

Sustainable Forests: Serving Information to Communities

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My Multiple Responsibilities ...

- **Science-Policy:** New ways of bringing science to policy issues
 - "Science consistency checks"
 - International activities; IUFRO, CBD, bilateral
- **Planning:** Strategic planning for R&D
- **Inventory:** The Forest Inventory & Analysis (FIA) Program
 - The nation's forest census
 - Sustainable forests
- **Information:** IT and IA policies for R&D
 - Archiving data from long-term R&D studies
 - e-Research; 4 initiatives underway; "Treesearch"
 - Intellectual property rights; FS Patent Attorney

Inventory: My Vantage Point

- A prime purveyor of information on the health, condition, and productivity of America's forests through the FIA program
 - \$58 million annual appropriations; \$10 million annually from partners
 - Covers both public and private forests
 - Nested sampling approach combining remotely sensed data and plot visits
 - National Information Management System (NIMS)
 - Plot level information
 - Standard tables and maps
 - Tools to customize analyses to meet client needs
 - Special privacy protections for private landowners

Sustainability: My Vantage Point

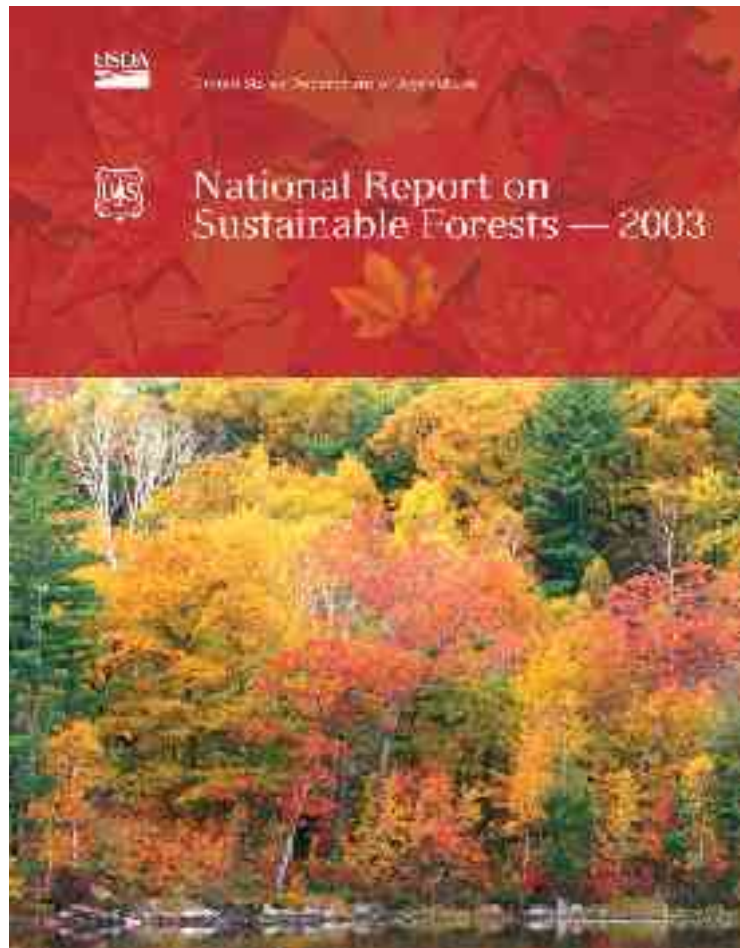
🌿 The “go to” source of information for the U.S. government in international, national, and regional dialogues on forest policy

- UN-FAO & UNEP-CBD
- Montreal Process Criteria & Indicators
- Assessments at multiple scales

🌿 Our mantra:

- Better data leads to better dialogue, which leads to better decisions

Sustainability Criteria & Indicators



Biodiversity and Ecosystem Informatics Conference
Evergreen State College, Olympia, WA 14 Dec 2004

Organized by:

