

Creating an Effective & Efficient Conservation Strategy

Landscape Conservation Forecasting™

Problem Statement

In a complex landscape, how do you choose the restoration strategy that provides the most benefit for the available budget?

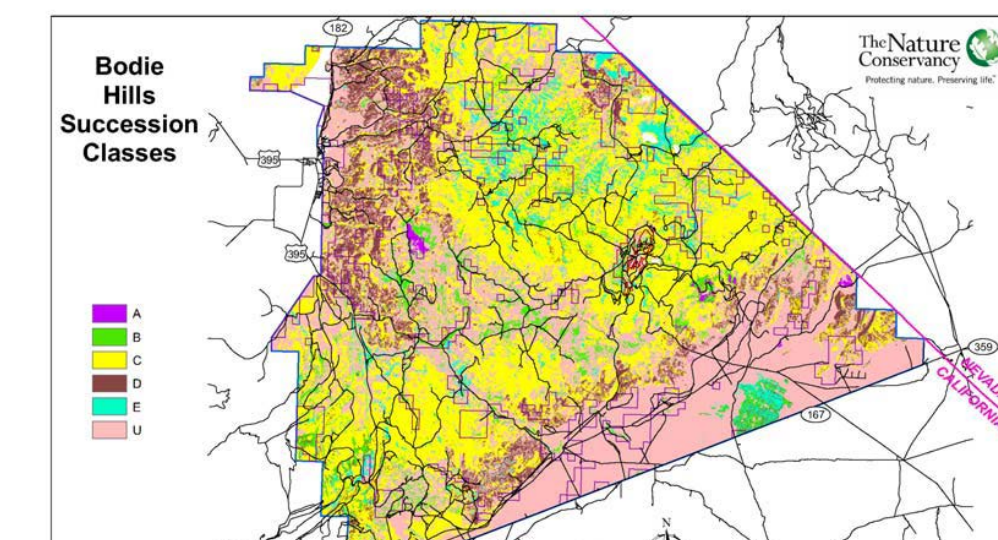
Landscape Conservation Forecasting™

Landscape Conservation Forecasting (LCF) can help planners and stewards identify a set of restoration strategies that provides the most bang for the buck!

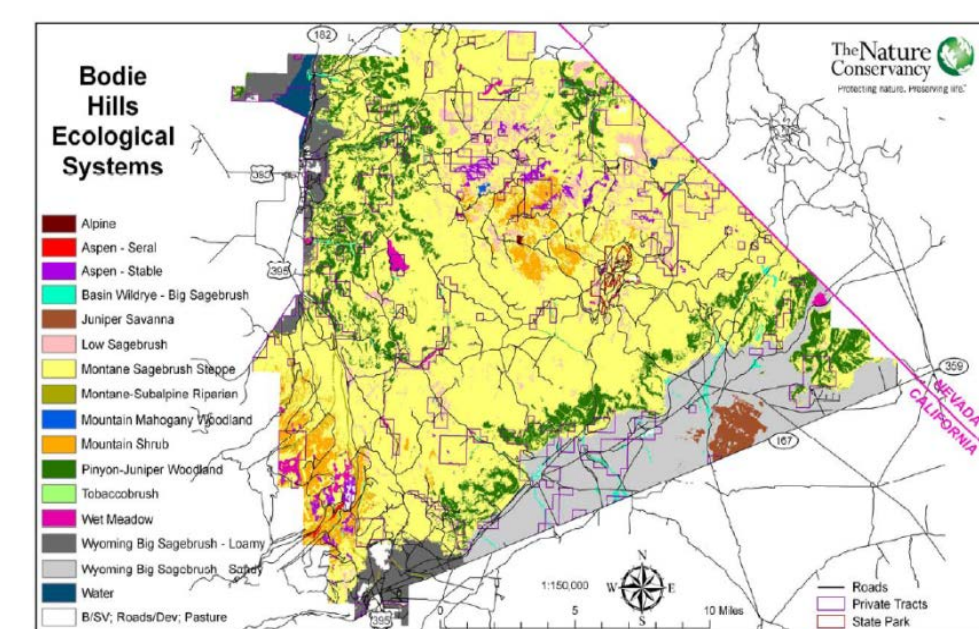
LCF was developed by the TNC Nevada Field Office (Louis Provencher, Greg Low and Susan Abele) with assistance from the TNC LANDFIRE Team

LCF works by using public domain tools to forecast how various activities and environmental changes impact the departure from desired future conditions for a series of restoration targets, with associated costs so funding needs and available budgets can be considered.

