



LONG TERM STEWARDSHIP

Robert Capriola

Westervelt Ecological Services

Dutchman Creek Mitigation Bank

Conservation is a Long-term Commitment

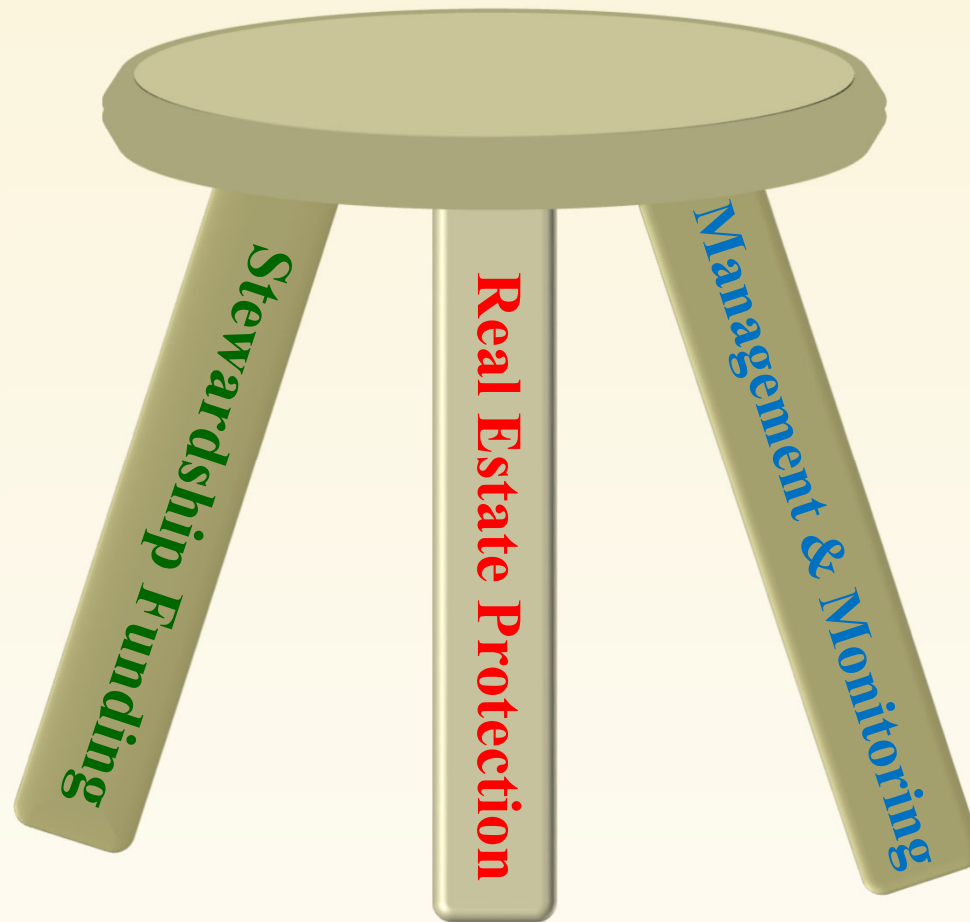
Acquisition \neq Protection



Acquisition \neq Protection



What Sets Banks Apart?



The Management Plan- Interim and Long-Term



Long-Term Management Plan

A photograph of a forest with tall, thin trees and a grassy undergrowth. The trees are mostly deciduous with green foliage. The ground is covered in grass and some low-lying plants. The text "Resource Goals and Objectives" is overlaid in the bottom right corner.

Resource Goals and Objectives

Resource Goals and Objectives

Site Selection

Resource Goals and Objectives



Habitat Preserve

Site Selection



594 ft

© 2010 Google

Google

Imagery Date: Mar 27, 2009

lat 38.650748° lon -121.177610°

Eye alt 2054 ft

A photograph of a forest scene. In the foreground, a large tree trunk with rough, textured bark is on the left. The ground is covered with green grass, moss, and fallen branches. In the background, several other trees are visible, and the forest is filled with green foliage.

