



Visitor Use and Impact Monitoring Program

Strengthening the Link between Science and Management

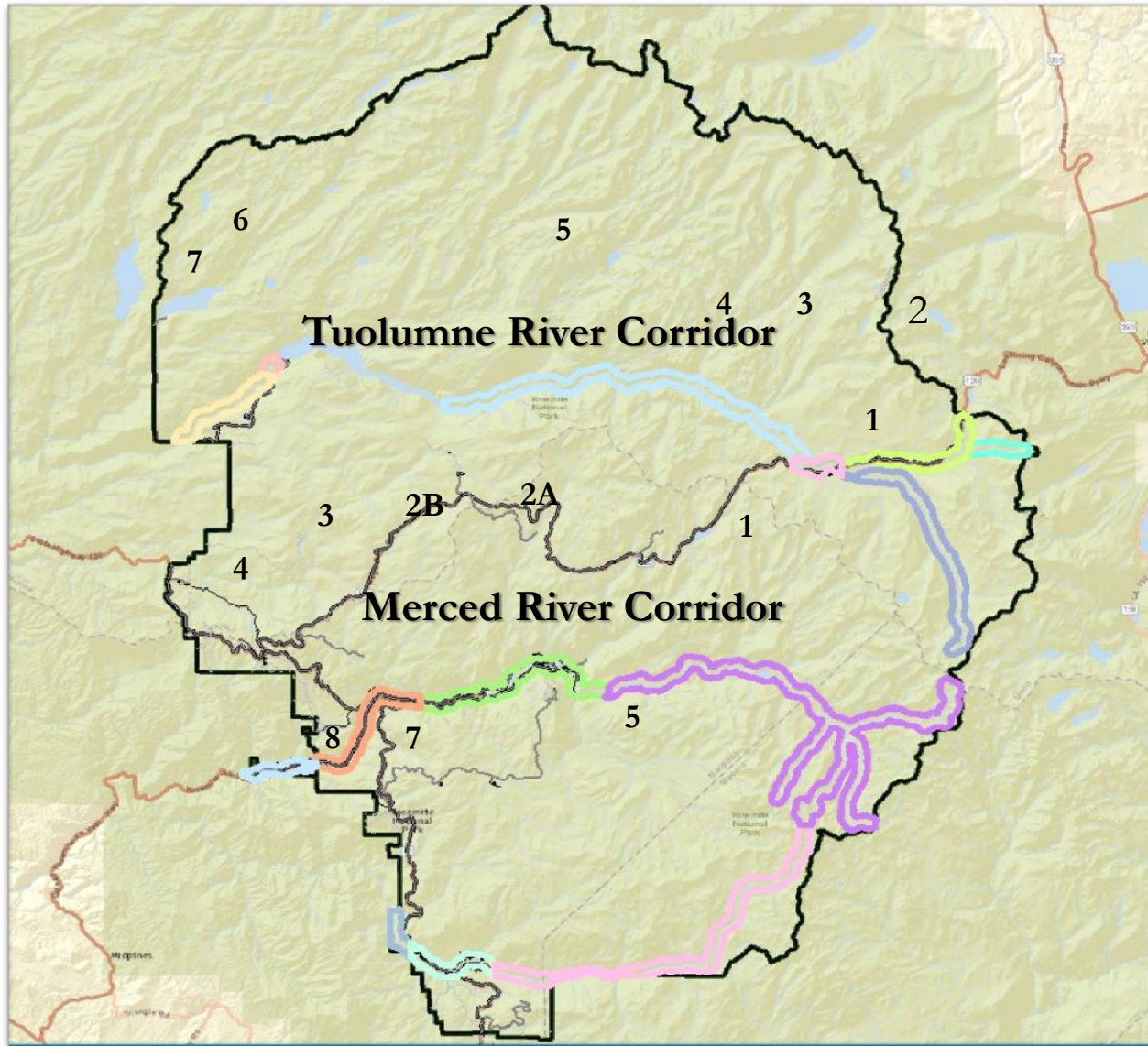
Heather Huppe
Wilderness Science Day
November 2, 2016

EXPERIENCE YOUR AMERICA

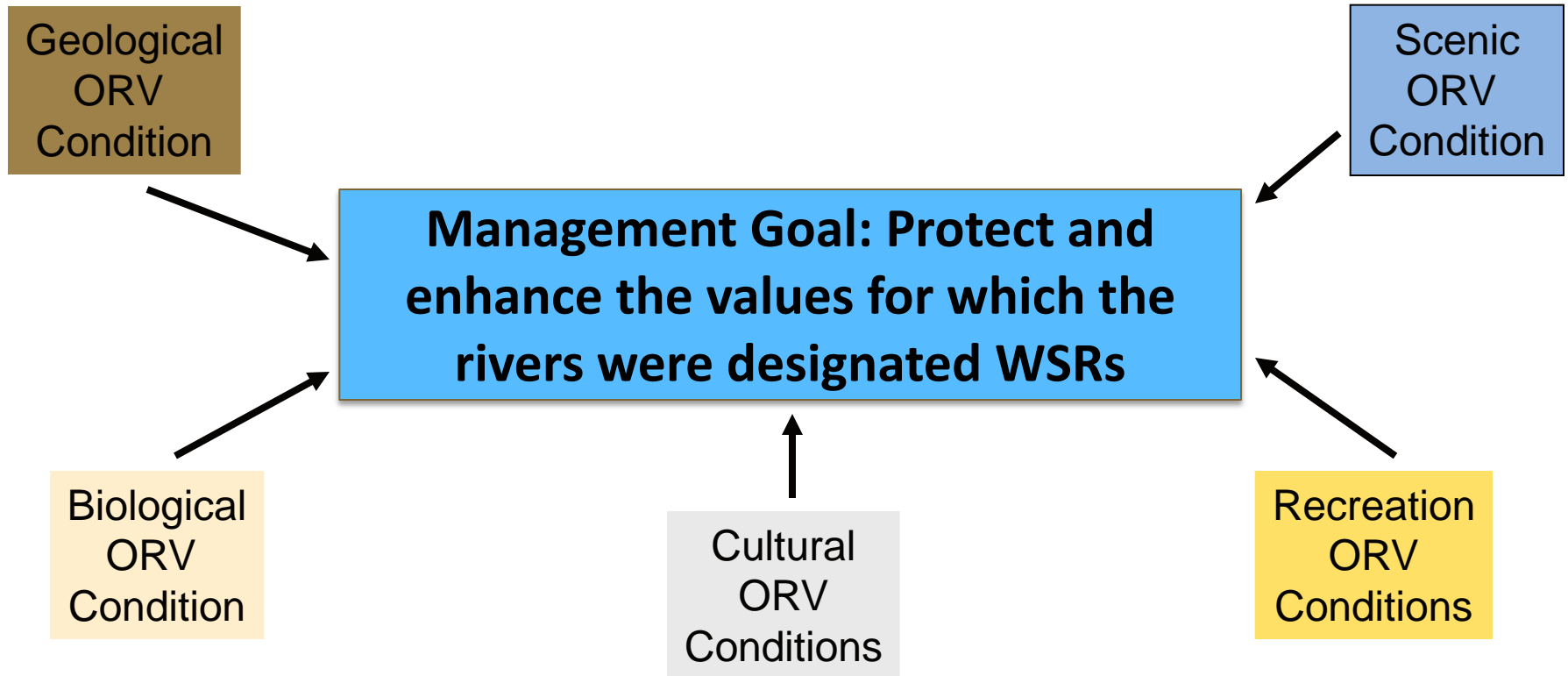
What is the Visitor Use and Impact Monitoring Program (VUIMP)?

