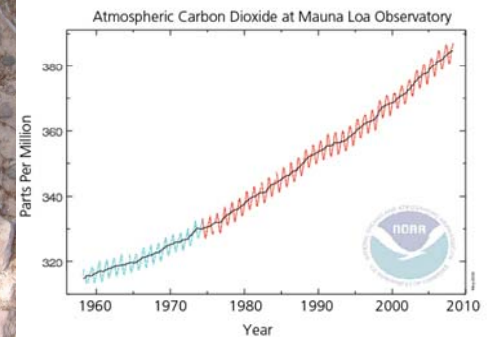
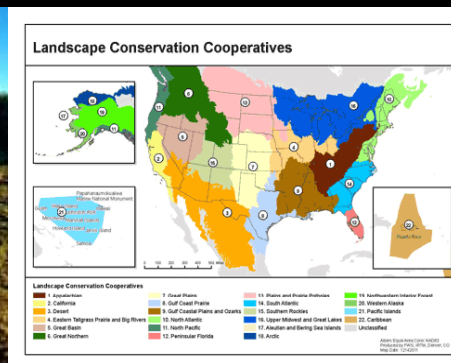


# Locating the Cultural in the Cooperative: *A Cultural Resources Toolbox for Climate Change Adaptation in the LCC Network*



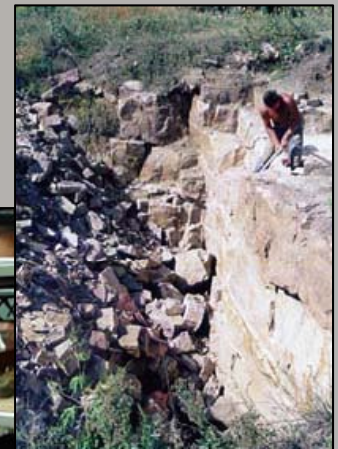
Marcy Rockman  
Climate Change Adaptation Coordinator -Cultural Resources  
LCC Workshop, Denver, CO  
March 28, 2012





# Cultural Resources (CR) Starter Kit

- ❖ Archaeological Sites
- ❖ Buildings and Structures
- ❖ Cultural Landscapes
- ❖ Ethnographic Resources
- ❖ Museum Collections





# Cultural Resources::Human Dim.

- ❖ Cultural resources  $\neq$  socio-economic/human dimensions research
- ❖ Cultural resources  $\longleftrightarrow$  human dimensions issues via communications, outreach , relevant questions