Tasks: Monitoring, Management, and Maintenance

Ecological Performance



Ecological Performance

Ecological Performance

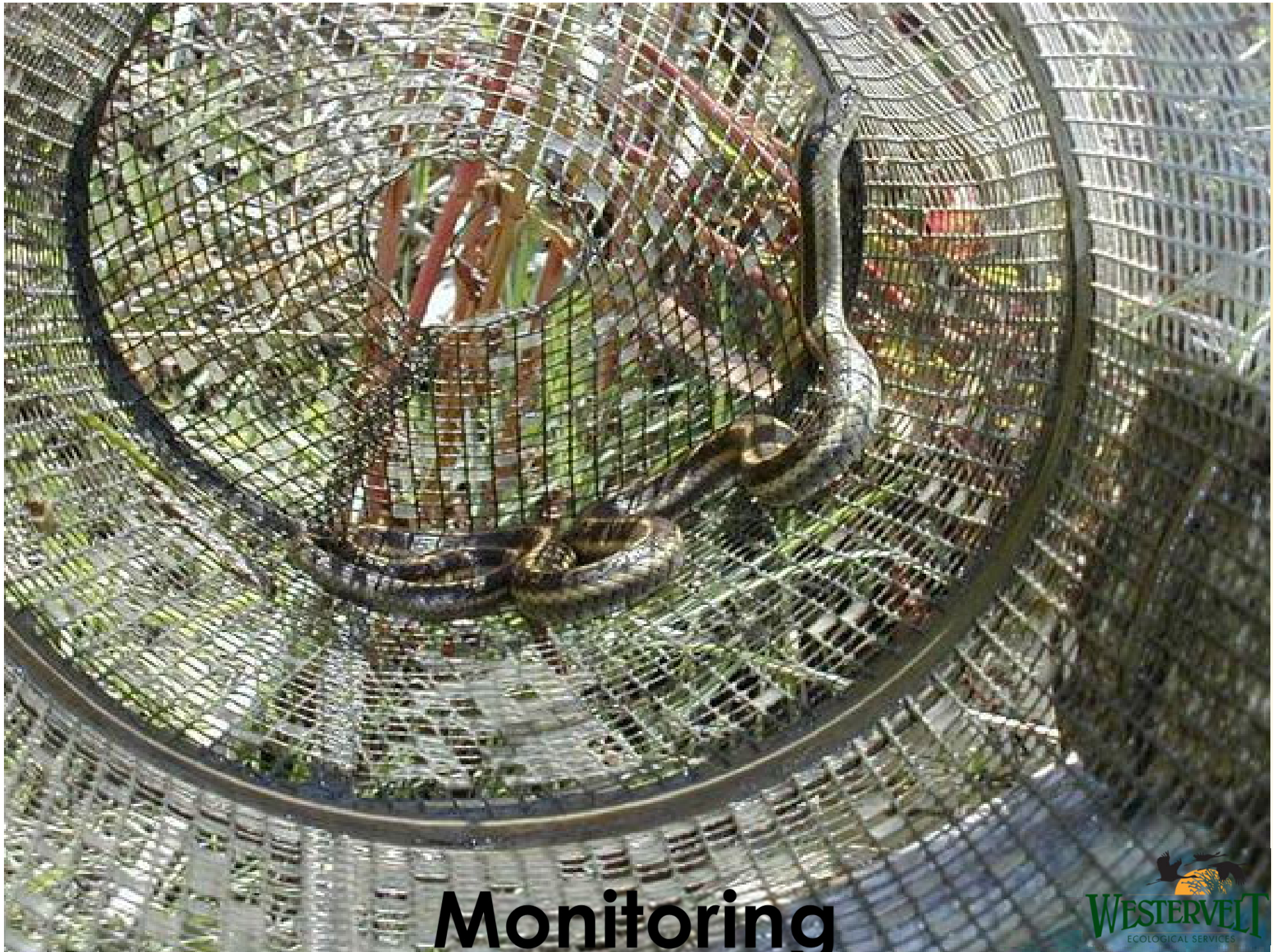


Monitoring



Monitoring





Monitoring

Maintenance



Need for Contingency



Prohibited Activities

Agency Notification

Adaptive Management

Management through trial,
error, learning and adjustment

Adaptive Management

**Assess
Problem**

Adjust

Design

Evaluate

Implement

Monitor

Adaptive Management

“This Plan can only provide guidance for adopting new technologies or practices as they are developed. Ultimately, the Bank Manager in coordination with the Monitoring Biologist, and the Resource Agencies, must determine the appropriate management decision for a given situation.”

