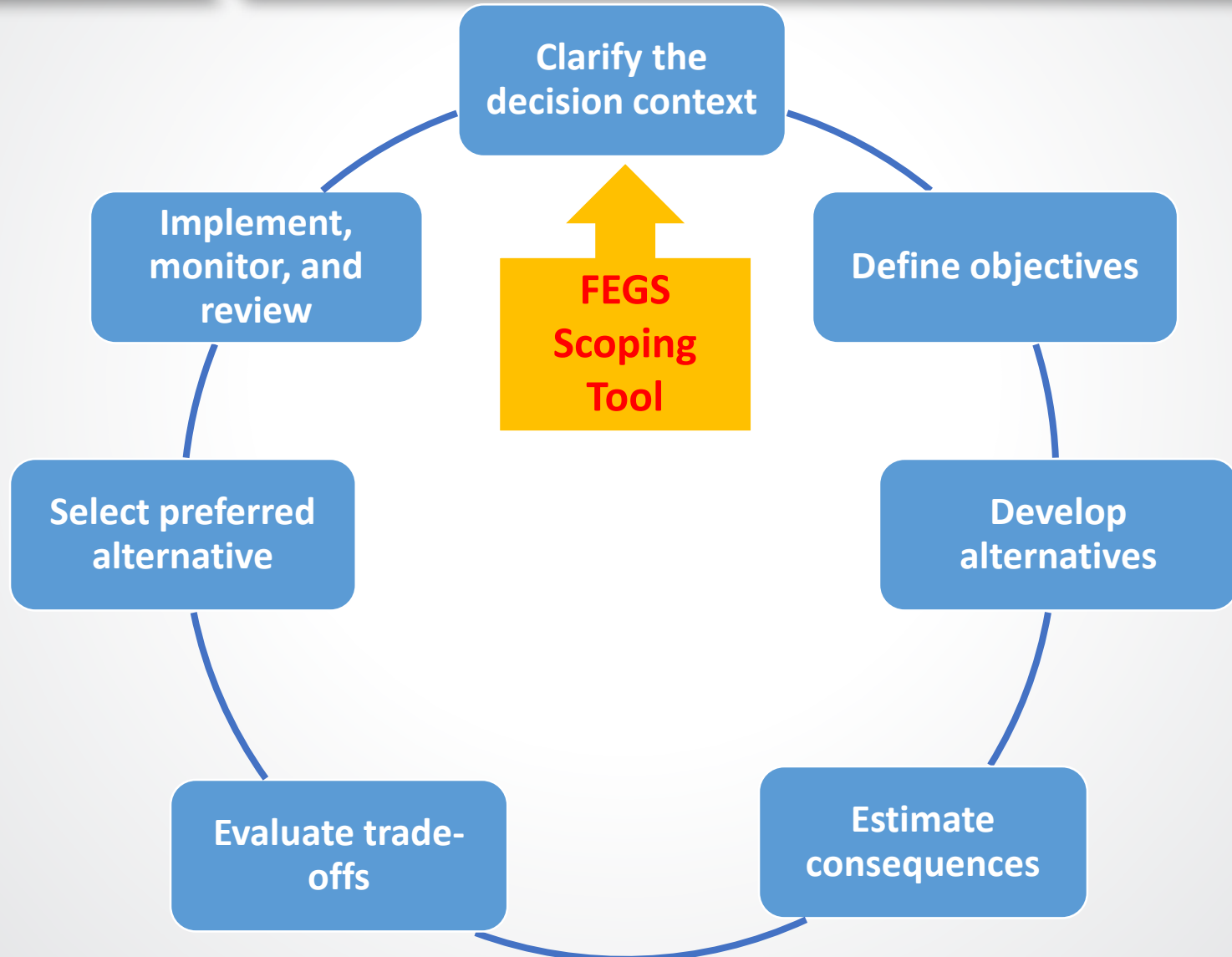
What is the FEGS Scoping Tool?

