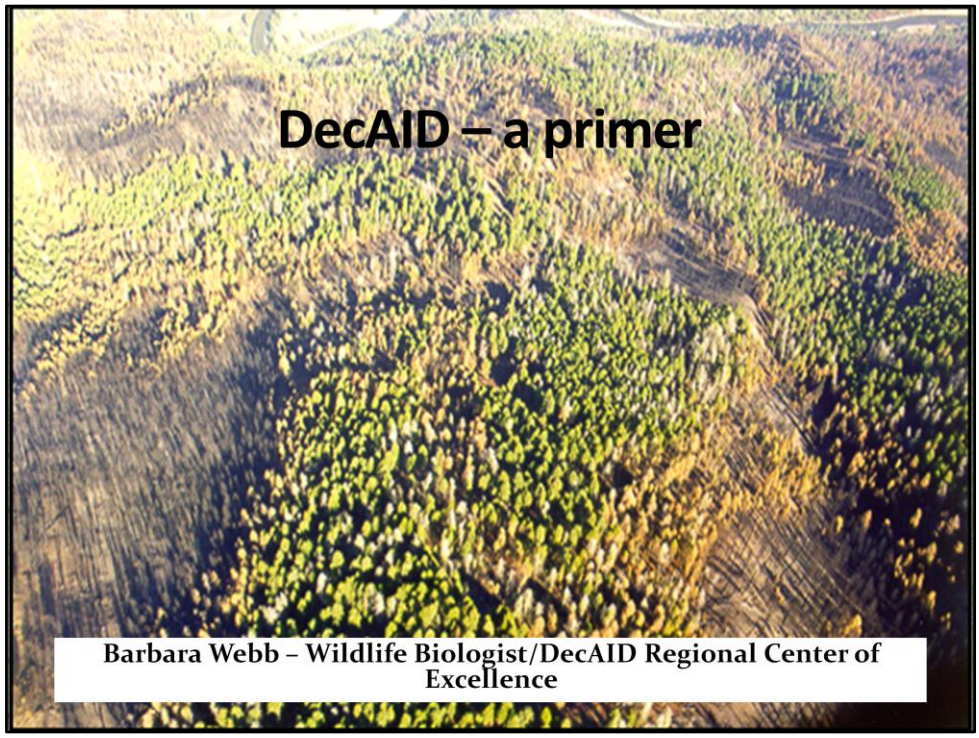
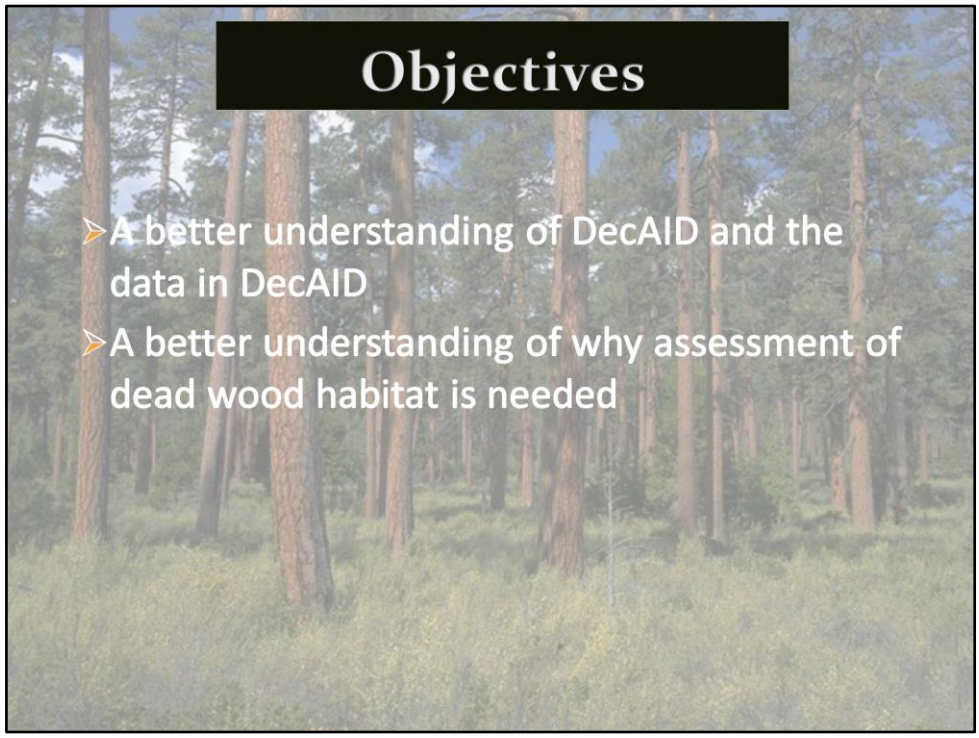
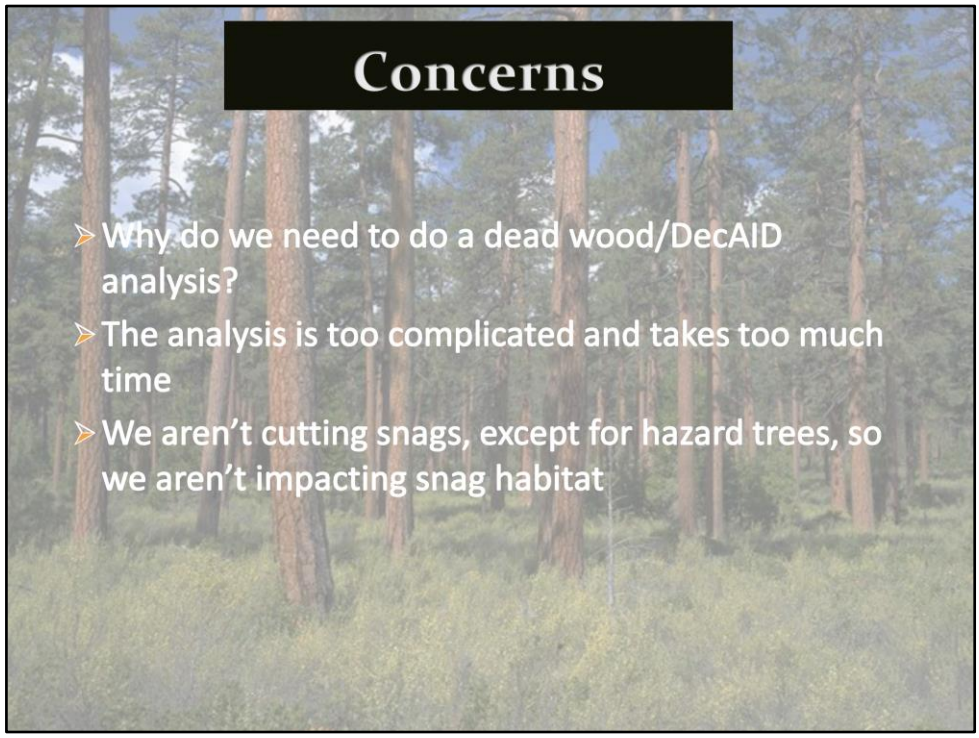