# CR: Stories at Landscape Scale



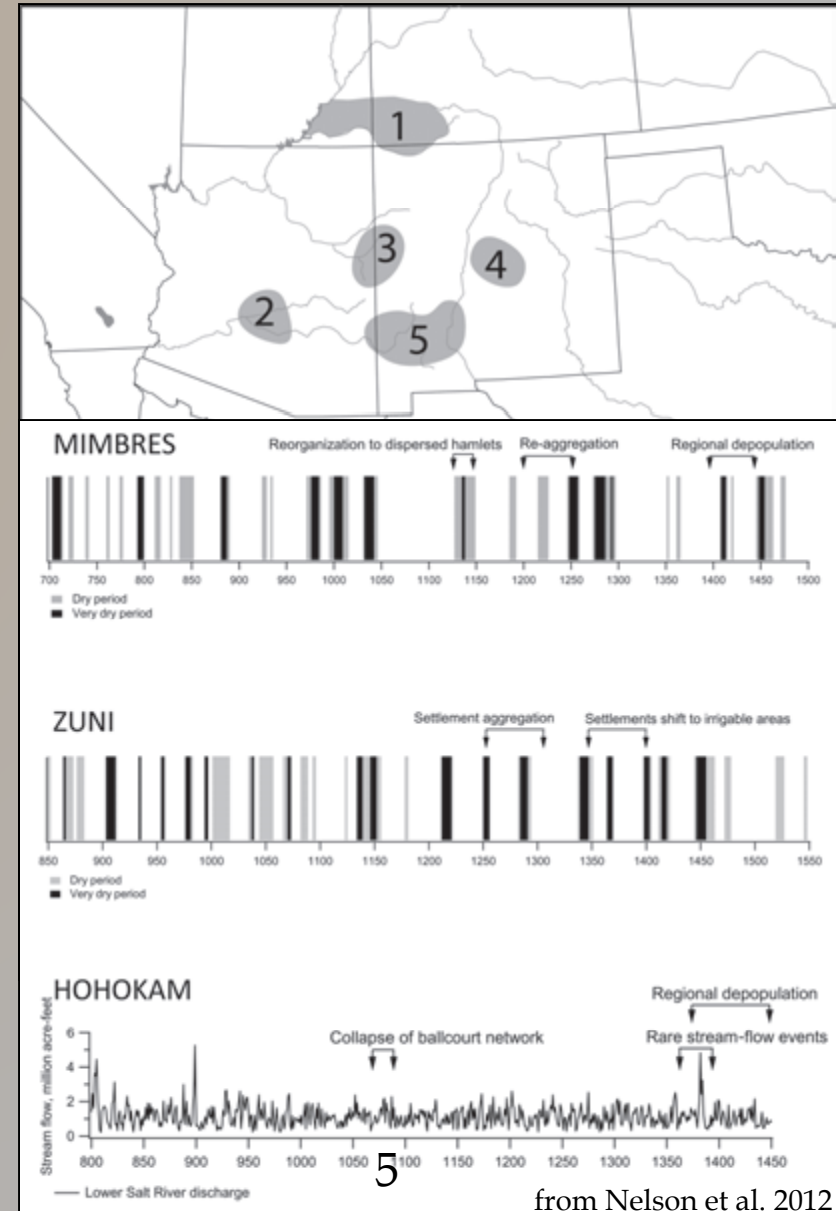
# Am. Southwest: AD~1150-1400

❖ Sequence of droughts-  
Medieval Climatic Anomaly

❖ Variable sequences across  
populations:

- reorganization
- aggregation
- depopulation

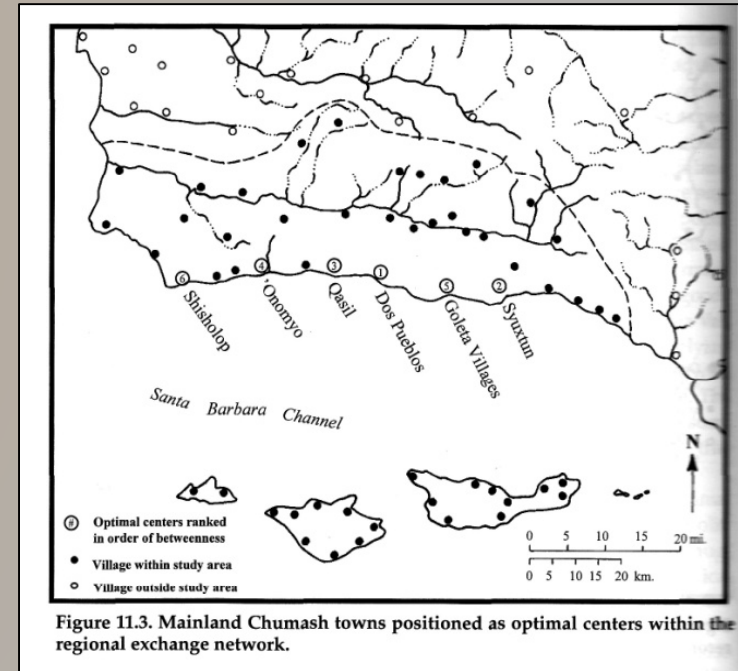
❖ Social changes visible via array  
of sites, features, etc. across  
landscape