- A tool for decision-makers (community, restoration practitioners) use at an **early project scoping stage** of decision-making to help identify and **prioritize stakeholders, beneficiaries, and environmental attributes** of a particular decision/restoration context
- These relevant and meaningful environmental attributes can then be used to evaluate decision/restoration alternatives
- Designed for use by a wide range of decision makers making a decision with an environmental component
- Only does one thing, but does it this regardless of context

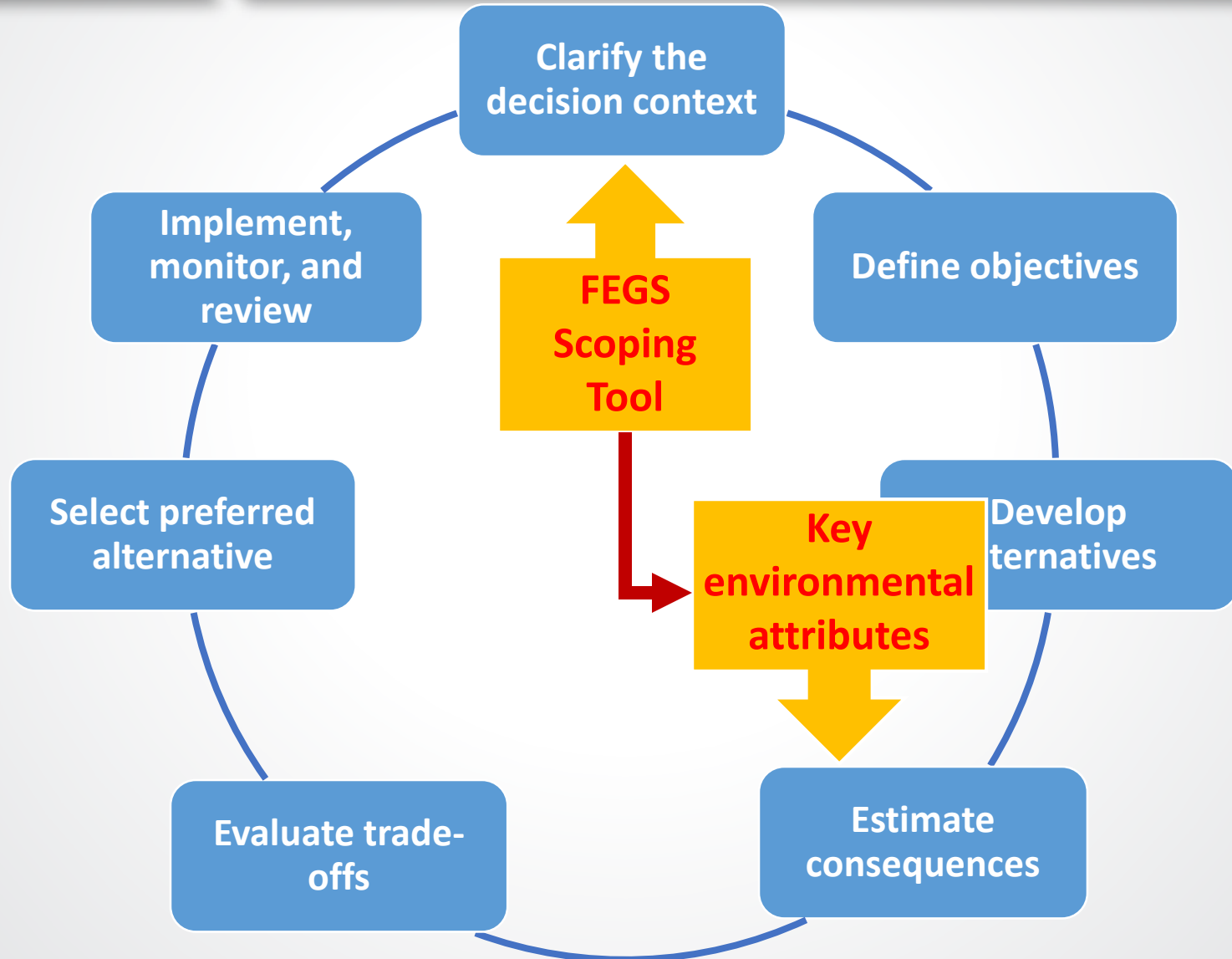
Generic Decision-Making Process



Generic Decision-Making Process



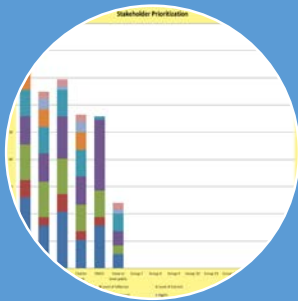
Generic Decision-Making Process





Why bother with a Scoping Tool?

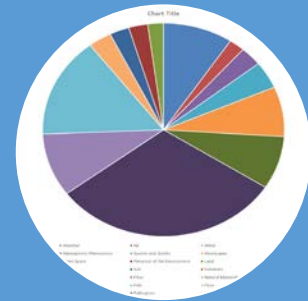
- It is difficult to include ecosystem services thinking into community level/restoration decision making