Van Vleck Ranch Mitigation Bank Management Plan

Stewardship Funding



Determining Costs



Plan Goals & Objectives

Management Tasks = Scope

Cost Estimate

Grasslands Mitigation Bank

Endowment Analysis

January 2015

Management Plan Action	Cost Unit	Land Acquisition (1515)				First Costs (1515)				Fixed Costs				Total	Occurrence Cycle in Years	Source Funding
		Ac	Gr	He	Gr	Ac	Gr	He	Gr	Ac	Gr	He	Gr			
Section I: Introduction (No Action)																
Section II: Property Description (No Action)																
Section III: Vegetation and Soils Description (No Action)																
Section IV: Management and Monitoring																
A. WETLANDS AND GRASSLANDS																
Element A.1: Wetlands and Grasslands																
Task A.1.1: Annual Monitoring (Survey and Inspection)	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.2: Percent of Invasive Plants	Hourly													\$ 1,400	5	\$ 7,000
Task A.1.3: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.4: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.5: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.6: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.7: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.8: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.9: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.10: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.11: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.12: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
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Task A.1.15: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.16: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.17: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.18: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.19: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.20: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
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Task A.1.28: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
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Task A.1.30: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.31: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.32: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
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Task A.1.70: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
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Task A.1.72: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.73: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.74: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
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Task A.1.79: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.80: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.81: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.82: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.83: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.84: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
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Task A.1.89: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.90: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.91: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.92: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.93: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.94: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.95: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.96: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.97: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.98: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.99: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
Task A.1.100: Native Plantings	Hourly													\$ 1,100	1	\$ 1,100
B. BATTLE SECURITY AND ACCESS ELEMENT																
Element B.1: Battle Security																
Task B.1.1: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.2: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.3: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.4: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.5: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.6: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
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Task B.1.9: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.10: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.11: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.12: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.13: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.14: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.15: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.16: Battle Security	Hourly													\$ 1,100	1	\$ 1,100
Task B.1.17: Battle Security	Hourly													\$ 1,100</		

Grasslands Mitigation Bank
100% Contingency
3.0% CAP Rate
Grand Total \$1,183,638

Determining Costs

Management Plan Action	
Section I - Introduction (No Action)	
Section II - Property Description (No Action)	
Section III - Habitat and Species Description (No Action)	
Section IV - Management and Monitoring	
A HABITAT TYPES AND SPECIES ELEMENTS	
	Element A.1 Seasonal Wetlands and GGS Habitats
	Task A.1.1: Annual and Monthly Surveys and Inspections
	Task A.1.2: Removal of Invasive Plants
	Element A.2 Giant Garter Snake Habitat
	Task A.2.1: Water Supply and Delivery (Cost/acre/year)
	Task A.2.2: Water Management
	Task A.2.3: Replacement/Repair of WaterControl Facilities
	Task A.2.4: Ditch Cleaning (500' per year, each year)
	Task A.2.5: Vegetation Management

Grasslands Mitigation Bank

Objective: Habitat Types and Species

Element A.2 Giant Garter Snake Habitat
Manage all habitat types represented within the GGS credited portions of the Bank Property to benefit all life stages of GGS, including foraging, breeding, thermoregulation, and estivation.

Grasslands Mitigation Bank

GGG Tasks

Objective



Task A.2.2 Water Management

Water Levels should be managed minimize the amount of active vegetation management required at the Property. Because water in the marsh habitats is lost to evapotranspiration (evaporation plus plant transpiration), seepage, and outflow, periodic water input may be needed to maintain water at design depths.

Task A.2.2 –Water Management State Your Assumptions

Water management is completed by Field Crew twice a month between April through September (3 hours per visit) and monthly between October through March of each year (totals 57 hours) . Supervision and coordination are provided by the Land Manager (2 hours) and the Senior Tech. (8 hours).

Task Costs and Endowment Required

Management Plan Action		Cost Unit	Hourly Rates										Fixed Costs		Total	Occurrence Cycle in Years	Secured Stewardship Account	
			Land Mgr. (\$125)		Sr. Tech (\$90)		Tech (\$75)		Field Crew (\$35)		Ad staff (\$50)						Annual Cost	Endowment
			Hr	Cost	Hr	Cost	Hr	Cost	Hr	Cost	Hr	Cost	Cost	Qty				
	Element A.2 Giant Garter Snake Habitat													\$ -		\$ -		
	Task A.2.1: Water Supply (Cost/acre/year)	Capital										\$14	840	\$ 11,760	1	\$ 11,760	\$ 336,000	
	Task A.2.2: Water Management	Hourly	2	250	8	720		-	57	1,995		-		1.0	\$ 2,965	1	\$ 2,965	\$ 84,714
	Task A.2.3: Replacement/Repair of WaterControl Facilities	Hourly and Capital	4	500		-	8	600		-		-	\$5,000	8.0	\$ 41,100	15	\$ 2,740	\$ 60,857
	Task A.2.4 Ditch Cleaning	Hourly and Capital							16	560			\$250	2.0	\$ 1,060	1	\$ 1,060	\$ 30,286
	Task A.2.5: Vegetation Management	Hourly and Capital	2	250	4	360	-	-	8	280		-	\$1,400	1.0	\$ 2,290	1	\$ 2,290	\$ 65,429

Total	Occurrence Cycle in Years	Secured Stewardship Account	
		Annual Cost	Endowment
\$ -			\$ -
\$ 11,760	1	\$ 11,760	\$ 336,000
\$ 2,965	1	\$ 2,965	\$ 84,714
\$ 41,100	15	\$ 2,740	\$ 60,857
\$ 1,060	1	\$ 1,060	\$ 30,286
\$ 2,290	1	\$ 2,290	\$ 65,429

