

A photograph of a forest with tall pine trees. In the foreground, a yellow measuring tape is visible, showing markings from 2 to 10. The text "Interagency Mapping and Assessment Process (IMAP)" is overlaid in the center of the image.

Interagency Mapping and Assessment Process (IMAP)

Needs

- Consistent, cost-effective existing vegetation mapping for the Region
- State-wide forest assessment (ODF)
- Simple models for Forest plan revisions (FS R6)
- Simple models for west-side plan revisions, rangeland assessments (BLM)
- Better integration and application of research for partners (PNW research station)

Challenges

- Define realistic business needs
- Limited funding and personnel
- Local ownership critical for success
- No desire for conflicting answers to broad questions
- Need integrated answers – single resource perspectives not suitable
- Want ability to adapt the product

Response

- 2003-2005 Region develops existing vegetation mapping standards and strategy
- At the same time PNW (Miles Hemstrom) develops modeling/mapping strategy through INLAS and COLA
- June 2005 Regional leadership adopts PNW approach; efforts merge
- Regional strategy ensures local ownership, business needs identified, standards met

An Approach

- Leverage and cooperate
- State and transition models + harvest scheduling models
- Organize by geographic area
- Integrate natural disturbances and management activities
- Summarize to land units (watersheds)

Three Basic Products

- Existing vegetation map generated through Gradient Nearest Neighbor
- Modeling for future scenarios, applications
- Finer scale polygon map on request

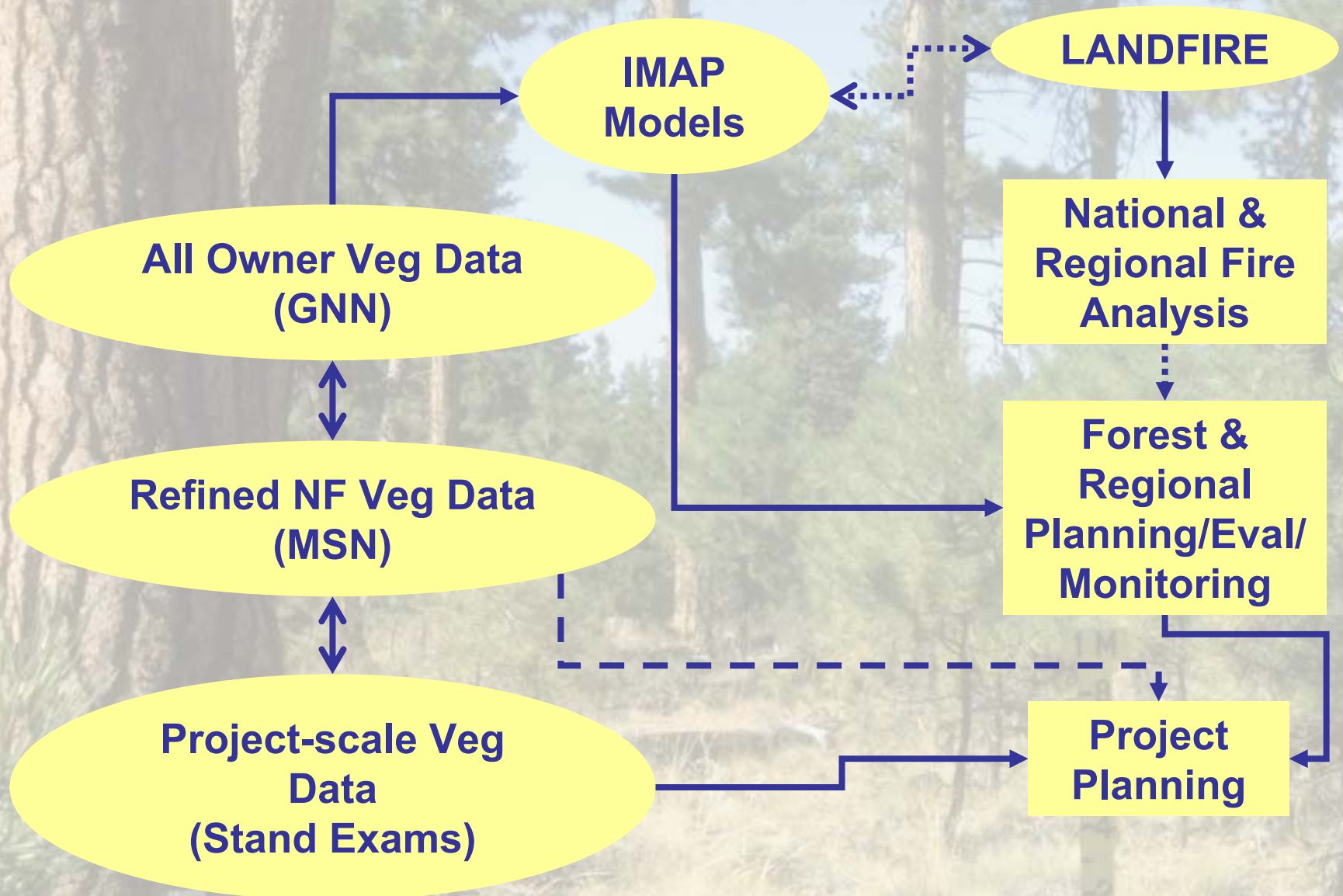
Three Basic Products

- Existing vegetation map generated through Gradient Nearest Neighbor
 - Present at 5th field scale, use to triage
- Modeling for future scenarios, applications
 - Needed for FRCC, plan revisions
- Finer scale polygon map on request
 - Essential for Forest involvement and support

BLM Involvement

- Existing vegetation map generated through Gradient Nearest Neighbor
 - Will probably accept this
- Modeling for future scenarios, applications
 - Not yet committed
- Finer scale polygon map on request
 - Will probably rely on their own mapping

LANDFIRE and IMAP



How do LANDFIRE and IMAP differ? What does each produce?

Attributes:R6 Veg Standards

- Total Veg Cover
- Cover Type
- Dominance Type
- Canopy Closure
- Canopy Structure
- Diameter Class
- Shrub Cover Class
- Tree Stand Origin (not an exhaustive list)

Attributes: GNN

- Canopy Cover
- Forest Type
- Shrub Cover
- Stand Age
- Stand Height
- Snag Density
- Downed wood pieces and cover

(not an exhaustive list)

Attributes: LANDFIRE

- Forest Canopy Bulk Density
- Forest Canopy Base height
- Stand Height
- Canopy Cover
- Existing vegetation type
- Potential vegetation type (both climatically- and disturbance-constrained)

(not an exhaustive list)

Crosswalking

- Many similarities
- GNN uses continuous variables
- Crosswalk has been developed with ongoing stewardship
- Plan to analyze at 5th field watershed, collapse to LANDFIRE subsections as a test

Boxes and Arrows

(States and Transitions)

Vegetation Type A

Cover type: Ponderosa Pine

Structure: Old single-story forest



Regeneration
Growth
Underburning

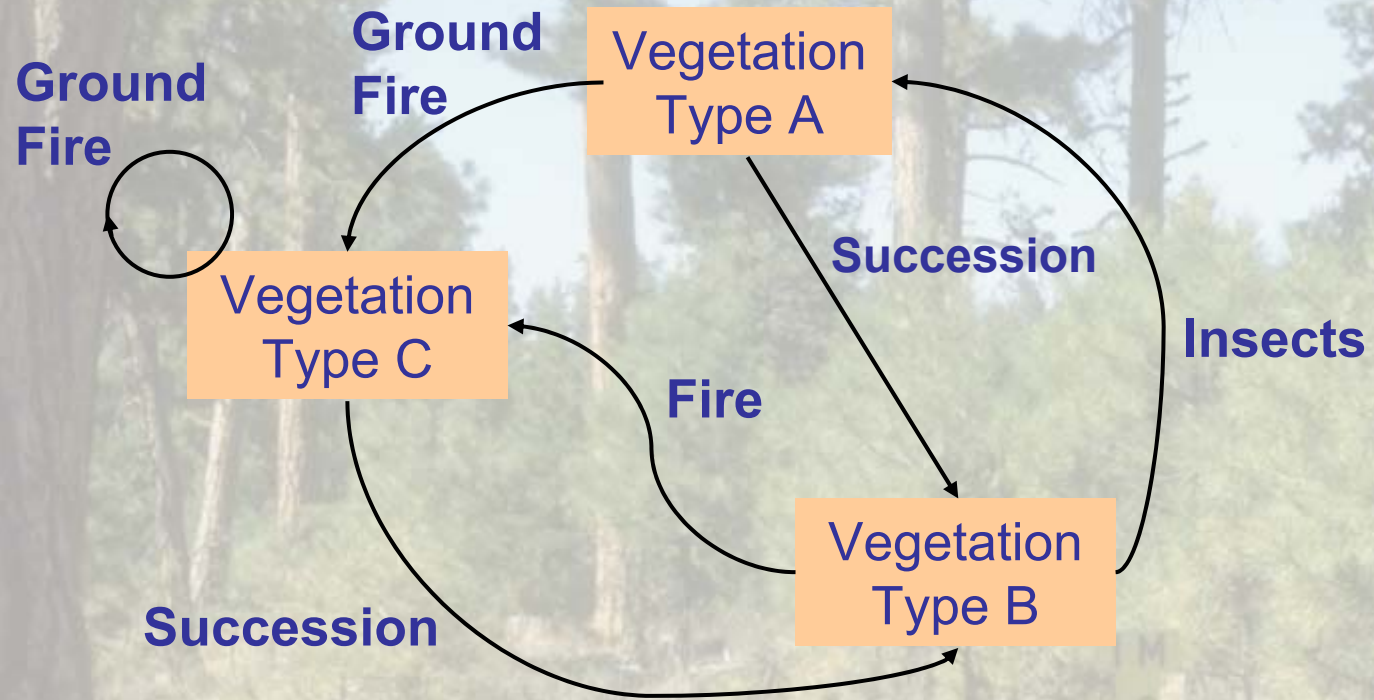


Vegetation Type B

Cover type: Ponderosa Pine
Structure: Non-Stocked, Post disturbance



State and Transition Models



Vegetation Development Dynamics Tool (VDDT). www.essa.com

Tool for Exploratory Landscape Scenario Analysis (TELSA)
www.essa.com

LANDFIRE & IMAP

LANDFIRE

- Nation-wide to Regional scale fire risks, assessment, prioritization, coordination
- All lands
- VDDT models for historical context, FRCC
- Maps
- Hazardous fuel treatment coordination
- Data and methods for fire modeling

IMAP

- State to local planning, assessment, coordination
- Vegetation maps/data
- Integrate wildfire, wildlife, forest products, land uses, management treatments and other issues
- Partnership and leverage costs, models, data

Not in competition

How do LANDFIRE and IMAP differ? What does each produce?