- Monitors condition of ORVs for the MRP and TRP
 - WQ, biological, cultural, scenic, recreational
- Sector expert-led monitoring
 - Integrates the expertise and informed uncertainty
- Supports Adaptive Management called for in MRP and TRP
 - Learning while managing

What does it monitor?



How to monitor a river....

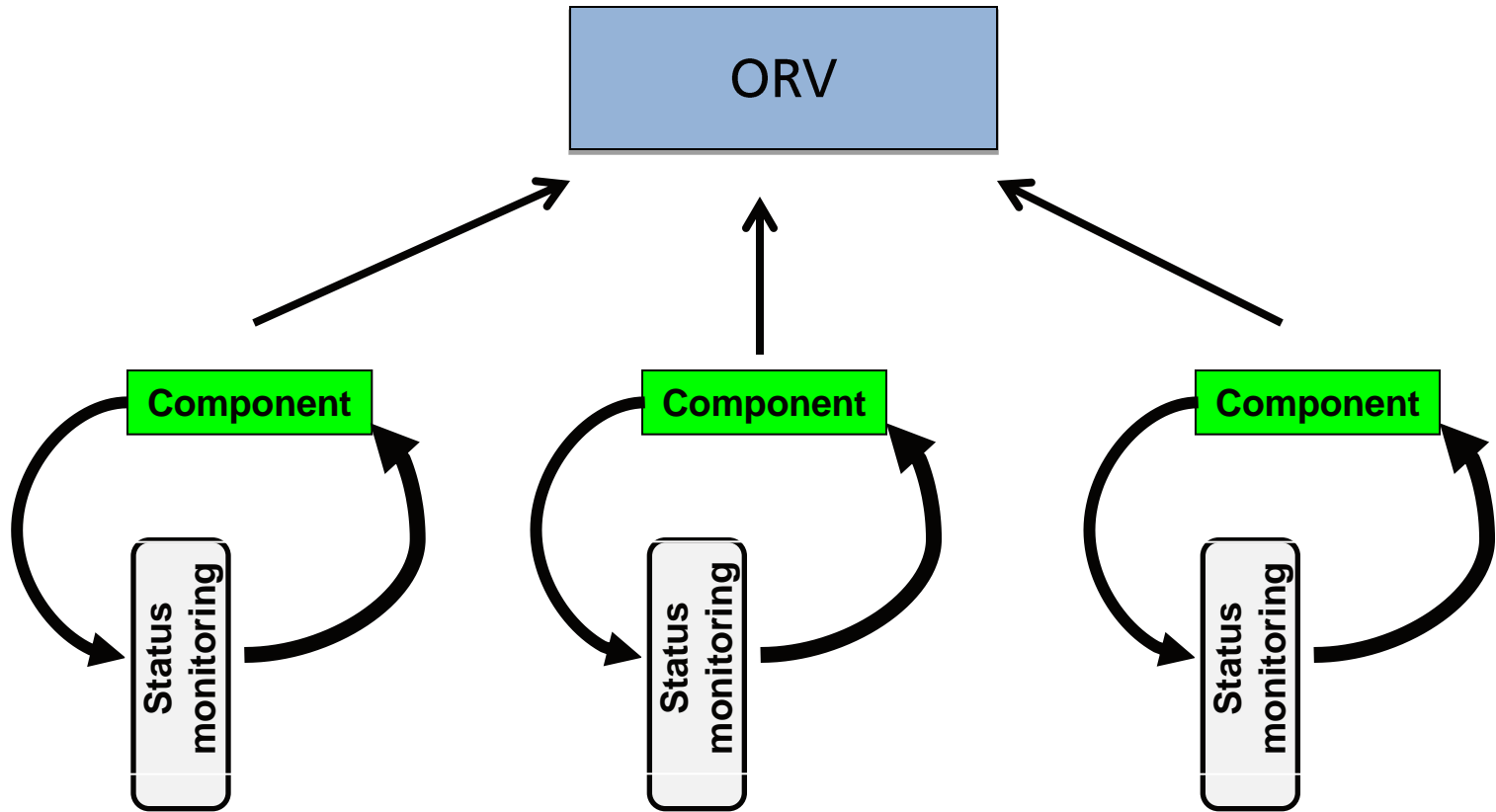


- **If the condition of the ORVs are maintained or improved then the river is protected or enhanced**

