



# Capitalizing on Coastal Blue Carbon

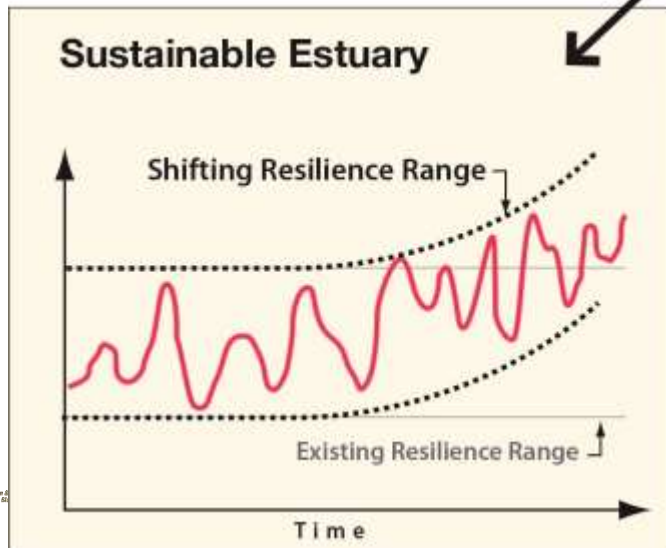
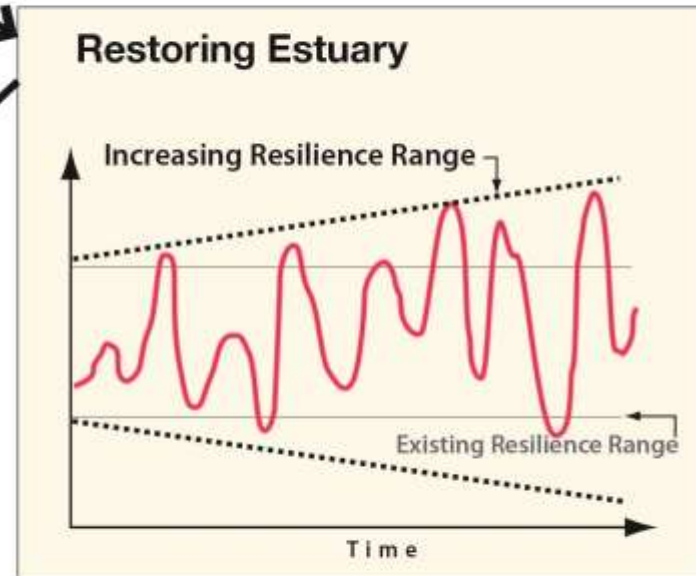
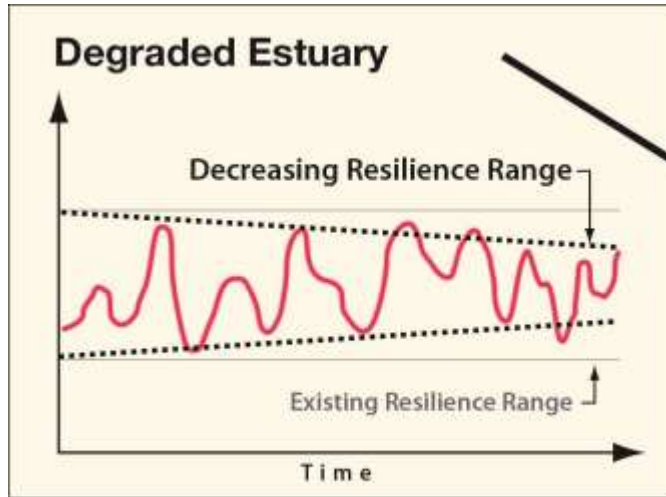
The Conference Center at Massasoit Community College | May 12-13, 2015