 - Often metrics that are easily measured (e.g., acres restored) or commonly spoken of (e.g., carbon sequestration) are not relevant/meaningful for the community within this decision context
 - Long lists of potential ecosystem services provide insufficient guidance
- Identifying **more relevant ecosystem services** allows them to be more influential in the decision-making process
- Decision makers are already doing *ad hoc* prioritizations, this tool makes the process transparent, the priorities explicit, and the results explainable



Stakeholder
Prioritization



Beneficiary
Profile



Key Attribute
Identification





Stakeholder Prioritization

Stakeholder prioritization criteria in the tool have been developed for the tool

Current methods of stakeholder analysis in environmental decision making

- **Identifying**
- **Categorizing**
- **Relationship analysis**

Stakeholder prioritization in other fields

- **Business and management**
- **Public relations**

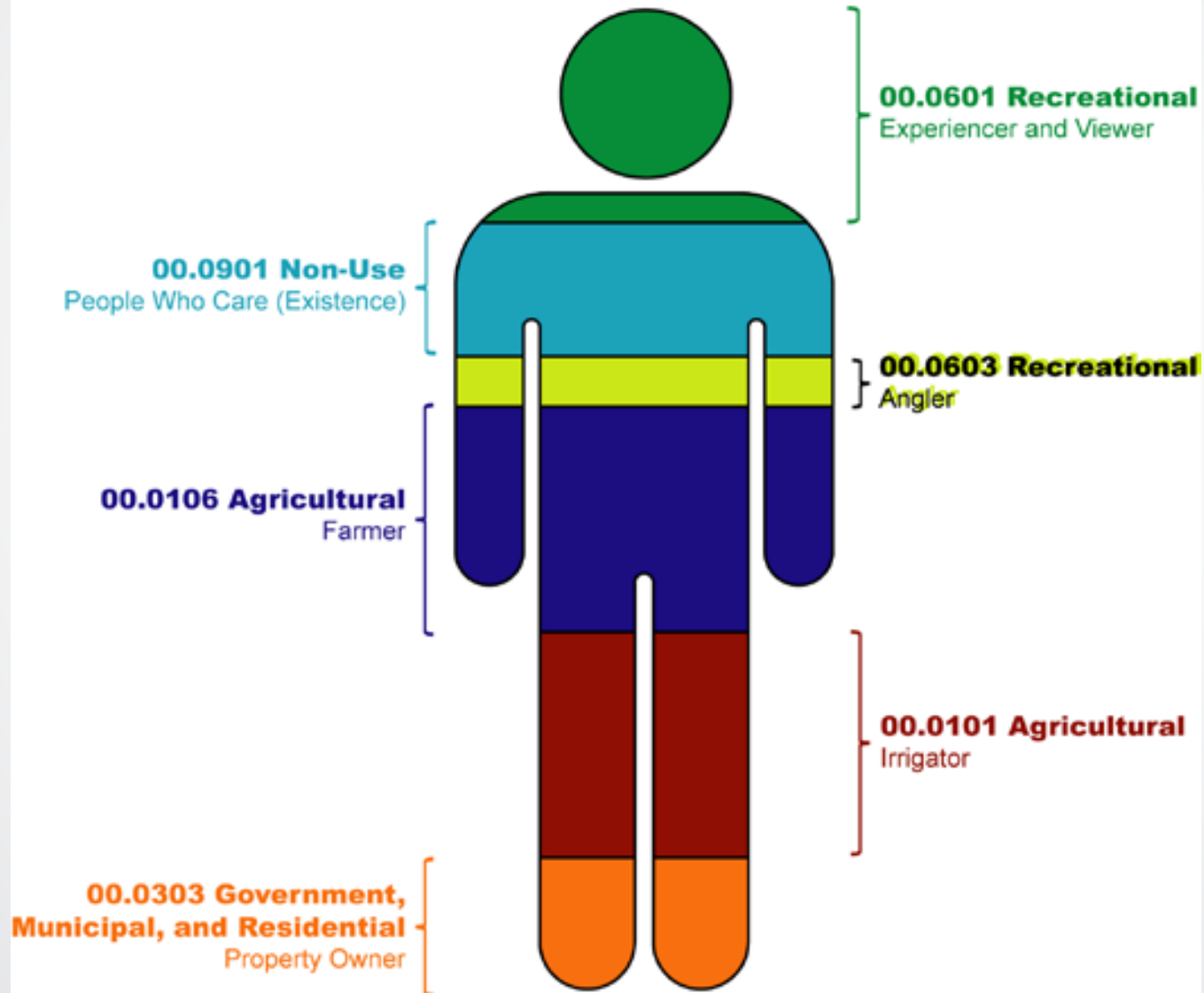
Suggested criteria for stakeholder prioritization