IMAP Relation to LANDFIRE

LANDFIRE

- Not designed for wildlife habitat and other uses
- Primary purposes: FRCC, fire risks, fire models
- Not easy to add detail

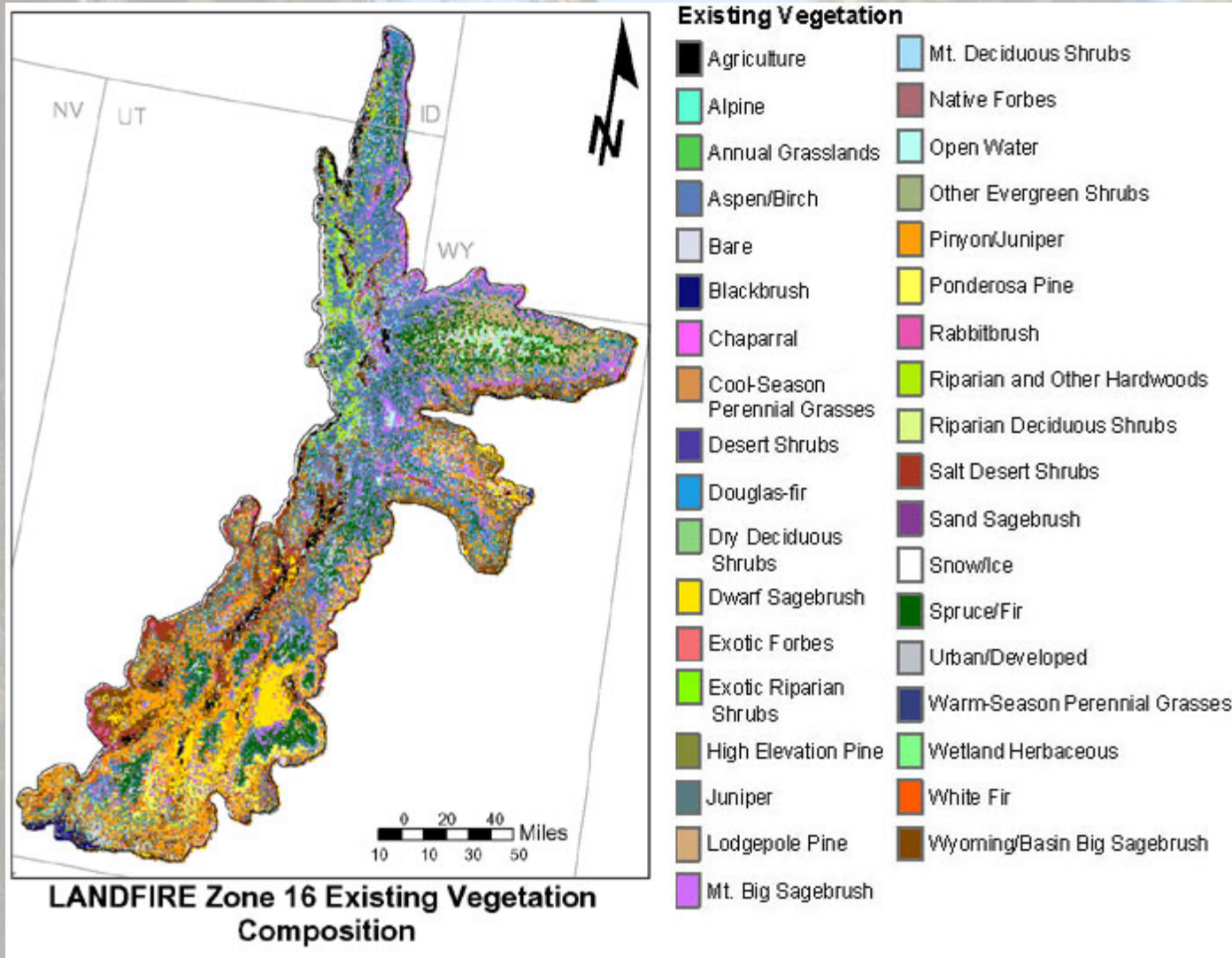
IMAP

- Evaluates wildlife, forest products, & other uses
- Easily summarized to FRCC
- Crosswalk to LANDFIRE

LANDFIRE

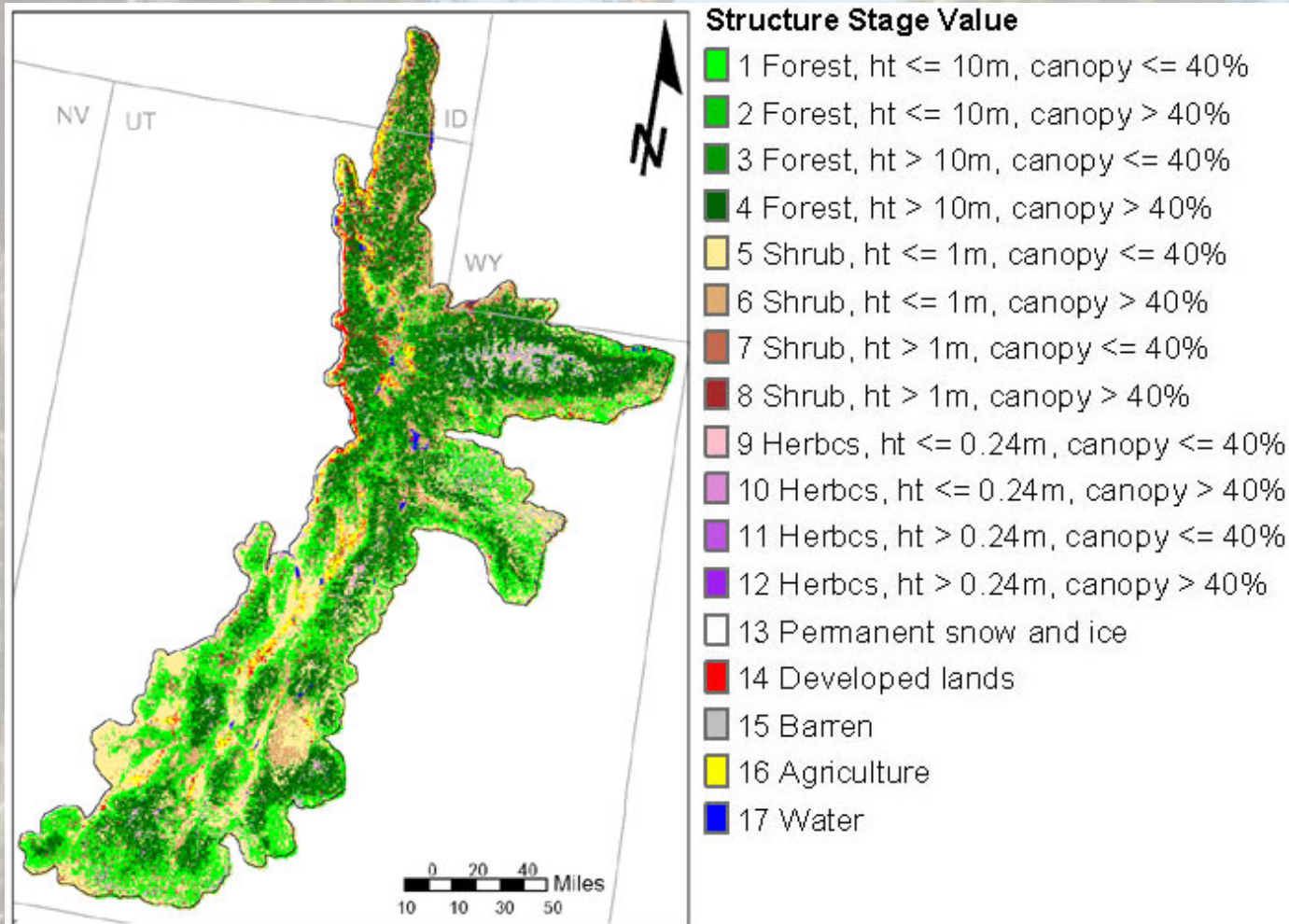
- Vegetation data is collapsed into broad categories
- Purpose is fuels, fire risks, prioritization
- Reference condition is historical

LANDFIRE Cover Type



How do LANDFIRE and IMAP differ? What does each produce?

