

An aerial photograph of a vast ocean with a large, irregular spill of dark brown oil or kelp floating on the surface. Two small white boats are visible on the water, one on the left and one on the right. The sky is a pale blue with some light clouds.

# Incorporating Ecosystem Services Into Results Chains to Inform Restoration Decisions

Heather Tallis  
The Nature Conservancy

# Diverse Goals

## NRDA Goals:

- Restore and conserve **habitat**;
- Restore **water quality**;
- Replenish and protect living coastal and **marine resources**;
- Provide and enhance **recreational** opportunities;
- Provide for **monitoring, adaptive management, and administrative** oversight to support restoration implementation.

## RESTORE Council Goals:

- Restore and conserve **habitat**
- Restore **water quality**
- Replenish and protect living coastal and **marine resources**
- Enhance **community resilience**
- Restore and revitalize the **Gulf economy**



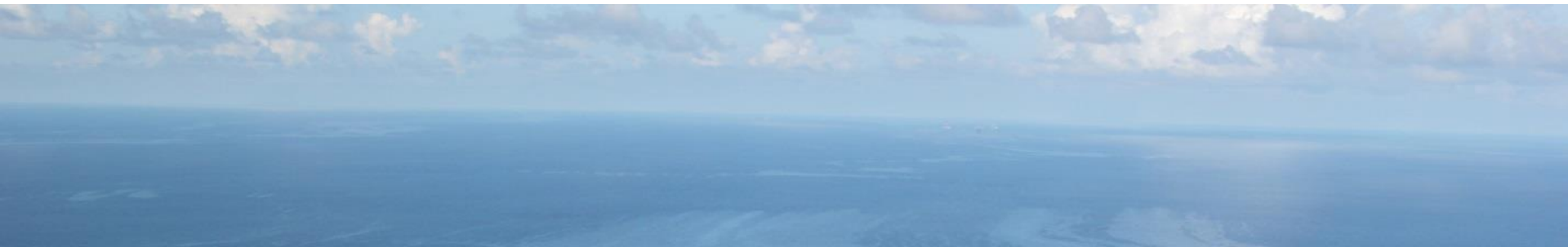
# Diverse Activities

## RESTORE Act Eligible Activities:

- **Restoration and protection**
- **Mitigation** of damage to fish, wildlife, and natural resources;
- Implementation of **management plans**, including fisheries monitoring
- **Workforce development** and **job creation**
- **Infrastructure** projects benefitting the economy or ecosystem resources, including port infrastructure;
- Coastal flood protection and related **infrastructure**
- **Planning** assistance
- **Administrative** costs of complying with the Act
- Promotion of **tourism** in the Gulf Coast region, including recreational fishing
- Promotion of the **consumption of seafood** harvested from the Gulf Coast region.

# Challenges

- Expand what we think of as impact – go beyond biophysical
- Funders need to compare very disparate project types
- Reporting to Congress needs to reflect project AND Gulf scale—metrics need to transfer and roll up
- There's really not that much money—M and E has to be efficient



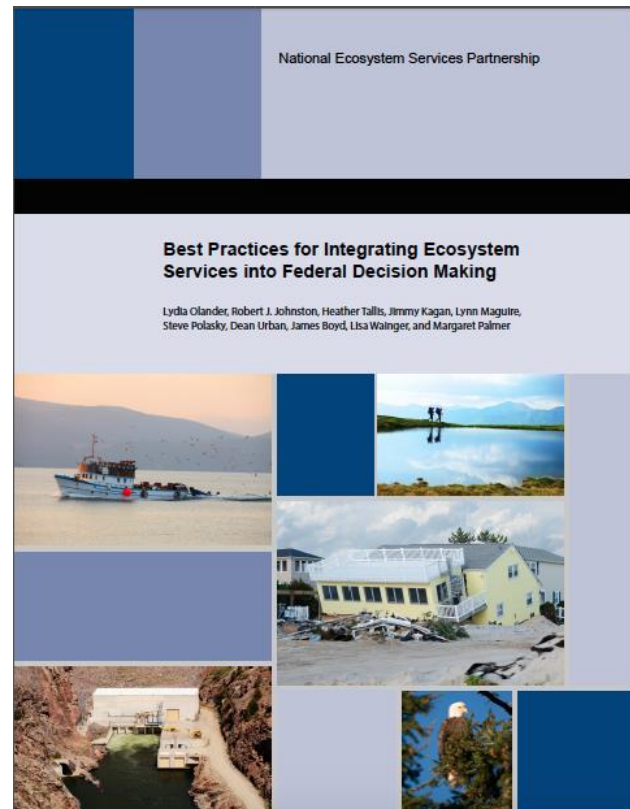
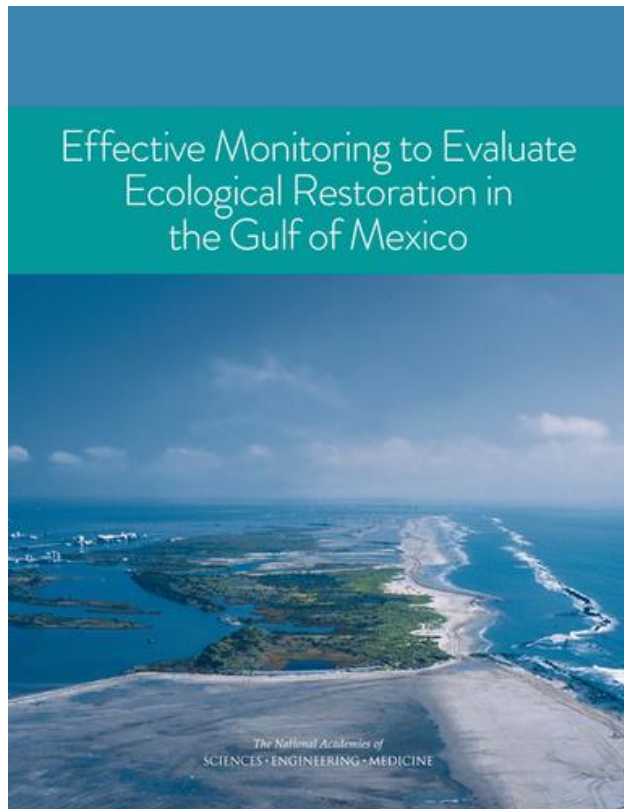
# Solutions

- Ecosystem services tie biophysical to human and economic—platform for expanding impact
- Results chains show logical pathways between project and impacts
- Consistent platform for all activities
- Consistent identification of metrics
- If standardized, massive increase in monitoring efficiency