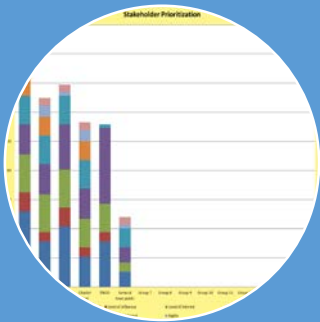
Weighting is key

Suggested criteria for stakeholder prioritization

- **Magnitude of impact**
- **Probability of impact**
- **Level of influence**
- **Level of interest**
- **Urgency/temporal immediacy**
- **Proximity**
- **Economic interest**
- **Rights**
 - **Legal**
 - **Property**
 - **Consumer/user**
- **Fairness**
- **Underrepresented/underserved populations**

What is a Beneficiary?





Stakeholder Prioritization

- ▶ **Decision makers:**
 - Review and weight criteria
 - Identify stakeholder groups
 - Score groups on criteria

- ▶ **Output:**
 - Prioritized list of stakeholders
 - Rank score for each stakeholder group

FEGS Scoping Tool

Project name:
New Project

Weights
9 of 9 criteria completed

Stakeholders
qwr: added
rewq: added
Group 3: added

Beneficiaries
2 of 3 stakeholders completed

Attributes
3 of 3 beneficiaries completed

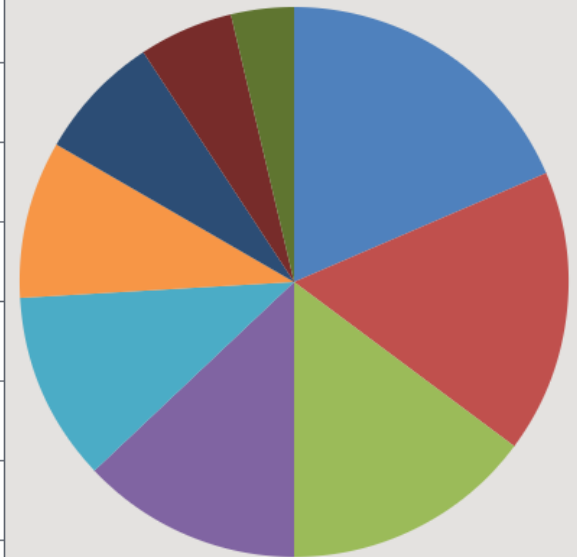
Zoom: 100%



Weights

Look over the criteria below. Identify the criterion that you value the most. Give that criterion a weight of 100. Weight all other criteria relative to that most valued criterion.

