

# A framework for establishing restoration goals for contaminated ecosystems

DOI NRDAR May 2016

Anne M. Wagner, Diane L. Larson, Julie A. DalSoglio, Jim A. Harris, Paul Labus, Emma A. Rosi-Marshall, Kristin E. Skrabis



# Determining Restoration Goals within a Remediation Context

Propose an integrated approach to consider restoration goals as well as remediation goals

- decision tree support tool
- team approach

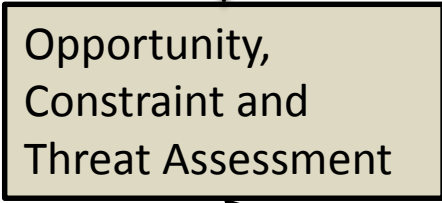


# Determining restoration goals

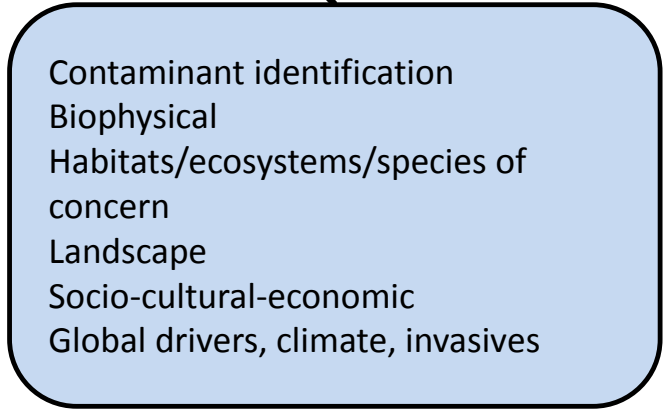
Start here...



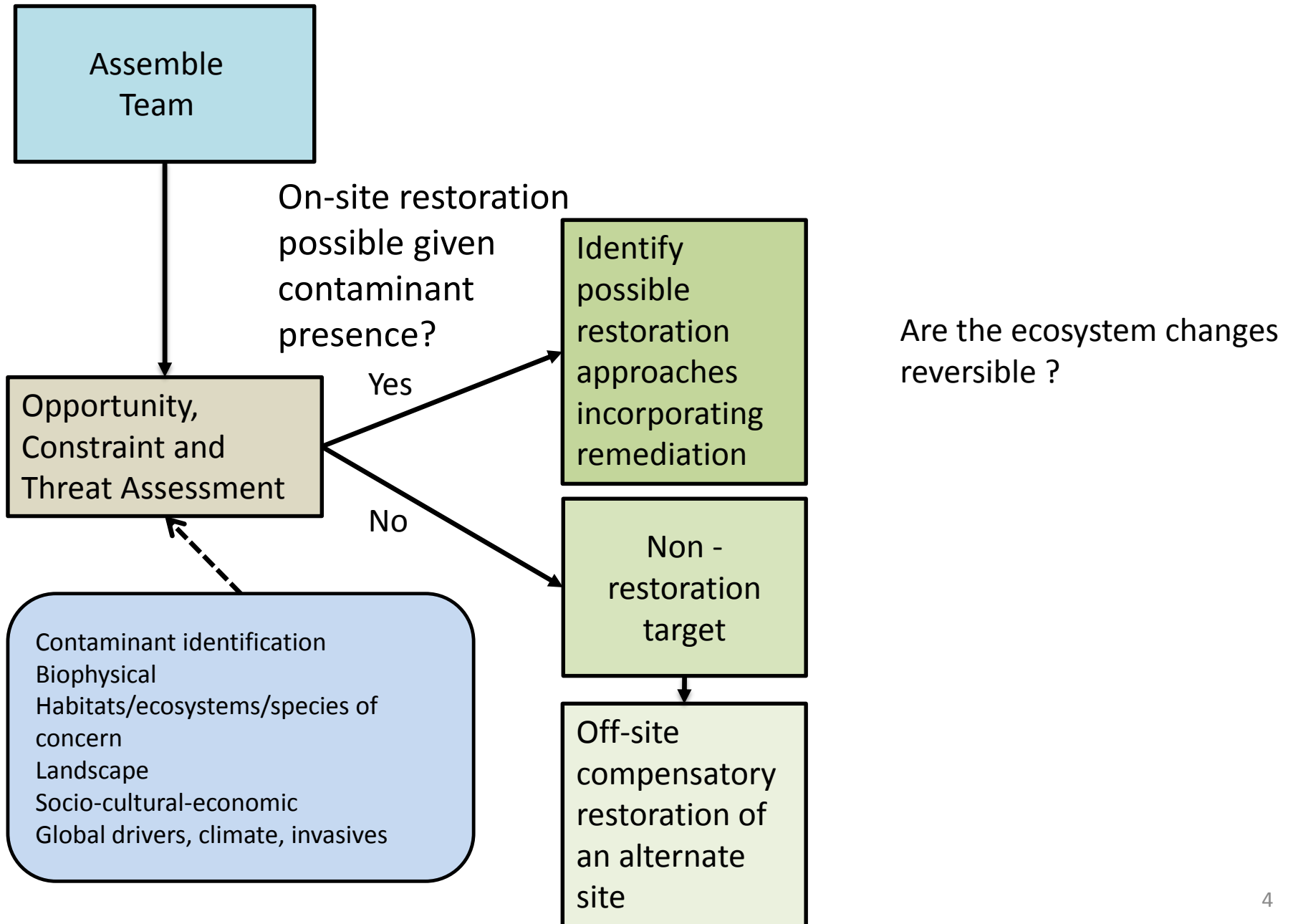
Is on-site restoration possible given contaminant presence?



