

Appendix B

Draft Criteria and Indicators

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The following draft criteria and indicators, developed during the LUCID test, provide a first approximation relevant to describing sustainability for the Mt Hood National Forest and will be further refined and adapted through the collaborative process.

Principal 1 - Social Well-Being

Collaborative Stewardship

- Citizen Involvement (volunteerism, cooperative agreements, collaboration, political engagement)
- Local area empowerment (Forest Service community capacity building, education)
- Collaborative decision making (Involvement in decision making process)
- Civic science (expertise, process)

Community Resilience

- Civic competence at the community level (knowledge, skills & abilities about resources)
- Civic enterprise (collective action experience)
- Social capital – Built relationships (number of civic/mediating organizations, environmentally focused non-profits, local services)

Institutional Adequacy

- Rules of the game (structure of government)
- Tenure (public & private land ownership)
- Legal framework (laws)
- Authority structure (land use agreements, stewardship certification)

Social and Cultural Values

- Sense of place
- Aesthetic values (scenic integrity)
- Recreational values (risk & safety, impacts & conflicts)
- Access
- Cultural heritage
- Civil rights
- Environmental justice organization
- Worker safety

Community Livability

- Community health (employment, crime, education, services, spousal abuse)
- Settlement pattern (complexity of land use, migration, demographics)

Principal 2 – Ecological Integrity

The ecological criteria and indicators were based on maintaining integrity of ecological systems to provide sustainable forests.

Landscape Function – processes that influence landscape patterns and distribution

- Disturbance processes (fire risk, insect & disease risk)
- Hydrologic function (watershed condition class, hillslope processes)
- Long-term Community Dynamics (longevity of current plant community assemblages)

Landscape Structure/Composition – landscape structures/composition that influence pattern

- Landscape diversity (vegetation composition – seral stage)
- Landscape patterns (habitat distribution, human developed landscape features)

Ecosystem Function - ecosystems are defined by fluxes in energy and matter

- Productive capacity (site productivity, tree growth, animal production)
- Functional diversity (species at risk or extirpated)
- Invasive species (plants and fish)
- Nutrient cycling (soil organic matter)
- Carbon sequestration (soil carbon and carbon sinks)
- Stream function (riparian vegetation, stream condition, community health)

Ecosystem Structure - ecosystems are defined by fluxes in energy and matter

- Air, soil & water quality (municipal water supply, air quality index)
- Ecological legacies (snags and coarse woody debris levels)
- Special habitats (wetlands)
- Species richness (native species diversity)

Population Function – defined by processes such as competition, predation, and mutualism that define interaction between organisms in the assemblage

- Species of concern (population viability of plants, animal and aquatic species)

Population Structure - plant and animal communities are defined by the occurrence of, density and age structure of indigenous species especially TES species

- Population of indigenous species (listed species)

Genetic Function - processes that shape population and genetic variation

- Artificial selection (harvest prescriptions)
- Migration (genetically selected stock, offsite stock)
- Drift (census population estimates)

Principal 3 – Economic Well-Being

The economic criteria and indicators were based on two fundamental principles of sustainable development:

1. Maintain sufficient natural, built, and human/social capital through time to provide non-declining flows of the goods and services desired by society from the forest.
2. Distribute the goods and services in ways that ‘equitable’ access and benefit are achieved for all major stakeholders, and for future generations.

Sustain minimum stocks of natural, human and built capital

- Natural capital (land, timber, water, wildlife that contribute to ecosystem functioning and/or human welfare)
- Human capital (private forest workforce and public agency workers)
- Built capital (facilities, roads, trails contributing to providing goods & services)

Produce and consume sustainable (annual) flows of market goods and services

- Commercial products from the forests and lands, (forest products, minerals)
- Energy flows (kilowatts generated)
- Developed recreation (recreation fees – ski passes, camping)

Produce and consume sustainable flows of non-market goods and services

- Undeveloped active recreation (recreation for which access is not regulated directly by fees – hiking)
- Passive tourism and scenic amenities (scenic viewing by touring)
- Water flows and quality (municipal water supplies, instream flows)
- Air quality effects (carbon sequestration, smoke, pollution)

Ensure an equitable distribution of benefits and costs

- Marketed forest goods and services
- Non-marketed goods and services
- Demographics of workforce
- Local revenue sharing (government payments to local jurisdictions related to forest operations)
- Rent distribution by recipient (timber, recreation, range)

Maintain an appropriate regional economic trade balance

- Exports of goods and services
- Imports of goods and services (meeting sustainable flows of desired services)
- Ability for local community to meet labor requirements (capacity to delivering sustainable flows of goods & services from forest resources)