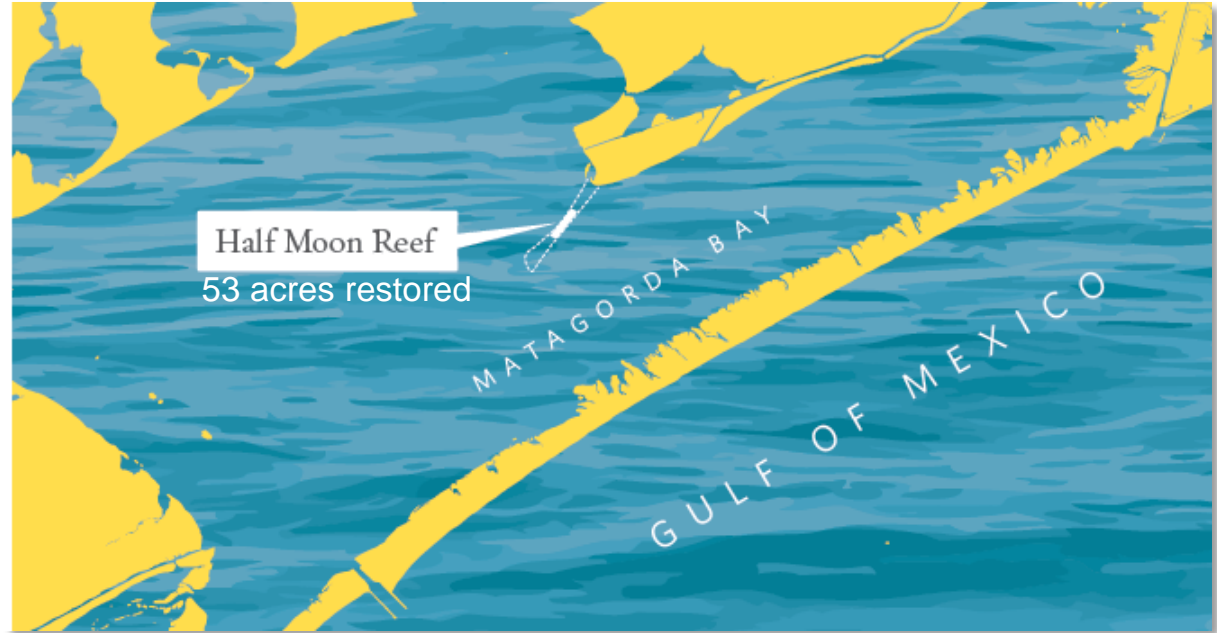


# Results Chains as Best Practice

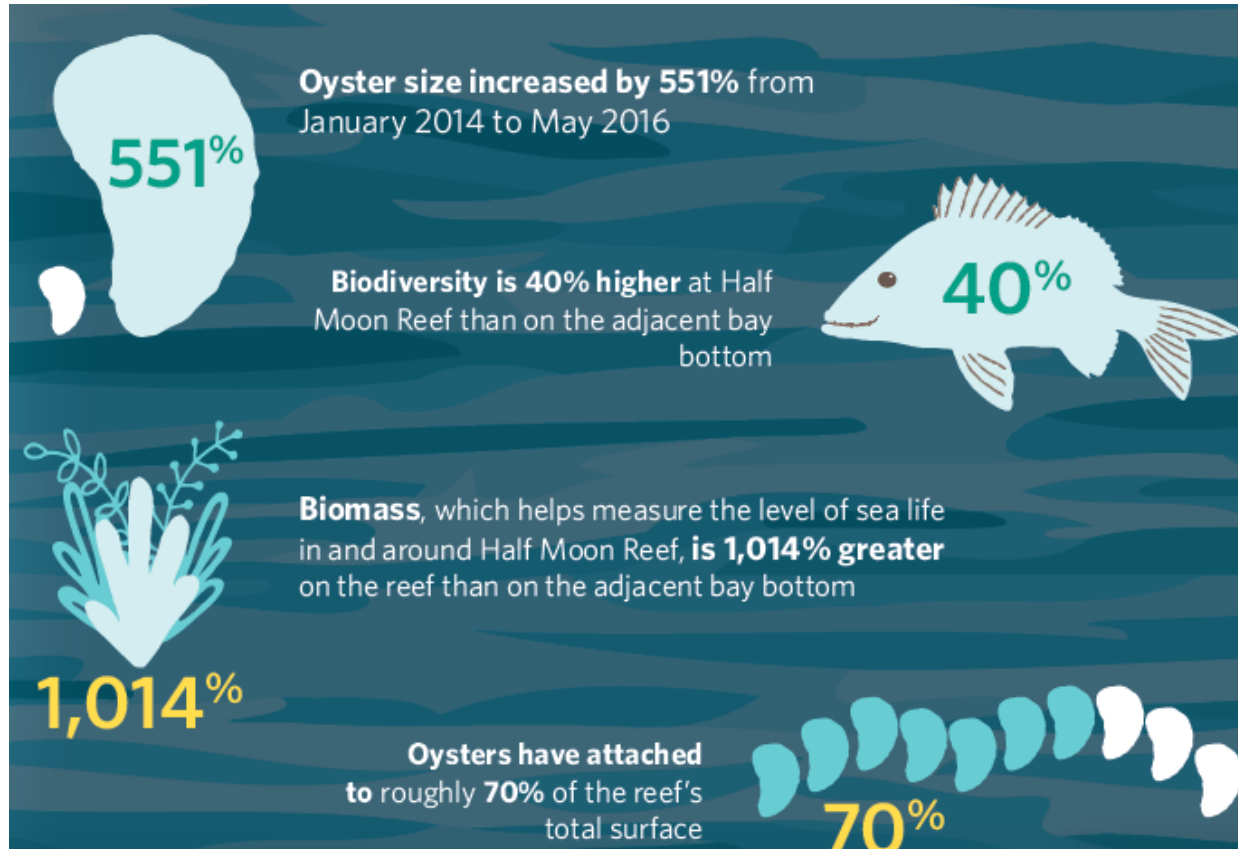


# Oyster Reef Restoration Example

4 - 8.3 billion adult, sub-tidal oysters died as a result of the spill  
(NRDA Damage Assessment)



# Biophysical Impacts





# Diverse Goals

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# Social and Economic Impacts



45% of the in-person survey respondents reported that they **were familiar with the Half Moon Reef restoration work**

94% of anglers reported that the restored habitat at Half Moon Reef offers **a more satisfying experience** than other fishing locations



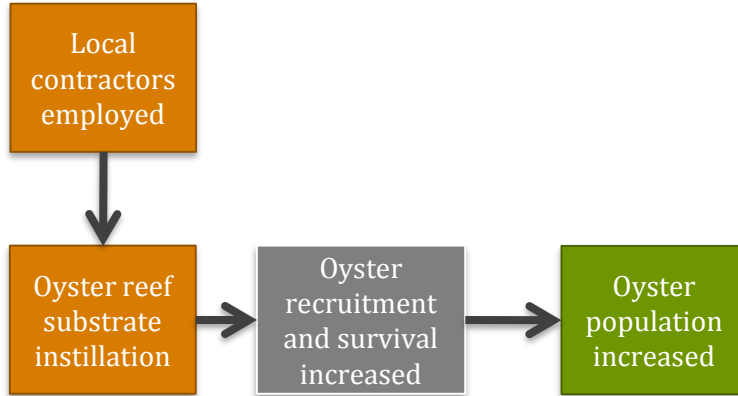
Increased recreational fishing at Half Moon Reef **added \$691,000** to Texas' **gross domestic product each year** and generated an additional \$1.273 million in annual economic activity

