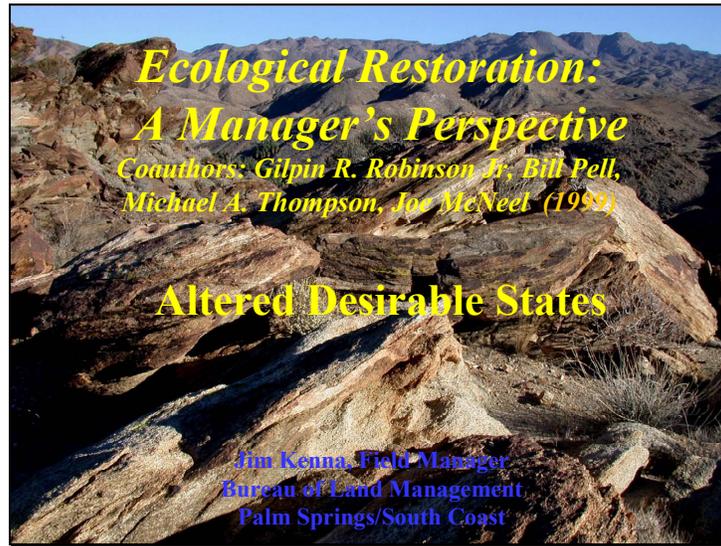


Slide 1



Altered States -- New Age Ecosystem Management

Ways to think about Restoration

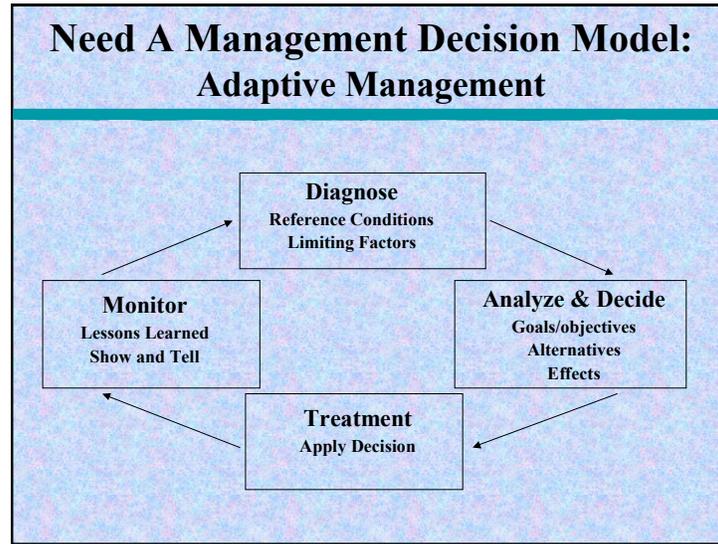


1983

- ▶ **Methods**
 - ▶ Review a large number of case studies
 - ▶ Utilize four scenarios
 - ▶ Break treatments into three types
 - ▶ Compile underlying literature
 - ▶ Feature 8 case studies
- ▶ **Restoration v. reclamation or rehabilitation**
- ▶ **Holistic v. component-based**
- ▶ **Problem Solving & Priority Setting** (at times very complex)



1995



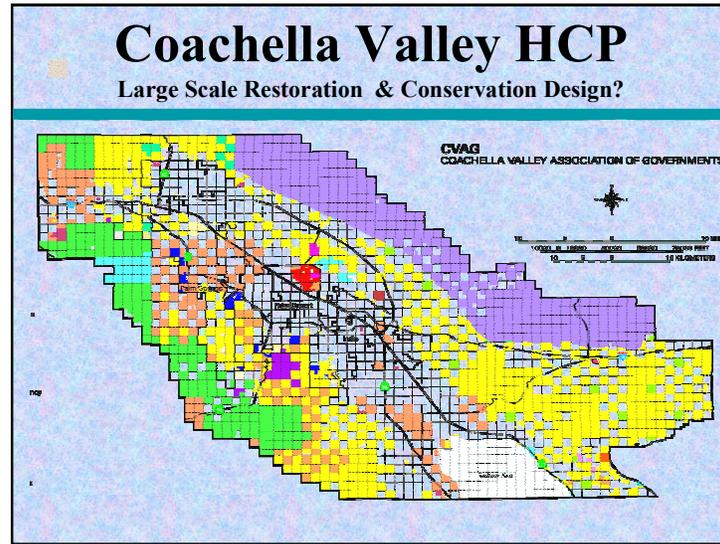
Types of Treatment Options

By Dominant Feature



Structural	Land Use	Biological
		
		

Slide 5



In the Coachella Valley, it is almost an unavoidable necessity to get more seamless in how we deliver services if we are to meet our public service goals.