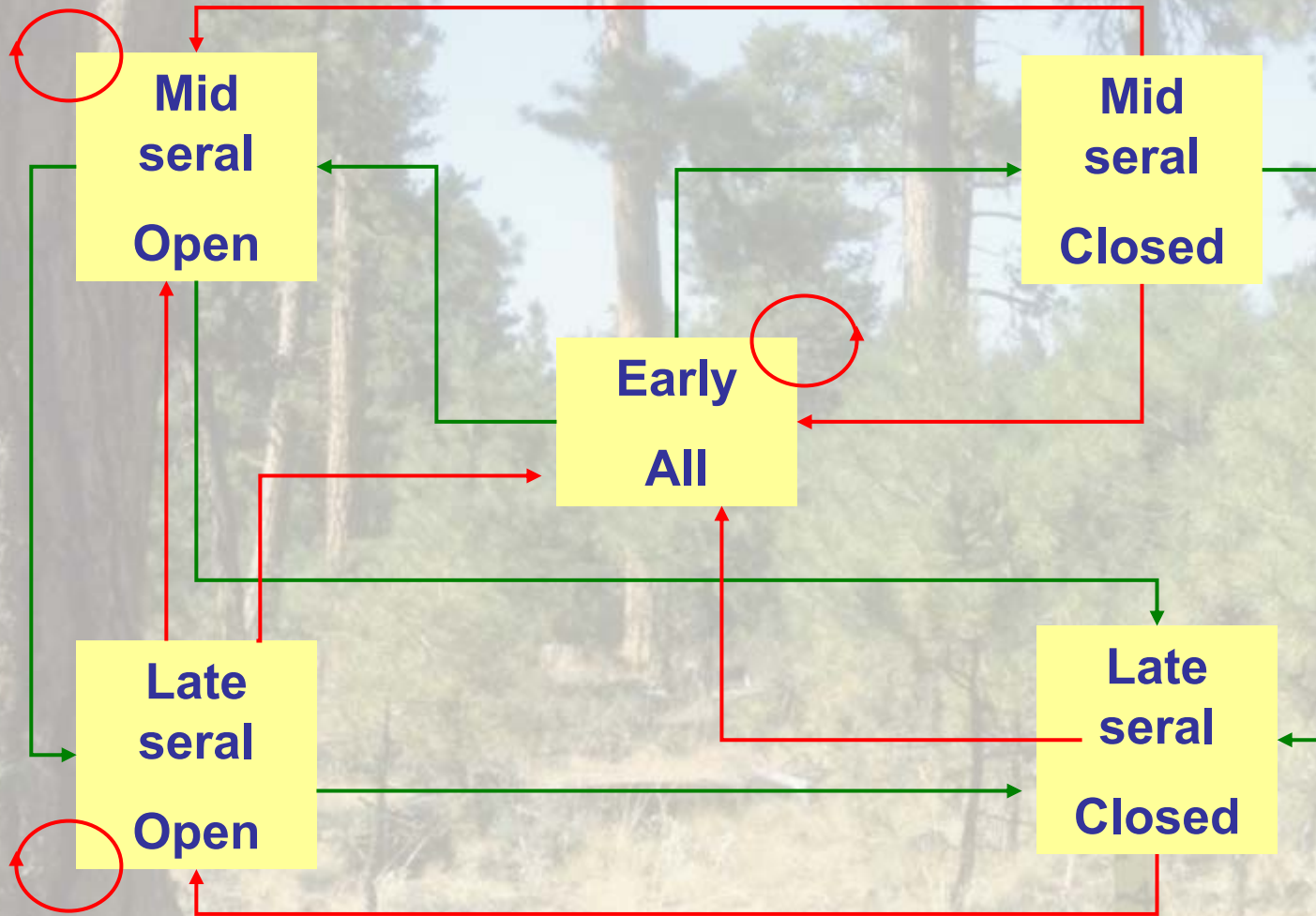
LANDFIRE Structure Class



LANDFIRE Zone 16 Structure Stage

How do LANDFIRE and IMAP differ? What does each produce?

LANDFIRE VDDDT models

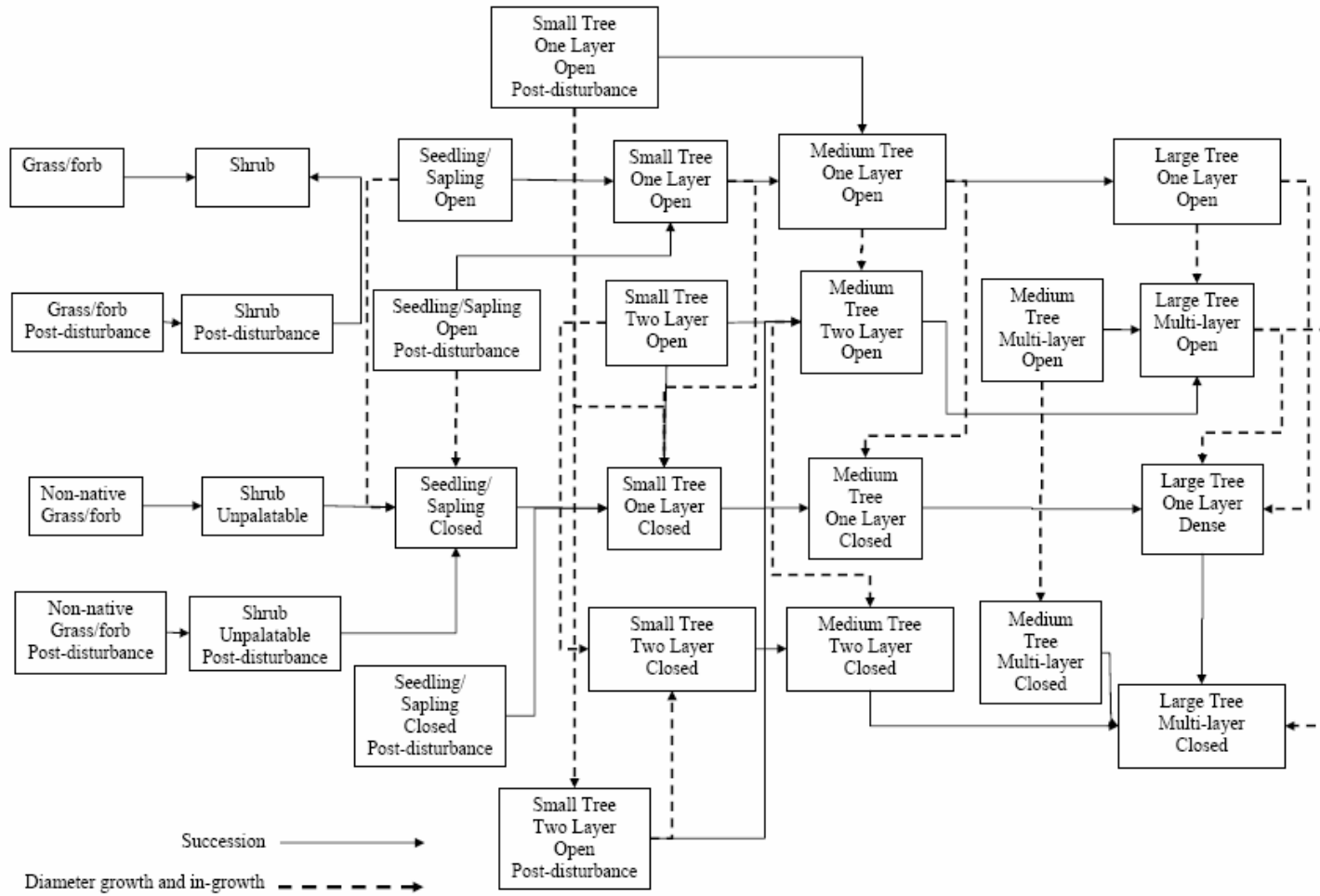


How do LANDFIRE, PNLA, and R6 current vegetation mapping proposal differ? What does each produce?

IMAP

- Vegetation data is tree lists for 30m pixels
- Purpose is integrated planning, assessment, monitoring
- Coverage is wall to wall
- Models are detailed and flexible: disturbances, management, habitats, products

INLAS VDDT model



How do LANDFIRE and IMAP differ? What does each produce?

Crosswalk to LANDFIRE

- Biophysical environment (Potential vegetation groups)
 - **We will cross-walk our PNVTs to LANDFIRE biophysical settings. LANDFIRE Application Projects will also be doing this cross-walk where necessary.**
- Cover and structure classes (boxes)
 - **We will cross-walk to post-review 3, 4, or 5 box models. LANDFIRE Application Projects will also be doing this cross-walk where necessary.**
- LANDFIRE standardized attribute list.
 - **We will cross-walk attribute lists.**

Coordinating Existing Vegetation with LANDFIRE

- LANDFIRE would likely not use our maps. **There is no expectation that local existing veg data has to match LANDFIRE existing vegetation data, although using local map products to improve LANDFIRE remains a topic of discussion nationally.**
- Local VDDT modeling work should cross-walk to or use the LANDFIRE geographic zones. Coordination with California is the question for the present. **We will cross-walk to the LANDFIRE geographic areas to stratify our work.**

COLA Pilot Results

Special thanks to

Jim Merzenich (R6)

Andy Herstrom (ODF)

Allison Reger (Willamette NF)

Xiaoping Zhou (PNW Research Stn.)

Scenarios

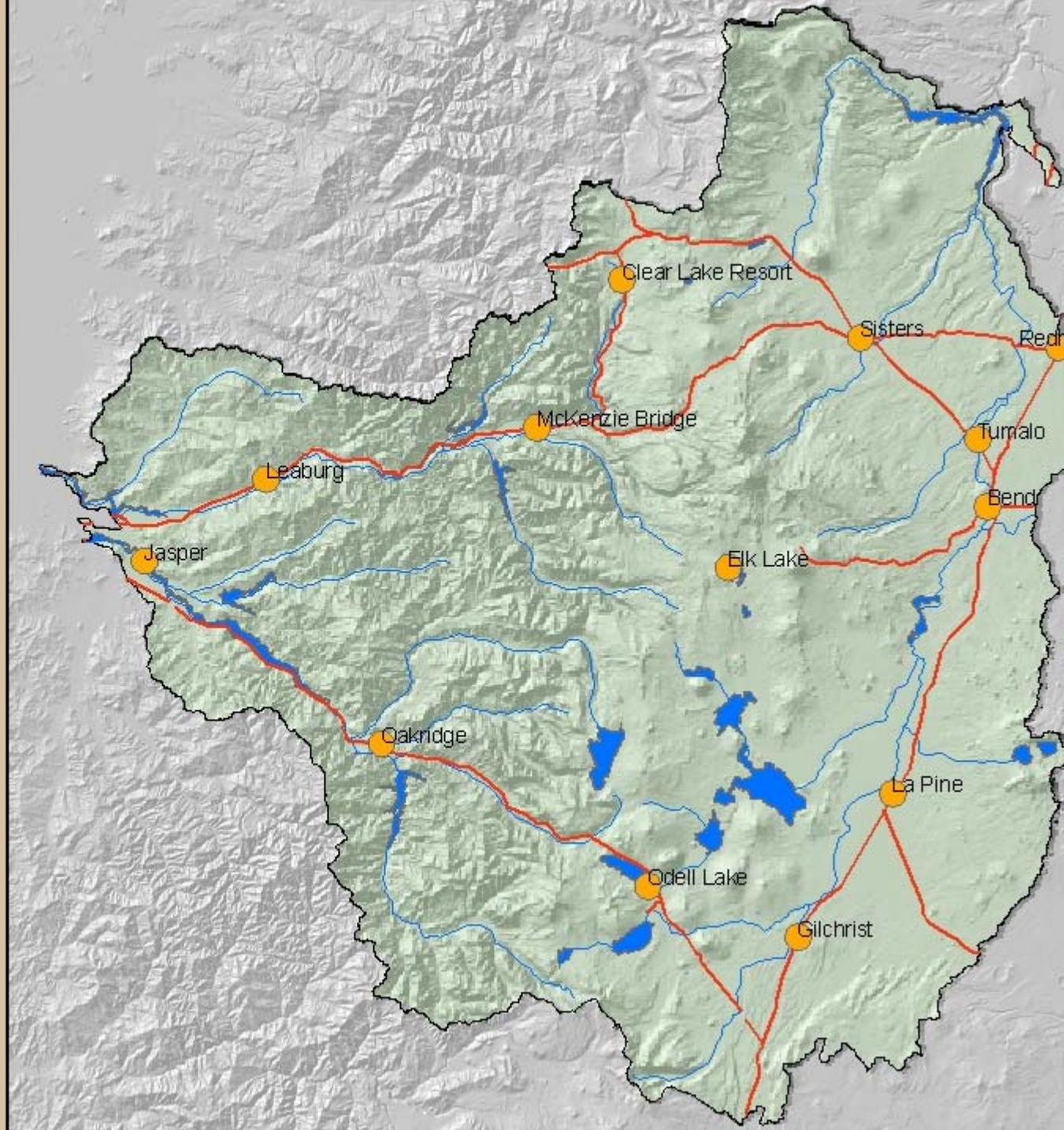
- Active Fuel Treatment (AFT)
 - Purpose: test active management scenario with fuel treatment focus
 - Not meant to be a realistic example...includes regeneration harvests on NF general forests
- Historical (HIST)
 - Purpose: test background disturbances scenario
 - Disturbance frequencies and severities from local opinion

