National Whitebark Pine Restoration Plan

Strategic Plan

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National Whitebark Pine Restoration Plan & Implementation

- Collaborative engagement
- Online survey
- Restoration actions: BMPs
- Teleconferences with regions and NPS
- National Summit: call for nominated areas
- Teleconference core area workshop
- Assembling data and narrative
- Restoration plan report
Timeline: process

Nov. 2017: Summit
Dec. 2017: Call for core area information
Mid-late Jan. 2018: Troubleshooting teleconference
Late April. 2018: Target deadline for information
Field season 2018: Data to fill in gaps
Late Sept./early Oct. 2018: Final data deadline
Mid/late Dec. 2018: Draft plan
Components to plan

- Nominated core areas from each jurisdiction
- Priority designation within each nominated area
- Criteria used to identify core areas
- Monitoring and adaptive management strategies
- Proposed restoration actions within core areas
- Implementation costs for restoration action across nominated area
Administrative level for data

Unit level for providing data.

Note that we are recommending a judicious inclusion of wilderness area for restoration treatment.

- USFS regions: National Forest level and Wilderness
- NPS: National Park level, including wilderness
- BLM: Field office level, including wilderness
- Tribal lands, Tribe level.
- State lands, state level.
Identification of criteria and coordination of effort

USFS--regional level
NPS--network or park level
BLM--state level
Tribal lands--tribe level (unless shared criteria are developed.)
Data requested from each unit

• GIS layer of whitebark pine distribution
• Nominate 20-30% area of the unit for restoration.
• Detail the criteria used for all portions of the nominated area.
• Delineate this area by priority 1, 2, 3.
• Map or provide data on the health status at the smallest scale possible.
• Determine which restoration actions are required for these nominated areas.
• Provide a monitoring and adaptive management strategy for each restoration project.
DEVELOPING THE DATA SETS NEEDED FOR THE NATIONAL WHITEBARK PINE RESTORATION STRATEGY (NWPRS)

Bob Keane
USDA Forest Service
Rocky Mountain Research Station
Missoula Fire Sciences Laboratory
THE NATIONAL STRATEGY

Major Deliverable:

Prioritization of areas for restoration at multiple scales

Demands a scientifically credible approach based on empirical data and comprehensive statistical analyses
NATIONAL WBP STRATEGY DATABASE

Spatial Data

Modeling & Statistical Analysis Programs

Non-spatial Data
NATIONAL WBP STRATEGY DATABASE DEVELOPMENT

Existing Spatial Data

Complex Statistical Analysis

Modeled Spatial Data

Existing Field Data

Modeled Plot Data
**NWPRS DATABASE**

**TARGET SCALE OF ANALYSIS**

- **Wall to Wall**
- **Map resolutions**
  - 1 km (30 m) pixel
- **Analysis unit**
  - 6th code HUC
- **Summary units**
  - District
  - Nat Forest, Park, etc
  - Region
  - Range
NWPRS DATABASE
EXISTING SPATIAL DATA

- Multiple resolutions
  - 1 km, 30 m, 100 m
- Wall to wall
- Represent all important factors
- Include climate change layers
- Includes existing modeled layers
- Probably won’t include Canada

Final Product: A GIS library of all the layers needed to prioritize landscapes across the range of whitebark pine
NWPRS DATABASE
EXAMPLES EXISTING SPATIAL DATA

- **Range**
  - Existing - LANDFIRE, VMAP
  - Potential - Little, Arno & Hoff, SDM maps, LANDFIRE

- **Fire** – MTBS fire severity, LANDFIRE FRI, Crown fire potential

- **Beetles** - FHP layers

- **Rust** - Modeled data layer (Helbrecht 2009)

- **Ownership (wilderness)**

- **Roads, trails**

- **Topography (DEM)**
NWPRS DATABASE
EXISTING FIELD DATA

- Anything collected that concerns whitebark pine
- Plot or stand info
- Represent all important factors
- Must meet QA/QC standards
- Stored in ANSI–ASCII for compatibility

Final Product: A comprehensive database that will serve as the foundation for building the modeled GIS layers
NWPRS DATABASE
EXISTING FIELD DATA EXAMPLES

- FHP WLIS database
- FIA whitebark plots
- Stand inventories
- Research plots
- Data from the field

Final Product: A comprehensive database that will serve as the foundation for building modeled GIS layers
NWPRS DATABASE
MODELED SPATIAL DATA

- **Range**
  - Potential
- **Rust** – Create new layer
- **Climate change SDM modeling**
- **Topography** – topographic indexes from DEM
- **Build as needed**

![Map of White Pine Blister Rust Infection](image)
NWPRS DATABASE
MODELED PLOT DATA

- Extrapolation of weather to field plots
- Computation of various attributes from field data (e.g., basal area, rust infection)
- Build as needed

Final Product: A comprehensive database that will serve as the foundation for building modeled GIS layers
**NWPRS DATABASE**

**PLANNED APPLICATION**

- Integrate spatial data layers into a Decision-Support System (DSS)
- Use the EMDS system
- Available free

Web site: http://emds.mountain-viewgroup.com/
NWPRS DATABASE
EMDS ANALYSIS

- Weight data layers for importance in prioritization
- Create thresholds for evaluation in spatial data
- Outputs a prioritized list of landscapes in map and spreadsheet format

Web site: http://emds.mountain-viewgroup.com/
NWPRS DATABASE
EMDS ANALYSIS

- Multiple scales: National Forest, District, landscape

- Multiple prioritizations: Each prioritization will emphasize a set of restoration goals

- Multiple analysis: various sensitivity evaluations

Web site: http://emds.mountain-viewgroup.com/
NWPRS DATABASE
EMDS PRODUCT

- Multiple priority lists
- Overall priority list: Integrates all other lists
- Documentation on prioritization

Web site: http://emds.mountain-viewgroup.com/