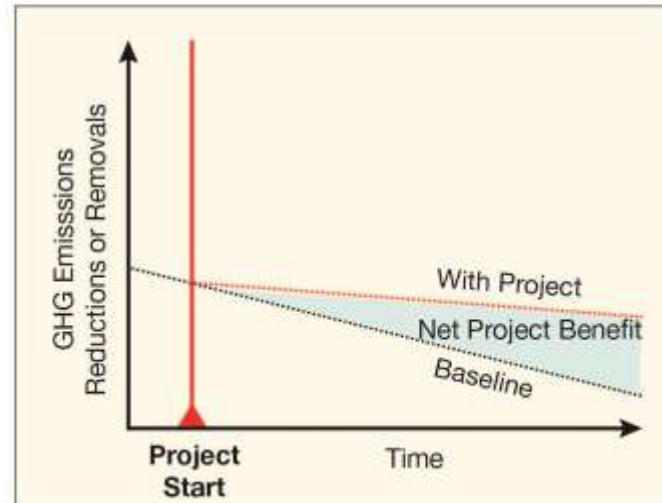
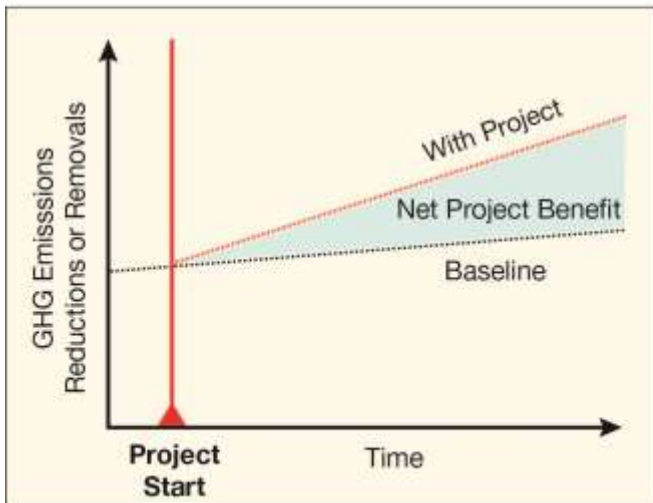
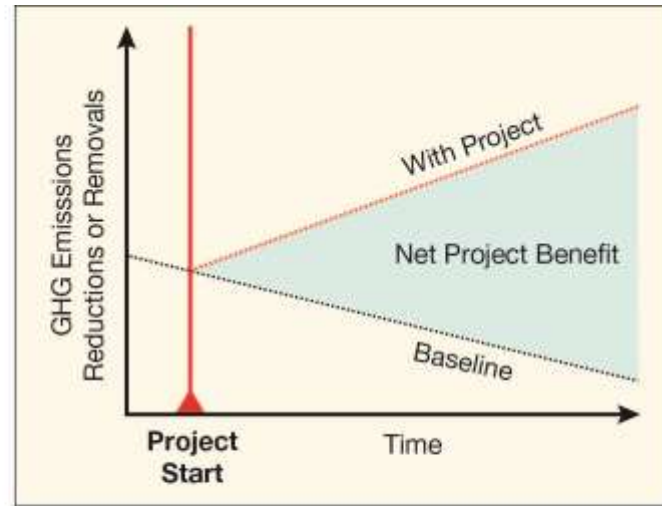
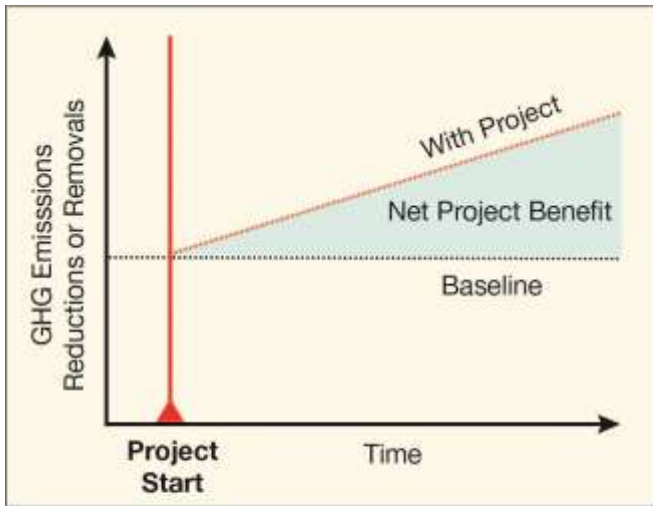
## Considerations in Planning a Blue Carbon Project