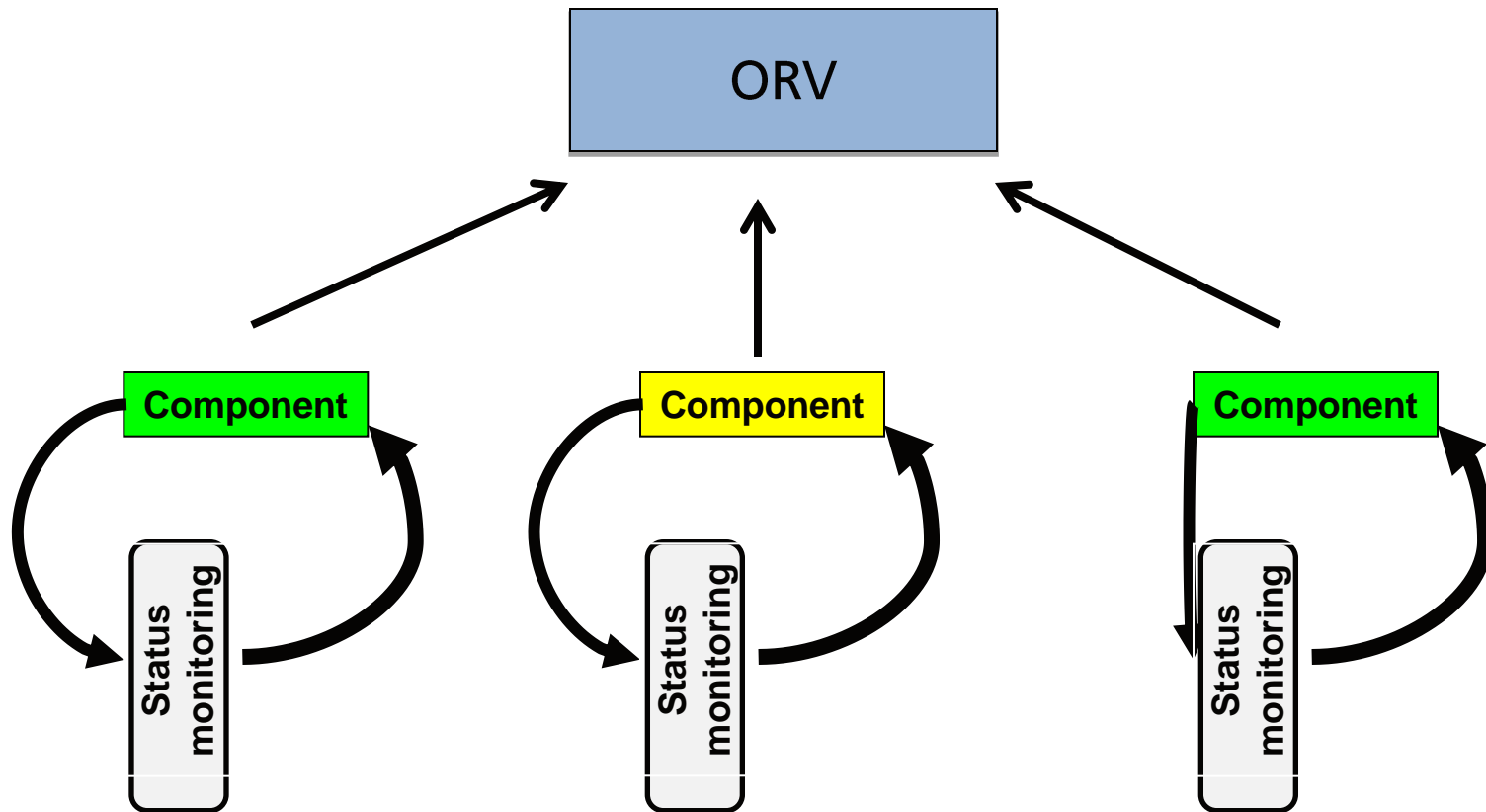
What does it monitor?

	Merced	Tuolumne
WSR in YNP	81 miles	55 miles
Segments	8 (W, S, R)	7 (W, S)
Common Values	Free flow and Water Quality	Free Flow and Water Quality
Special Values	20	10
No. ORV Monitored	15 (w/WQ)	6 (w/WQ)
No. of Protocols	13	8

Identify indicators and measure components:

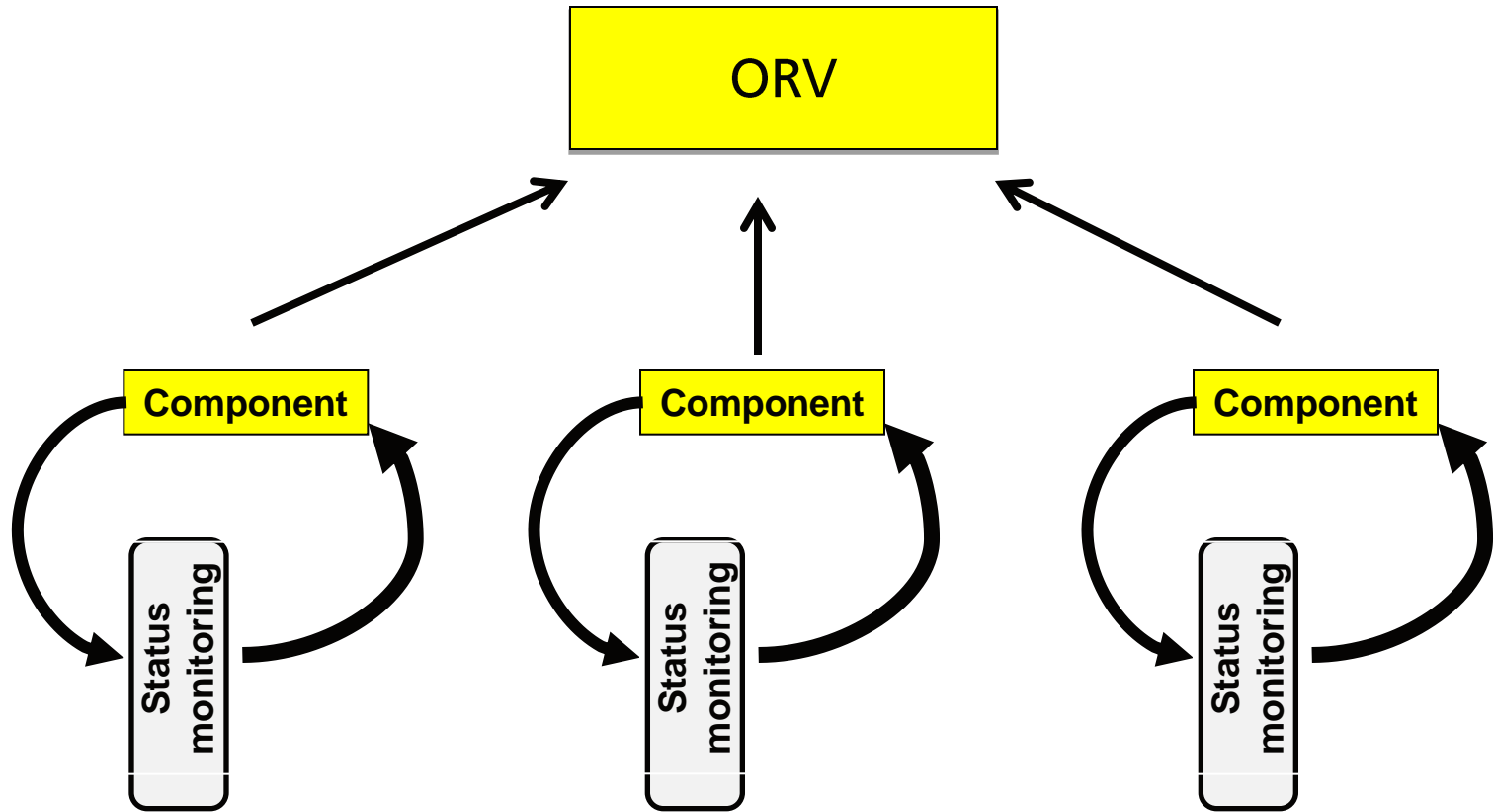


Identify indicators and measure:

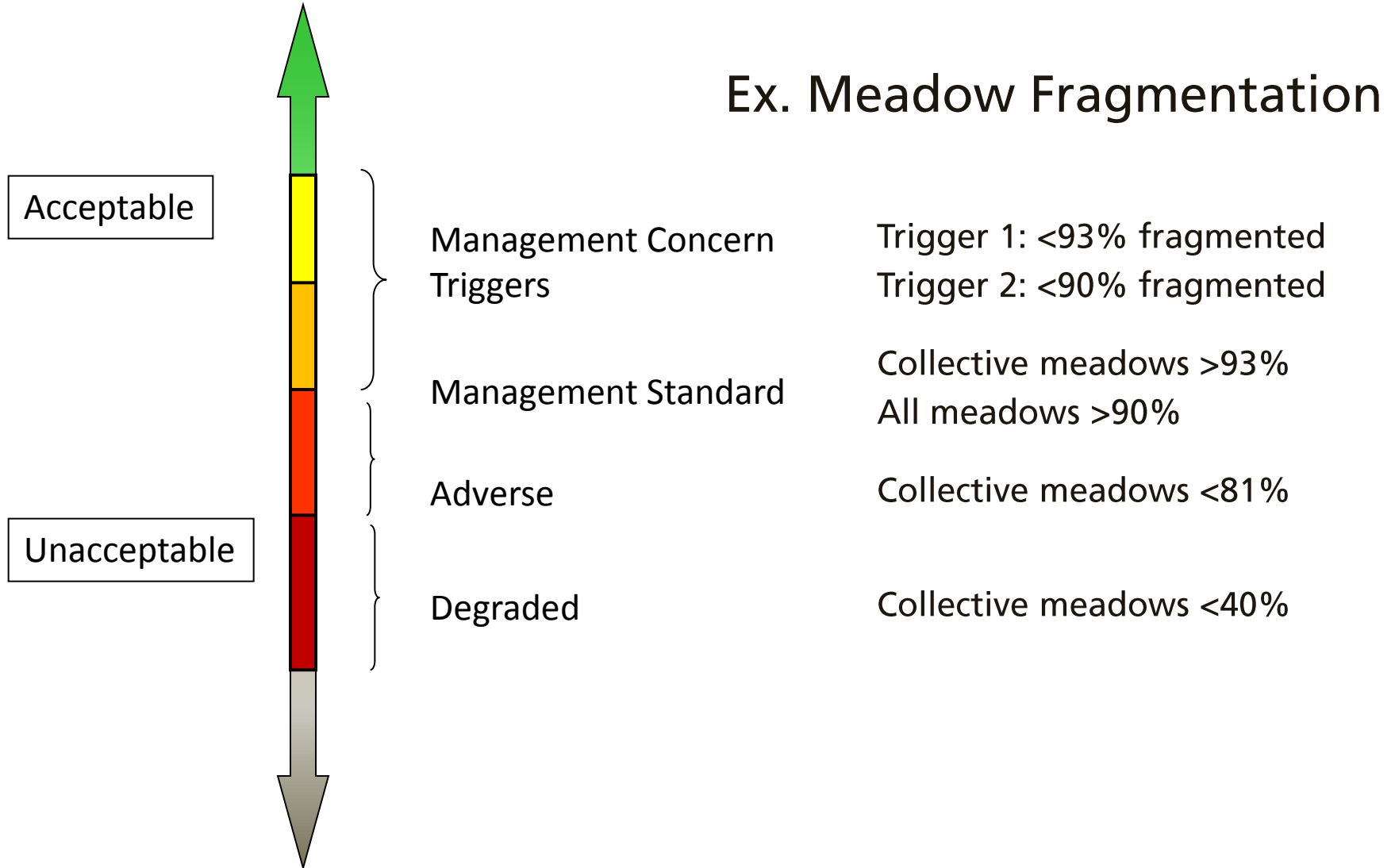


Signals a concern.....