DecAID – a primer
Barbara Webb – Wildlife Biologist/DecAID Regional Center of Excellence


Objectives
A better understanding of DecAID and the data in DecAID
A better understanding of why assessment of dead wood habitat is needed



These are concerns we've heard from various folks around the Region. Will try to address in the presentation

Outline of presentation

- Why DecAID was developed?
- Why DecAID is relevant?
- What is DecAID?
- What a dead wood analysis needs to address
- Suggested analysis methods

Began development in 1998
First version was in 2002

Why was DecAID developed?

Because LRMP S&Gs were based on "potential population levels" *aka* "biological potential" *aka* "maximum population potential" yet in 2001 it was published that this was a flawed technique:

> "Calculations of numbers of snags required by woodpeckers based on assessing their "**biological potential" [or maximum population potential]** ***is a flawed technique***…studies show numbers used and selected by some species ***are far higher*** than calculated with this technique." (emphasis added)

(page 602 - "Lessons Learned During the Last 15 Years" Chapter 24 "Decaying Wood in PNW Forests: Concepts and Tools for Habitat Management" (Rose et al. 2001) *in* Wildlife – Habitat Relationships in Oregon and Washington (Johnson & O'Neil 2001; OSU Press)

Replaced Thomas "Wildlife Habitat in the Blue Mountains"
LRMP S&Gs were based on the BP model from the snag chapter in this publication

A Paradigm Shift

We went from the past management strategies:

- Focused on providing snags only for primary cavity-nesting birds
- "One size fits all" – one magic number
- Stand level approach

↓

Ecosystem management strategies:

- Focus on all dead wood dependent species and ecosystem function
- A focus on using HRV for reference conditions results in attempts to mimic natural levels ***and distributions*** – one size does not fit all
- Landscape level approach

Regulatory Framework

NFMA directs the Forest Service to provide habitat to maintain viable populations of existing native and desired non-native vertebrate species.

Management Indicator Species (MIS) were selected for emphasis in planning, and are assessed during forest plan implementation in order to determine the effects of management activities on their populations and the populations of other species with similar habitat needs.

Primary cavity-excavating birds are MIS for dead and defective wood habitat on **all** forests in Region 6. Some plans identify individual species as MIS and others identify the group of primary cavity-excavators.

Regulatory Framework

Remember….

Even though S&Gs from the Forest Plan used outdated techniques, the snag levels in the Plan are still your minimums and analyses need to show (that is - document!) how the project is meeting the S&G's for snags and downed wood. Otherwise may need a project-specific Forest Plan Amendment

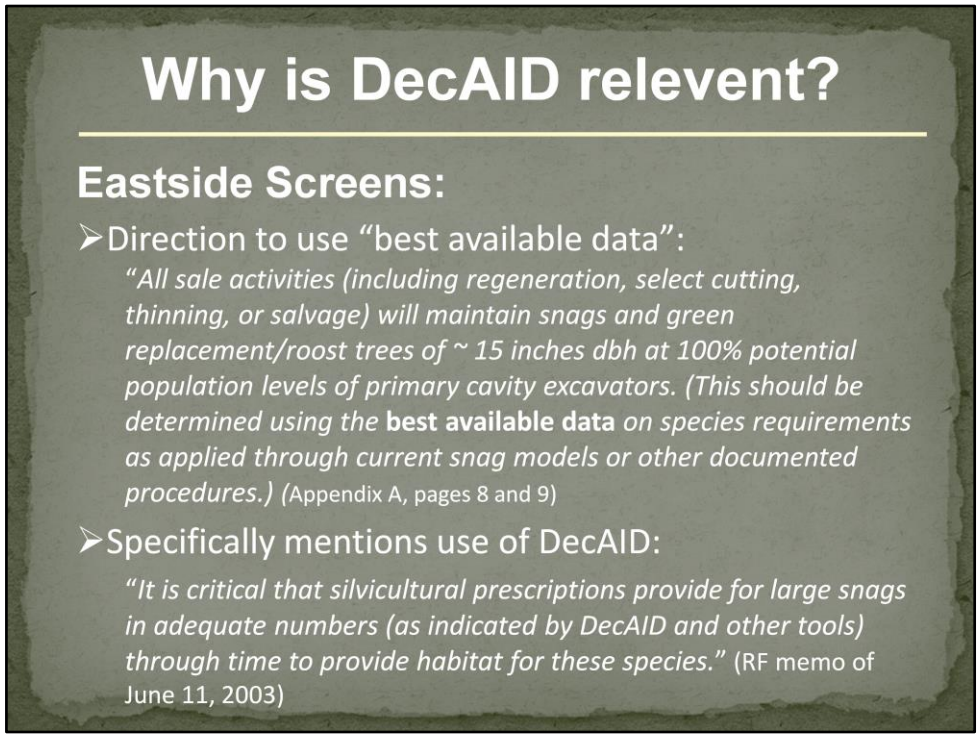
What does your LRMP say?

Why is DecAID relevent?

New information & direction was challenging the current plans:

- NWFP ROD (1994)
- Eastside Screens (1995)
- Increased public interest in dead wood habitat– **about 75% of appeals on vegetation management/fuels projects list snags as one of the issues**
- White-headed and Lewis' woodpeckers added to the Regional Sensitive species list; petition to list black-backed woodpecker

Appeals data from last 3 years



The Eastside Screen implementation memo specifically mentions DecAID … though doesn't require its use.