Stephen Crooks

# Goal of Restoration (Adaptation)



# Goal of Carbon Management (Mitigation)

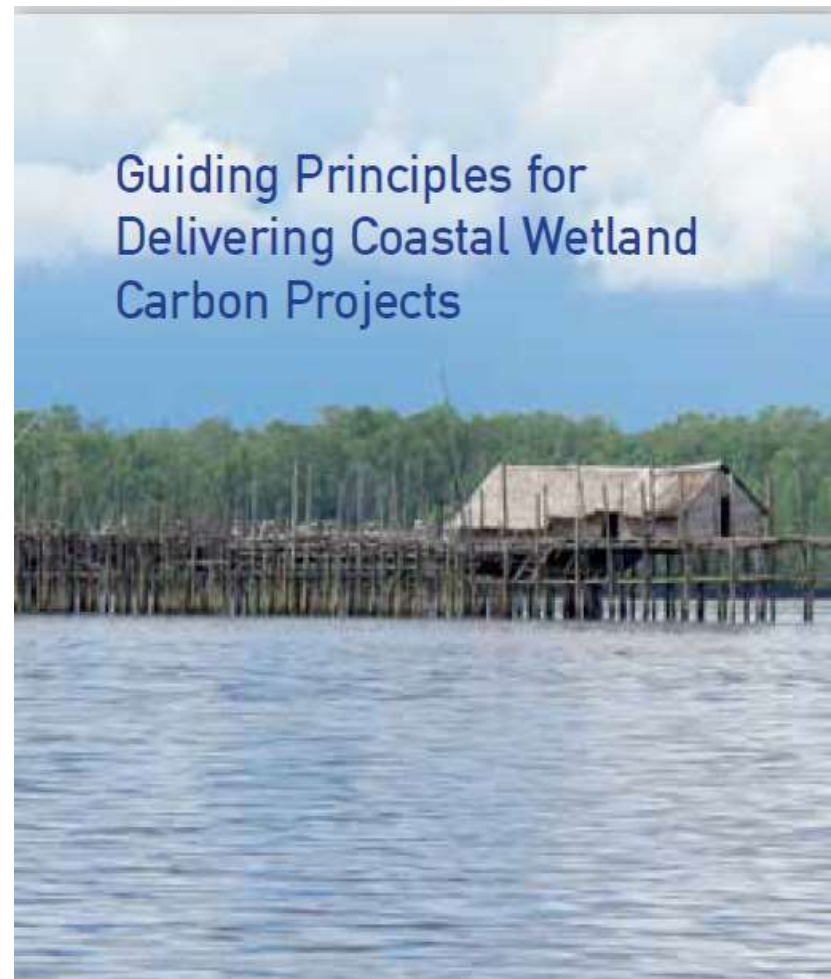


# Wetland Management Learning Curve

1. Recognize value of wetland management
2. Establish examples of good practice
3. Achieve multi-use functional landscape
4. Adaptation to climate change
5. Incorporate GHG fluxes and storage

## Blue Carbon Interventions:

Policy adjustment  
Management actions  
Carbon finance projects



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# Ecosystems in focus for climate change mitigation

Forest



Peatland



Mangroves



Tidal Marshes



Seagrass



- **United Nations Framework Convention on Climate Change**
  - Brief national climate change negotiators
  - Identify policy opportunities
  - Engage IPCC and SBSTA
  - Multi-national demonstration projects
- **National / State Governments**
  - Establish programs and science research
  - Recognize wetlands in national / state accounting
  - Agency awareness, action, funding
- **Local Demonstration and Activities**
  - Landscape level accounting
  - Establish carbon market opportunities
  - Look for synergistic conservation benefits
  - Demonstration projects and public awareness



# U.S. Blue Carbon Demonstration Activities

- Understanding landscape GHG fluxes (national & local science)
- Incorporating wetlands into the national GHG inventory
- Supporting national and sub-national blue carbon working groups
- Building technology for blue carbon monitoring
- Modeling coastal system response to climate change
- Connecting blue carbon and green infrastructure
- Developing policy and market tools (VCS Methodology)
- Linking climate change adaptation and mitigation
- Supporting demonstration activities



# Key Lessons

- 1. Wetland conservation offers greatest benefits**  
Highest GHG benefit, protect services, avoid engineering costs
- 2. Restoration of wetlands often technically feasible**
- 3. Poor project planning cause of failure**  
Need for technology transfer and capacity building
- 4. Planning should incorporate sea level rise adaptation**  
Tools exist  
Link adaptation and mitigation
- 5. Community and national / state capacity required for success**
- 6. No rigid template for blue carbon interventions**