LCF Example-Bodie Hills



Map of Historic Conditions on the Bodie Hills Landscape



Map of Current Vegetation Seral States

Ecological System	Ecological Condition: Departure from NCV	Relative % of High Risk Vegetation Classes
Alpine	Very Slight	n/a
Tobacco Brush	Very Slight	n/a
Montane-Subalpine Riparian	Slight	Very Low
Mountain Mahogany	Slight	Very Low
Pinon-Juniper Woodland	Moderate	Moderate
Juniper Savanna	Moderate	n/a
Low Sagebrush	Moderate	Very Low
Mountain Shrub	Moderate	Very Low
Stable Aspen	Moderate	High
Wet Meadow	Moderate	Very Low
Basin Wildye-Big Sagebrush	High	High
Montane Sagebrush Steppe	High	Moderate
Seral Aspen	High	High
Wyoming Big Sagebrush-Loamy	High	High
Wyoming Big Sagebrush-Sandy	High	High

Current Departure From the Desired Condition

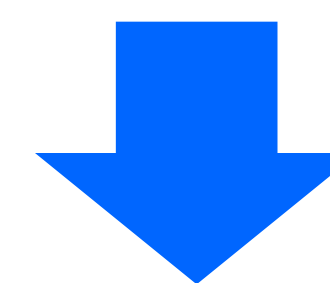


Map of Historic Conditions

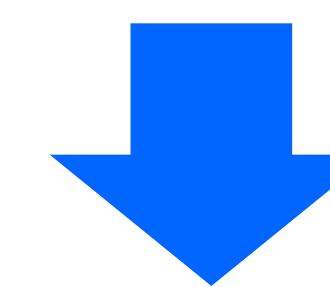
Ecological System	Current	20 Years No Mgmt	20 Years Ecological Mgmt
Alpine	5	5	n/a
Aspen	41	43	33
Basin Wildye - Big Sagebrush	23	79	45
Juniper Savanna	35	29	n/a
Low Sagebrush	41	37	37
Montane Sagebrush Steppe	27	69	57
Montane-Subalpine Riparian	21	33	27
Mountain Mahogany Woodland	22	15	n/a
Mountain Shrub	39	49	n/a
Pinon-Juniper Woodland	29	30	n/a
Tobacco Brush	9	15	n/a
Wet Meadow	11	30	19
Wyoming Big Sagebrush (loamy)	74	70	50
Wyoming Big Sagebrush (sandy)	39	60	67

Restoration Benefits for the Focal Targets

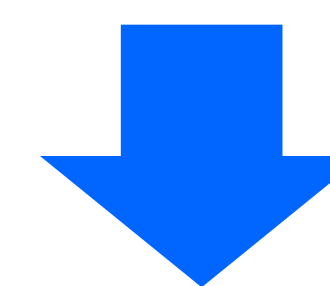
Identify targets, and assemble or create historic or desired conditions



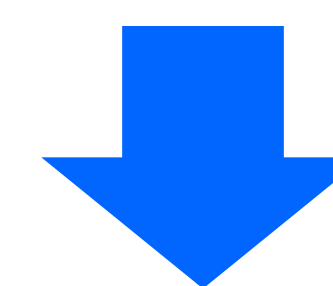
Assemble or create current landscape information, including potential management activities and costs



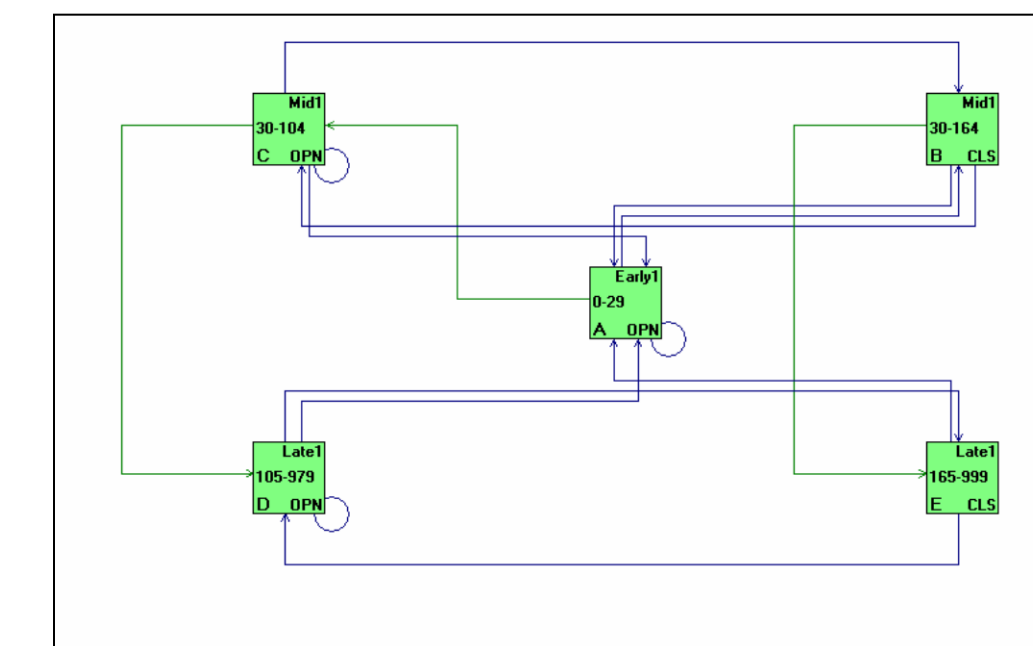
Compute current departure from historic or desired conditions