# Chumash: ~AD 650-1300+

- ❖ AD 650 full villages
  - ❖ AD 950 intensification of fishing
  - ❖ AD 650-1300 intensified exchange coast - Channel islands
  - ❖ AD 1000 spread of dialects; change of chiefs to *between-ness*
  - ❖ Post- AD 1300 apparent decrease in violent injuries
- 
- ❖ Key: Chumash identifiable society in place through environmental fluctuations
  - ❖ Annual ceremony: sun v. coyote





# *Musca?* Shell Mounds: ~AD 1300

- ❖ Recent baseline data dissertation NPS SEAC scholar
- ❖ Sequential growth shell mound rings, finger bays
- ❖ Mounds 2-3m tall, 100s m long = BIG!
- ❖ C14 dated same top as bottom, shells top smaller
- ❖ Coastal mangroves all abandoned ca. AD 1290-1300
- ❖ Question: economic depletion, environmental change, or both?



crude shell mound outline





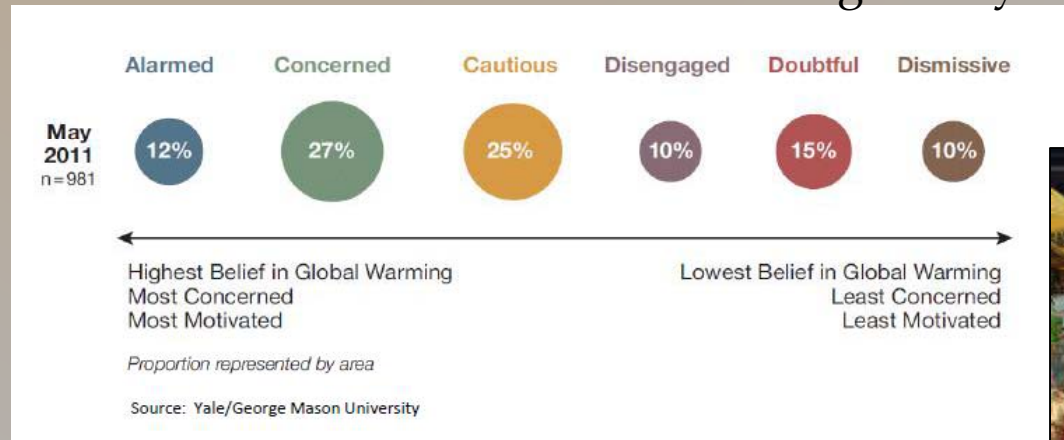
# Policy Needs for CR

From 2010 Interagency Climate Change Adaptation Task Force:

- Expand research on relevant social and behavioral sciences to improve understanding of human responses to change.
- Identify the social and ecological tipping points and thresholds (beyond which change is sudden and potentially irreversible) to help guide decisions regarding intervention and planning.



From 2011 Six Americas climate change study:



➤ The present cannot provide all requested information about human-environment adaptation response- for that we need CR!





# CR at Landscape Scale





# What Cultural Resources Bring-

CR Type	Place-based Info	Time-based Info	Communication Pathways
<i>Arch. Sites</i>	Fixed in place: Artifact/features-style + tech info Loc./resource use	Deep time to recent past -	Gen. requires scientific study/interp.
<i>Buildings &amp; Structures</i>	Gen. fixed/may be moveable Assoc., use info Technical info	Deep time to recent past/present	Scientific study plus experience
<i>Cultural Landscapes</i>	Interacting human-enviro lifeway/econ.	Represents specific past timeframe	Experience, plus scientific study
<i>Ethnographic Resources</i>	Interacting human-enviro lifeway/econ.	From past into present/recent past; future trans.	Practice Experience Knowl. transmiss.
<i>Museum Collections</i>	Moveable (not easily), place-linked via data, + museum assoc.	Variable by collection; deep time to recent past	Scientific study plus interpreted experience