- *existing credible scientific evidence 40 CFR 1502.22*
- *scientific integrity 40 CFR 1502.24*
- *Data quality act - section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106–554; H.R. 5658). Section 515 directs the Office of Management and Budget (OMB) to issue government-wide guidelines that ''provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies.*

DecAID in Brief

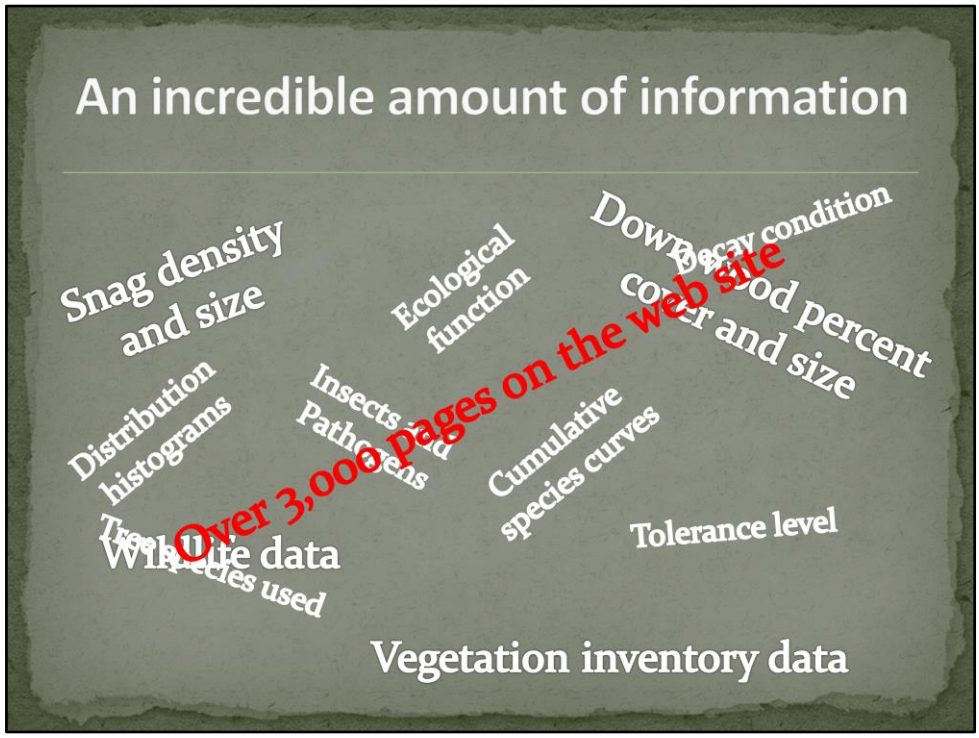
- It is an interactive Web Site compiling the best available science on dead wood dependent species
- DecAID is not a model
- Needs to be applied at the landscape scale – 12,800 acres or larger

DecAID the Website

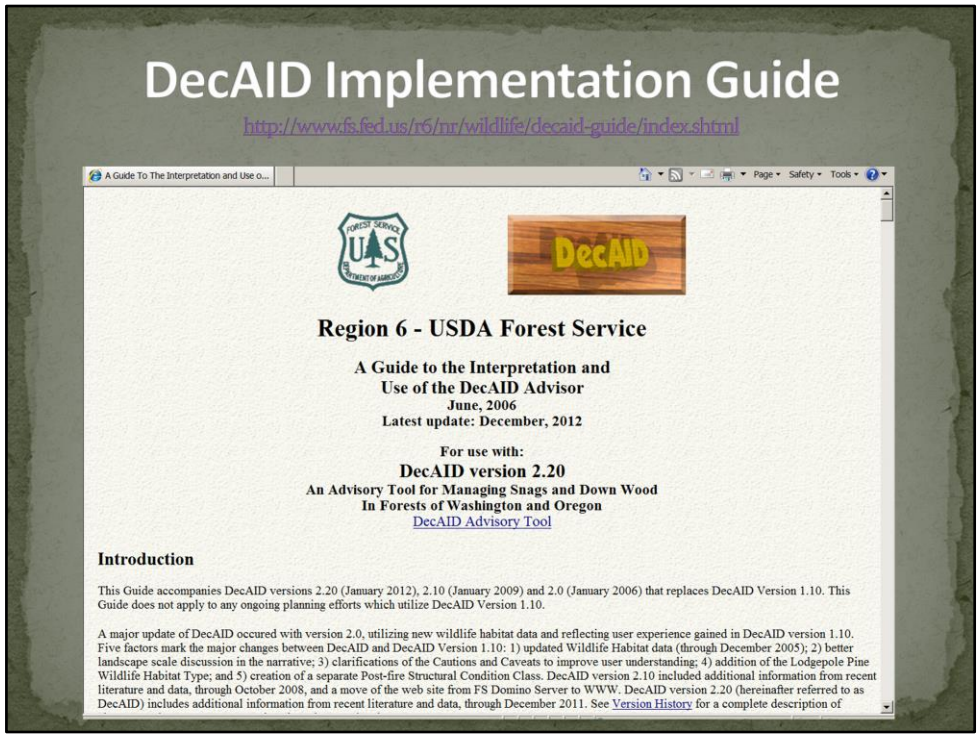
http://www.fs.fed.us/r6/nr/wildlife/decaid/

What is DecAID?

- **Compilation of best available data/science**
  - "**Wildlife**" data from research and publications
  - **Vegetation** inventory data from CVS, FIA, NRI
- **Statistical analysis of metadata**
  - Tolerance levels
  - Cumulative species curves, bar graphs
  - Distribution histograms
  - Types and amounts of forest insects and diseases
- **Interpretation of data**
  - Comparison of "**wildlife**" to **vegetation** inventory data and insect and disease information



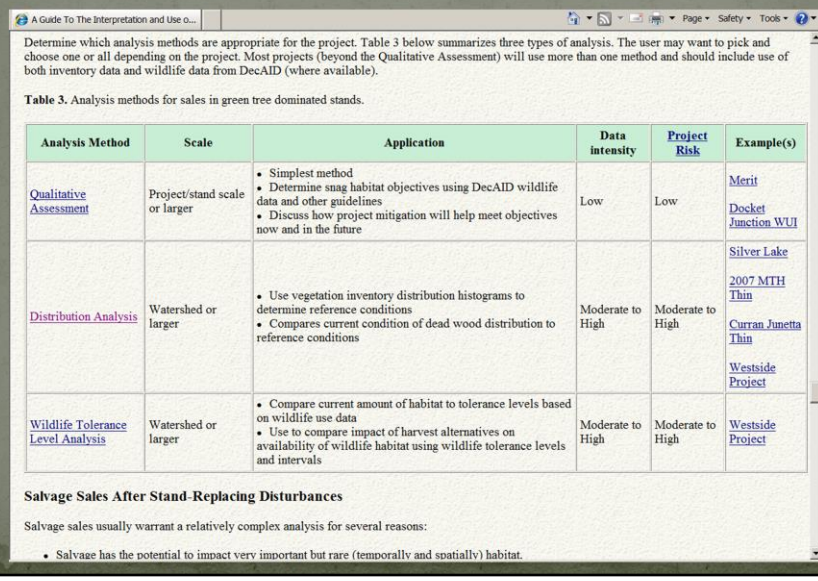
There is an incredible amount of information on the DecAID web site



Because there is so much information on the web site, an implementation team was put together to develop guidance in using the information in DecAID
Team members included **regional, forest, and district-level folks**; also included USFWS

DecAID Implementation Guide

http://www.fs.fed.us/r6/nr/wildlife/decaid-guide/index.shtml



A Guide To The Interpretation and Use o...