# Blue Carbon: Low Hanging Fruit

- 1. Protection of existing stocks**  
Organic soils and forest biomass, particularly
- 2. Reconnection of impounded waters**  
Methane reduction  
No non permanence risk
- 3. Rewetting of drained organic soil**  
May occur on unconnected lands
- 4. Include with forestry projects**  
Additional carbon stocks  
Provides for sea level rise resilience
- 5. Restoration of wetlands**  
Complimentary with above

# Steps in Blue Carbon Project Planning

1. Define project concept and perform preliminary feasibility assessment.
2. Define target market and select a carbon standard
3. Establish effective community engagement
4. Design project activities
5. Assess permanence risk and develop mitigation strategy
6. Secure project development finance and structure agreements
7. Provide for legal due diligence and assess carbon rights
8. Provide for social and environmental impacts assessment
9. Maintain ongoing liaison with regulators.

# Lessons from Conservation and Restoration Planning

1. Have a clear and coherent planning approach
2. Plan conservation and restoration in the wider landscape context
3. Prioritize sites (not all are suitable)
4. Restore physical processes and ecosystem dynamics
5. Recognize the value of project design and engineering
6. Understand the restoration trajectory and ecological thresholds
7. Conserve and restore ecosystems sooner rather than later
8. Restoration of historic conditions is not always possible
9. Avoid transplantation of non-indigenous species
10. Be patient

# Lessons learnt from carbon projects

1. Assume ownership of the project
2. Choose and demarcate the site(s) carefully
3. Choose the project standard and project delivery cycle
4. Access the market early
5. Link the project to other finance options
6. Check the costs and prepare for economies of scale