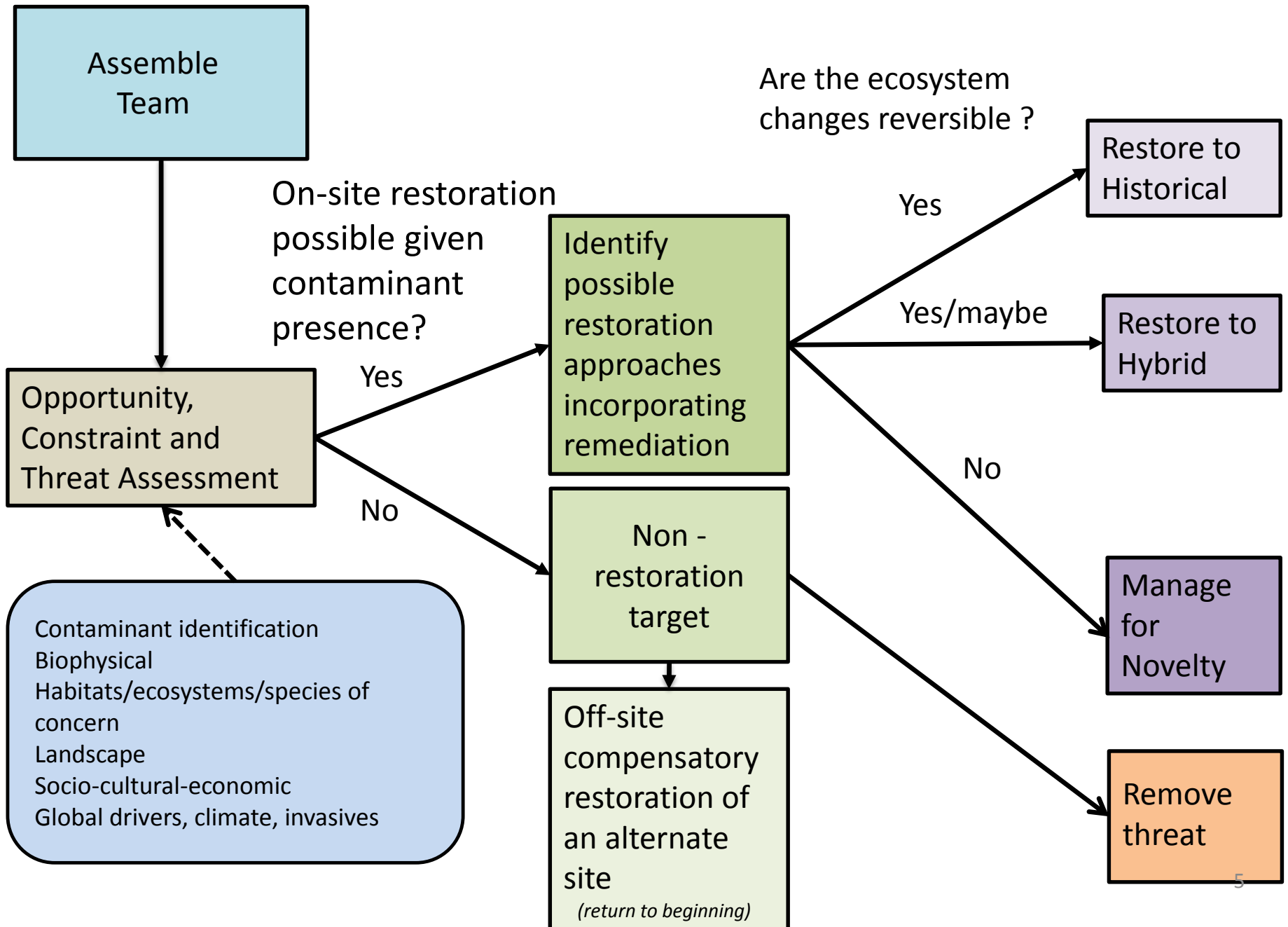
Inputs to the assessment



# Determining restoration goals



# Determining restoration goals



# Restoration targets

- Historical systems – often referred to as attaining a reference condition
- Hybrid systems – a mix of historical and novel elements – e.g., a species that was not previously present but contributes to ecosystem function
- Novel systems – far from historical range of variation through biotic, abiotic and functional changes
- Threat removal – Site can not be ecologically restored



# Closing Thoughts

- ✓ Sustainable restoration:
  - Socio-cultural aspects
  - Economic aspects
  - Ecological aspects
- ✓ Iterative process:
  - Decision tree not a one-time activity
- ✓ Consider restoration goals as the remediation is planned

