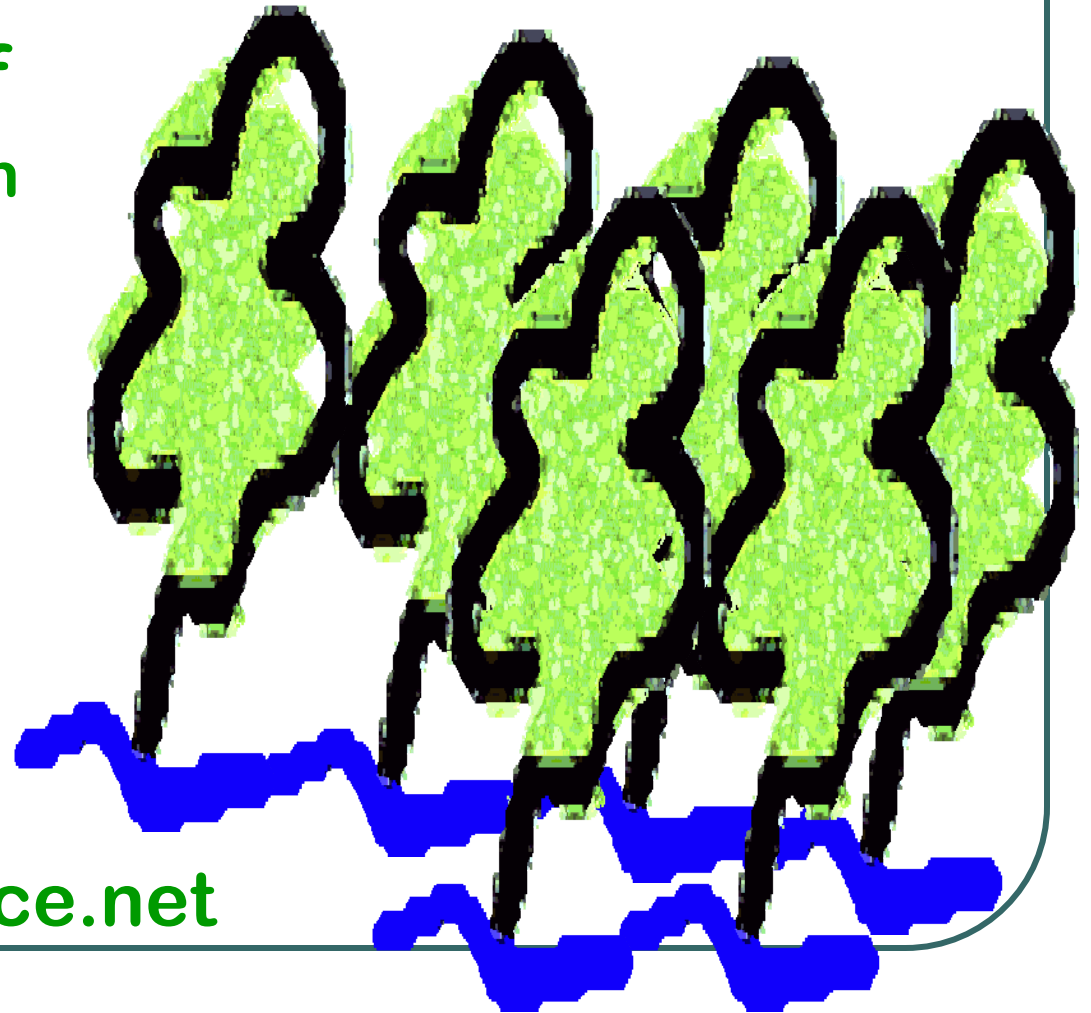


Restoration Strategies

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Why? To Increase Sustainability

- **Enlarging area of specific ecosystems**
- **Enhancing biodiversity**
- **Repairing ecosystem functions**



Common Theme Is Naturalness



- **Natural conditions**
- **Native species**
- **Natural stand structures**
- **Natural disturbance regimes**
- **Nature-based silviculture**

What Is Natural?