# Snohomish Estuary – An Example

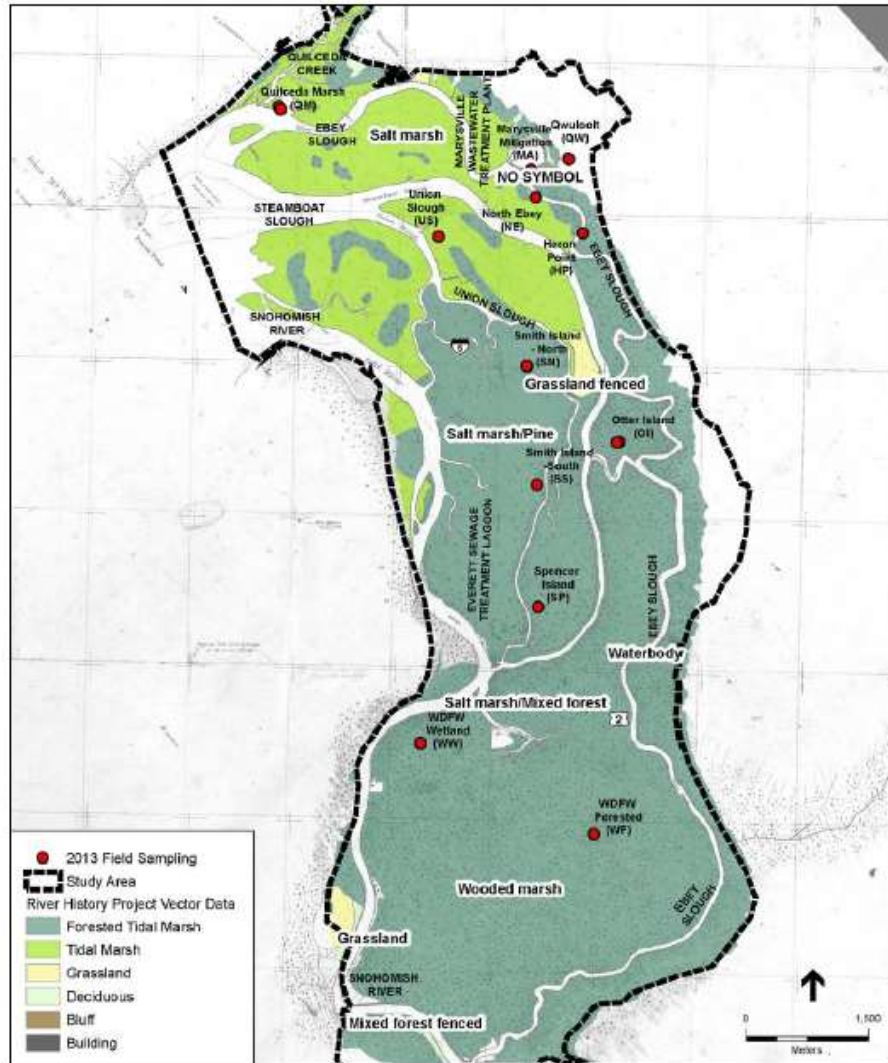


Figure 8 Historic habitats of the Lower Snohomish Estuary based on River History Project (Geomorphological Research Group, Quaternary Research Center, 2005) and Haas and Collins (2001) and 2013 soil core and vegetation plot locations.

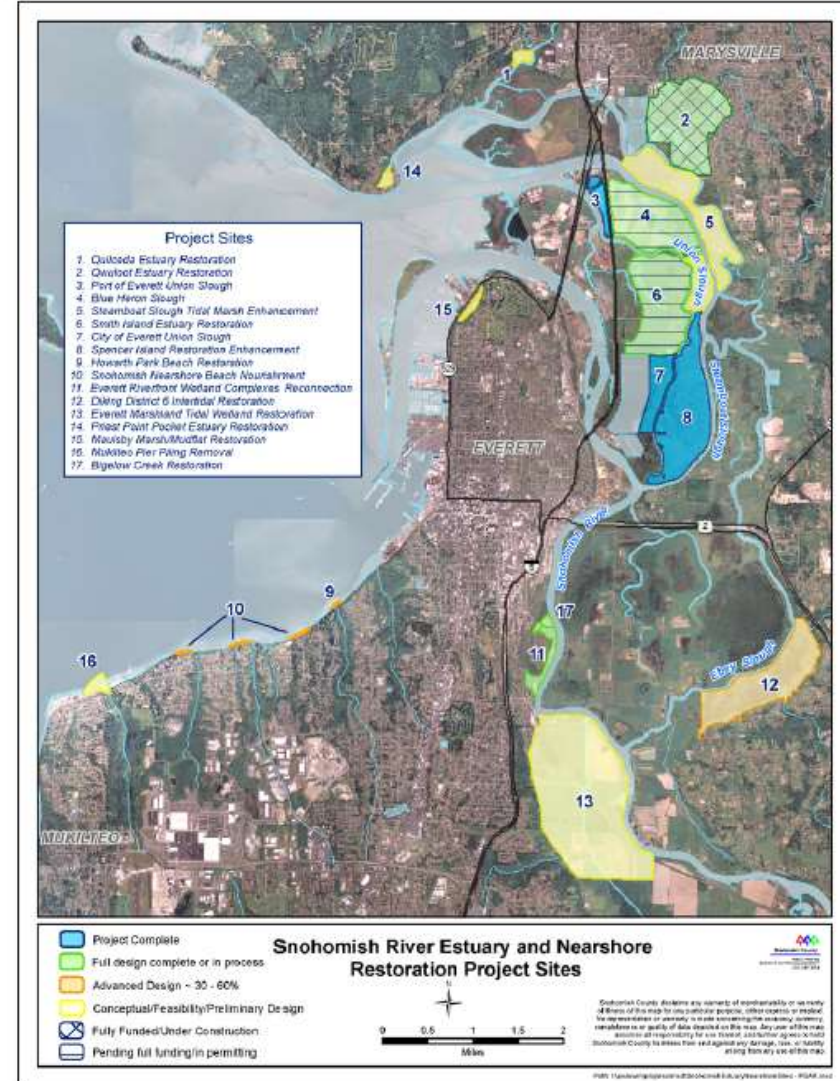


Figure 2 Snohomish Estuary nearshore restoration sites (Snohomish County, 2013).

# Snohomish Estuary – An Example

Set project boundary at the landscape scale.

Accommodate sea level rise.

Link across multiple habitats (forest, floodplain, agriculture, coastal wetlands).

Group smaller projects within a larger domain.