Color	Label	Value
■	Magnitude & Probability of impact	<input type="text" value="100"/>
■	Level of influence	<input type="text" value="90"/>
■	Level of interest	<input type="text" value="80"/>
■	Urgency & Temporal immediacy	<input type="text" value="70"/>
■	Proximity	<input type="text" value="60"/>
■	Economic interest	<input type="text" value="50"/>
■	Rights	<input type="text" value="40"/>
■	Fairness	<input type="text" value="30"/>
■	Underrepresented & Underserved representation	<input type="text" value="20"/>





Stakeholder Prioritization

Stakeholders

Identify your stakeholder-groups.

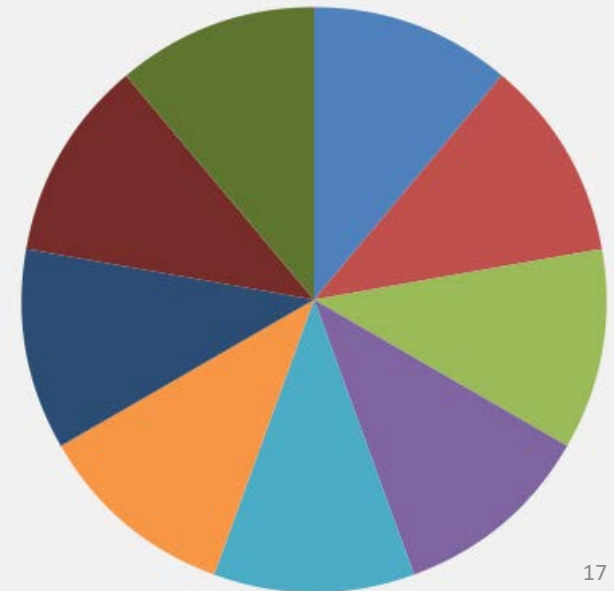
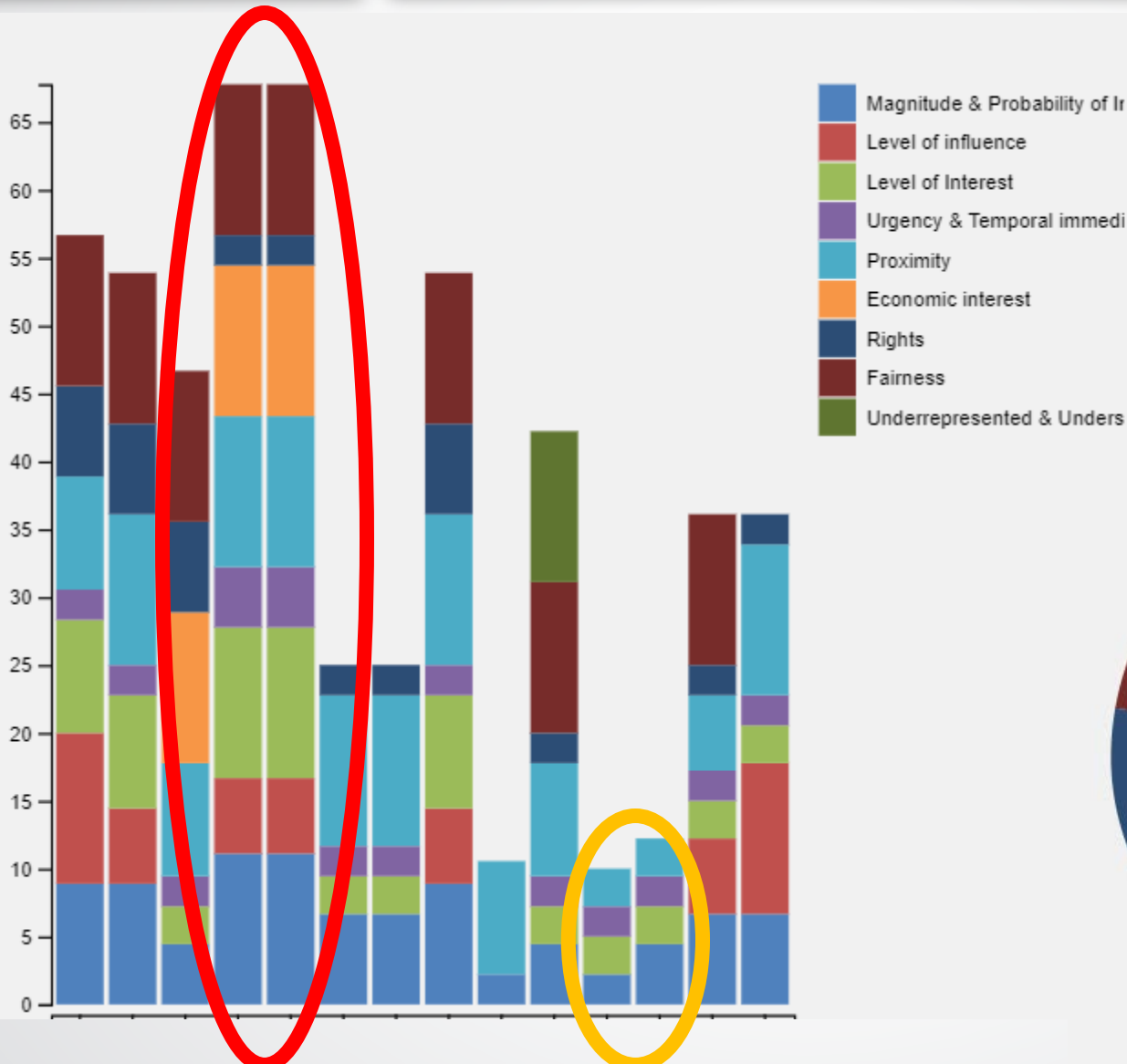
Stakeholder-group name