COLA Study Area

- Major Rivers
- Major Roads



0 5 10 20 Miles

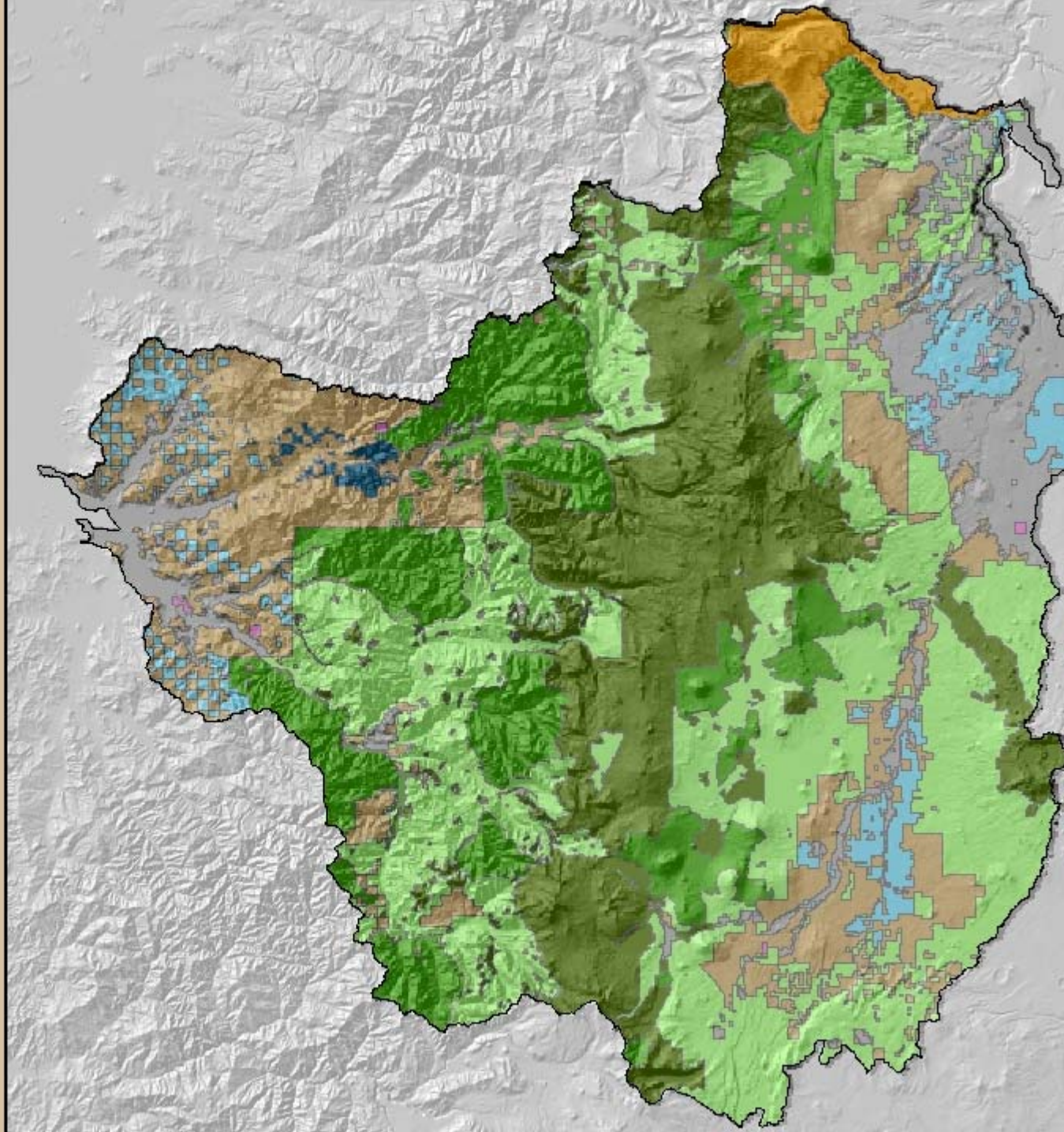


COLA Ownership

- USFS General Forest
- BLM General Forest
- USFS Reserved
- BLM Reserved
- State
- Wilderness / Admin WD
- Tribal
- Private Timbered
- Private Non-Timbered
- Unknown



0 5 10 20 Miles



Plant Association Groups (PAGs)

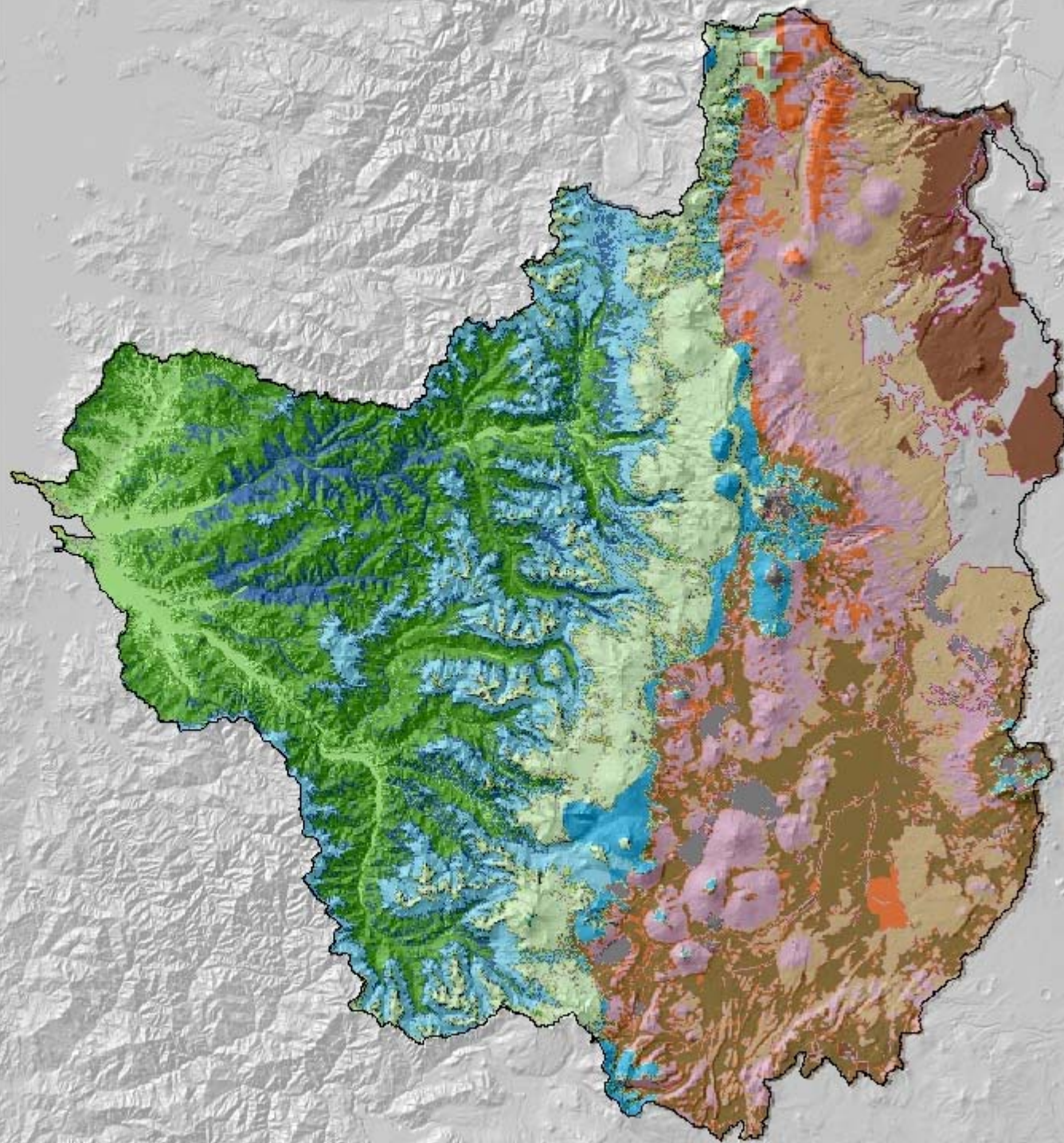
- Non-Veg
- Urban and Agriculture
- Mountain Shrub / Meadow Wet
- East-side Juniper Woodland
- Ponderosa Pine Dry
- Mixed Conifer Dry
- Mixed Conifer Wet
- Lodgepole Pine Dry
- Upper Montane Conifer Cold
- West-side Grass Shrub Dry
- West-side Douglas Fir / Grand Fir Dry
- West-side Western Hemlock Dry
- West-side Western Hemlock Moist
- Upper Montane Moist (Pacific Silver Fir)
- Alpine / Subalpine



0 5 10 20 Miles



N



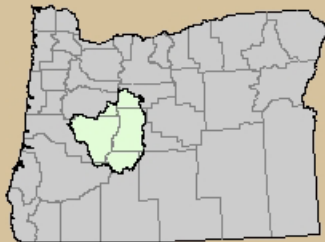
36 Watersheds (HUC5)