Page ▾ Safety ▾ Tools ▾

Determine which analysis methods are appropriate for the project. Table 3 below summarizes three types of analysis. The user may want to pick and choose one or all depending on the project. Most projects (beyond the Qualitative Assessment) will use more than one method and should include use of both inventory data and wildlife data from DecAID (where available).

Table 3. Analysis methods for sales in green tree dominated stands.

Analysis Method	Scale	Application	Data intensity	Project Risk	Example(s)
Qualitative Assessment	Project/stand scale or larger	• Simplest method • Determine snag habitat objectives using DecAID wildlife data and other guidelines • Discuss how project mitigation will help meet objectives now and in the future	Low	Low	Merit Docket Junction WUI
Distribution Analysis	Watershed or larger	• Use vegetation inventory distribution histograms to determine reference conditions • Compares current condition of dead wood distribution to reference conditions	Moderate to High	Moderate to High	Silver Lake 2007 MTH Thin Curran Junetta Thin Westside Project
Wildlife Tolerance Level Analysis	Watershed or larger	• Compare current amount of habitat to tolerance levels based on wildlife use data • Use to compare impact of harvest alternatives on availability of wildlife habitat using wildlife tolerance levels and intervals	Moderate to High	Moderate to High	Westside Project

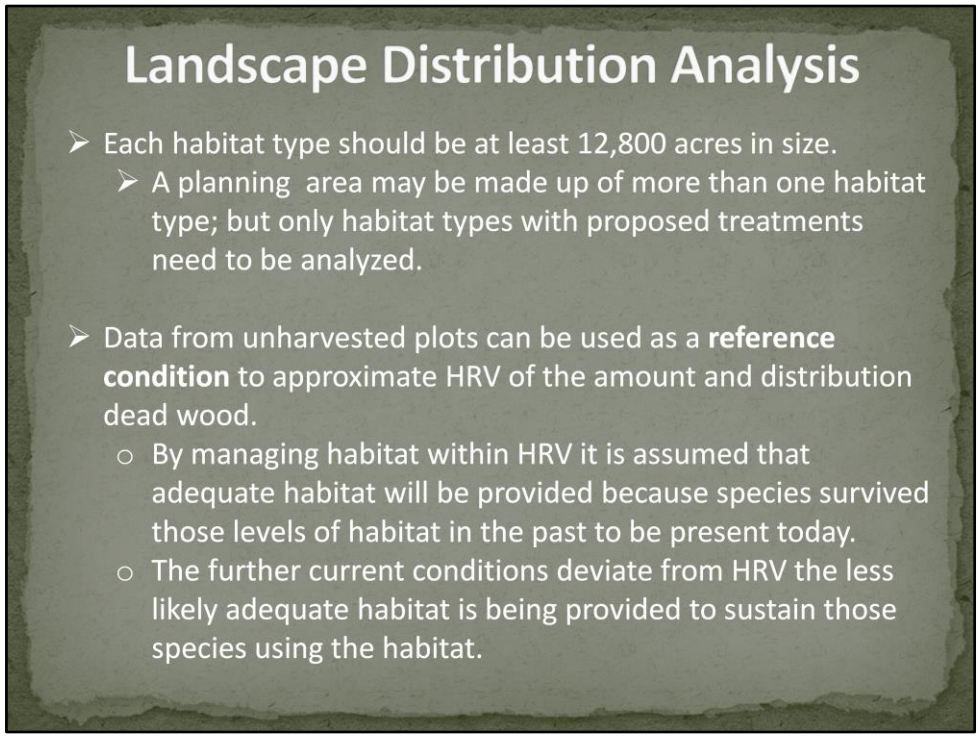
Salvage Sales After Stand-Replacing Disturbances

Salvage sales usually warrant a relatively complex analysis for several reasons:

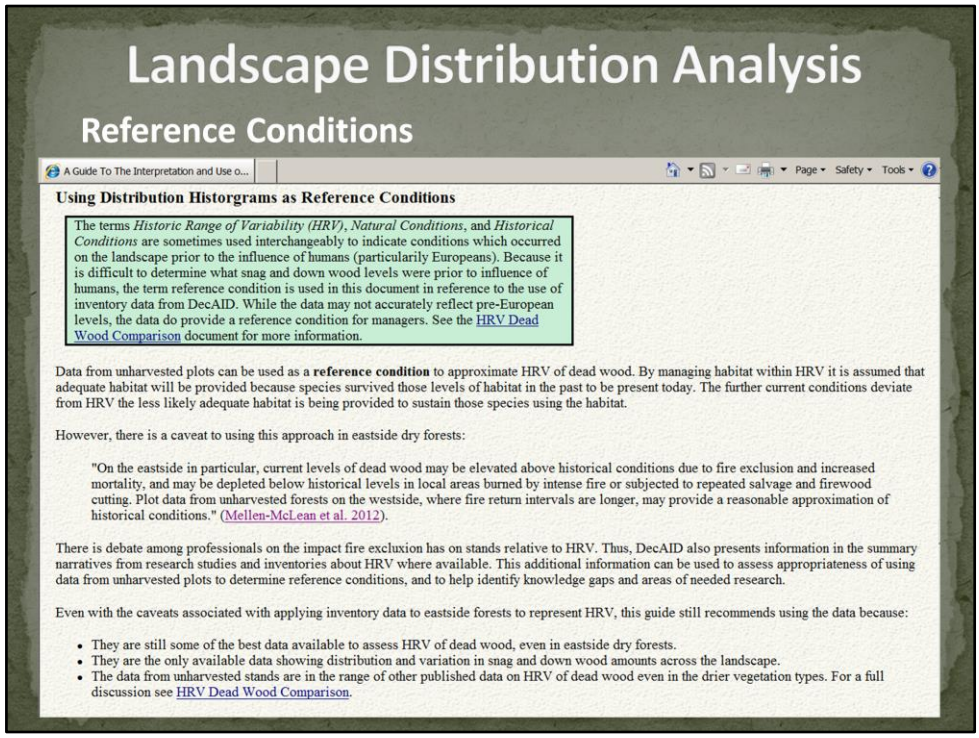
- Salvage has the potential to impact very important but rare (temporally and spatially) habitat.