Half Moon Reef has created a dozen new jobs and \$465,000 in annual labor income



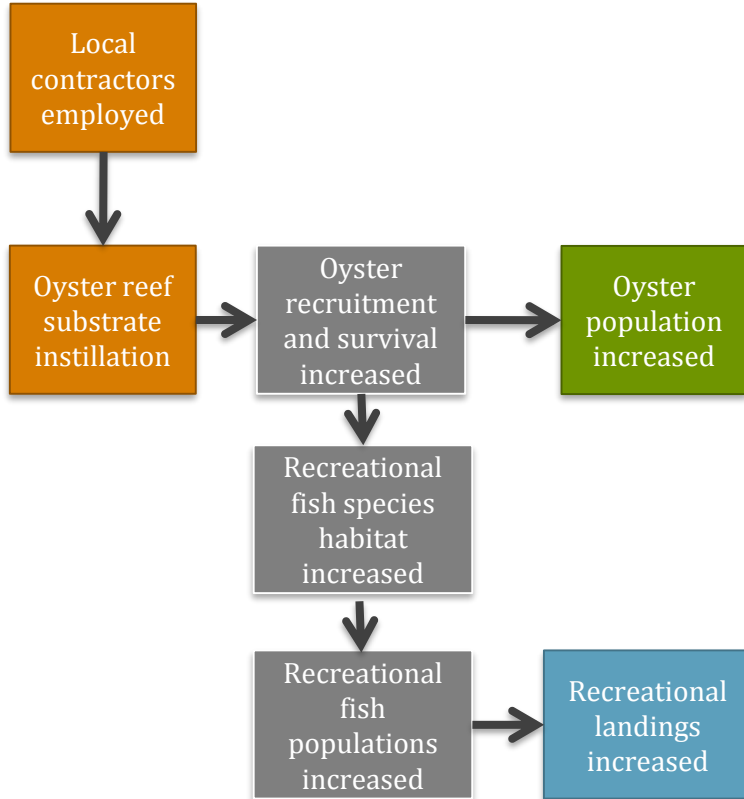
**12 JOBS**

# Results Chains

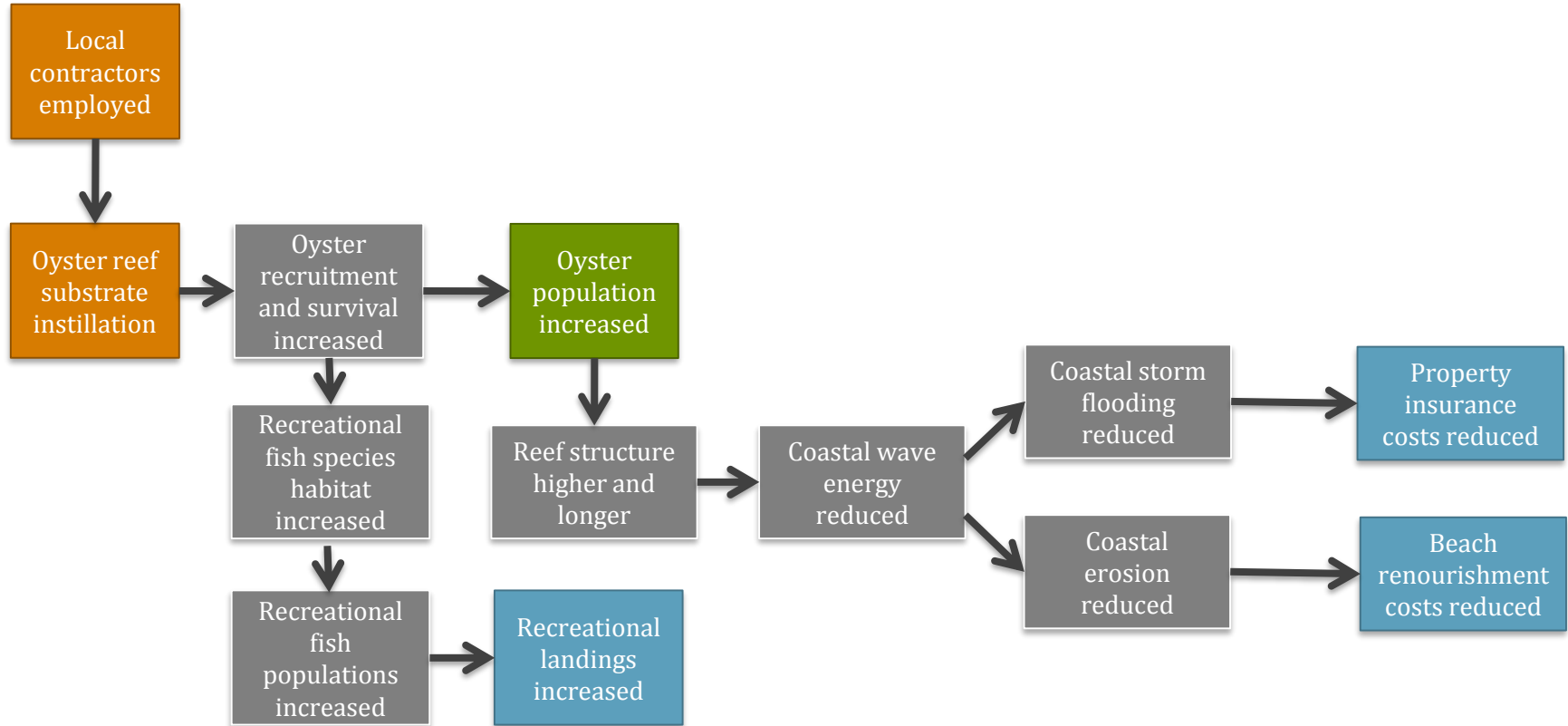




