Soosoy Himu Naanamiwiwyungwa:
Hopi Stewardship in Grand Canyon

Presented by Kristin Huisinga and Michael Yeatts

A program conducted by the Hopi Cultural Preservation Office under the guidance of the Cultural Resources Advisory Task Teams

History of Hopi Involvement in Grand Canyon resource management

1991 Glen Canyon Environmental Studies begins

Hopi begins formal involvement with management of GC resources

1992 National Historic Preservation Act mandates tribal feedback

Impacts to historic properties must be evaluated if any change in dam operations occurs

1995 Final Environmental Impact Statement issued; beginning of "transition period" that continues until Record of Decision is signed

Hopi Tribe collects and analyzes cultural resources in GC

1997 Record of Decision signed; "Transition Period" ends

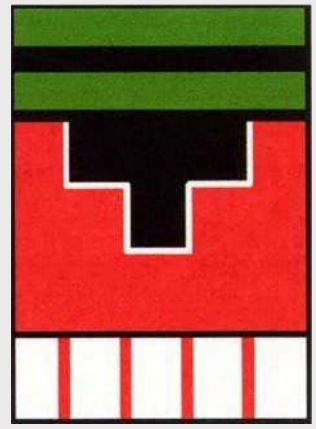
1997 First Adaptive Management Work Group (AMWG) meeting and beginning of Glen Canyon Dam Adap. Mgmt Program

1997 Hopi Ethnohistory project completed

2001 Hopi Ethnobotany project completed

2002-04 Hopi Long-term Monitoring Program development and implementation

12 years of Hopi participation



Hopi Ethnohistory Project

This work identified culturally significant resources including:

7 minerals

77 plants

54 animals & birds

235 archaeological sites

10+ TCPs (traditional cultural properties)

Other findings:

11 Hopi deities are associated with Grand Canyon

23+ clans traveled through Grand Canyon

Numerous Hopi place names & narratives associated with Grand Canyon

Identification of trade networks between Hopi and other tribes

Hopi Ethnobotany Project

128 plants identified as having cultural significance & Hopi names

Integration with GCMRC classification begins

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92 *Wu'ya niqw Wim'vasi* (religious)

72 *Nganghu* (medicinal)

52 *Nöösiwqa* (food)

48 *Ngaavi* (utilitarian)

} Most plants have multiple uses

****

20 *Pasíiqölö* (riparian zone)

85 *Hopíikive.ningwu* (Hopi-like zone)

26 *Sulaktutskwat Aw Natuwi'yta* (Desert zone)

} Zones overlap too

Recognition that the Grand Canyon provides a unique and regionally rare habitat for riparian plants and animals, one that should be protected in conjunction with its associated cultural traditions.

GCMRC Terrestrial Monitoring Program: Integrating Hopi Concerns

Research questions:

Does the program gather information on Hopi resources of concern?

Is the information relevant to Hopi advisors?

If no data are gathered, what recommendations can Hopi make to ensure that the information is relevant to cultural concerns?

Findings:

The Center collects data on most resources of Hopi concern.

As presented, the data are of limited use for tribal groups making tribal research and management perspectives difficult to incorporate.

A Hopi Long-Term Monitoring Program

Objective: To provide a Hopi perspective on the research, monitoring and management of Grand Canyon resources that is consistent through time and scientifically credible, while also offering a complementary viewpoint for all work conducted under the Glen Canyon Dam Adaptive Management Program.

Long-term tracking of:

Cultural---TCPs, archaeological sites, human remains, petroglyphs & pictographs

Biological--- plants, birds, mammals, insects, reptiles, fish, springs, side streams

Physical---minerals, sand, water

Terrestrial Resources of Hopi Significance

***Tutuvost*: Large Mammals**

Iisaw (coyote), *Tokotsi* (bobcat), *Leetayo* (grey fox & kit fox), *Toho* (mountain lion)

Pangwu (bighorn sheep), *Sowi'ngwa* (mule deer), *Hootsani* (raccoon)

***Ang Hiitu Poninitaqam*: Lizards, snakes, toads and frogs**

All are important but they are grouped by:

Lölöqam (non-poisonous snakes) and *Tsutsü* (poisonous snakes)

Manangya (lizards), *Paavaq* (frogs and toads)

***Tsirot*: Birds**

Yellow birds, Birds of prey (raptors), ducks, breeding birds, migratory birds

***Tooto*: Arthropods (insects and arachnids)**

Palatatsi (dragonfly), *Kóokyangw* (spider), *Poli* (butterfly)

***Tuusaqa*: Plants**

128+ plants are important but they are grouped by:

Indicator plants: *Qahavi* (willow), *Wipho* (cattail), *Paaqavi* (common reed)

Plant communities: *Pasungkuyta* (riparian), *wipho'qölö* and *paaqapqölö* (marshes)