4th and 5th Field HUCs

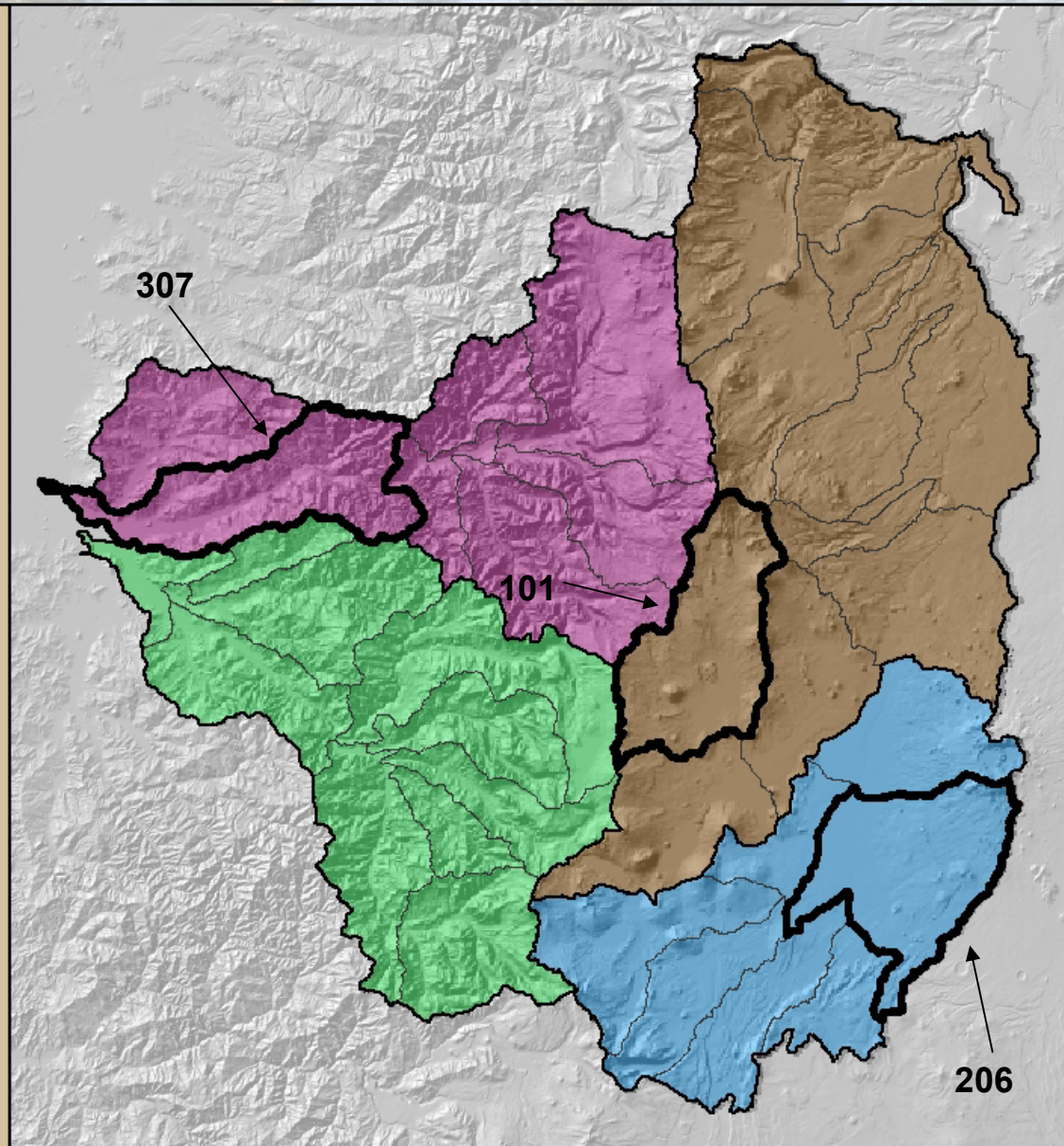
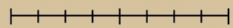
4th Field HUCs

-  Lower Deschutes
-  Upper Deschutes
-  McKenzie
-  Middle Fk. Willamette

— 5th Field HUCs



0 5 10 20 Miles

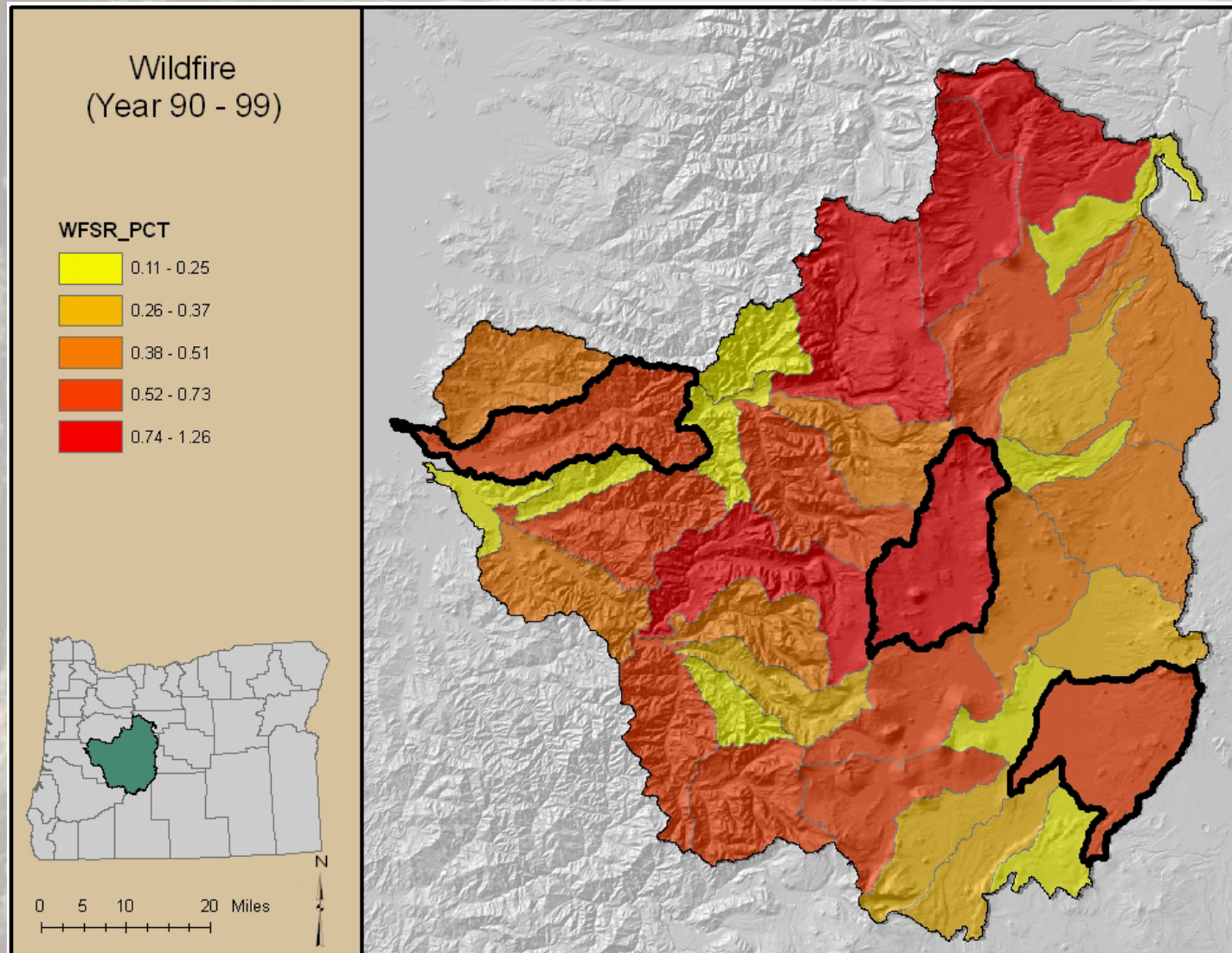


Active Fuel Treatment Scenario

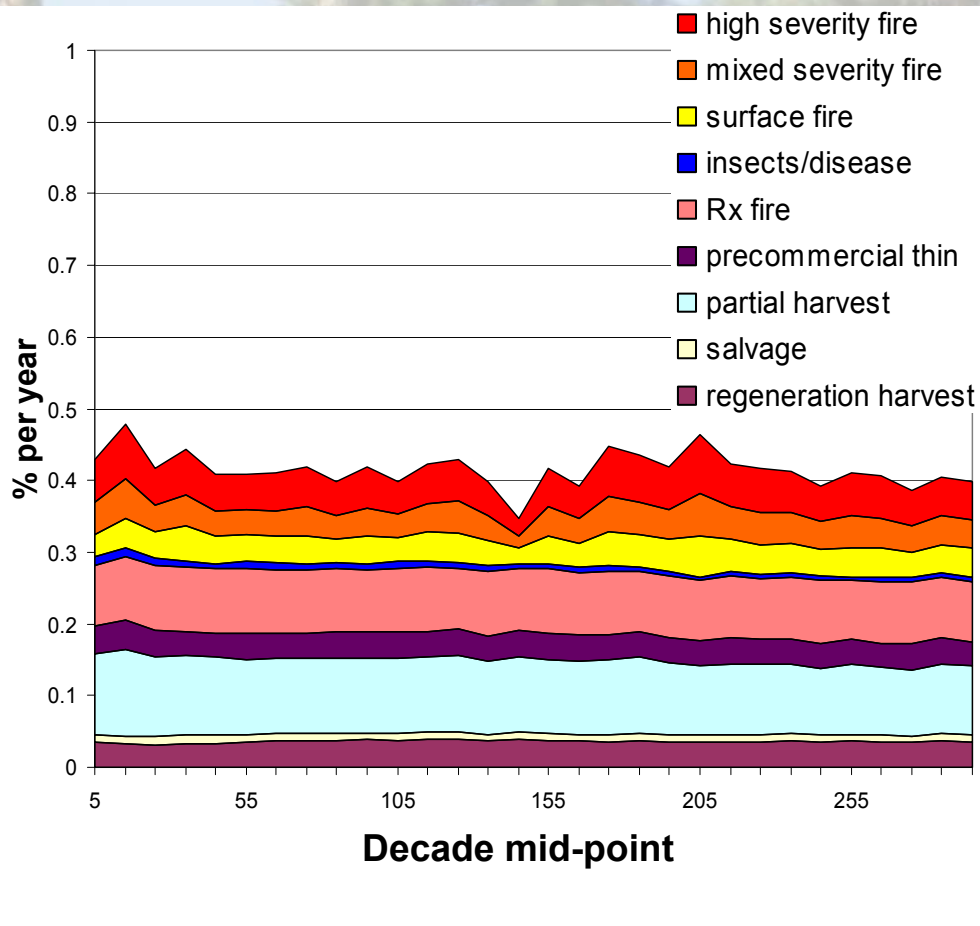
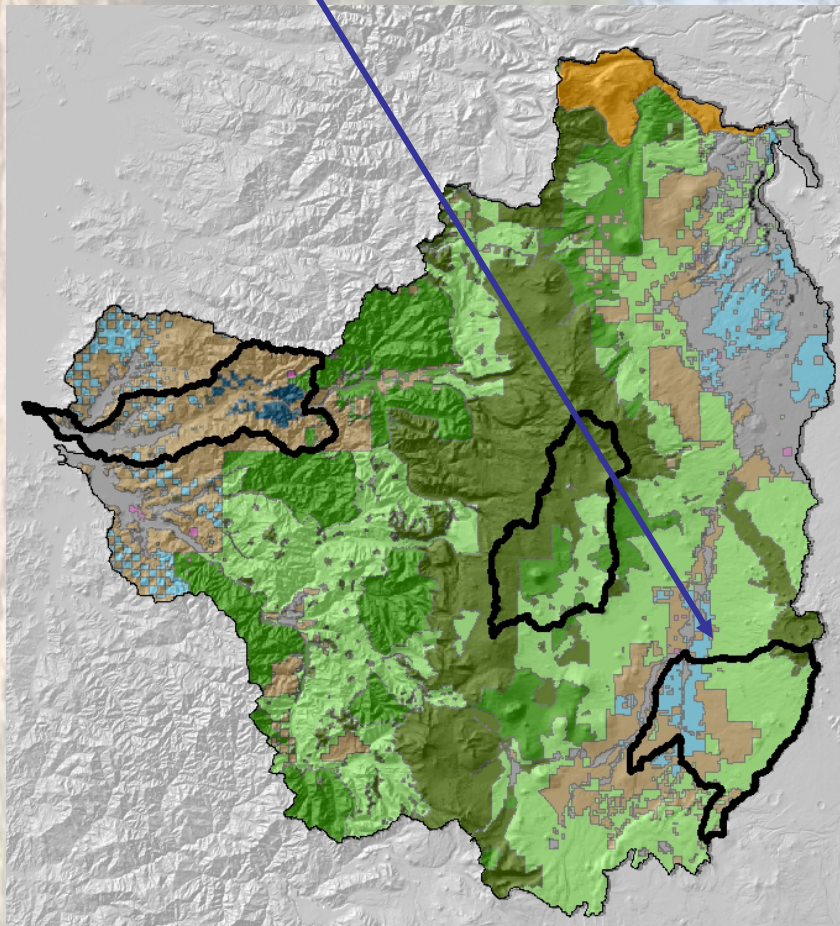
Remember, this is not a realistic level
of treatment