Just look at the land pattern.

If you think of yourself as a public customer of our agencies, you can appreciate the difficulty of keeping straight which agency administers which land and what is different about each agency. The reality is the public wants some things done - they are much less concerned about who does them.

Most of us in the valley agreed we can make things better than they are now if we work together in ways that make sense.

Four Scenarios: Symptoms of Decline



- ▶ **Terrestrial Systems**
 - ▶ Changes in fire regime or other processes
 - ▶ Changes in species composition (invasive?)
 - ▶ Species at risk
 - ▶ Fragmentation, linkages
- ▶ **Drastically Disturbed Lands**
 - ▶ Abandoned Mines, Agricultural Land & Utilities
 - ▶ Industrial & urban sites
 - ▶ Intensely disturbed land
 - ▶ Natural catastrophes
 - ▶ Polluted sites/Waste sites
- ▶ **Riparian Systems**
 - ▶ Ability to absorb flood events
 - ▶ Altered streambanks
 - ▶ Channel morphology problems
 - ▶ Water Quality: Temperature, nutrient, sediment, bacteria
 - ▶ Accelerated erosion and degradation
 - ▶ Aquatic species decline
- ▶ **Wetland Systems**
 - ▶ Regional availability
 - ▶ Water quality
 - ▶ Changes in species composition (exotics)
 - ▶ Altered hydrogeomorphic processes
 - ▶ Accelerated deposition or erosion

Four Scenarios we addressed

What was the protagonist in our story trying to address.

If you notice most of these relate most directly to the function of the system

The Seven Common Characteristics in Successful Projects

- ▶ **Clear Objectives**
- ▶ **Landscape context: Conditions & Trends**
- ▶ **Emphasize degree and/or direction of change**
- ▶ **Blend physical, biological, social & economic**
- ▶ **Know constraints: physical, fiscal**
- ▶ **Interdisciplinary input/review**
- ▶ **Attention to implementation detail**
- ▶ **Monitoring**



The projects that appear to be successful generally seemed to have common characteristics
Clear about what they were trying to do

2. The project was designed with the broader landscape in mind, with some reference as to what healthy is.

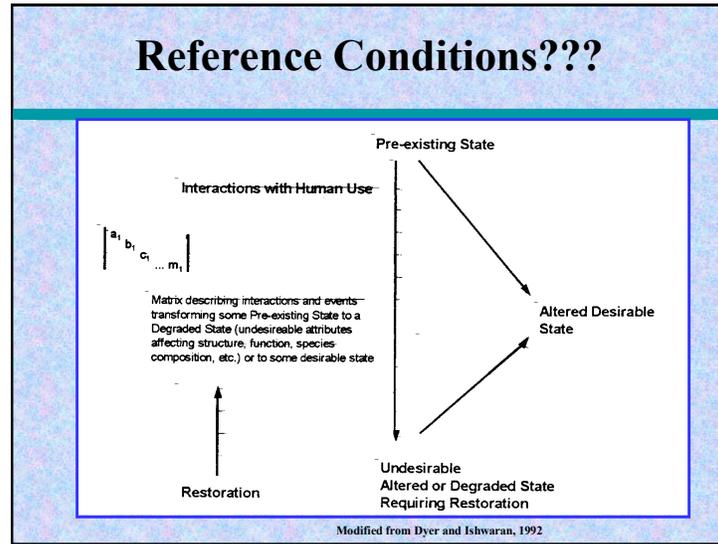
3. The focus was direction of change.