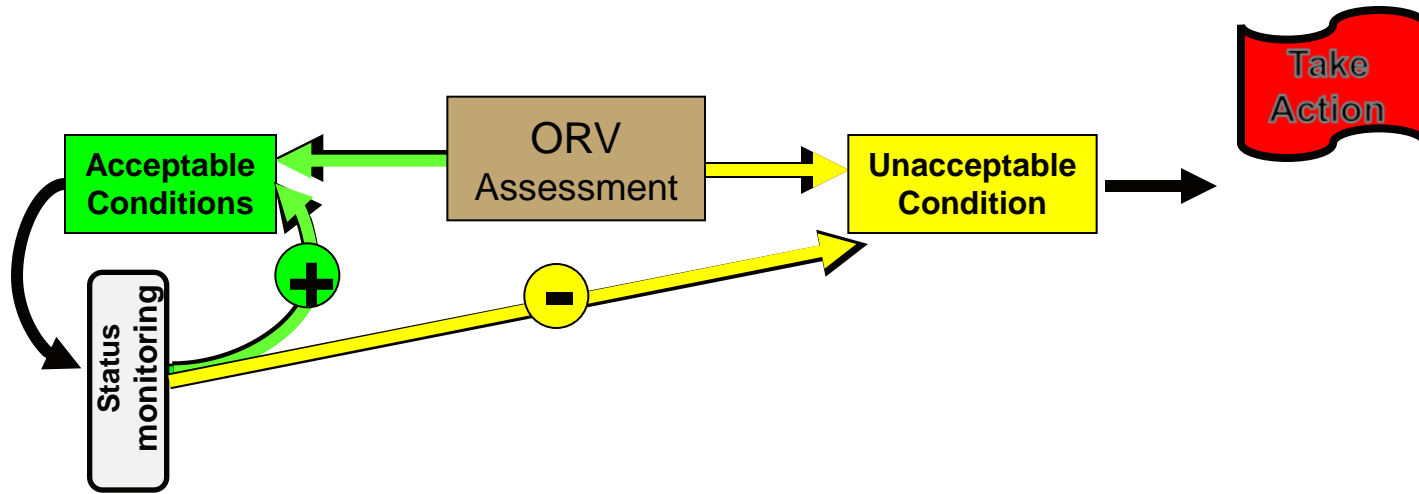
What we want to avoid:



How triggers can help prevent damage



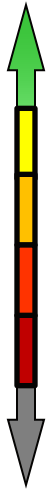
Action Required:



ORV Conditions in the TRP:

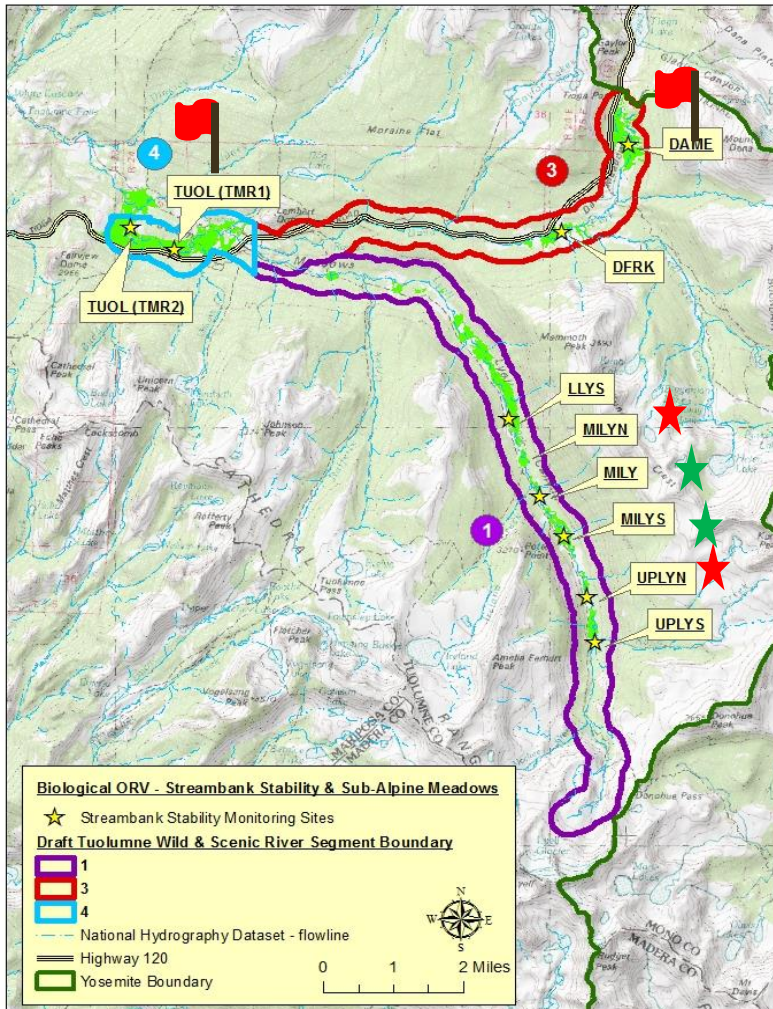
ORV Quality	Specific Value	Indicator & Alias	TRP Findings	TRP Action
Biological	Subalpine and riparian complex	Indicator 1 Meadow Fragmentation (Informal Trails)	Yellow	Tuolumne Meadow Restoration actions, monitor other segments
		Indicator 2 Streambank Stability (MIM)	Yellow	
		Indicator 3 Meadow Bare Soils	Grey	
Cultural	Archeological	Aggregate condition of Archeological Sites	Green	Monitor for 5-yr cycle
	Historic	Condition of Parson's Lodge	Green	5-yr review
Scenic	Scenic	Views from Dana and Tuolumne Meadows	Green	As needed
Recreational	Wilderness Experience along the River	Wilderness Encounters	Green	Developing new protocol

Results of Monitoring 2014-2015:



ORV Quality	Specific Value	Indicator & Alias	TRP Findings	2014	2015	Needs FY16
Biological	Subalpine and riparian complex	Indicator 1 Meadow Fragmentation (Informal Trails)	Yellow	Yellow	Orange	Continue regular monitoring
		Indicator 2 Streambank Stability (MIM)	Yellow	Grey	Orange	TM stream diagnostic, willows, Dana
		Indicator 3 Meadow Bare Soils	Grey	Orange	Orange	Continue regular monitoring
Cultural	Archeological	Aggregate condition of Archeological Sites	Green	Green	Green	Continue regular monitoring
	Historic	Condition of Parson's Lodge	Green	Grey	Grey	5-year review
Scenic	Scenic	Views from Dana and Tuolumne Meadows	Green	Grey	Green	As needed-see recommendation
Recreational	Wilderness Experience along the River	Wilderness Encounters	Green	Grey	Green	Will apply new protocol elsewhere

