

Koren Nydick, PhD Sequoia & Kings Canyon National Parks



A Southern Sierra Change Adaptation Workshop February 20-22, 2013

## What are we to do?

What do we value? Where do we value it most?

How to prioritize /decide (What to do? Where? When?)

SCIENCE + VALUES

What are current objectives for these things?

What strategies & tools accomplish revised objectives?

How vulnerable are these things? Where, when & why?

Do current objectives make sense? What are revised objectives?

## **Climate-Smart Conservation Cycle**

Revisit planning as needed

 Define planning purpose and objectives

7. Track action effectiveness and ecological responses

Adjust actions as needed

6. Implement priority adaptation actions

2. Assess climate impacts and vulnerabilities

Re-assess vulnerability as needed

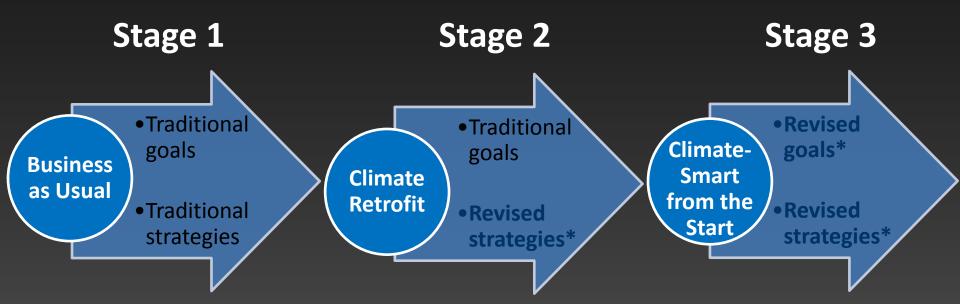
3. Re-evaluate conservation goals and objectives

5. Evaluate and prioritize adaptation actions

4. Identify possible adaptation options



# **Climate Retrofits and Beyond**





<sup>\*</sup> Review and revised as needed, based on climate change assessments.

## COOPERATE REGIONALLY

What do we value? Where do we value it most?

How to prioritize /decide (What to do? Where? When?)

What strategies & tools accomplish the revised objectives?

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& LEARN TOGETHER



#### **Example: Revised objectives for high-elevation forests**

- 1. Self-sustaining high elevation white pine species (foxtail pine, whitebark pine, western white pine) exist within the ecoregion.
- 2. Transforming high-elevation forests retain existing soil and support species native to the ecoregion.

How to prioritize regionally where to manage for persistence, manage for change, or use restraint and observe?

# Conservation from a regional perspective:

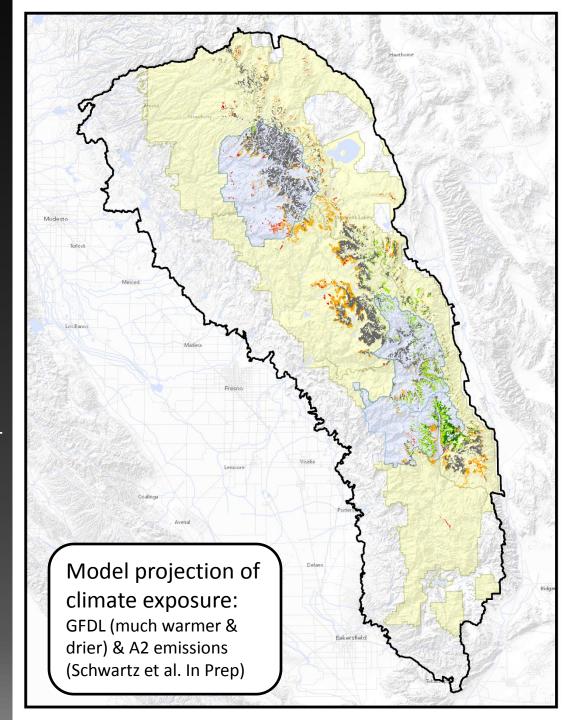
### A subalpine example

<u>Greens</u> = Potential Refugia Low exposure to climate stress in 2070-2099

Red/orange = Early Exposure
High climate exposure early (2010-2039)

Grey = moderate/high exposure to climate stress in 2070-2099.

Land Ownership: Light Yellow = USFS Light Blue = NPS White = other



## **COOPERATE REGIONALLY**

Structured Decision Making

What do we value? Where do we value it most?

Climate Change Scenario Planning

Commu nicating Climate Change How to prioritize /decide (What to do? Where? When?)

What strategies & tools accomplish the new objectives?

SCIENCE + VALUES What are current objectives for these things?

How vulnerable are these things? Where, when & why?

Data & Info Sharing Technology

Monitor
-ing
Change

Climate Change Adaptation Toolbox (4 R's) Do current objectives make sense? What are new objectives?

& LEARN TOGETHER

Climate Change Vulnerability Assessment DISCLAIMER: The terms and definitions used in this template are provided for the purpose of facilitating dialog at a workshop about shared conservation values in the southern Sierra Nevada. The terms and definitions presented do not represent the official position of any agency, organization, or individual. The intent is simply to create a common vocabulary for the conservation valuing exercise. This "Change Adaptation Planning Template" (CAPT) lays out a process framework for workshop participants.