50+ terrestrial species documented by GCMRC are important to Hopi

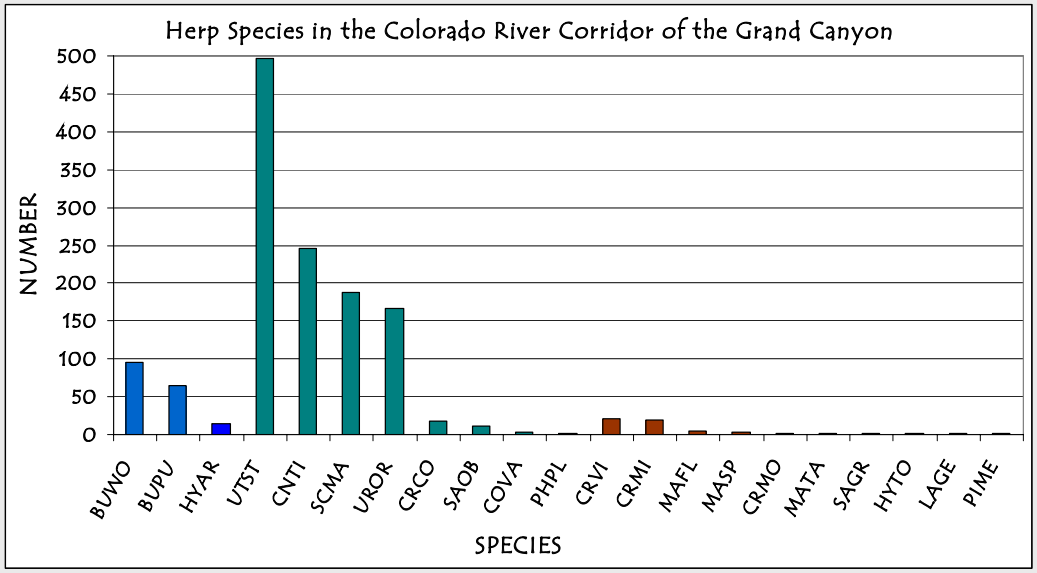
Implement the Long-Term Monitoring

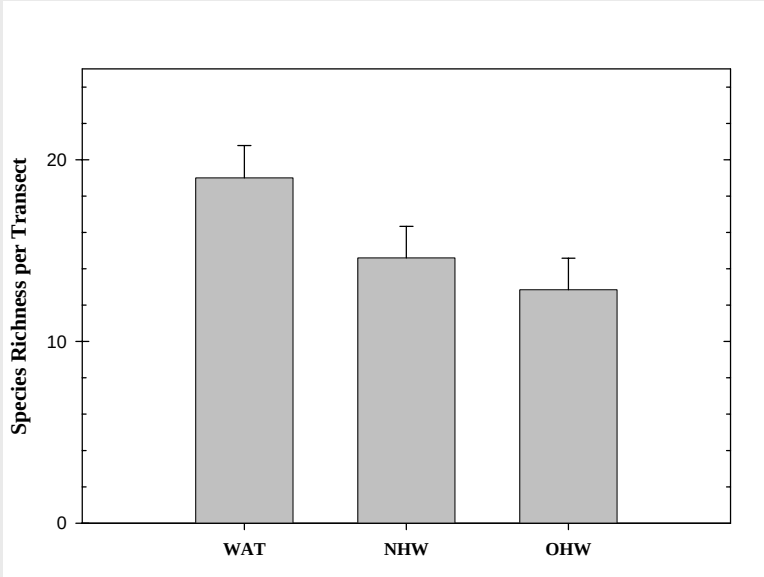
Finalize research and pilot fieldwork in 2003
Full implementation in 2004

Annual review of new data → Process & "translate" data → Present to Hopi user groups → Gather feedback & conduct monitoring trips → Annual Hopi report & presentations

Annual Data Review & "Translation"

Scientific information must be "translated" so that it is culturally-relevant to Hopi people. The information is processed in a manner that builds on what is known to be culturally important, so that Hopis can provide feedback based on existing knowledge and experience.