Biological ORV: Management Concerns

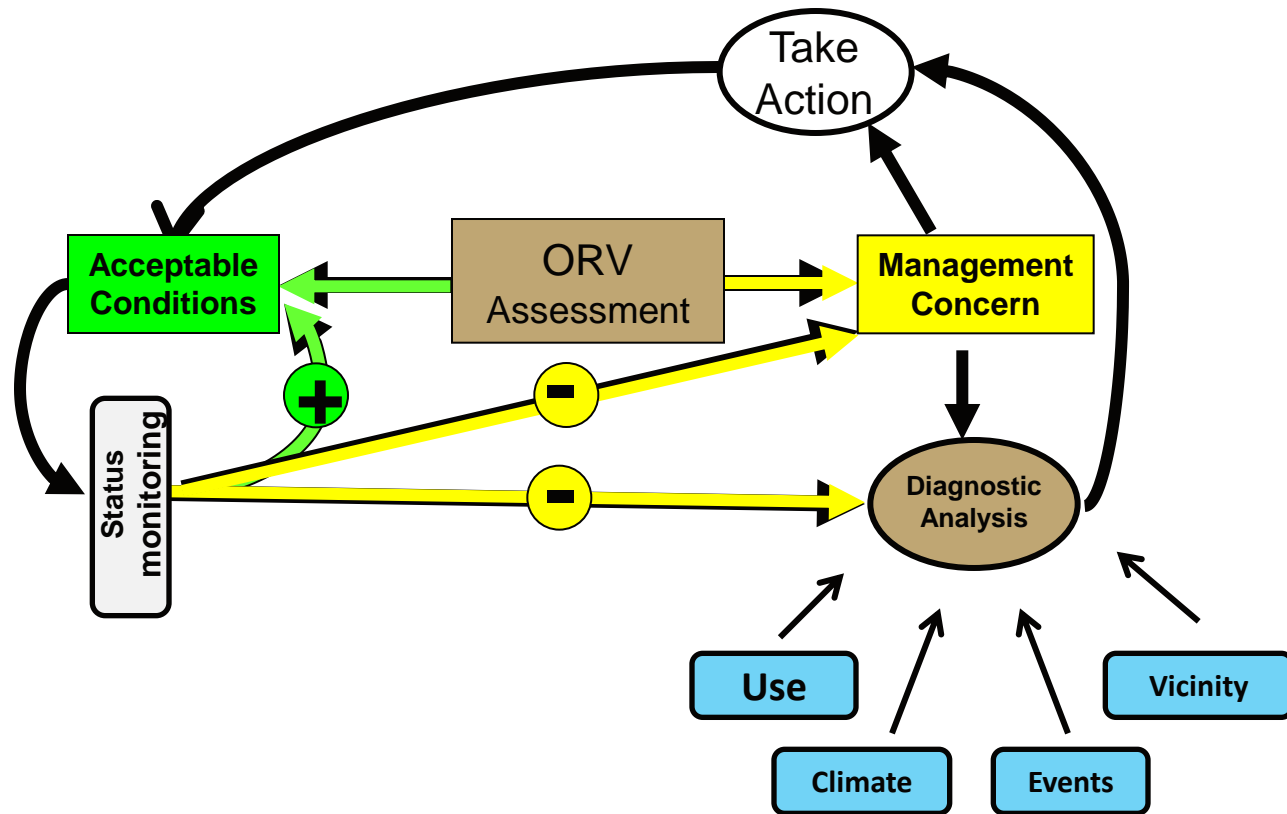


Tuolumne: Some indicators same or worse

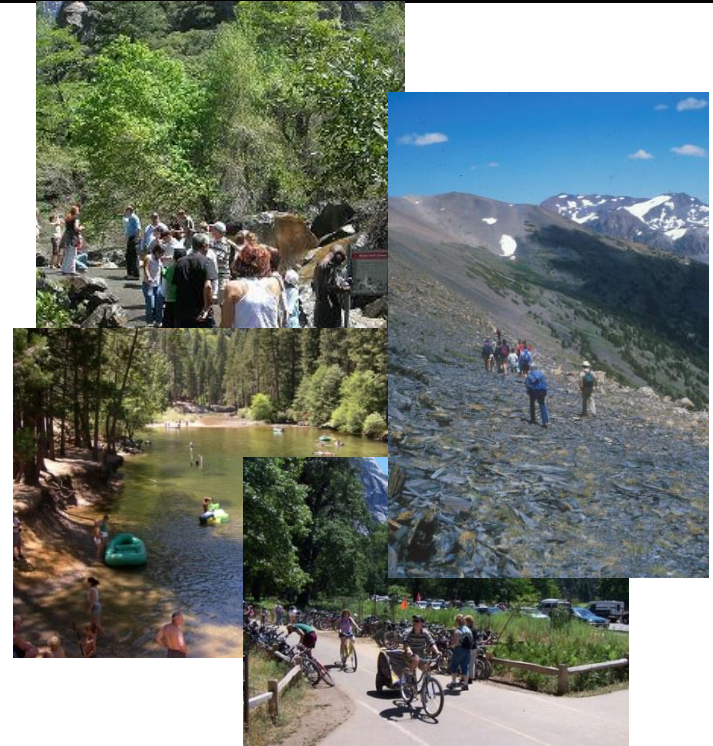
Dana: New indicator low, others OK

Lyell: Some indicators low but steady, some improving

A little more complicated:



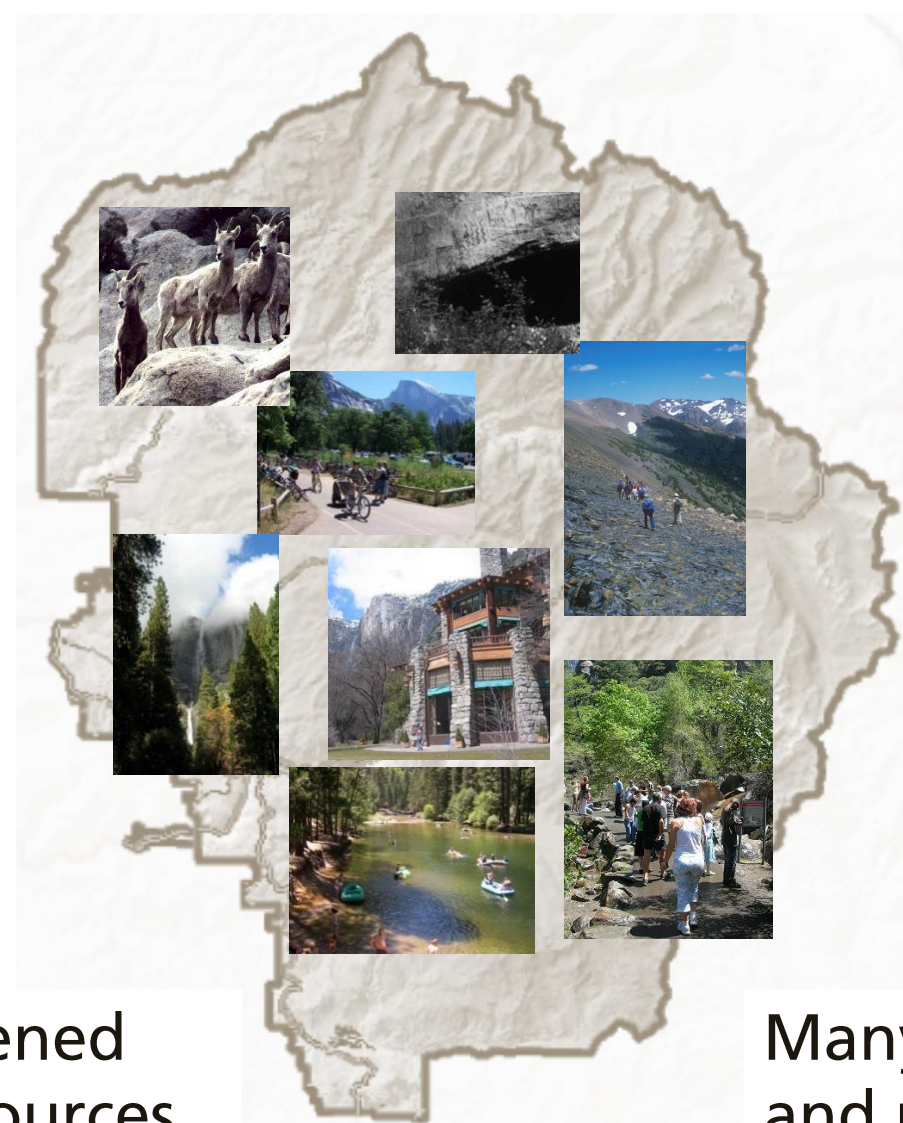
Why is Adaptive Management important?



- Diverse resources
 - Threatened resources
 - Unique resources

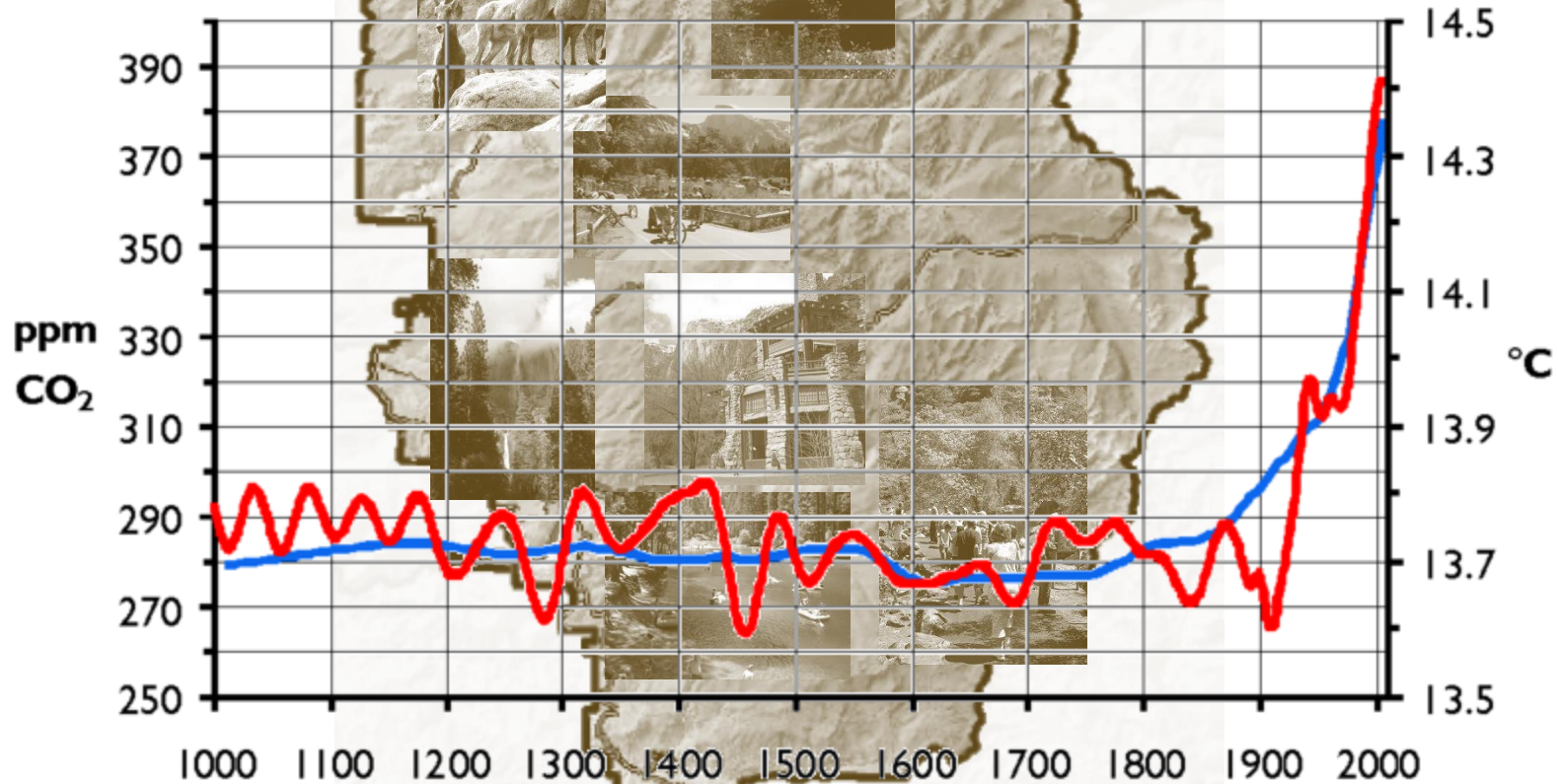
- Increasing numbers
 - Increasing diversity
 - New types of uses