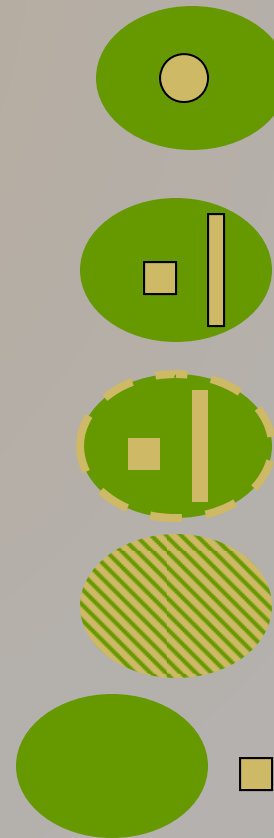
# Cultural Resource Considerations

- ❖ Significance of place
  - Fixed in place, and/or
  - Derive substantial significance from place
- ❖ Uniqueness
  - Each CR=record of human use of that place
- ❖ Irreplaceability
  - CR do not reproduce; once gone, gone forever
- ❖ Alternate adaptability focus
  - CR difficult to adapt themselves; humans must do most of changing



# Cultural – Natural Res. Overlap

CR Type	Relation to Natural Resources
<i>Arch. Sites</i>	Human-made/modified items and constructions located in enviro.
<i>Buildings &amp; Structures</i>	Human-made constructions in enviro.
<i>Cultural Landscapes</i>	Bounded environment +/- human-made constructions
<i>Ethnographic Resources</i>	Human use of natural resources
<i>Museum Collections</i>	Indirect, museum location



Both Need:
Inventory
Vulnerability Assessment
Monitoring
Adaptation Options

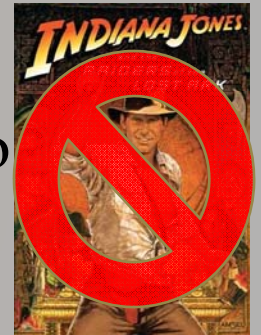




# Inventory

Sources of current info:

- ❖ NHPA, Section 110 responsibilities
- ❖ SHPO coordination
  - ❖ Note: issues of confidential site location info



Methods:

- ❖ Pedestrian survey
- ❖ Historic and ethnographic research





# Climate Change Impacts to CR



Impacts	Env. Forces	CR Affected	Rate
<i>Inundation</i>	Flooding Storm Surge Sea Level Rise	All All All	Event Event Trend
<i>Dessication</i>	Temp. Extremes Drought	AS, B/S, CL, E AS, B/S, CL, E	Event (trend?) Long event
<i>Deterioration</i>	Precip. Var. Temp. Var. Wind Var	AS, B/S, CL, E AS, B/S, CL, E AS, B/S, CL, E?	Trend/event Trend/event Event/trend
<i>Destruction</i>	Flooding Storm (rain/wind) Wildfire	All All All	Event Event Event
<i>Invasion</i>	Invasive species	AS, BS, CL, E, MC?	Trend
<i>Disruption</i>	Loss of species Loss of access	E E	Trend/event Event/trend





# Monitoring

- ❖ Need to track impact-specific characteristics
  - ❖ Ex. NPS Vanishing Treasures: crack monitors
  - ❖ Ex. USFS-NPS Ice Archaeology!: exposure of once-frozen items





# CR Adaptation Options

For vulnerable, threatened, or endangered resources:

1. Do nothing – assess need for/rate of monitoring
2. Remove / deflect stressor
3. Modify resource itself to better withstand stressor
4. Movement
  - a. Relocate some or all of resource
  - b. Allow movement to happen
5. Data recovery, then let location go
6. Record, then let location go
7. Interpret the change (climate change is heritage of future)

Also need:

- ❖ Decision framework (ex. National Register criteria?)
- ❖ Theme studies to support decisions (ex. context studies)
- ❖ Policy standards/guidance to support decisions





“Humans adapt not to their real environment but to their ideas about it, even if effective adaptation requires a reasonably close correspondence between reality and how it is perceived.”

B. Trigger, *A History of Archaeological Thought*, 1989



# Thank You!



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