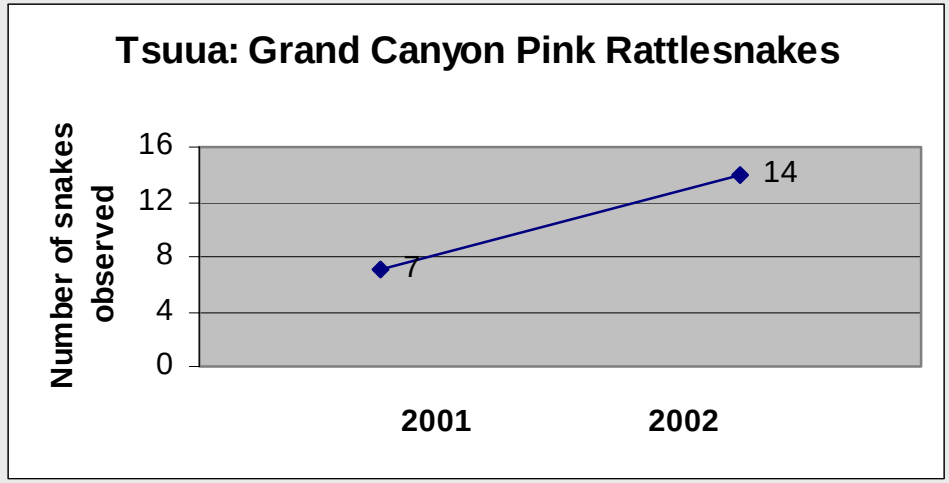




"Translate" Data for Hopi Advisors

Tsuua: Grand Canyon Pink Rattlesnake
Crotalus viridis abyssus

Of the 21 total in 2001-02:
5 found in *Pasungkuyta* (Shore)
10 found in *Paatsimoyti* (New High Water)
6 found in *Pövaöva* (Old High Water)



Data Presentations to Hopi advisors

Supplement new data with relevant information

Related ecological, management, policy information

Past studies

For example, Robert Reed thesis (ASU)---1995, in Little Colorado River

4 Grand Canyon pink rattlesnakes observed in February & March

Seen in upland mesquite/boulder habitat

BUT snakes seen from May-Sept. spent 27% of time within 5 meters of river so that floods have potential to be life threatening

Supplement data with river trip assessments

River trip participant assessments

Trip report results

Standardized pre- and post-trip survey results

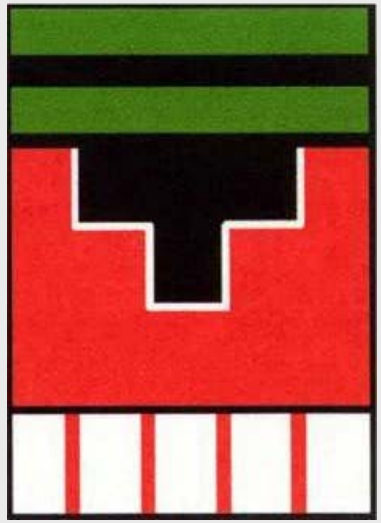
Focus group discussion results

Presentations to Hopi "user" groups

1. Cultural Resources Advisory Task Team (CRATT) & River trip participants
   - Guide all research, management, and policy in Tribe and provide firsthand expertise

2. Tribal managers & administrators
   - Integrate Grand Canyon efforts with expertise of other Hopi Departments & Tribal Council

3. Hopi public
   - Provide educational benefits to schools
   - Make work relevant to Hopi public



Gather feedback from Hopi "user" groups

Conduct formal surveys → Analyze feedback → Make research & management recommendations

The knowledge and practice of Hopi resource management is imbedded in social values, cultural practices, and belief systems. Tracking these social values about resource health provides a basis and rationale for Hopi management recommendations within the AMP.

Fall 2003 Hopi pilot river trip

Field test pre- and post-trip survey instruments
Finalize sites to be monitored long-term
Photographic monitoring of sites
Gather new cultural information
Further document Hopi traditional knowledge
Discuss integration and management

Monitoring Hopi sites with photography

Because some of the Hopi advisory (CRATT) team and others do not visit the sites in person, photographs can provide a way for advisors to visually assess the impacts at significant sites.

A significant contribution of the Hopi Tribe is to monitor significant Hopi sites that are not monitored by other groups such as the Salt Mines.

Initial locations anticipated for monitoring with photography are:

- South Canyon
- Vasey's Paradise
- Nalöpva
- Salt Mines
- Deer Creek

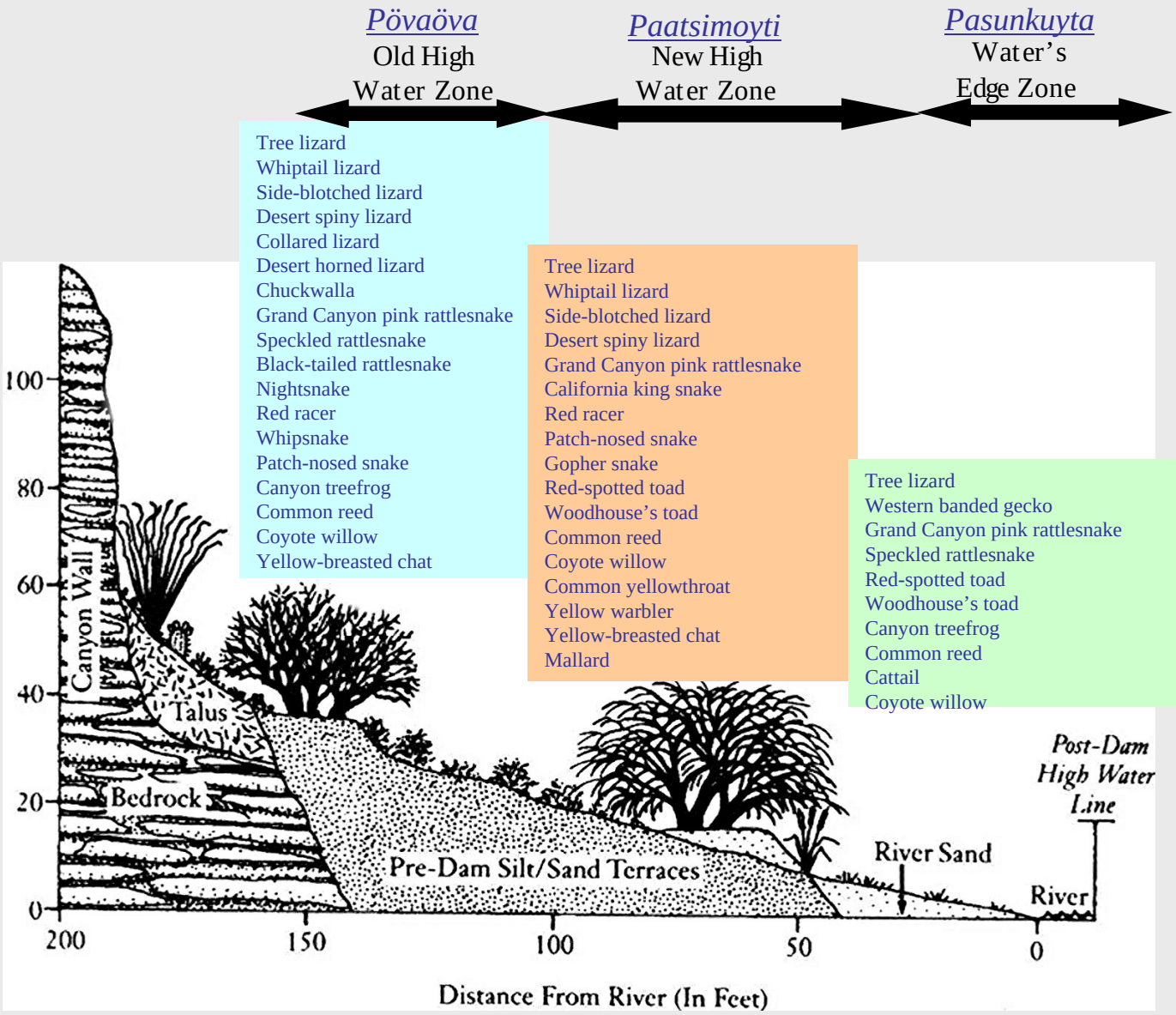
Education & Outreach:
Data Presentations

Formal surveys provide a means to track Hopi assessments of natural and cultural resource health in Grand Canyon, but…

Valid responses depend on the ability of the Hopi Cultural Preservation Office to present data in a manner that is relevant to Hopi concerns, and to broader economic, political, and natural resource trends.

How do we ensure that Hopi "user" groups are well-informed?

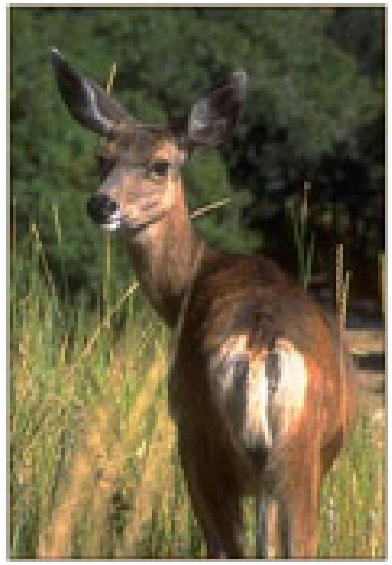
Education and Outreach: Diagrams



Education and Outreach: Resource ID

***Tutuvost:* Large Mammals of Hopi Significance in Grand Canyon**

Pangwu
Bighorn sheep *Ovis canadensis*



sowi'ngwa
Mule deer *Odocoileus hemionus*

koya'leetayo
Kit fox *Vulpes macrotis*

Ongoing Hopi Work

• Continue to develop methods for integrating Hopi traditional knowledge into Western scientific programs

•Continue collecting information on Hopi ethnozoology, through the investigation of historical literature and interviews with Hopi advisors, including naming classification, management, and cultural significance of:

- •Birds, Insects, Mammals, Reptiles and amphibians

• Further document Hopi traditional management techniques

•Explore levels at which Hopi education and outreach will be most effective

• Explore collaboration with other regional agencies to better incorporate similar data

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