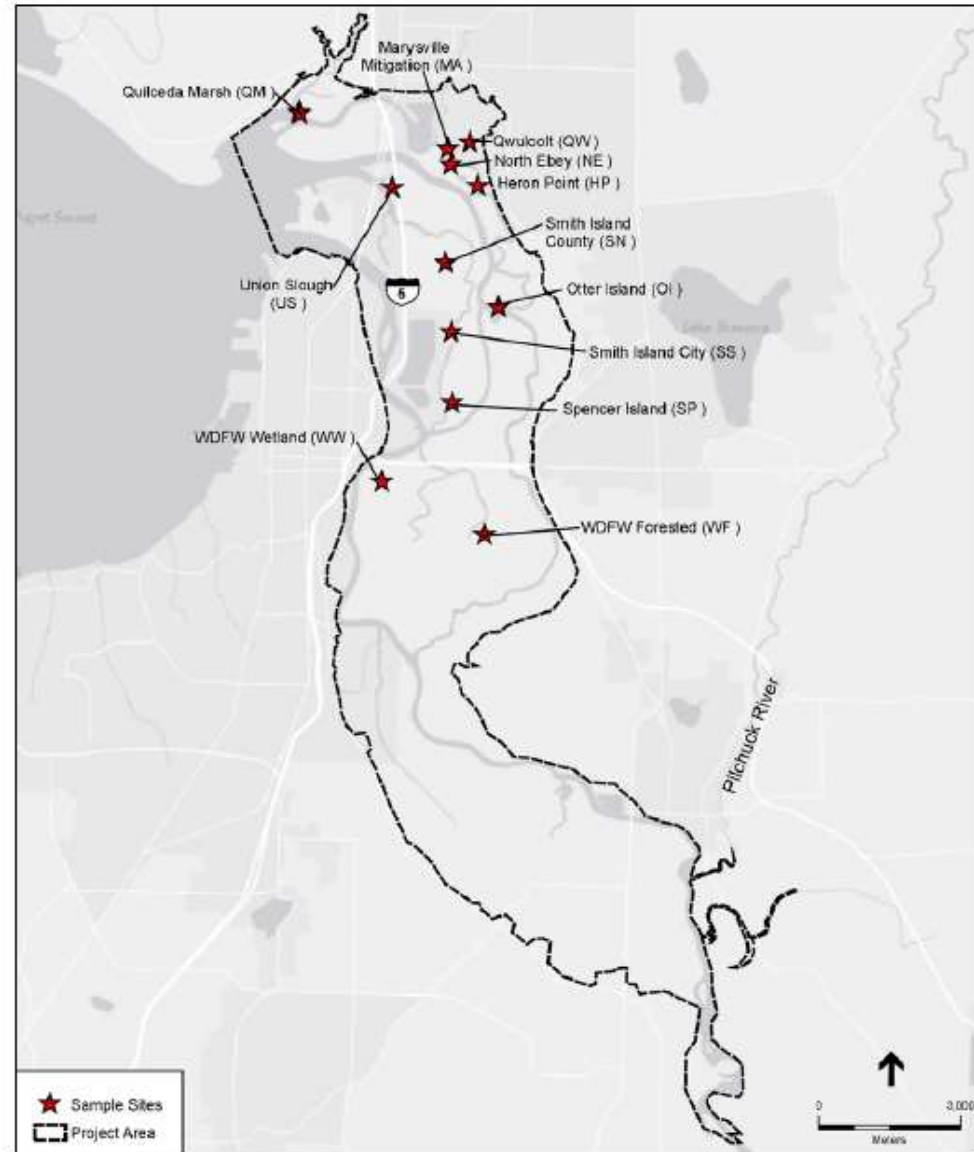


Figure 6 Study Area (dashed black line) and 2013 field sampling sites (red star).

# Grouped Projects – Applicability and Recommendations

Under the VCS it is possible to group several projects (known as project activity instances) within a larger project.

Project Activity Instance:

“particular set of implemented technologies and/or measures that constitute the minimum unit of activity necessary to comply with the criteria and procedures applicable to the project activity under the methodology applied to the project”



# Grouped Projects – Applicability and Recommendations

## Setting up:

1. Projects may include a flexible number of PAIs
2. Validation focuses on a single project activity which serves as a model for all PAIs
3. Top level features are laid out in the project description
  1. Geographic extent
  2. Eligibility criteria
4. PAIs must be homogenous wrt baseline, additionality and non-permanence risk.
5. New geographic areas can be included over time provided can demonstrate meet above criteria.





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