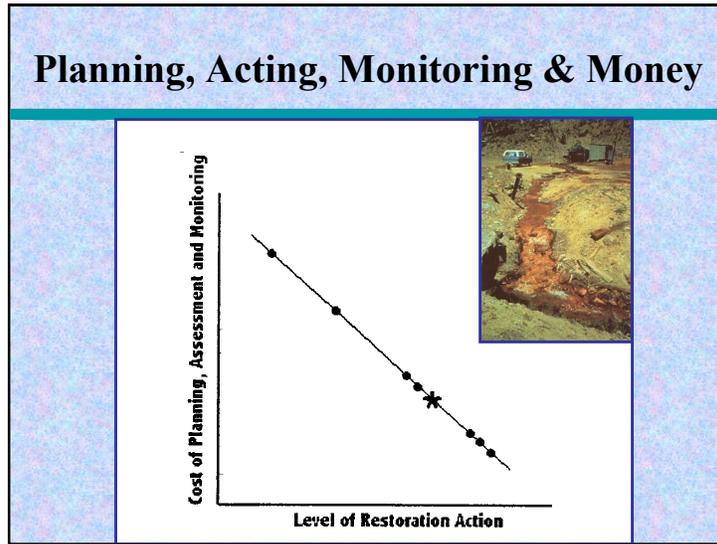
4. Blend of the physical, biological, social, & economic.

Every project has constraints; success usually requires realism.

6. No one specialty has all the information that may be relevant.

7. Some level of monitoring, even if it is as simple as before and after photographs.





Restoration Decision Factors

- ▶ **Ecological Function**
- ▶ **Potential Effects**
- ▶ **Risk Assessment**
- ▶ **Conservation Values**
- ▶ **Other Actions/Trends**
- ▶ **Cost Effectiveness**



One of the smartest things we did in working on the National Monument with people in the valley was to recognize what was already in place.

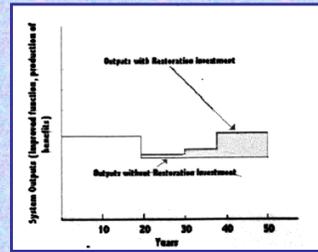
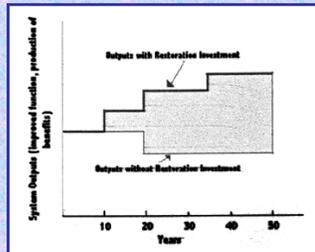
The Scenic Area proposal was developed by a local committee and designated by the Secretary of Interior in 1990. Step back even further into the mid-1980s, when one of the first Habitat Conservation Plans in the nation was developed in partnership with local governments and interests.

Other things in place to build on included an interagency acquisition program in the Santa Rosa and San Jacinto Mountains, and the need for a conservation reserve in the mountains under the multiple species plan.

Bottom line: A strong orientation to partnerships already existed and existing processes were very consistent with the monument idea.

Level of Ecological Function

Functioning, Functioning At Risk, Not Functioning?

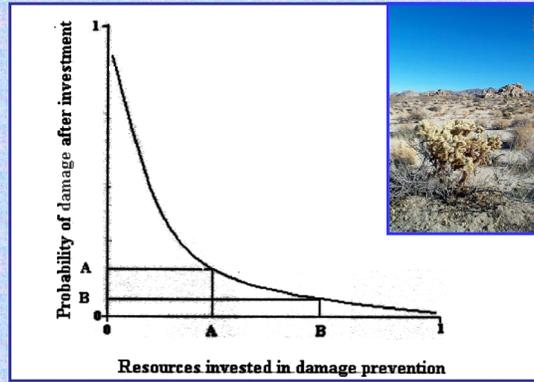


Potential Effects

- Where to work first?
- Watershed as an analysis unit
- Functioning, but at risk
- Ability to address causes of decline
- Land ownership pattern (agreement?)
- Economic incentives/disincentives