West-side fire regimes are more like
historic than current

Active Fuel Treatment



H206 – Active Fuel Treatment

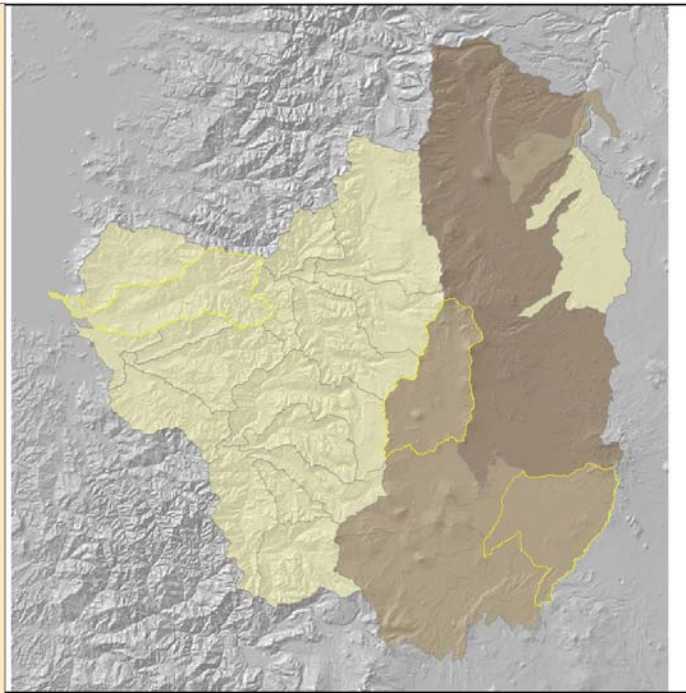
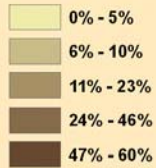


AFT Mature Forests

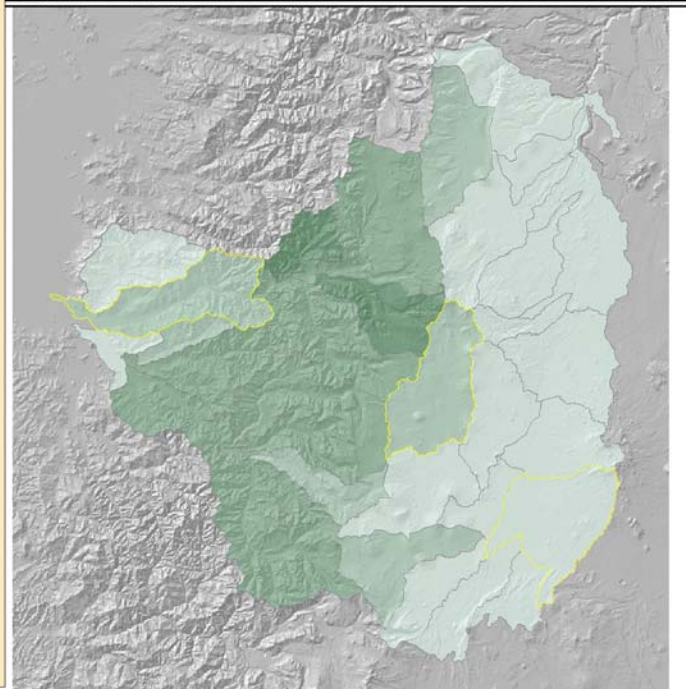
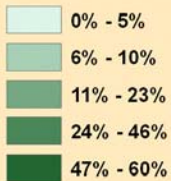
>20" DBH

Density of Mature Stands in Year 300

Percent of Open Large and Giant Trees



Percent of Dense Large and Giant Trees

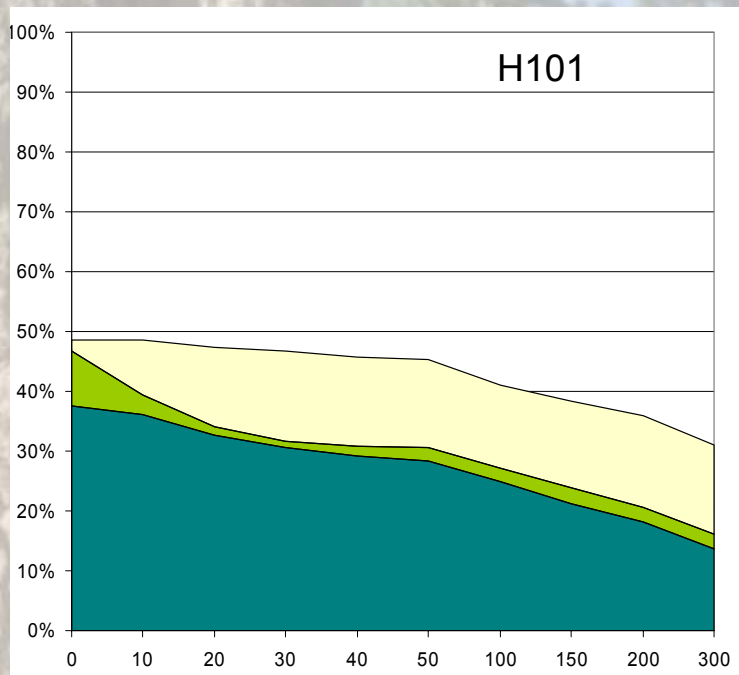


0 5 10 20 30 40 Miles

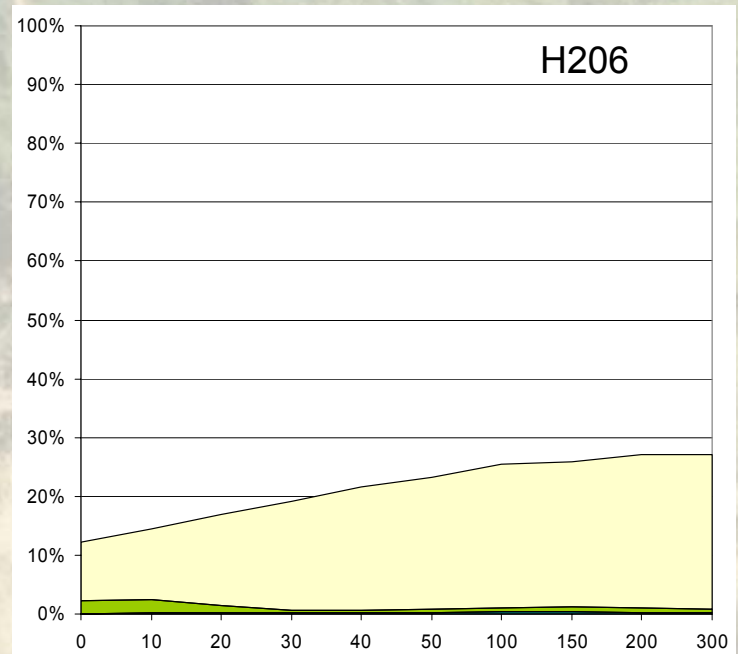
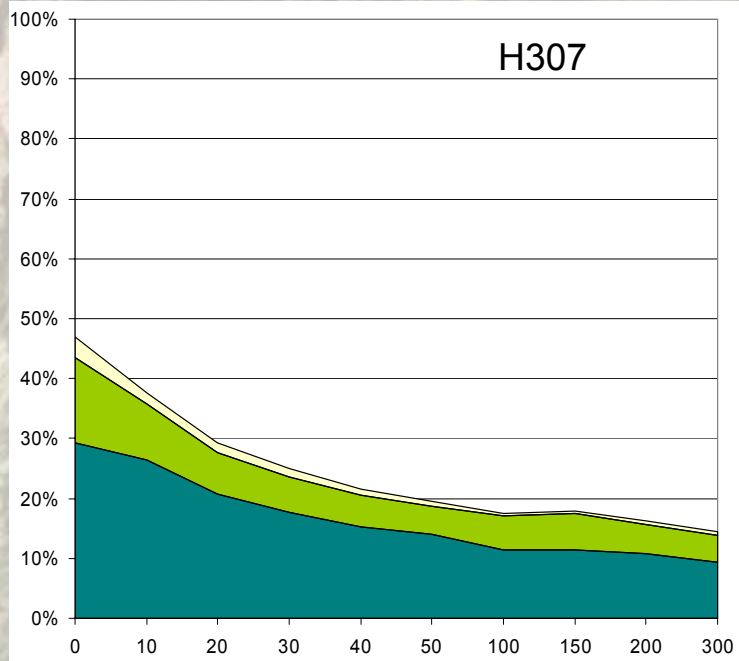
Open