Revise models to incorporate potential management activities and costs, and rerun them for a planning period



Recalculate departure for the various strategies with their associated costs, compare and identify the most effective and efficient suite of actions



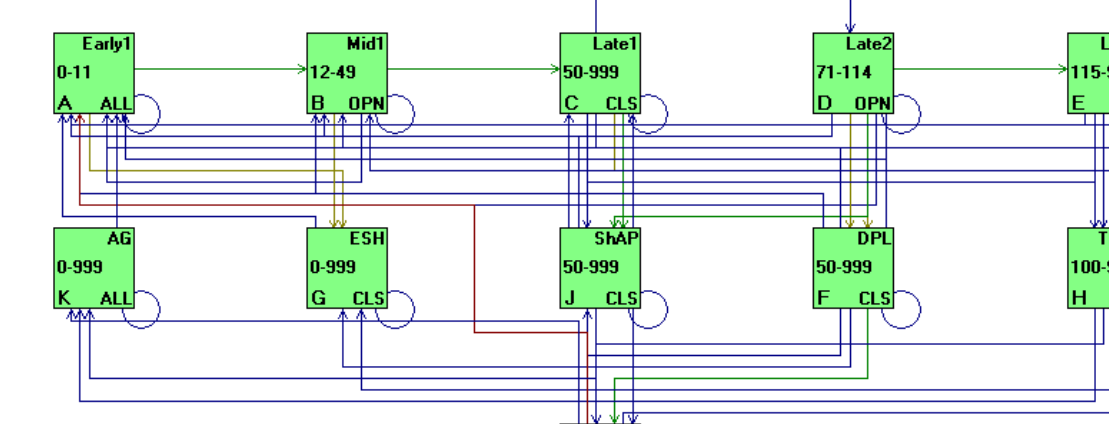
Reference Condition Vegetation Model in VDDT/Path



Local Experts Discussing Current Conditions, Management Options and costs



Current degraded condition on the landscape



VDDT/Path Model Modified to Include invasive species and potential management options

Ecological System	Conservation Strategy	Annual Cost	Probability of Success
Aspen (stable)	Treat 50 acres/year of late succession aspen classes, provide fencing for 200 Unharvested acres and continue active herd management	\$20,000	Very High
Basin Wildye - Big Sagebrush	Treat 500 acres/year of displaced basin wildye to convert to early development class (e.g. one stage aspen) as field circumstances permit; continue weed inventory & control; add prescribed fire as needed if future	\$18,000	High
Low Sagebrush	Mechanically thin ~125 acres/year of late-successional low sagebrush to prevent new tree encroachment	\$11,000	High
Montane Riparian	Continue weed inventories, spot treatments and active herd management in riparian areas (1/3 is on private lands); stabilize headcuts and restore natural channels on targeted creeks	\$6,000	High
Montane Sagebrush Steppe	Treat ~1000 acres/year of montane sagebrush steppe - with prescribed fire, mowing/burning/ grazing	\$97,000	High
Wet Meadows	Continue weed inventories, spot treatments & active herd management in wet meadows (50% are on private land and private landowners & agencies cooperate on coordinated weed control); treat riparian slope at targeted meadows	\$10,000	High
Wyoming Big Sagebrush (loamy)	Develop field and ecological data breaks in Wyoming using appropriate - using mapping, seeding, herbicides - to convert to Class B and A	\$4,000	Medium
Wyoming Big Sagebrush (sandy)	Create coarse ecological data breaks in Wyoming big sagebrush (sandy) using sandy soils and other VDDT data breaks as needed	\$18,000	High
		\$189,000	

Final Set of Effective Restoration Strategies

Who Has Used LCF?

- Bodie Hills BLM
- Great Basin National Park
- Dixie-Fishlake National Forest
 - Fremont Ranger District
 - Powell River Ranger District
- Cherokee National Forest
- Nevada Field Office/TNC
- Tennessee Field Office/TNC

Questions?

Comments?

Suggestions?

Follow-up Contact?

Please let us know with a Post-It or a comment here!