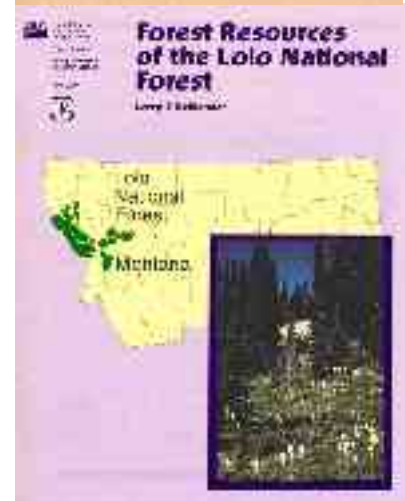
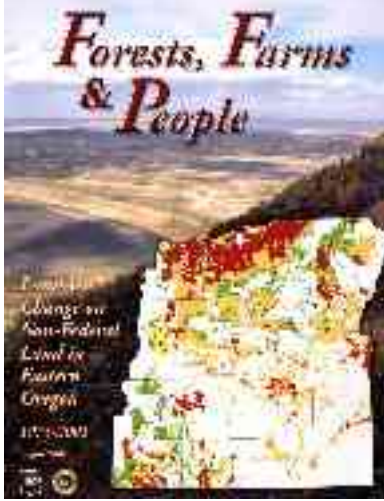
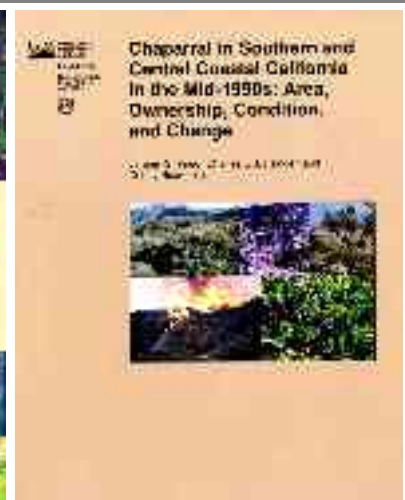
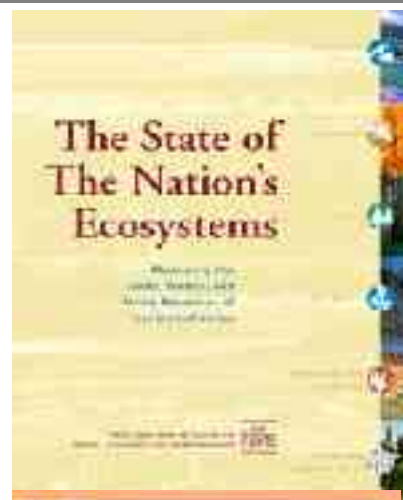
- 6 criteria; including Cons. Of Bio. Div.
- 67 indicators; including 9 for Cons. of Bio. Div.

Epitomizes current interest in criteria and indicators in U.S.

- Heinz Center
- CEQ
- Roundtables

Check out data gaps

FIA Products and By-Products: multiple scales & diverse audiences



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Six Major Points

- Policy makers' and their clients' information needs are paramount
- Serve communities of interest as well as communities of place
- Remember equity when improving access to information
- Make mass customization possible
- Don't confuse stories, indicators, and measurements
- All maps, data layers, and derived products need metadata and validation statistics

Policymakers' and their clients' information needs are paramount

- ❏ Understand their needs and their clients'
 - What's important to them
 - In terms they and their clients can understand
- ❏ Build backwards from their needs to data
 - Create logic models and test them on clients
 - Decisions based on dialogue are better decisions
 - Dialogue based on data is better dialogue
 - Better data → better dialogue → better decisions
- ❏ Assign the responsibility for data collection, analysis, and warehousing to agencies without regulatory responsibilities
 - Neutrality adds credibility and public trust; "no axe to grind"

Understanding communities and their needs is vital

🏡 Communities of Place

- Affinity for specific geographic locations because of multiple attributes of the place
- Operates at multiple scales; often simultaneously
 - E.G., Neighborhood, county, state, country of origin

🏡 Communities of Interest

- Affinity for a specific attribute found at multiple places
- United by a shared love/concern
 - E.G. Ducks Unlimited, Rocky Mountain Elk Foundation, Audubon Society, American Forestry Assn., SWOAM

🏡 Both types of communities must be considered in any informatics product

🏡 Combinations of Place & Interest add complexity

- E.G. Appalachian Trail Conservancy

Remember equity when improving accessibility to information

❖ Differences in access can disempower communities as well as empower them

- Cutting edge solutions and enterprise architecture can favor the cognoscenti
- Some communities are disempowered by cutting edge solutions
 - Less-developed areas (e.g., without broadband service; without dial-up service)
 - Language-challenged (e.g, unfamiliar with jargon; ESL)
 - Technology-challenged (e.g., without access to computers, computer illiterate)

❖ Strive to assure equitable access to all

- Keep file sizes and web design complexity simple enough for modem downloads
- Battle jargon; K.I.S.S.
- Provide alternative mechanisms to obtain information

Make mass customization possible

- ❏ Create robust systems that empower clients to obtain what they need when they need it
 - Controlling information availability by limiting access only to “standard” information is disempowering
 - Build tool-kits that enable clients to analyze data and model relationships of interest on their own
- ❏ A major caution: **Respect the privacy of private landowners**

Don't confuse stories with indicators with measurements

🧩 Measurements are the "big ticket" cost item

- Measure once, use the data often
- QA/QC and metadata that are unimpeachable
- Stratify variables measured to provide flexibility-- national core, core-optional, and regional add-ons

🧩 Indicators are modeled or otherwise estimated from the measurements

- Guard against confusing proliferation of indicators
- Communities need to come together to define meaningful indicators; forest fragmentation

🧩 Stories are interpretations of indicators

- Stories often make implicit assumptions about values

All maps, data layers, and derived products need metadata and validation metrics

❏ Protocols need to be defined and peer-reviewed

- Protocols are equally important for measurements, indicators, and derived products like maps and layers
- Be explicit about relationships among the data and model elements

❏ Explicit metrics that document geospatial variation in the goodness-of-fit must be available for all maps, models, and derived products

- Give users a solid, statistical basis for evaluating how good the product is for their needs
- Without validation metrics, a map is just a pretty picture



Six Major Points, Reprised

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🌿 Thanks for the opportunity to present ideas

🌿 Questions? Catch me at breaks