Click on each analysis method for a step by step guide showing how to do it. There is a similar table for salvage/stand-replacing events

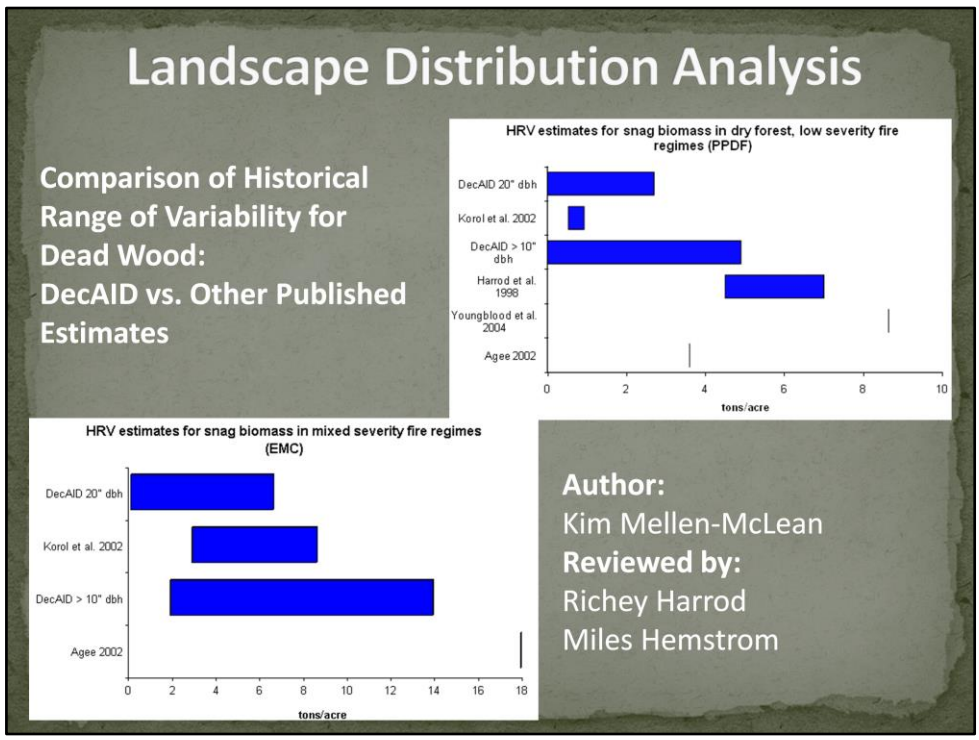
After years of using DecAID to assess dead wood habitat, the Implementation Team recommends using a Distribution Analysis as a basis for the effects analysis.



When you finish your distribution analysis you will key in on those densities with large differences between reference and current

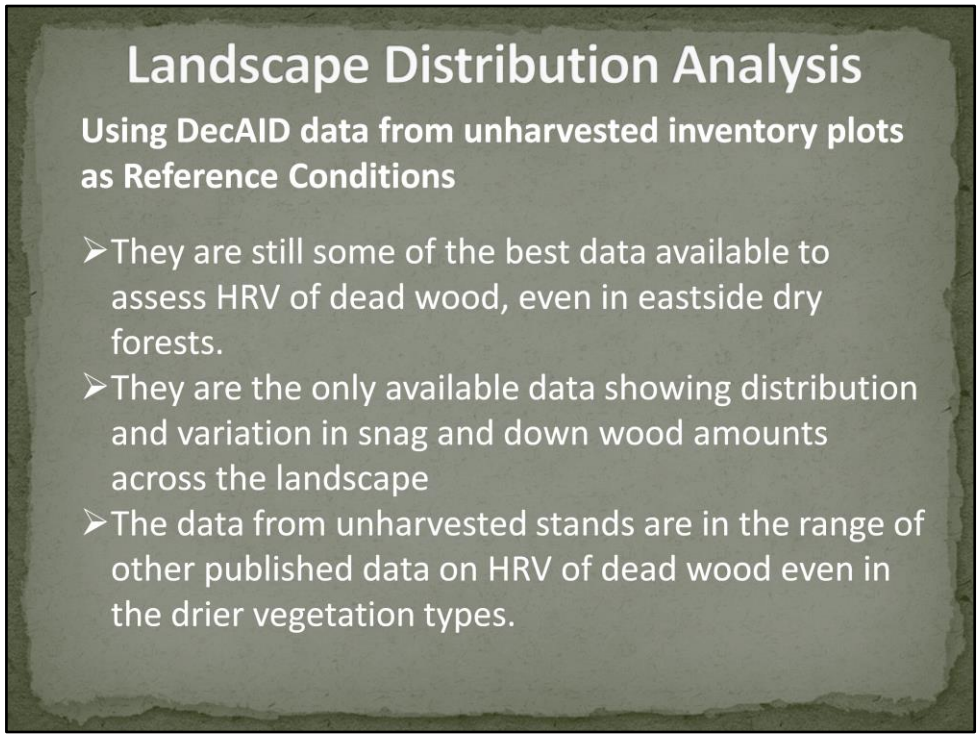


Many folks are concerned about using “unharvested plots” as reference conditions, so explored other published estimates of historical dead wood – link to paper in green box



DecAID is similar or below other estimates (and a distribution range rather than one point)

Agee 2002- 30 inches
Harrod et al. 1998 - 6"
Korol et al. 2002 - 20 inches
Youngblood et al. 2004 - 24 inches