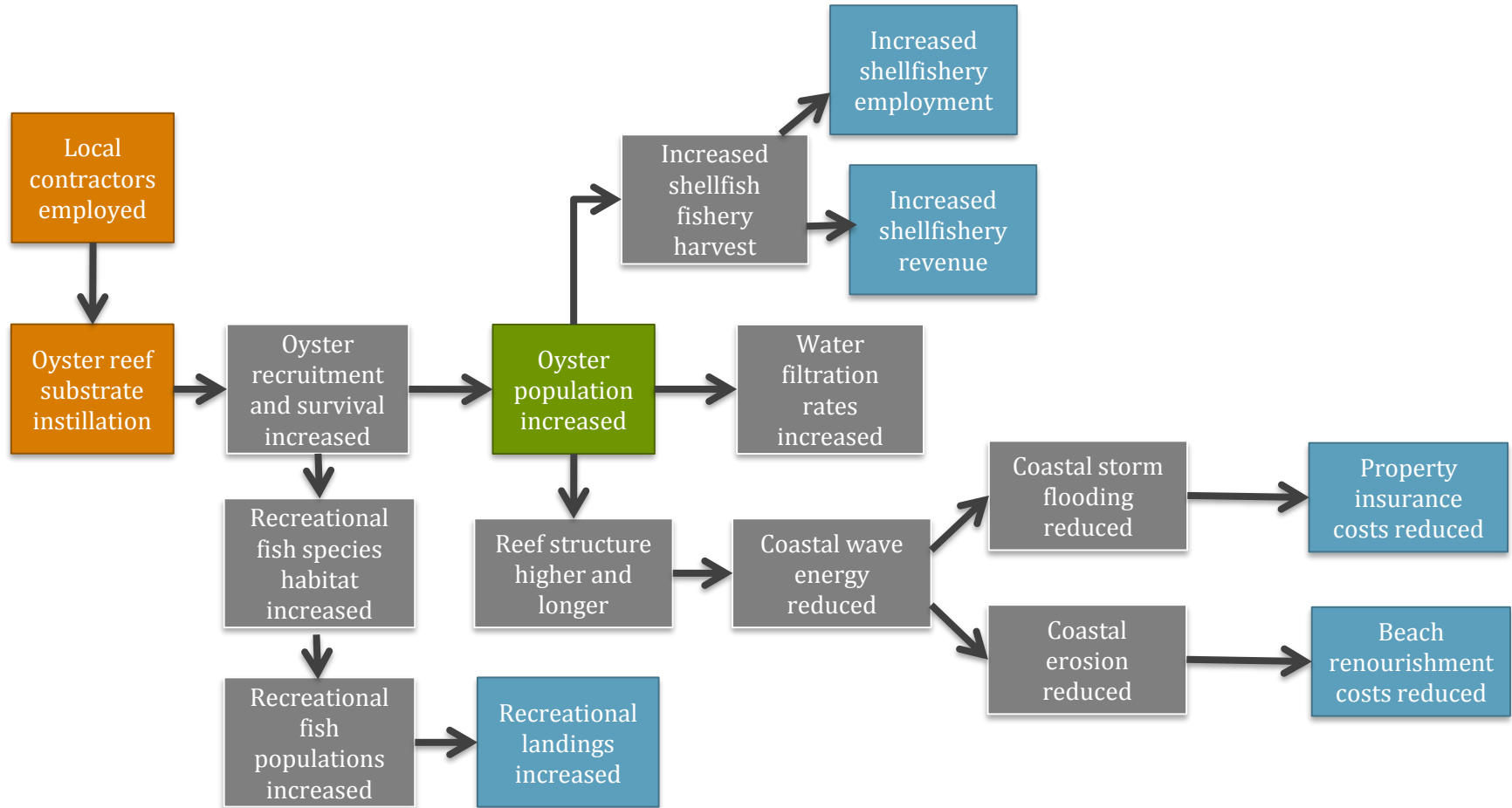
# Results Chains With Ecosystem Services



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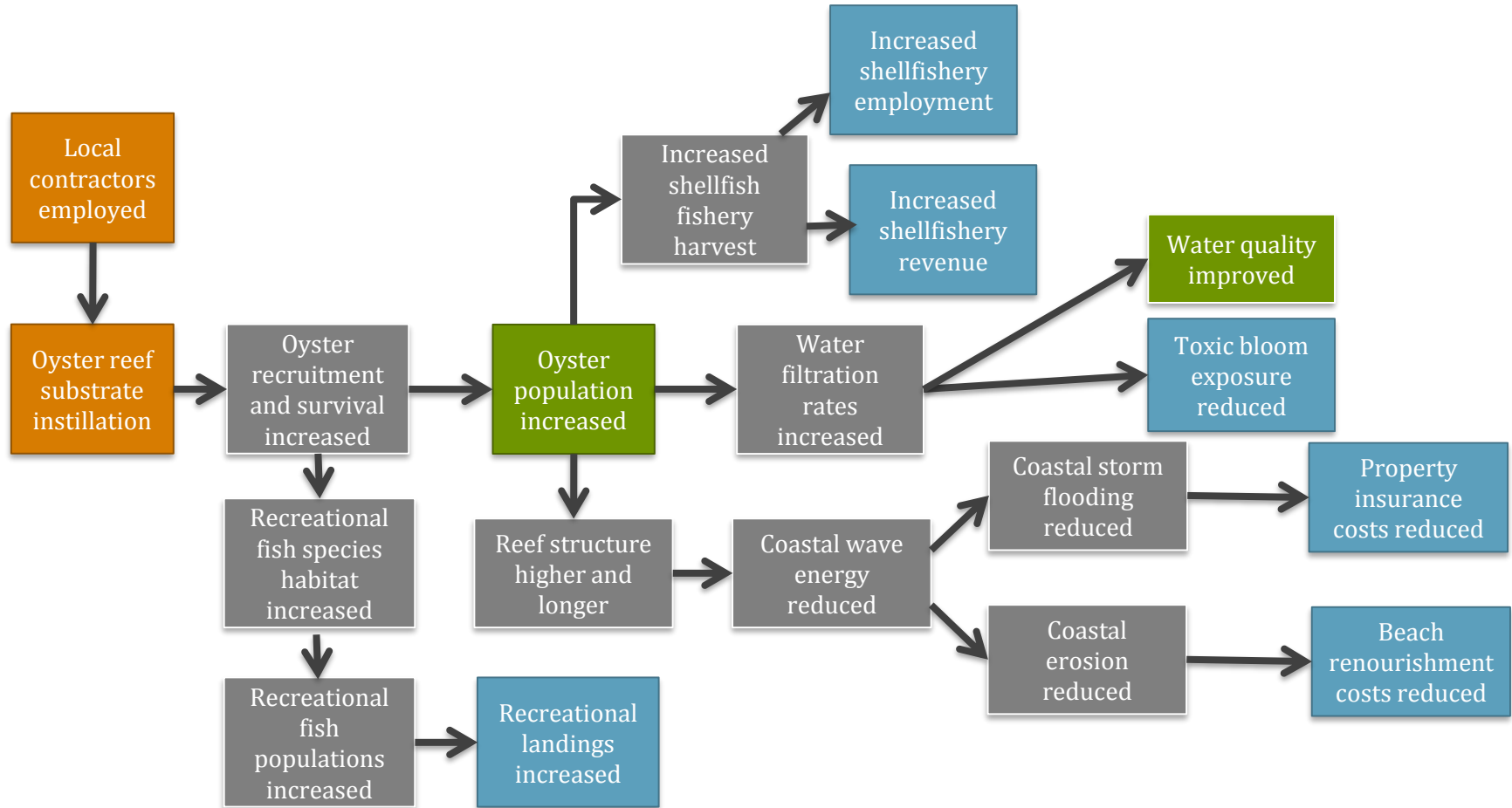