Add stakeholder-group

Stakeholders

	Stakeholder-group	Magnitude & Probability of impact	Level of influence	Level of interest	Urgency & Temporal immediacy	Proximity	Economic interest	Rights	Fairness	Underrepresented & Underserved representation
Edit Remove	Ports Authority	80	100	75	20	75	0	60	100	0
Edit Remove	SJNEP	80	50	75	20	100	0	60	100	0
Edit Remove	OSJ Shops Hotels Residents	40	0	25	20	75	100	60	100	0
Edit Remove	Cruise ship industry	100	50	100	40	100	100	20	100	0

Stakeholder Prioritization





**Beneficiary
Profile**

- ▶ **Decision makers:**
 - **Segment each stakeholder group into its beneficiary groups**

- ▶ **Output:**
 - **Prioritized set of beneficiaries, weighted by the relative priority of each stakeholder group**
 - **Beneficiary profile of the decision context**



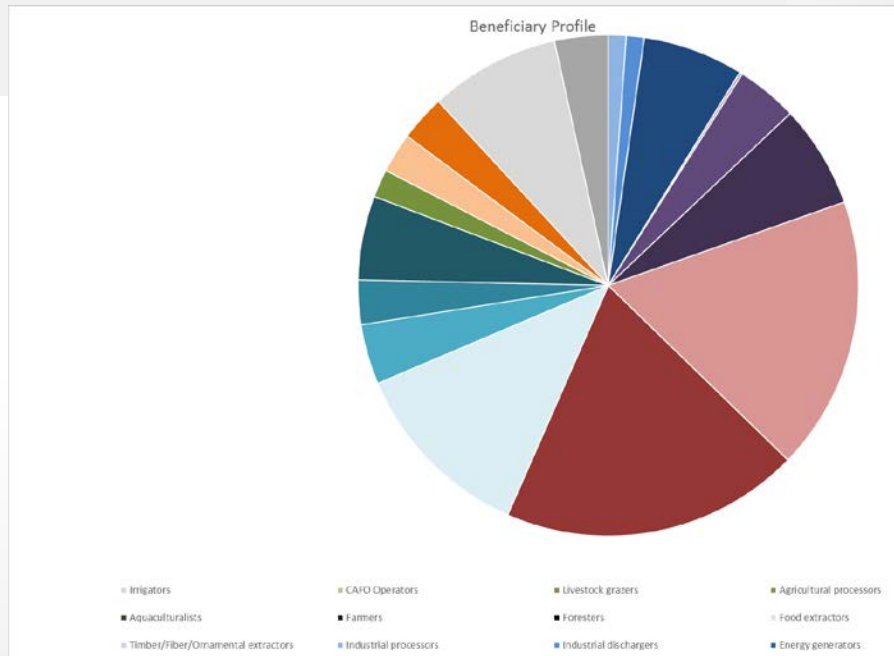
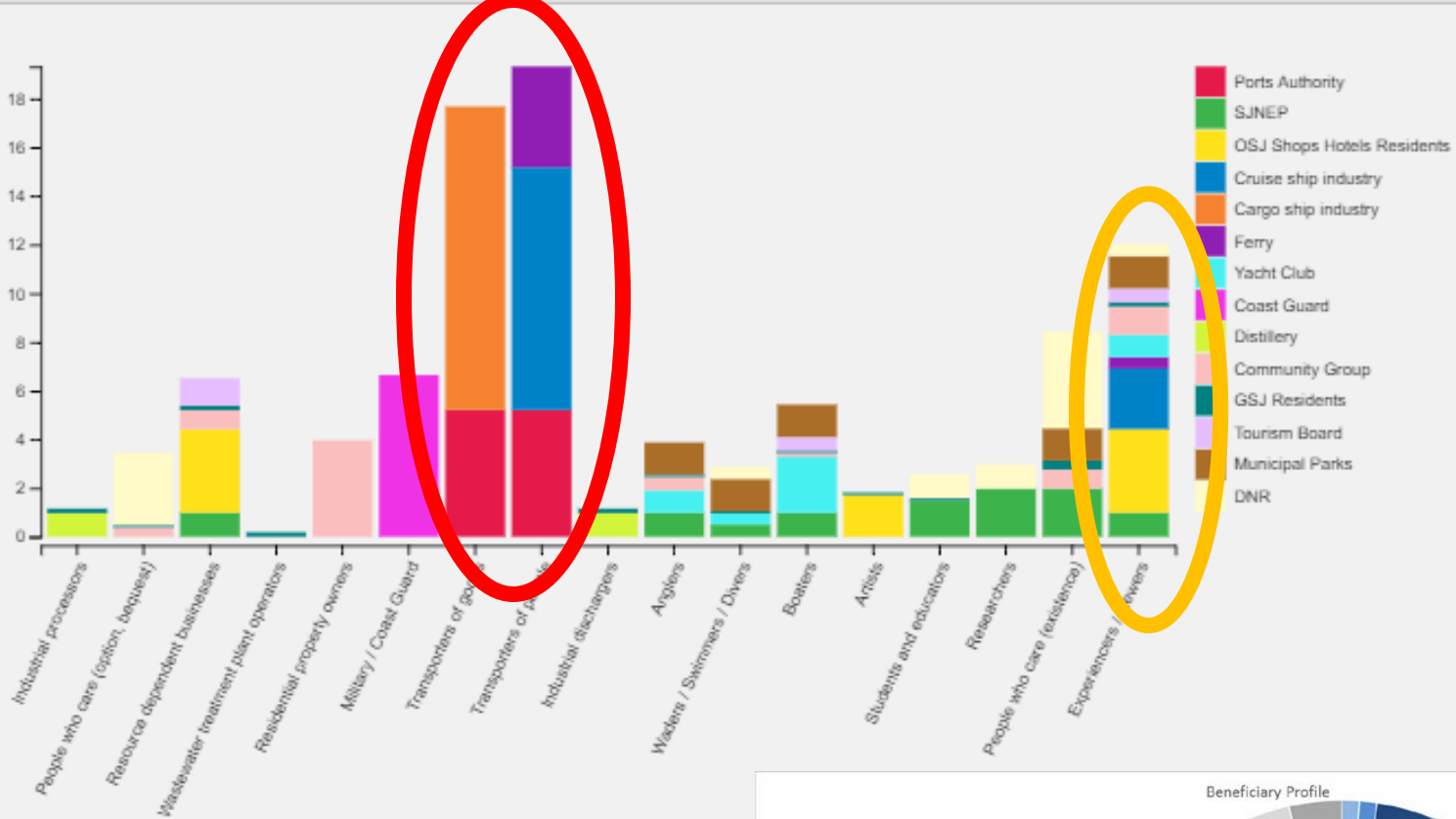
Beneficiary Profile