Getting to the Fund Amount

Average Annual Cost	\$37,325
10.0% Contingency	\$3,732
Subtotal	\$41,057
CAP Rate	3.5%
Grand Total Endowment Required	\$1,039,580

Maintaining the Purchasing Power of Endowments Over Time

Full Funding of the Endowment at Bank
Establishment

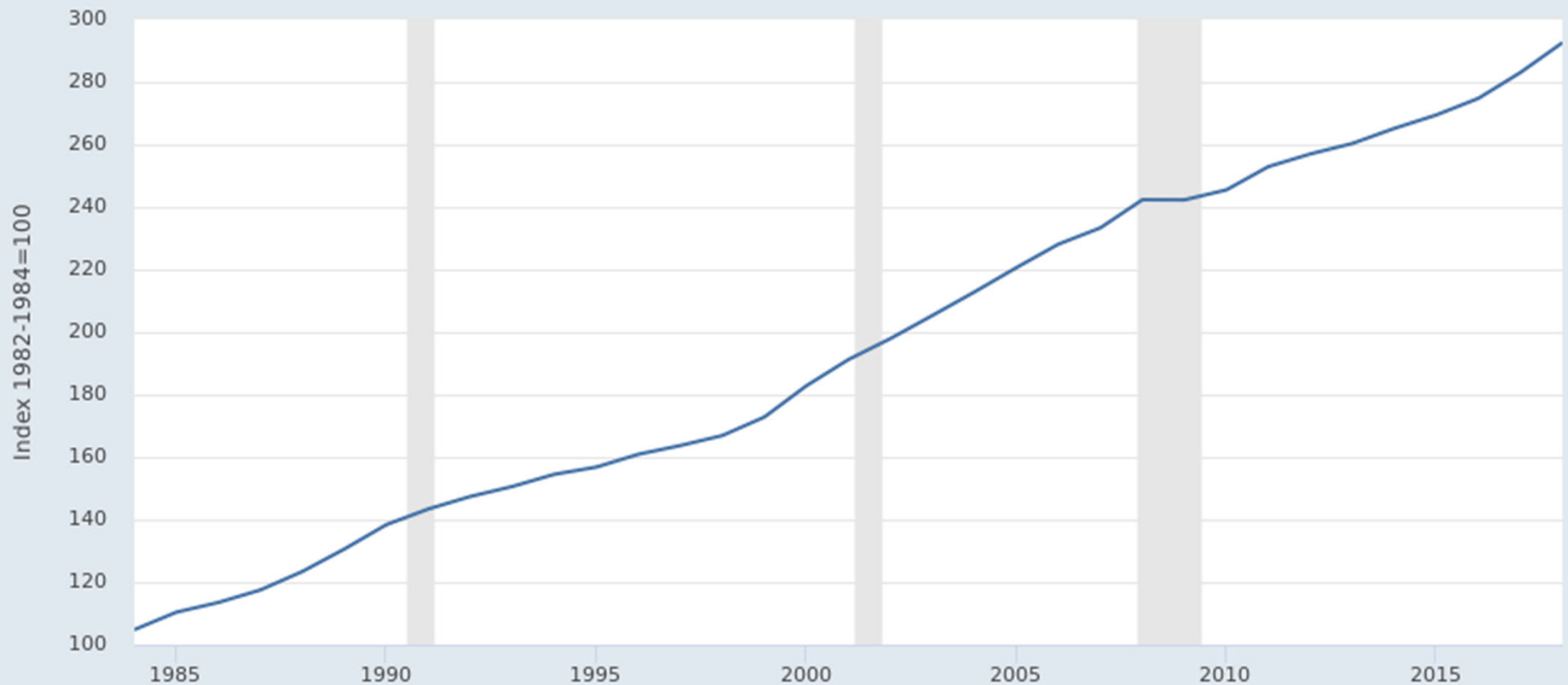
Vs.

Funding the Endowment during the
Interim Management Period

Maintaining the Purchasing Power of Endowments Over Time

FRED

— Consumer Price Index for All Urban Consumers: All items in San Diego-Carlsbad, CA (CBSA)



Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Labor Statistics

myf.red/g/gecT

Maintaining the Purchasing Power of Endowments Over Time (Hypothetical)

Bank Established in 2005

Endowment Principal = \$500,000

Annual Costs = \$17,500

CPI in 2005 = 220

Endowment Fully Funded in 2015

CPI = 260

CPI-adjusted Annual Costs = \$20,682

Adjusted Endowment Principal = \$590,909

A Good Stewardship Plan

- **Goals and Objectives of the Site**
- **Factors that Complicate Implementation**
- **Requires Effective Monitoring**
- **Actions Essential to Conserve the Site's Resources**
- **Gives the Land Manager Flexibility**
- **Allows Adaptive Management**
- **Funding is Adequate for all Tasks and Contingencies**
- **Inflation is Accounted for in Endowments**