Interagency Mapping and Assessment Project (IMAP)

Simplicity, integration, standardization

Policy makers and resource managers need tools to evaluate management alternatives and display potential outcomes effectively while accurately accounting for the wide variety of things citizens expect from public lands. The most helpful tools are easy to use and understand, fairly inexpensive to apply, and provide a reasonable representation of the implications of vegetative succession, management, and natural disturbances.

Challenges

- Limited and declining funds
- Very busy people
- No conflicting answers to broad questions
- Integrated answers
- Landscape modeling is hard

Mid-scale assessments and plans are needed by several state and federal agencies, including the Oregon Department of Forestry (ODF), Region 6 National Forests, and BLM Districts. Ideally, these planning efforts would share models, methods, and data. Key issues for all these planning and assessment activities include integrating fire risks, fuel conditions, wildlife habitats, old forests, forest products, rangeland conditions, potential biomass supplies, and others.

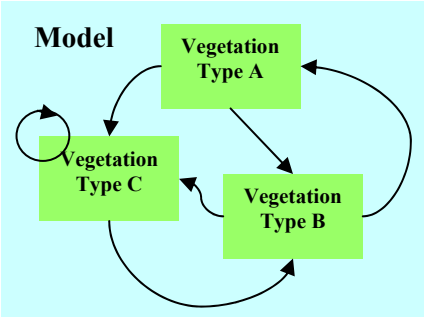
Uses:

- Oregon Department of Forestry
  - State-wide forest assessment
- USFS R6 and USDI BLM
  - National Forest & District Plan Revisions
  - National reporting – fire
  - Regional assessments
  - Monitoring
- Other partners
  - Conservation planning and assessments

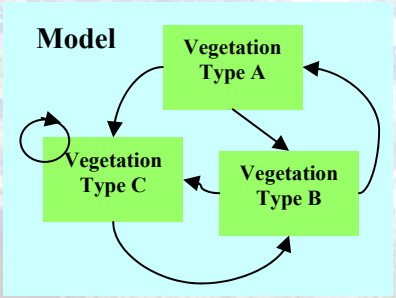
Partners include the Oregon Department of Forestry, USDA Forest Service Region 6, USDI Bureau of Land Management Oregon/Washington State Office, The Nature Conservancy, and the USDA Forest Service PNW Research Station. Other federal, state, and non-governmental entities are involved, including the Western Wildland Environmental Threats Center and the Oregon Natural Resource Institute.

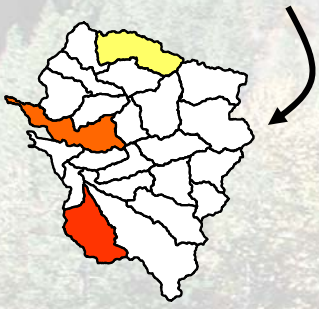
Why a partnership?

- Leverage scarce resources
- Share models and landscape data
- Organize by geographic area
- Integrate natural disturbances and management activities
- Generate consistent answers
- Hook to broader and finer analyses and plans



The modeling approach (VDDT) uses a simple state and transition model that treats vegetation as a few combinations of cover type and structure stage (boxes) within each potential vegetation environment. Boxes are linked by arrows or transitions that can be natural disturbances, management actions, or growth and development. Local experts from field units (silviculturists, ecologists, others) build VDDT models, creating local expertise and ownership. The project will build and run current management and historical (natural disturbance) scenarios. Local units will build and run planning scenarios as needed.





Summarizing results to watersheds, ownerships, land allocations, and plant association groups generates information about the spatial distribution of landscape characteristics, *without implying pixel or stand-level accuracy*, though pixel-level data on existing and potential vegetation will be developed. Results at the watershed scale are fine enough for most or all Forest Plan-scale questions and for the state-wide assessment.

Current vegetation data is developed using Gradient Nearest Neighbor methods (Ohmann and Gregory 2002) using FIA/CVS plots and/or stand exams (www.fsl.orst.edu/lemma/gnnpac). Areas where GNN does not work (e.g. non-forest and other gaps) will be filled from the current version of data from LANDFIRE, SAGEMAP, GAP, and other sources. Locally developed data can be used provided they meet minimum standards and IMAP can generate polygon data if needed. Vegetation and other data meet Interagency Regional and USDA FS national standards.

Products

- Current vegetation cover type, structure type in 30m pixels
- Potential vegetation groups and other GIS coverages
- VDDT models with documentation
- Current management scenario modeling results
- Historical scenario modeling results

Interpretations

- Historic Range of Variability
- Current departure from HRV
- Future departure from HRV
- Fire regime/condition class
- Wildlife habitat for featured species
- Potential forest products
- Several sustainability indicators
- Others.

Integration with LANDFIRE is essential. IMAP VDDT models and supporting data are compatible with LANDFIRE models and data, but developed at mid-scale resolution to support multi-resource planning and assessment. However, cross-walks of local models and data to the LANDFIRE project will allow compatibility and cross-scale analysis, evaluation, and coordination. The process is essentially a *localization* of LANDFIRE and provides methods to roll-up and roll-down LANDFIRE models and data.

Proposed Schedule

- NE Oregon – FY06-7.
- South half, east-side Cascades – FY07-8
- North half, east-side Cascades – FY07-8
- SW Oregon – FY 08
- NW Oregon – FY09
- NW Washington – FY10

Several on-going efforts drive the IMAP schedule: 1) east-side Oregon National Forests are scheduled for management plan revisions, requiring models and data; 2) the Oregon Department of Forestry is working toward a 2010 release of a state-wide forest assessment; and 3) the Northwest Forest Plan is due for an update in the next few years. These efforts determine the priority for IMAP work, beginning in eastern Oregon in FY06. In addition to these mid-scale planning and assessment efforts, IMAP data and VDDT models could be used later to support mid-scale cumulative effects analyses, and cross-ownership analyses of fire effects, wildlife habitats, and other similar work.

Contacts

Miles Hemstrom, mhemstrom@fs.fed.us, (503) 808-2006
Jamie Barbour, jbarbour01@fs.fed.us, (503) 808-2542
Tom DeMeo, tdemeo@fs.fed.us, (503) 808-2963
Louisa Evers, louisa_evers@blm.gov, (503) 808-6377
Gary Lettman, glettman@odf.state.or.us, (503) 945-7408
Janet Ohmann, janet.ohmann@oregonstate.edu, (541) 750-7487
Melinda Moeur, mmoeur@fs.fed.us, (503) 808-2811

References

Ohmann, J.L.; Gregory, M.J. 2002. Predictive mapping of forest composition and structure with direct gradient analysis and nearest-neighbor imputation in coastal Oregon, USA. Canadian Journal of Forest Research. 32: 725-741.