- Categorized list of beneficiaries
- Overarching categories:
 - Agricultural
 - Commercial/Industrial
 - Governmental/Municipal/Residential
 - Commercial/Military Transportation
 - Subsistence
 - Recreational
 - Inspirational
 - Learning
 - Non-use

Beneficiaries

Identify the types of beneficiaries making up each stakeholder-group by percentage.

Community Group ▼		
Category	Subcategory Show definitions	Community Group
Recreational	Experiencers / viewers	15
	Food pickers / gatherers	
	Hunters	
	Anglers	7
	Waders / Swimmers / Divers	
	Boaters	2
Inspirational	Spiritual and ceremonial participants	
	Artists	
Learning	Students and educators	
	Researchers	
Non-Use	People who care (existence)	10
	People who care (option, bequest)	5





Key Attribute Identification



- ▶ **Decision makers:**
 - Identify ecosystem attributes of concern for each beneficiary type
- ▶ **Output:**
 - Prioritized set of environmental attributes, weighted by the relative priority of each beneficiary group



Key Attribute Identification

- Two tiered list of attributes
- Tier 1:
 - Water
 - Air
 - Weather
 - Soil & substrate
 - Natural materials
 - Flora
 - Fungi
 - Fauna
 - Extreme events
 - Composite
 - Environmental aesthetics
 - Naturalness
 - Open space

Attributes

Score Attributes for each Beneficiary

		Agricultural	Commercial/ Industrial	
		Livestock grazers	Food extractors	Timber / Fiber / Ornamental extractors
Beneficiary Score Show definitions		68.75	15.83	15.83
Water	Water quality	50		
	Water quantity	50		
	Water movement		50	
Land	Land quantity		50	
	Land quality			50
	Land availability			50
Atmosphere	Wind strength / speed			
	Wind predictability / consistency			
	Air quality			
	Weather predictability			
	Frequency of extreme weather events			
Natural materials	Soil availability			
	Soil quality			
	Substrate quantity			
	Substrate quality			
	Fuel quantity			
	Availability of fiber materials for use or subsistence			
	Availability of minerals / chemicals			
	Availability of other natural materials for artistic use or consumption (e.g. shells, clay, acorns, honey)			





Key Points

- Tool designed to help community-level decision makers and restoration practitioners identify relevant environmental attributes to be incorporated in their decision-making process
- Tool designed to be easily transferrable among a wide range of decision-makers
- Can be used in the scoping phase for any decision with an environmental context, including ecosystem restoration
- The first version of the tool will be available October 2018
 - Strategically shared to get feedback tool's utility and usability
 - Contact Sharpe.Leah@epa.gov
 - Second version released in FY20



Questions?

Contact Information:

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850-934-9323



What are FEGS? (final ecosystem goods & services)



Wetland restoration

Intermediate Ecosystem Goods
and Services

Final Ecosystem Goods
and Services (FEGS)

Final Economic
Good or Service