Risk Assessment

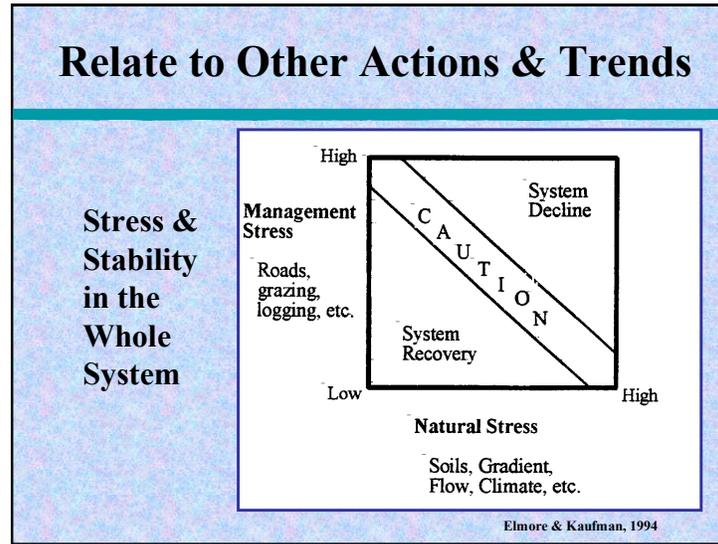


Adams and Hairston, 1994

Conservation Value

- Values are assigned socially and economically
- Trust in communities of interest
- How well complexity is understood
- Working Groups, Review Teams
- Sometimes controversy, fear or frustration
- Odum, 1997
 - Citizen Groups
 - Government
 - Scientists
 - Business





Cost Effectiveness

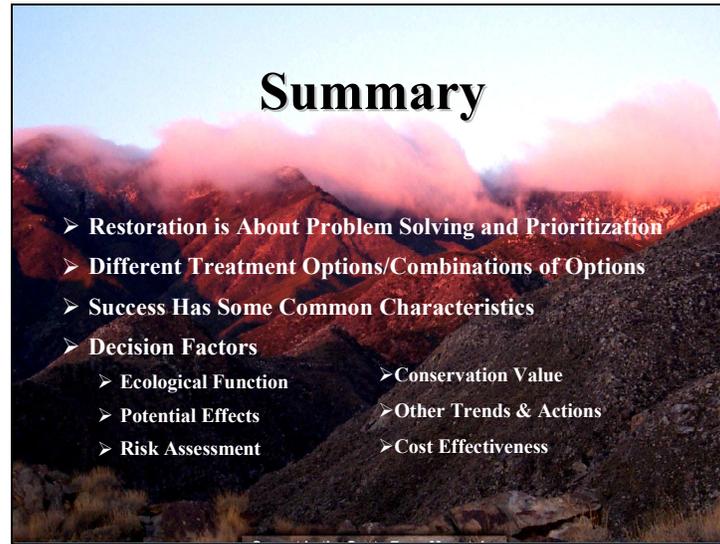
	<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 50%; text-align: left;">High Results/ Low Cost</th><th style="width: 50%; text-align: left;">High Results/High Cost</th></tr></thead><tbody><tr><td style="vertical-align: top;"><ul style="list-style-type: none">Simple actionsConsensus to implementSuccess in similar applicationsFrequently at smaller scalesPlanning costs are lowMore actions with similar fundsMonitoring may be simpler</td><td style="vertical-align: top;"><ul style="list-style-type: none">More complex actionsConsensus must be obtainedMore uncertainty of outcomesFrequently involve larger scalesPlanning costs are higherFewer actions with similar fundsMonitoring more costly</td></tr></tbody></table> <p style="margin-top: 10px;">Potential for Results</p> <ul style="list-style-type: none">Low ResultsSystem is not ready to respond to the restoration actionCauses and limiting factors are incorrectly diagnosedCosts to assess, plan or monitor are out of balance with actionImplementation does not meet expectationsLack of consensus prevents or retards necessary actionObjectives are set with inadequate or inaccurate information (can be good data but at the wrong scale) <p style="text-align: center; margin-top: 10px;">Cost to Assess, Plan, Implement and Monitor</p>	High Results/ Low Cost	High Results/High Cost	<ul style="list-style-type: none">Simple actionsConsensus to implementSuccess in similar applicationsFrequently at smaller scalesPlanning costs are lowMore actions with similar fundsMonitoring may be simpler	<ul style="list-style-type: none">More complex actionsConsensus must be obtainedMore uncertainty of outcomesFrequently involve larger scalesPlanning costs are higherFewer actions with similar fundsMonitoring more costly
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Restoration Requires Careful Thought



*“The significant problems
we face today
cannot be solved
at the same level of thinking
we were at
when we created them.”*

Albert Einstein



So where are we now and where are we going?

We have a shared set of goals.

We have an established cooperative dialogue anchored by relationships established through the Desert Managers Group.

We have partnerships and ongoing activities around us that provide us with the opportunity to change things for the better.

And we have some talented people in place that are prepared to make a difference.