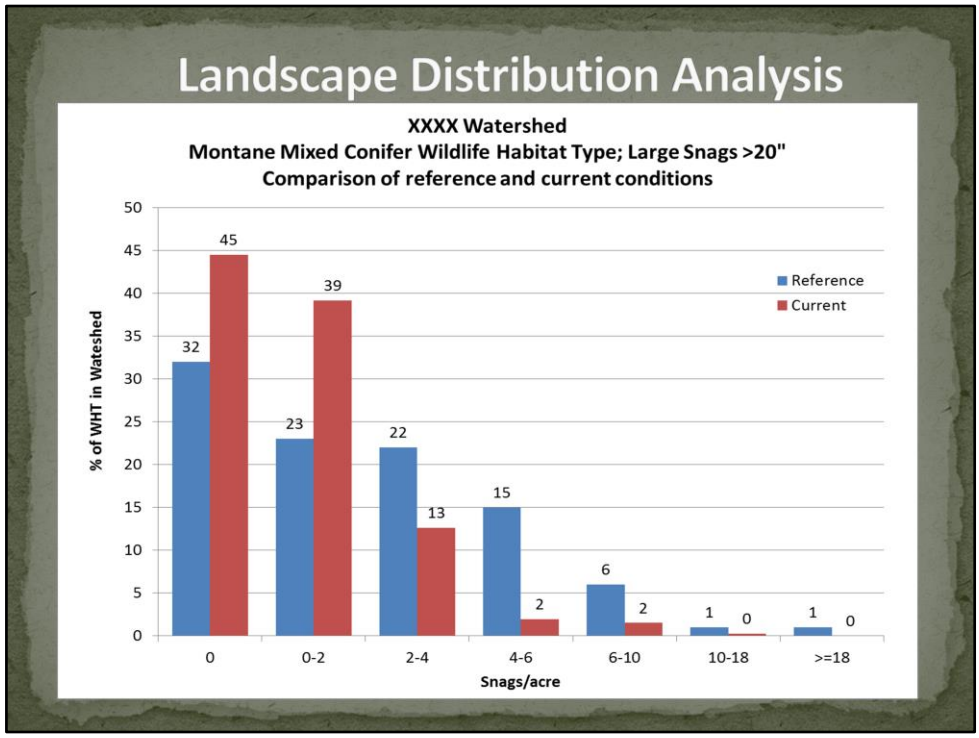


This analysis justifies using the unharvested plot information as references conditions

Landscape Distribution Analysis

- **Step 1:** Data Collection: Determine current snag and down wood distribution across the landscape (DONE *using the region-wide distribution analysis using the 2012 GNN vegetation data*)
- **Step 2:** Determine Wildlife Habitat Type(s) in the Analysis Area
- **Step 3:** Determine Historical Structural Condition(s) Within Each Wildlife Habitat Type in the Analysis Area
- **Step 4:** Build "Current Condition" Distribution Histograms for Each Wildlife Habitat Type and Compare to Vegetation Inventory Histograms (Excel *templates available to assist with this step*)

The inventory data uses FIA and CVS data that was designed to be statistically reliable at the Forest scale therefore a landscape approach (12,800 ac or greater per habitat type) is necessary when using these data.



We can interpret from this chart:

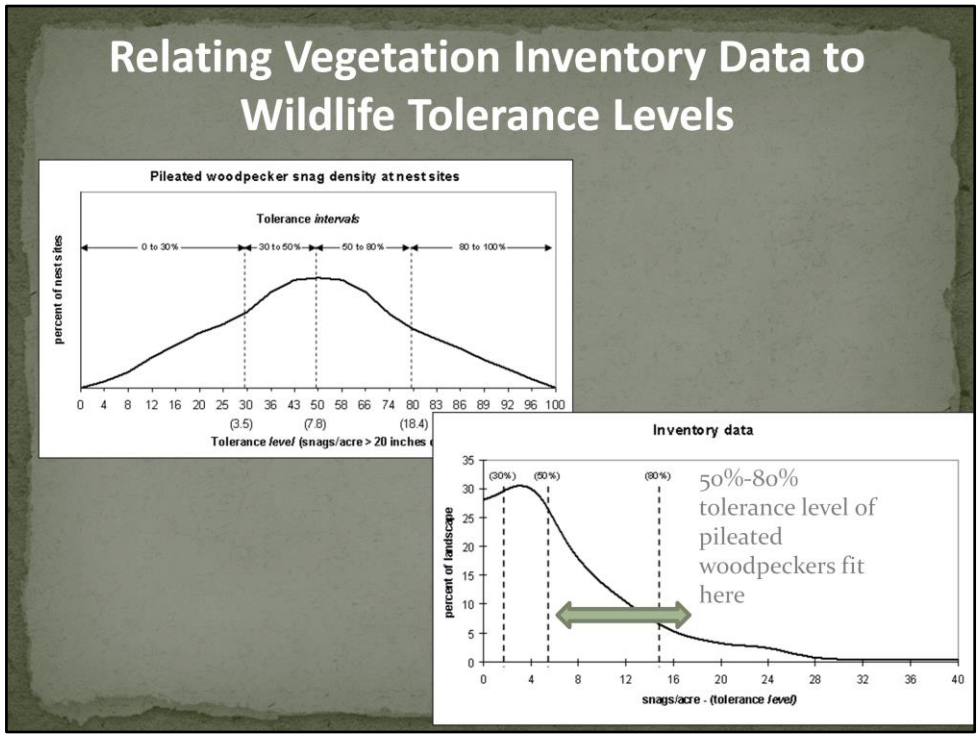
1. much of our current landscape (>20” snags in MMC habitat) is either not providing snag habitat or snag habitat at the <2/ac density than what we could expect historically.
2. that the highest snag densities (>10/ac) are relatively rare on the landscape currently and historically.
3. The 2-10 snags/ac densities is noticeably below what would be expected historically

Dead Wood Prescriptions – how do you decide?

Prescriptions need to be logically tied to current conditions and effects analysis

- What density or percent cover classes are you deficit in at the forest- and at the project-scales? ***Landscape Distribution Analysis informs you***
- Are there specific dead wood associated species that are a concern in the area? ***TES or MIS species***
- What are the objectives of the project and treatments? ***Fuels reduction, restoration, etc.***
- Do you want to manage below the LRMP S&Gs and do a project-specific plan amendment?