Dense

AFT Medium, Large, & Giant Tree Forest



- MLGT open
- MLGT medium
- MLGT dense

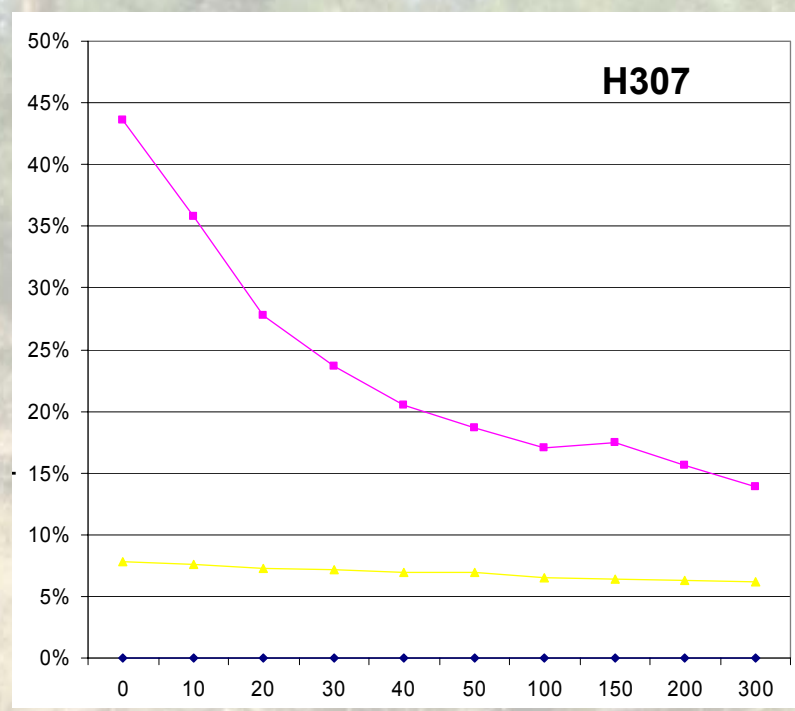
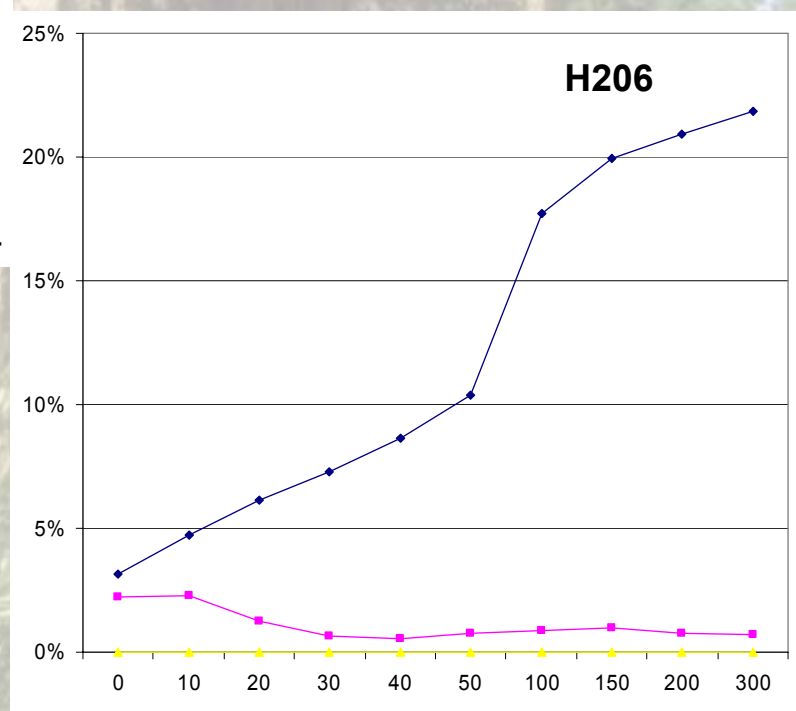
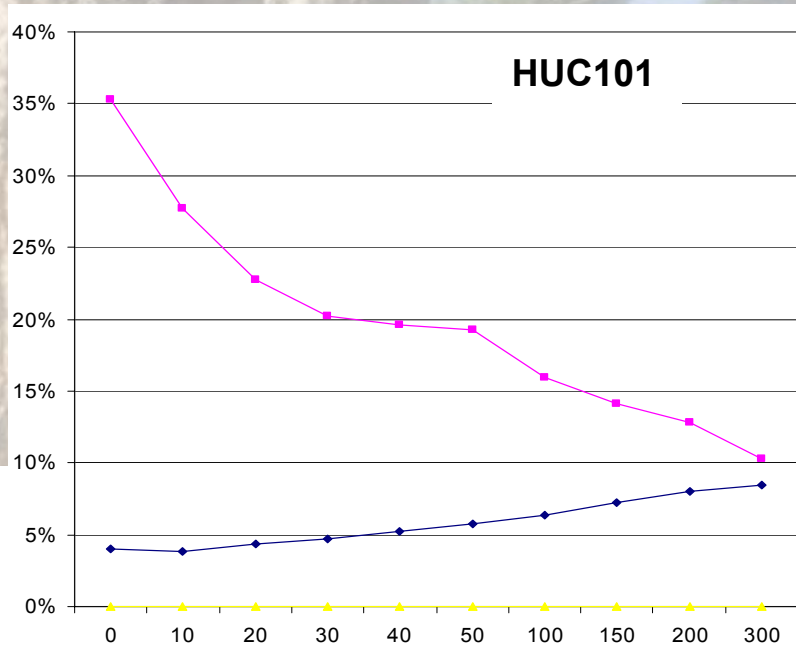


AFT Scenario

Example Species

percent suitable habitat

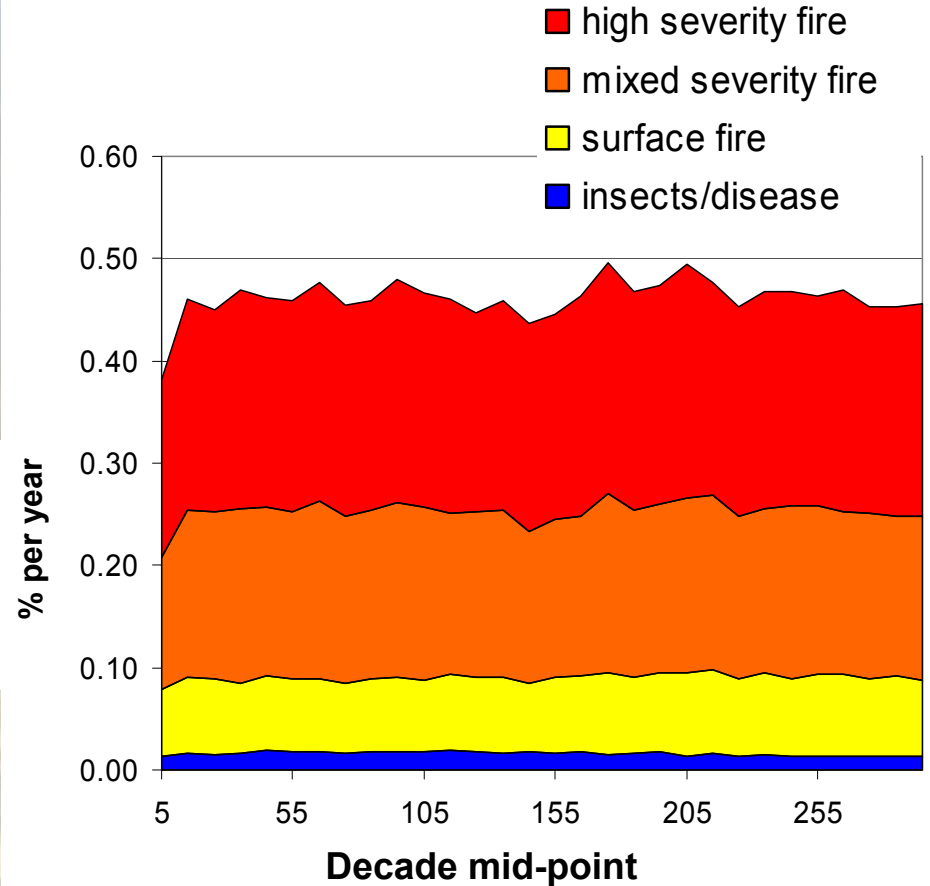
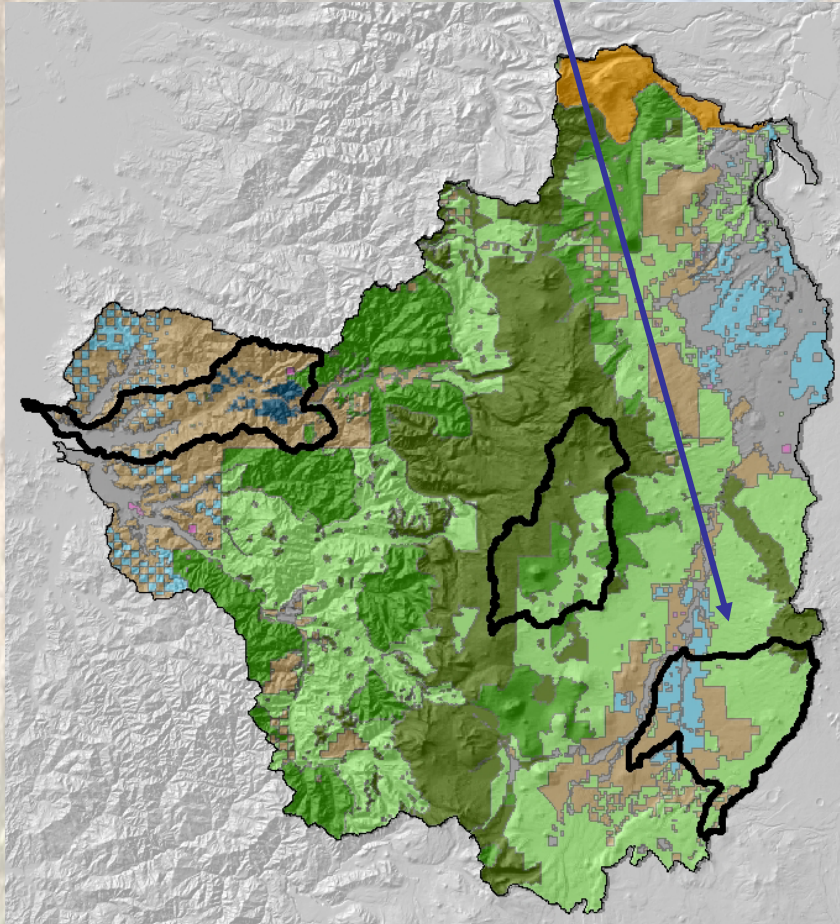
- Whiteheaded woodpecker
- Hammonds Flycatcher
- Acorn woodpecker