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	Change Adaptation Planning Template (CAPT)	
rganization	Mission Statement	Pgs. 47-48 in workbook
Parent	The mission of	Pgs. 47-46 III WUIKDUK

The mission of ....

WHAT DO WE REALLY CARE ABOUT (VALUE)?				WHAT KNOWLEIGE IS NEEDED/AVAILABLE TO PLAN FOR AN UNCERTAIN FUTURE?						
GOALS	Fundamentals	Defining Features	Critical Attributes	Current Objectives	Relative Priority (total score=100)	Stressors (Vulnerabilities)	Retrofitted Goals & Objectives	Thematic Strategies	Management Alternatives/Tools	Plan Developm Inputs
Ecological Goals:	Ecosystems:					Use a separate	TBD	Use the Strategies		TBD
	Composition and					worksheet to list each	I BB	Worksheet to pick		100
	Structure					critical attributes'		strategies relevant to		
						vulnerability to		each critical		
						agents of change		attribute's		
								objective(s)	-	
					i i					
					1	Stressors Pick List:		Change Adaptation		
						SU ESSUIS FICK LISE.		Strategies Pick List:		
						Air Pollution; Altered		STATE STATE OF THE		
						Fire Regime;		Do nothing		
						Climate change;				
						Loss of snowpack		Manage for		
						Sustained drought;		Persistence:		
					1	Flood events;		- Resist change	-	
						Invasive Species;		- Build resilience		
						Invasive Animals;		A275 A245		
				-		Pathogens;		Manage for Change:		
						Blister rust:		- Facilitate	P	
						Other Disease;		Transformation		
						Habitat Loss;				
						Developments;		Delay Deciding:		
		Soils	Productivity			Contaminants: Other (name)		- Monitor (watch & then decide)		
		Geomorphology	Landform/topography			Otter (name)		- Research (to get		
			Geology	]				better information)	}	
	Ecosystem		Temperature		N/A			better milarmation;		
	Functionality		Precipitation	<u> </u>	N/A					
	(Maintenance	Weather & Climate	Snowpack		N/A					
	Processes)		Drought		N/A					
	1		Storm Events		N/A				Fire Mgt TOOLS	
									Pre-staging	
		Fire							Fight fires Mechanical thinning	
									Prescribed fire	
	1		Physical, chemical, and						Information/education	
			biotic processes						Manage wildfire	
		Biogeochemical	Nitrogen cycle						The second of th	
			Carbon cycle							
		Air	Quality	Meets regulatory standards						
		\$4000	Visibility	2						
		Underland Curt	Timing							
		Hydrologic Cycle	Quantity							
		Geomorphological	Quality Erosion &mass wasting	Meets regulatory standards						
		Processes	Fluvial							
		Frocesses	i i savidi							

			1							
	Human Dimension			present generations						
	Goals:		Experiential	future generations						
					Minimize alterations of the					· · · · · · · · · · · · · · · · · · ·
					community of life (untrammelled)					
					Maximize natural qualities					1
					Minimize developments for any					
					purpose (Undeveloped)					
			200000000000000000000000000000000000000		Provide opportunities for solitude &					
		Opportunity	Recreational		primitive experience					
		Opportunity			Allow commercially supported					
					recreation to the "extent necessary"					
		,		hunting & fishing	· ·		i i			
				camping and hiking						
				snow play						
			Educational							
			Educational							
					į.	į į	_	1		Ţ
				race and gender						
				experience						
			Divorcity	tradition						
			Diversity	perspective						
				tribal						
		Culture		prehistoric						
			Cultural Legacy	historic						
			TO THE PARTY OF TH	ethnic						
						4				-
				skills						
				education						
				health and safety			j			
			People	*						
										i i
				public services		j				
				employment opp.						
				business opp.						
			Economy	housing						
				personal income						7
		- 1		december 200 Control Control						
		Community Capacity								
				democratic principles						
				environmental justice						
			Bolitics / Communication							
			Politics/ Government							
				Transportation						
				Water & Sewer						
			planet and traffic atom	Communications						
			Physical Infrastructure	Energy Systems						
				326 1						
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										7
- 19										

# How to prioritize /decide (What to do? Where? Where

Where? When?)

What strategies & tools accomplish the new objectives?

**VALUES** 

things?

How vulnerable are these things? Where, when & why?

Do current objectives make sense? What are new objectives?

& LEARN TOGETHER

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## **Workshop Organization**

Session & Focal Question	Format	Tables						
TODAY								
1 – INTRODUCTION: What do we know?	Plenary: presentations	N/A						
2 – SHARED CONSERVATION VALUES: What do we really care about?	Plenary: presentations, exercise, discussion	Values grp (#)						
Evening: POSTERS & COLLABORATION STATIONS								
TOMMORROW								
3 – VULNERABILITY: How can we determine the vulnerabilities of shared conservation values?	Plenary: presentations, mini-exercise	Critical Attribute grp						
4 – STRATEGIES, CONSTRAINTS & TOOLS: What can we really <u>do</u> to prepare for rapid change and an uncertain future?	Plenary: presentations ThenBreak-Out grp exercise	Critical Attribute grp						
FRIDAY								
4 - REPORT-OUT	Plenary							
5 – CONCLUSIONS & NEXT STEPS: What's next?	Plenary: mini-exercise, presentations, discussion	Values grp (#)						