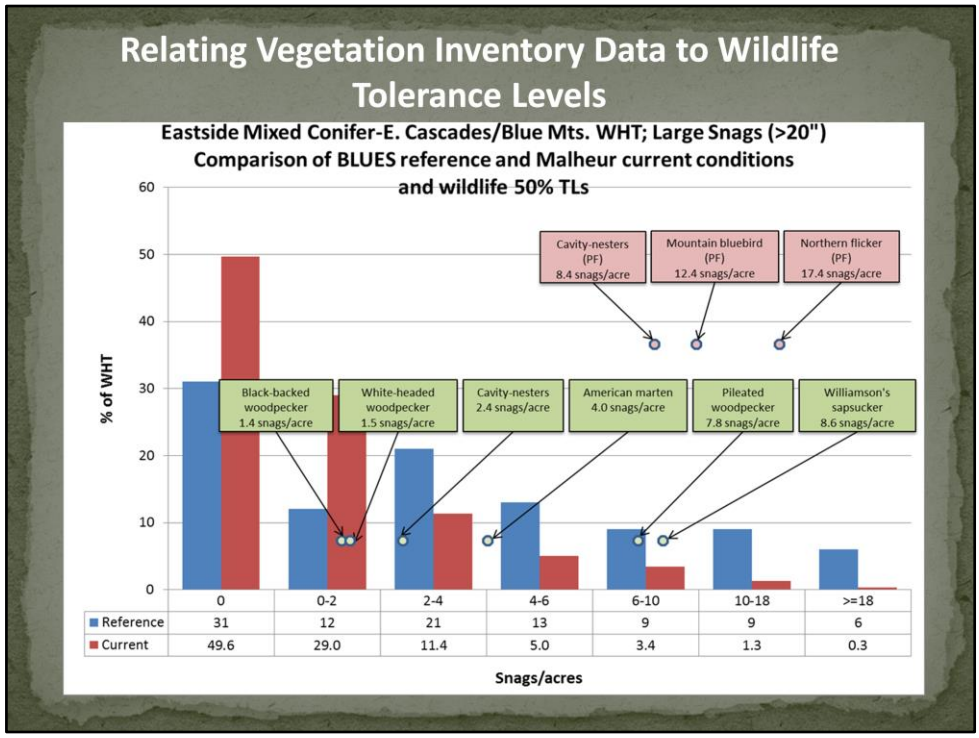
You don't need the same prescription on every acre …



A brief explanation of what a tolerance level is: the wildlife ones are normally distributed where the 50% level represents the AVERAGE; the inventory ones are skewed and the 50% level represents the MEDIAN.

What these graphs are saying: that although high density of snags are rare (curve at bottom) they are important to pileated woodpecker populations (upper graph).

segue nicely into next slide that expands on this.



EXAMPLE: Wildlife tolerance levels compared to distribution analysis from vegetation inventory data … 50% TL represents the average but some species will need some areas at 80% (pileated woodpecker MIS) depending on other project objectives. The right hand side of the graph represents densities attained through stand-replacing event (also indicated in the pink “post-fire” boxes)

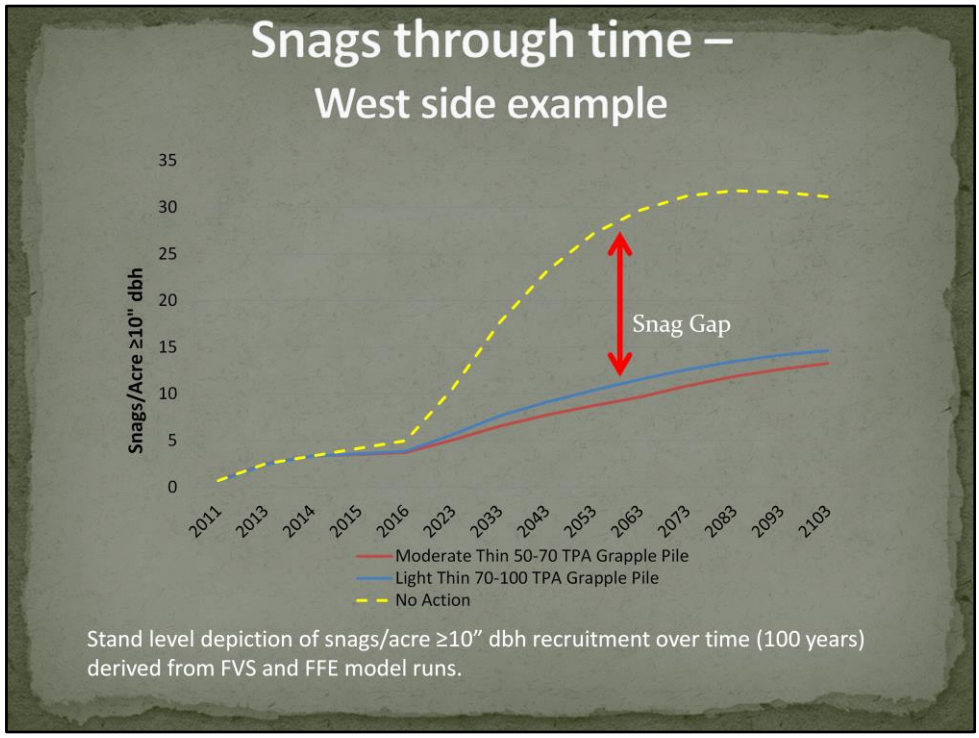
Effects Analysis

Describe Direct and Indirect Effects of the Alternatives and the difference between action and no-action alternatives

- Through time– **suggest use of FVS-FFE**
  - Short Term – snag gaps and pulses
  - Long Term – future stand produces snags/down wood
- Spatially (Stand/Landscape)

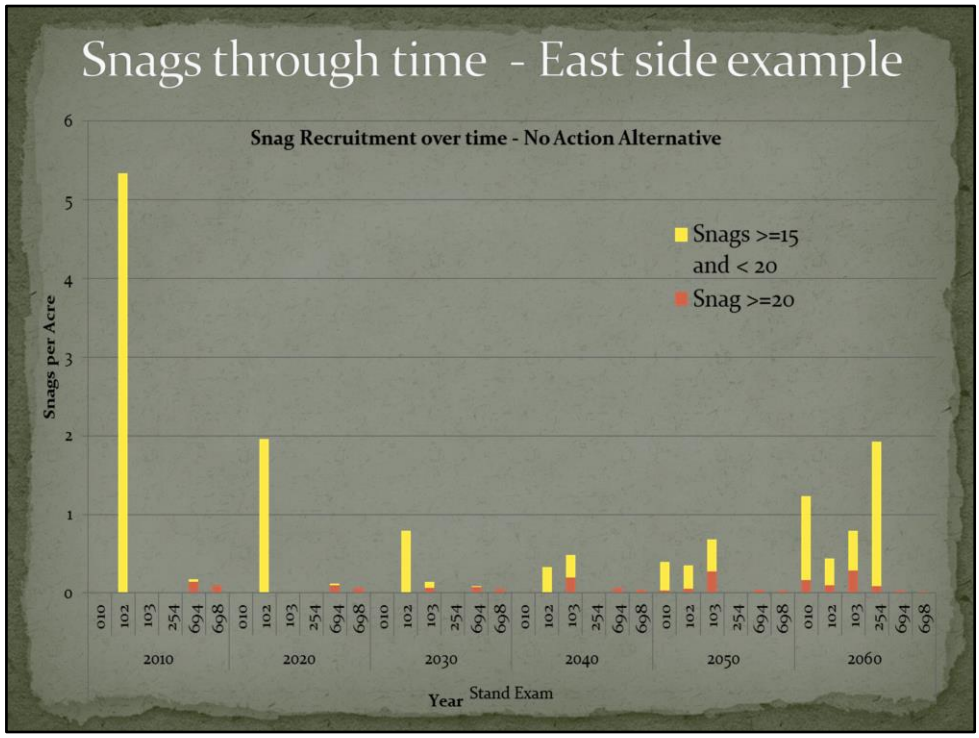
Failure to adequately address the effects of a project on recruitment of dead wood over time is a common oversight in effects analyses.