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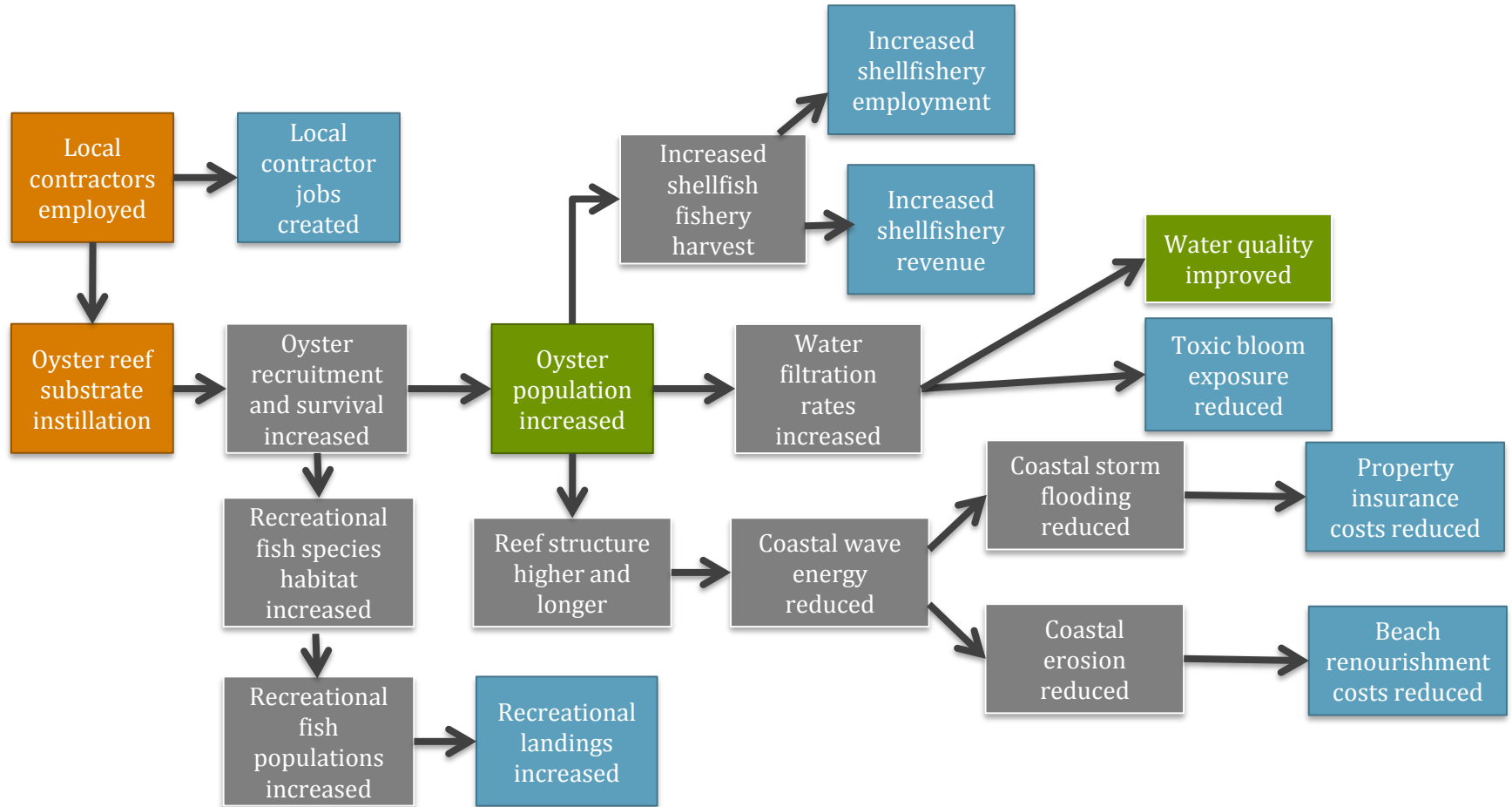




# Results Chains With Ecosystem Services



# Results Chains With Ecosystem Services & More!



# Diverse Goals

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