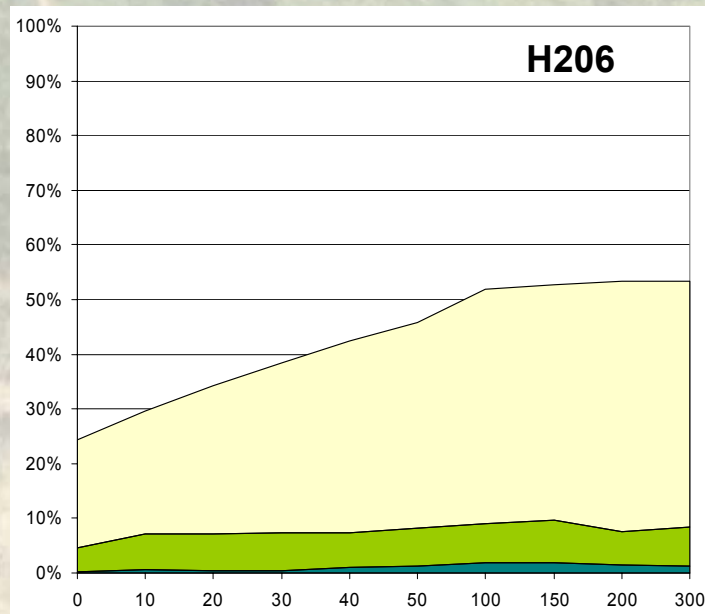
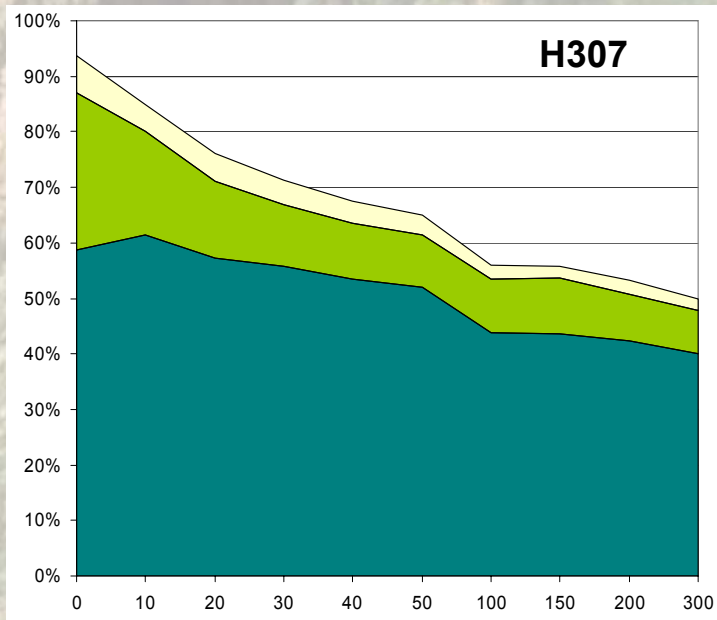
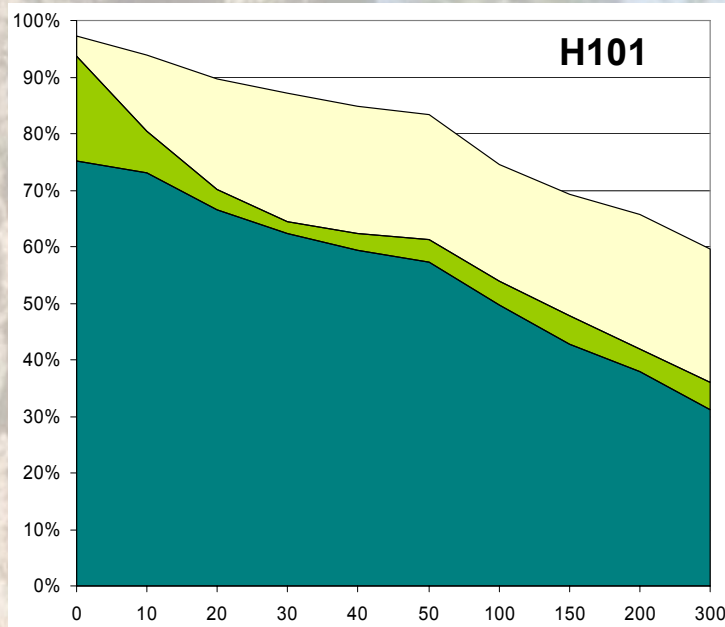
Historic Scenario

Historical natural disturbance regimes are best guess from local experts

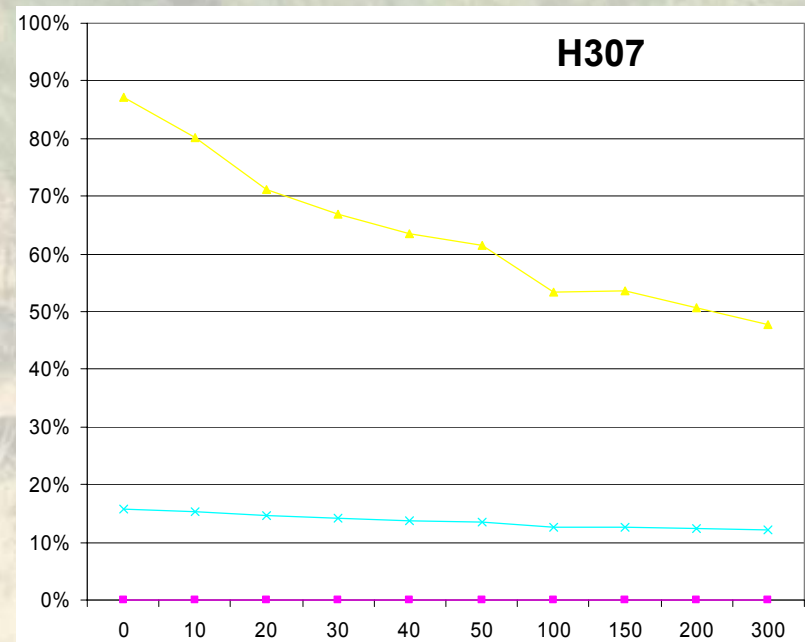
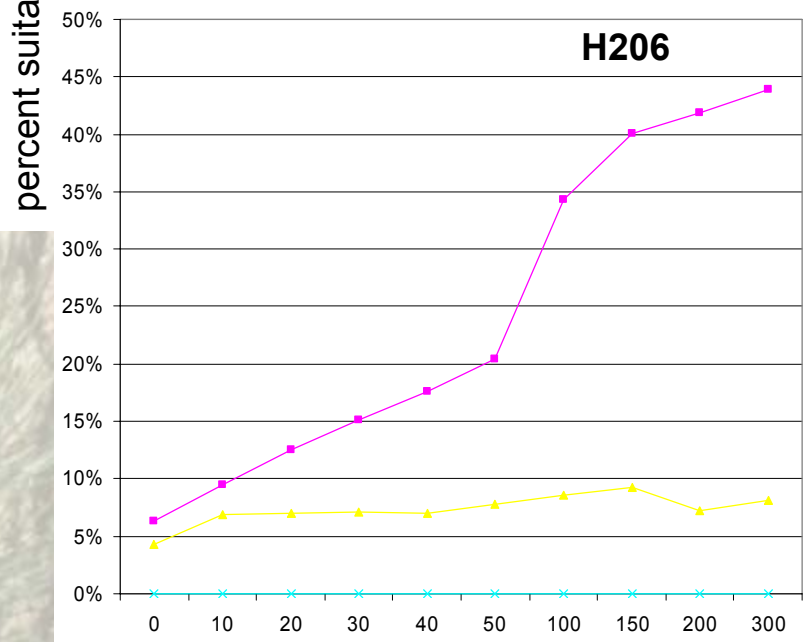
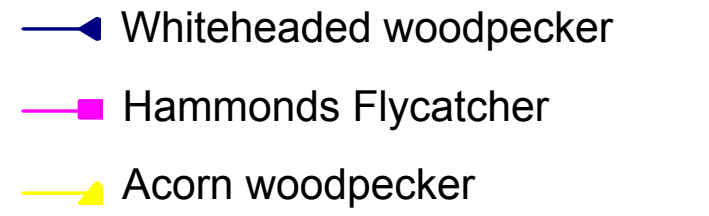
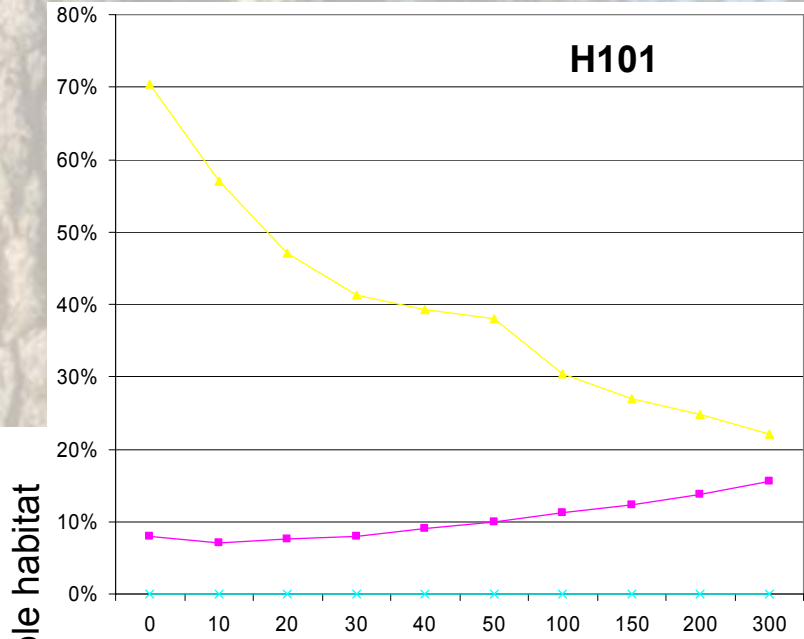
H206 – Historic



HIST Medium, Large, & Giant Tree Forest



HIST Scenario Example Species



FY07 Program of Work

- SE Oregon mapped and modeled
- Fremont-Winema polygon map completed
- SW Oregon pre-work (VDDT modeling)
- Deschutes NF has expressed interest in polygon layer update

Applications to Wildlife Movement Study

- Provides wall-to-wall vegetation mapping
- Variety of attributes related to wildlife can be mapped (cover, snags)
- Highway networks can be overlaid on maps and buffered
- Will be most useful at mid-scale

FY06 Program of Work

Update...

- Tied to Deschutes Fire Pilot **Ongoing**
- Develop study plan for state-wide assessment – ODF **Several drafts completed, nearing final**
- Complete NE Oregon Veg Mapping and Models **Expected by end of FY**
- Develop Fremont-Winema Polygon Layer
3 of 5 areas completed; completion expected by end of FY06