FVS-FFE = Forest Vegetation Simulator – Fire and Fuels Extension



Don't need to run for every project – do some representative runs for similar treatments in similar vegetation types

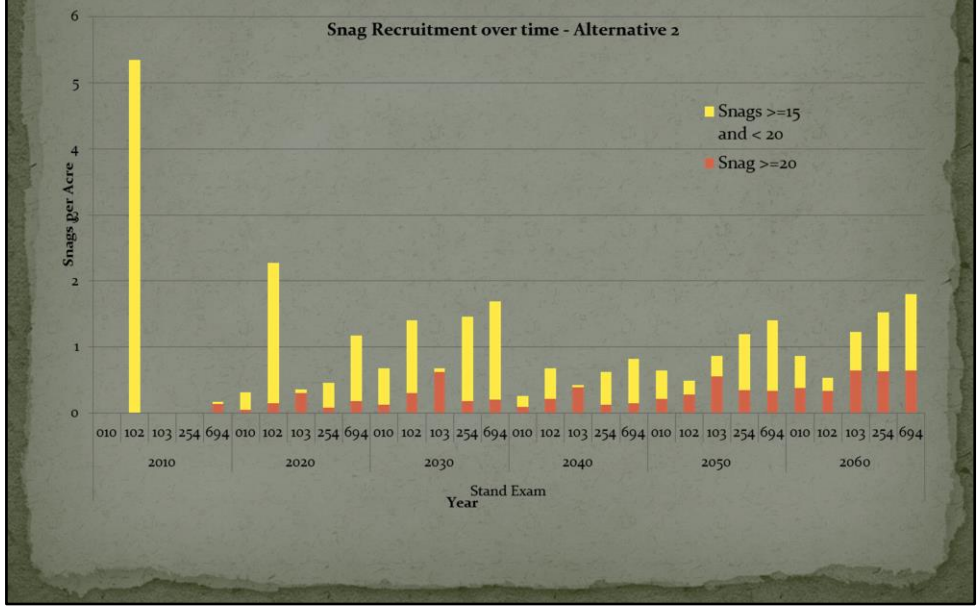
Any treatment you use in the stand, whether you remove snags or not, influences its ability to produce new snags. "Capturing mortality" and creating a healthier stand (e.g. by managing below the upper mgmt zones). Need to provide snags throughout the "rotation" as per forest plan (i.e. green tree replacements).

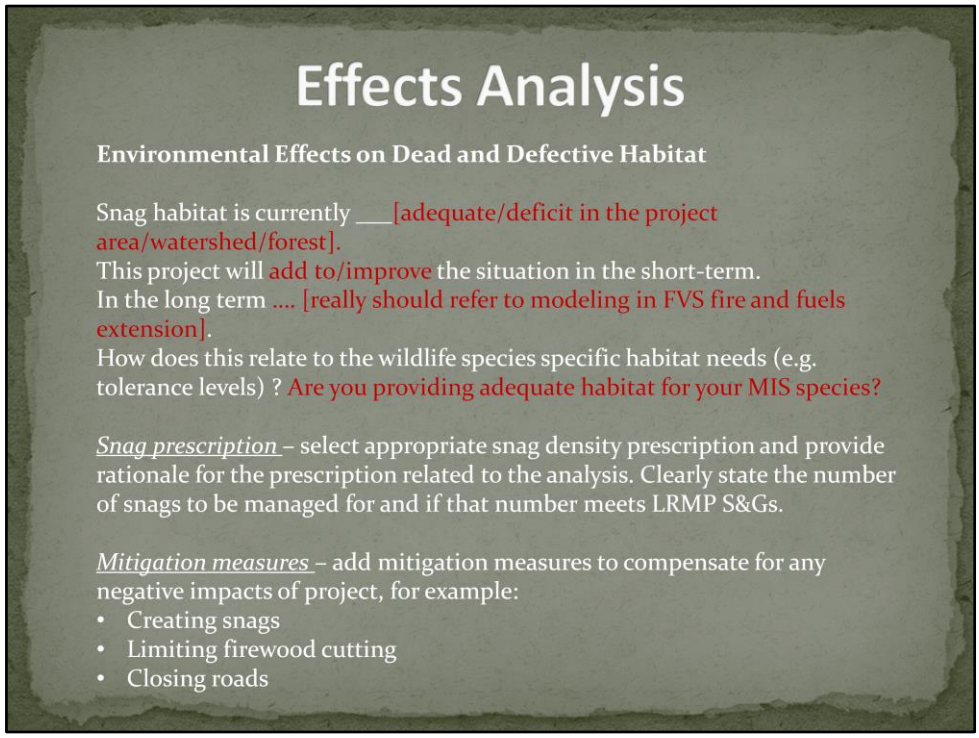


This is a treatment within ponderosa pine/lodgepole pine stand. Thinning and then an underburn.

6 stands were used as examples to model with FVS over 5 decades

Snags through time - East side example





These are the types of discussions you should have in your analysis after going through the steps in the Implementation Guide.

DecAID Implementation Team

- **NFS:**
  - Barbara Webb – DecAID Center of Excellence
  - Steve Acker – NW Oregon Ecology Program
  - Joan Kittrell – Crescent RD, Deschutes NF
  - Cameron Mitchell – Umpqua NF
  - Kim Mellen-McLean – Regional Wildlife Ecologist
- **USFWS**:
  - Sue Livingston – Wildlife Biologist

For questions on Implementation and the DecAID Website: contact Barbara Webb bswebb@fs.fed.us

For questions on Vegetation data and local modifications of Regional veg data: contact Steve Acker stevenaacker@fs.fed.us