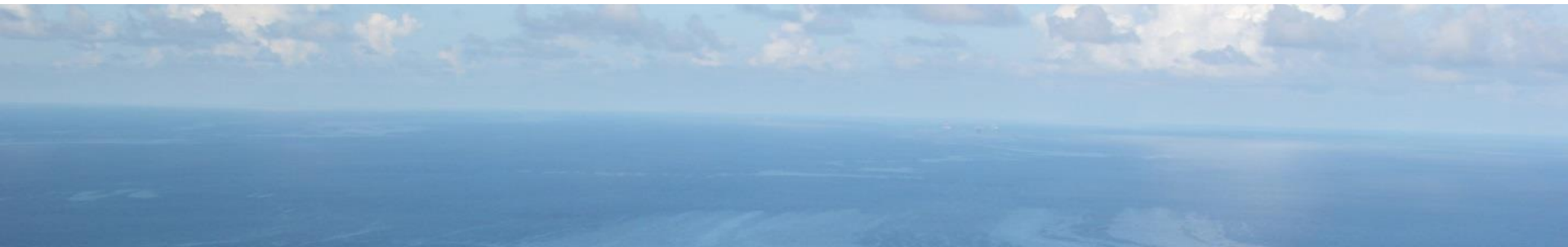
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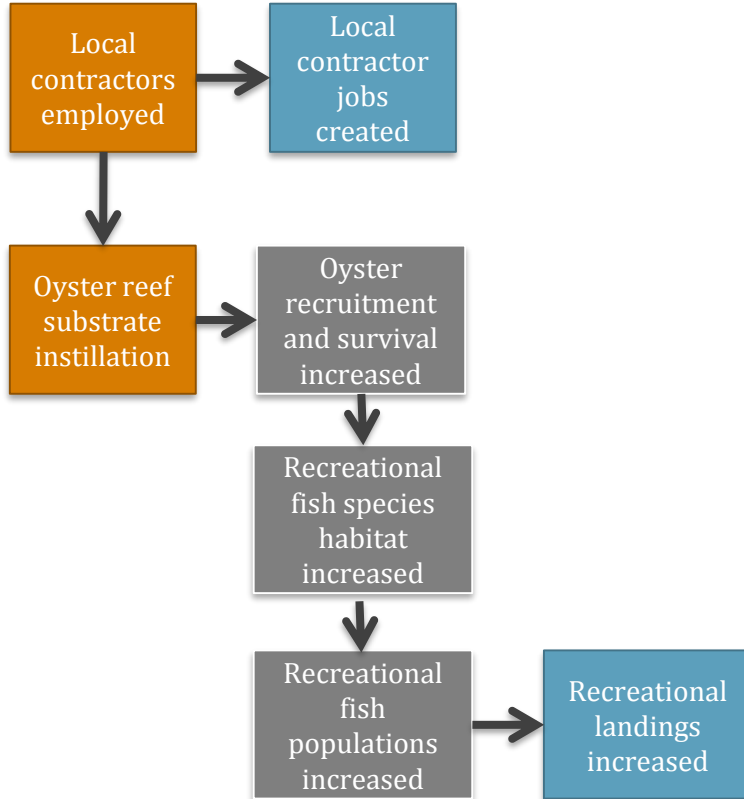
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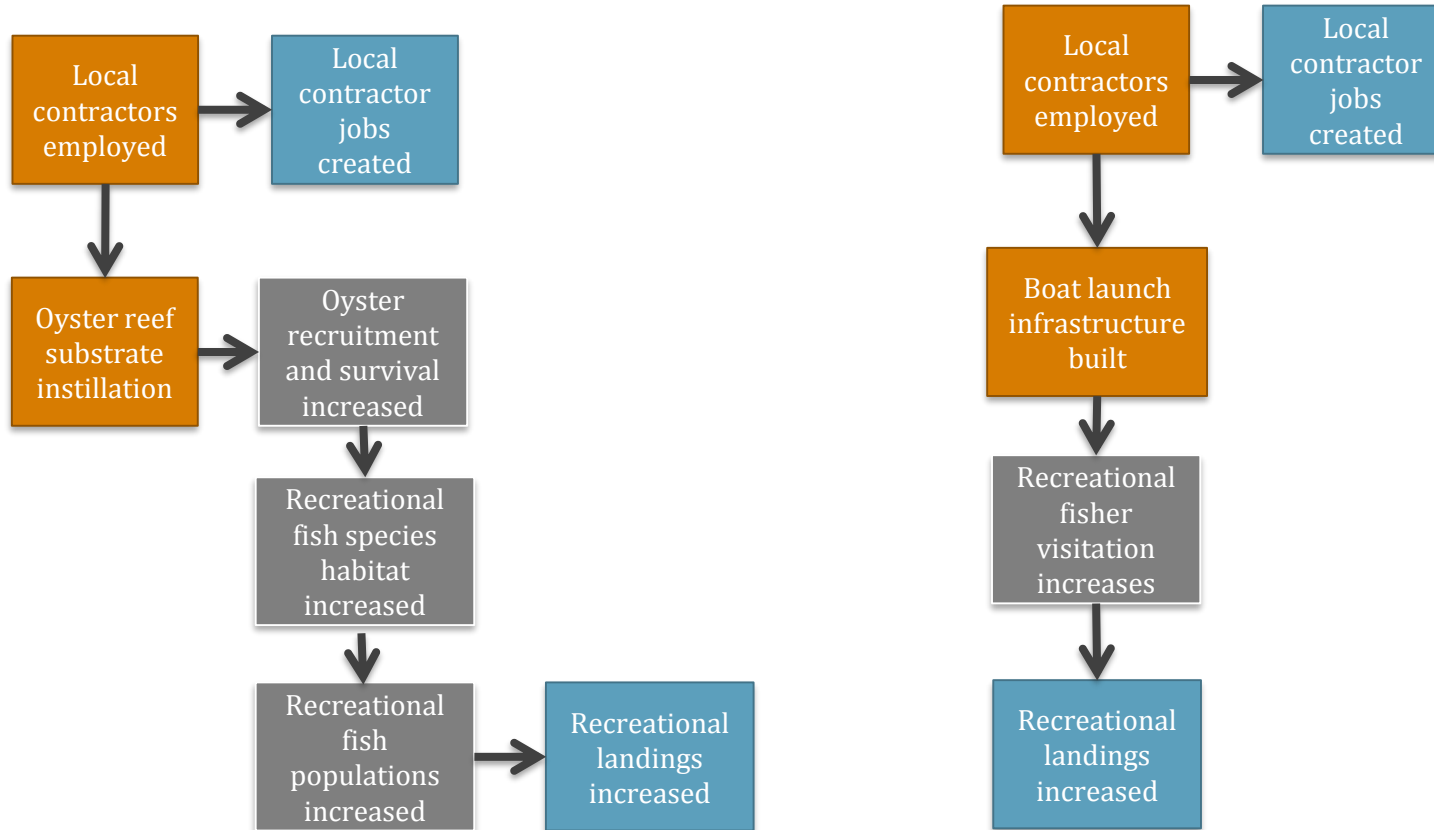
# Compare Activities or Strategies