Management Goal: Protected Resources and Happy Visitors

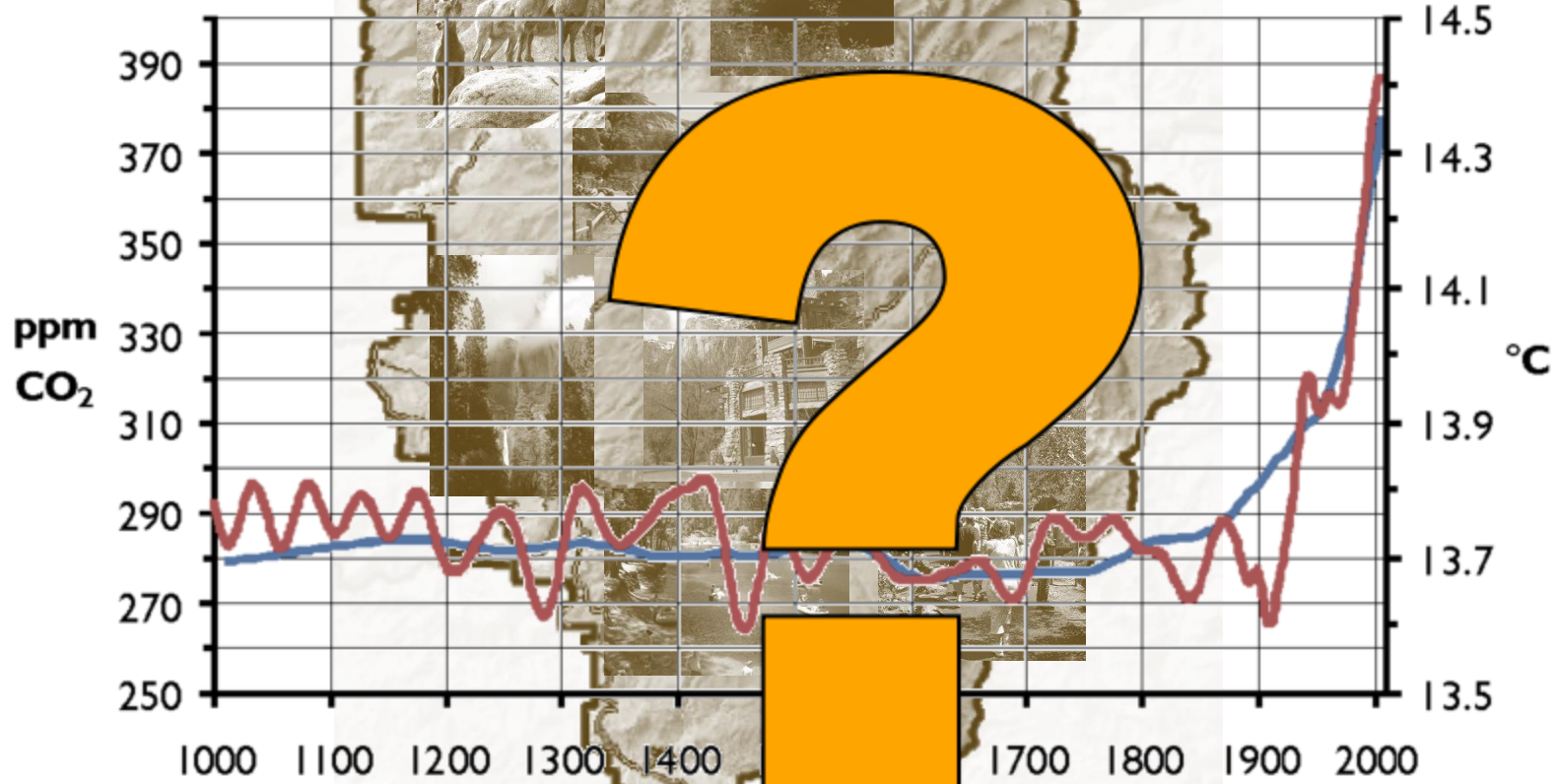


Diverse, threatened and unique resources

Many, diverse visitors and uses

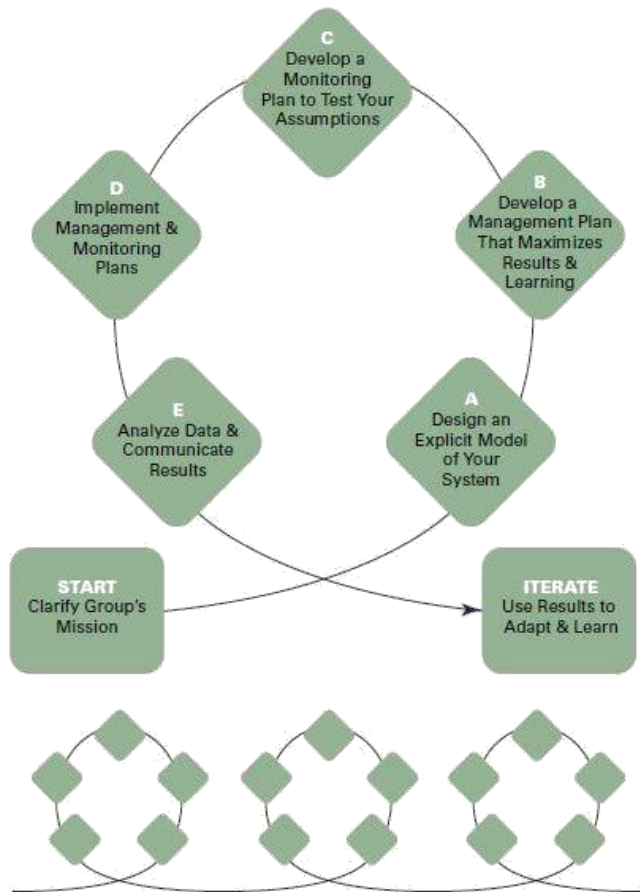


- Cannot rely on past to predict future



Uncertainty is increasing

Adaptive Management Monitoring Lessons



1. We can act while learning
2. Context Matters
 - ❖ Key to diagnosing cause and identifying solutions
3. Monitoring improves with experience
 - ❖ As trends develop, we improve triggers and responses
4. Makes us more strategic
 - ❖ Early actions and prevention

Linking Science and Management

Given....

- Complexity
- Change
- Uncertainty



Future resource management will depend on Science-based Adaptive Management

Thank you!



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