Goals: Increase recreational opportunities and economic activity



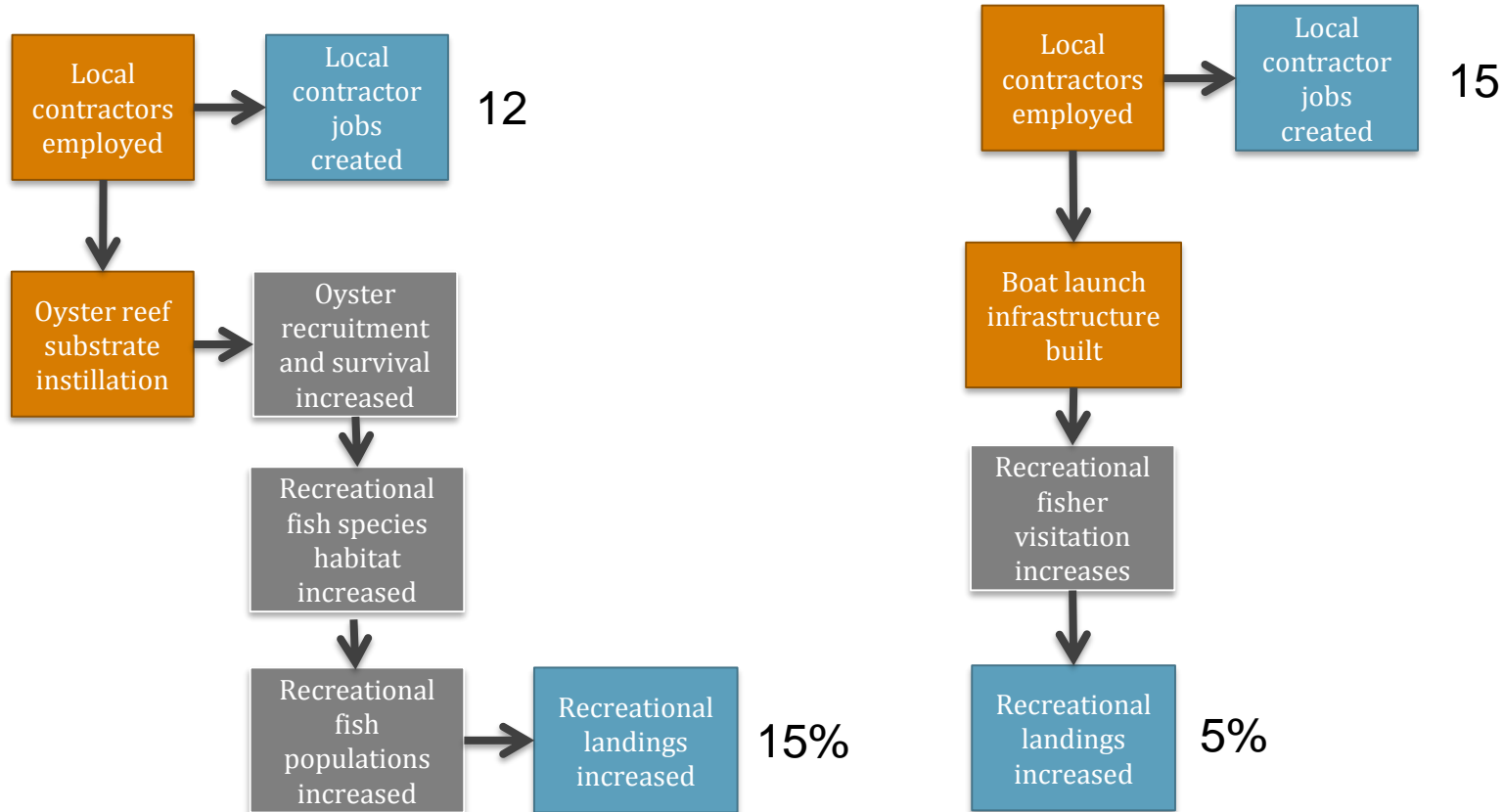
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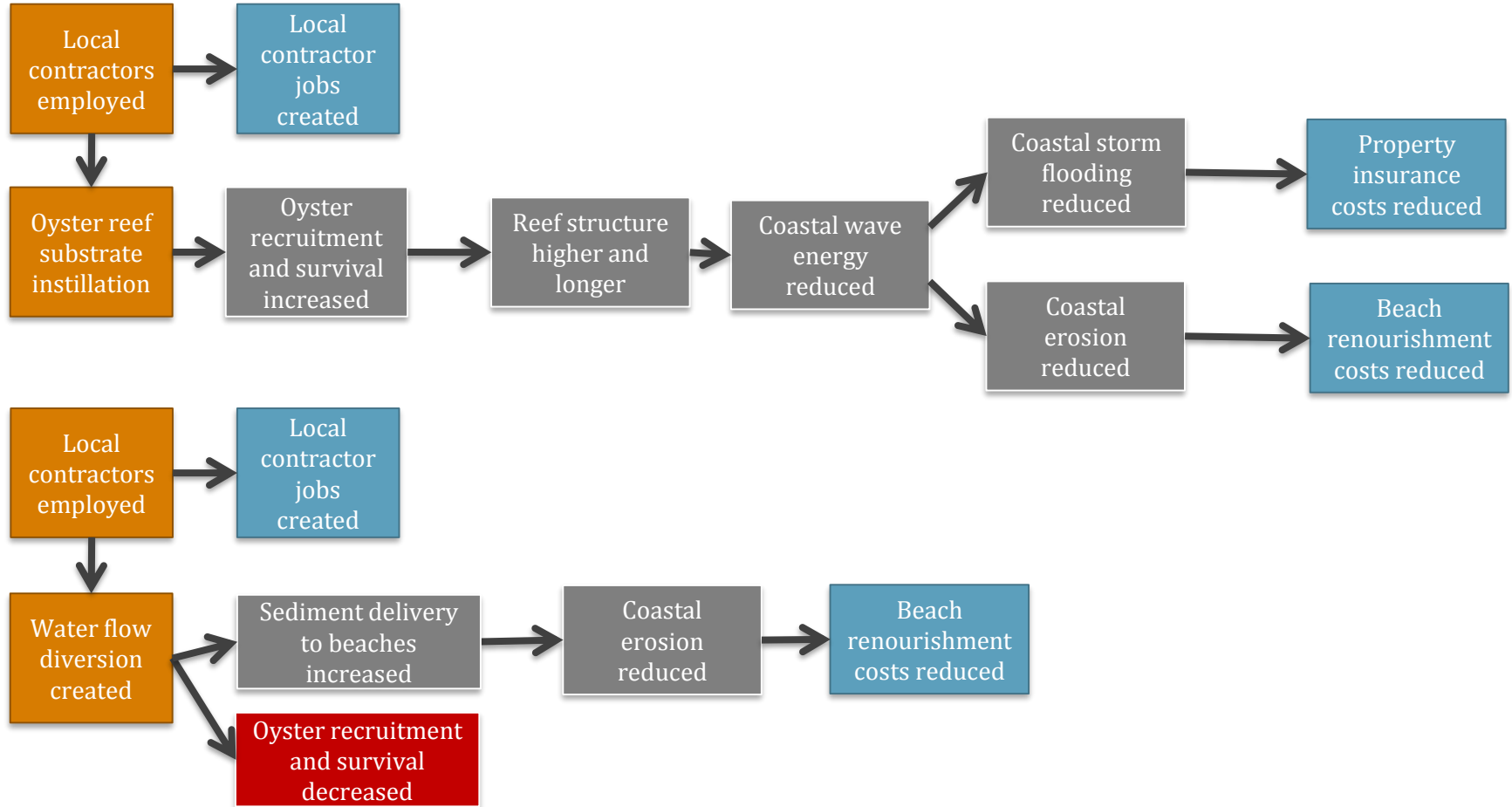
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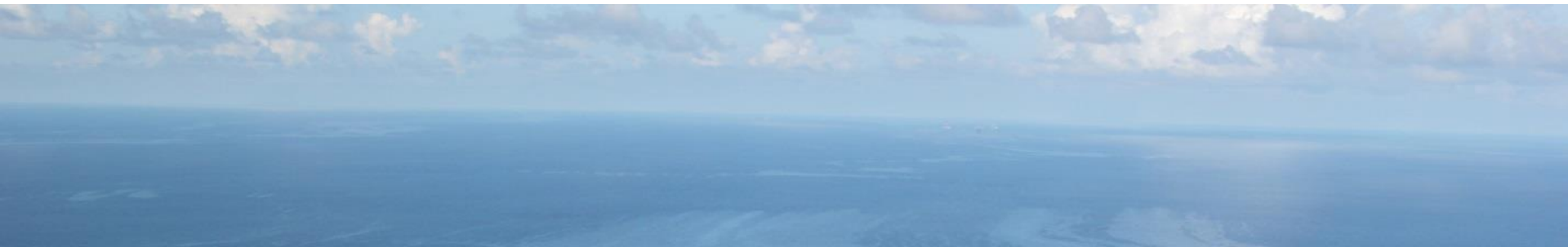


# Results Chains With Ecosystem Services & More!



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# Aligned Metrics

## Project 1

Oyster reef restoration will lead to increased recreational fish habitat, and improved recreational fisheries.

### Metrics:

- Oyster reef area
- Recreational fish sp population size
- Recreational fish landings



## Project 2:

Increased boat launch access will lead to increased recreational fishing.

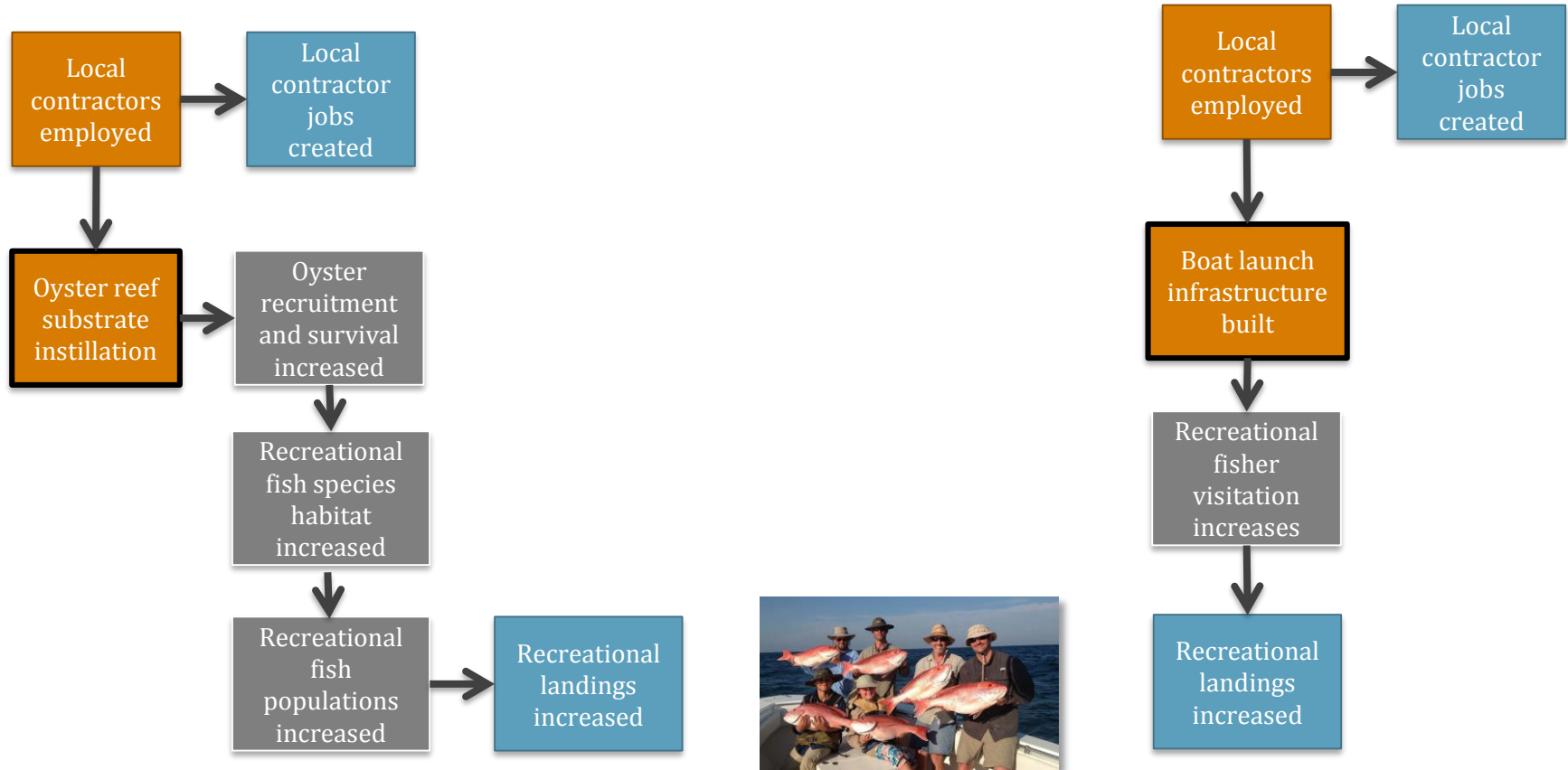
### Metrics:

- Launch visitation rate
- Recreational fish license purchase



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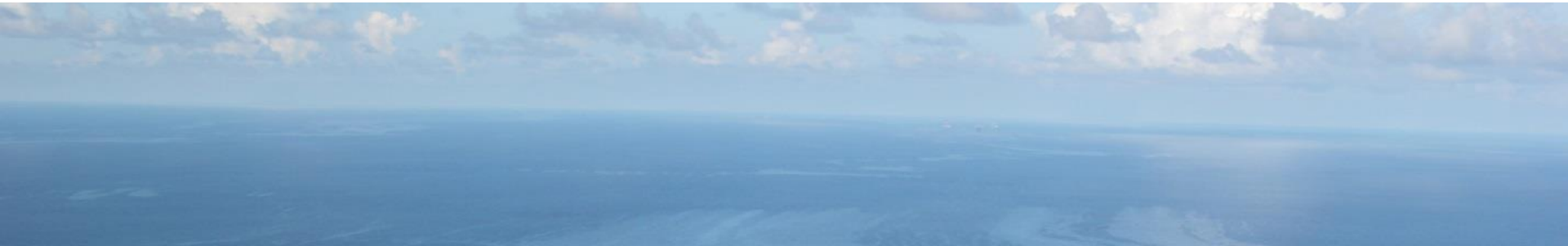
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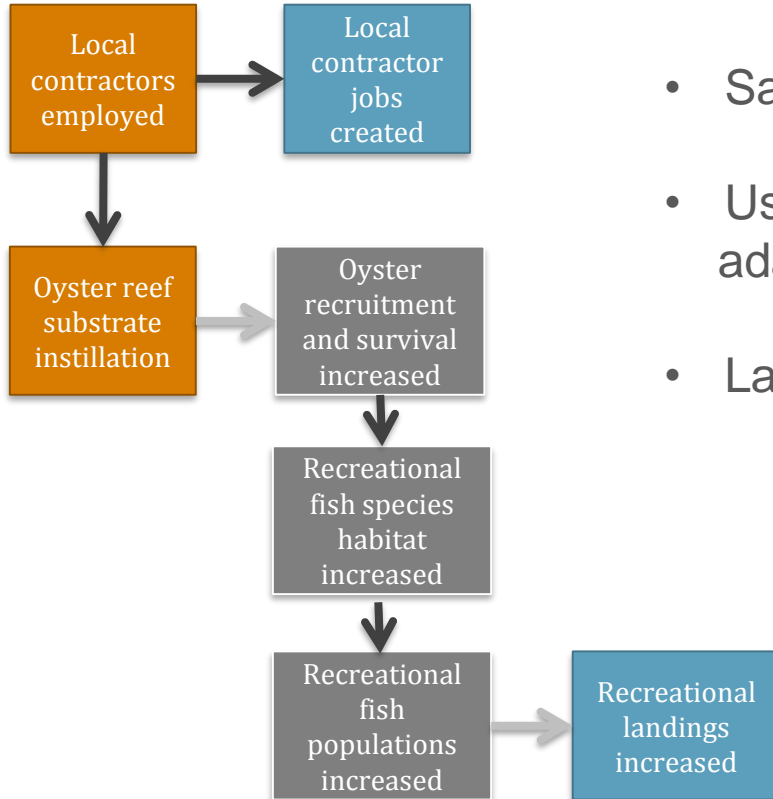


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# Platform to Synthesize & Build Evidence



- Save monitoring costs by focusing on weak links
- Use early projects for higher investment, adaptive management
- Later projects have lower monitoring needs

# Conclusions

- **Full intent of Gulf restoration won't be met if view of impact is not expanded**
- **Ecosystem services provide a frame for expanding impact measures**
- **Results chains can help make ES practical, standardize metrics, allow Gulf-wide roll up and reduce monitoring costs**
- **Standard results chains would be even more powerful**

# Guidance Exists to Deploy Today

## Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico

The National Academies of  
SCIENCES • ENGINEERING • MEDICINE

National Ecosystem Services Partnership

### Best Practices for Integrating Ecosystem Services into Federal Decision Making

Lydia Olander, Robert J. Johnston, Heather Tallis, Jimmy Kagan, Lynn Maguire,  
Steve Polasky, Dean Urban, James Boyd, Lisa Wainger, and Margaret Palmer

The Nature  
Conservancy

## **Conservation by Design 2.0** Guidance Document {Version 1.0, March 2016}

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