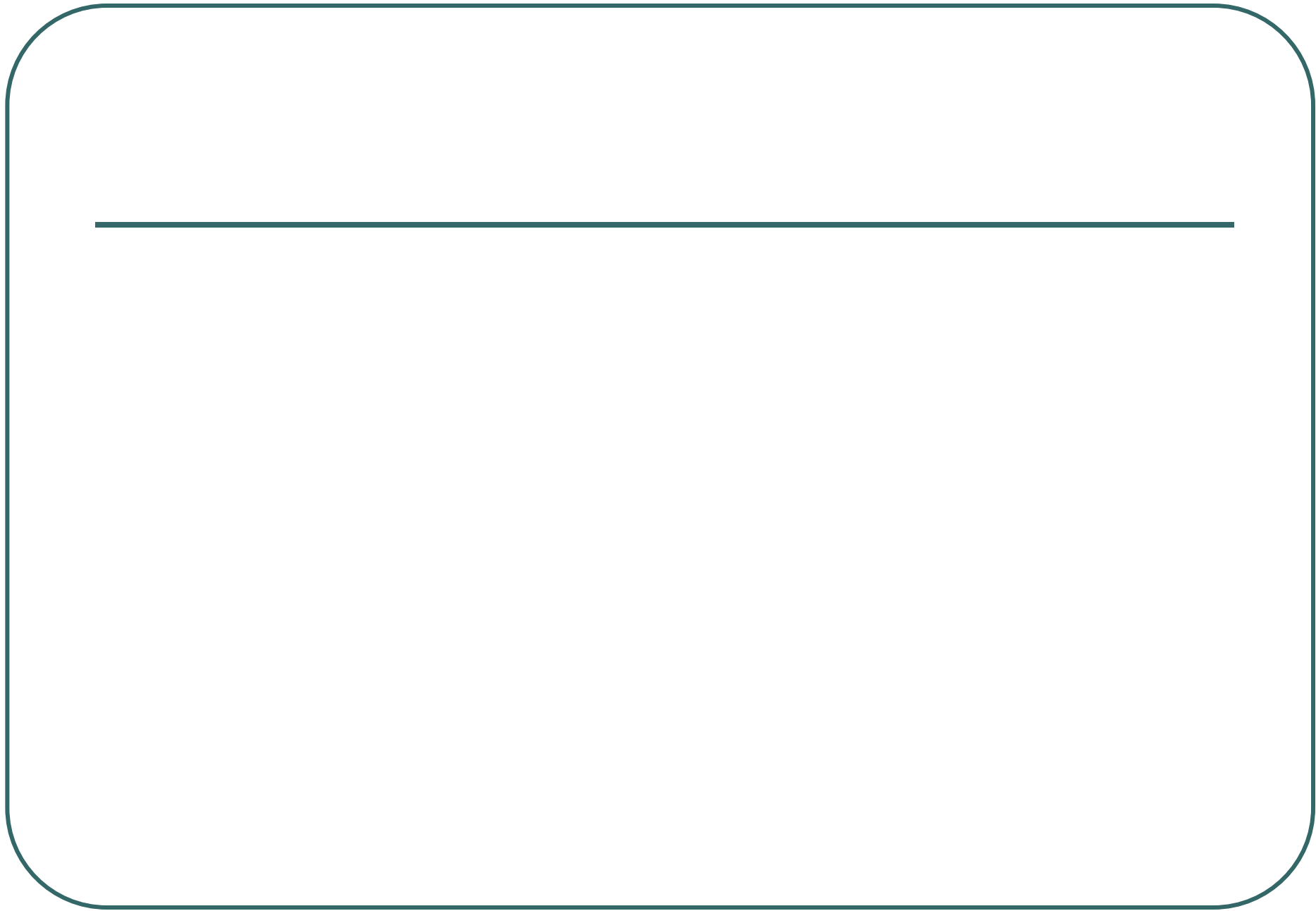
- **Naturalness to some people implies “without human influence”**
- **What’s Your World View?**
 - **Humans In Nature, or**
 - **Humans Against Nature**
- **What is the goal of restoration?**
 - **Pristine Forest**
 - **Working Forest**

A Pragmatic View of Restoration

- **Naturalness is a continuum, not a binary condition**
- **My goal is a more natural forest, not necessarily a pristine forest**
- **Restoration is any set of activities that moves a forest ecosystem from a degraded state to a more natural state (recovery of forest functions)**

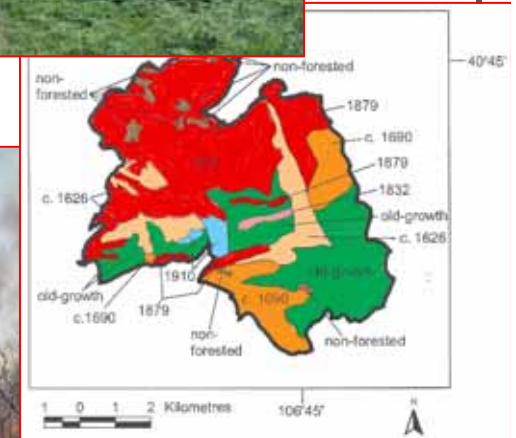
Ecological Restoration is:

- **“an intentional activity that initiates or accelerates recovery of an ecosystem with respect to its health, integrity and sustainability” (SER 2002)**
- **Relative to some reference or criterion**
- **Looking back**



Restore to What?

- Reference stands or landscape conditions
- Historic structure, function, disturbance regime
- Natural range of variability



The Temporal Trap

- **Processes that led to reference stand conditions no longer operate**
- **Lack of reference stands or reference stands not really representative**
- **Which historic condition?**



Restore to What?

- **Many practitioners now recognize that complete ecological restoration is an unattainable goal**
- **Reference sites, if available, can guide restoration**



The Climate Challenge

- **Climate variability**
- **Climate change**
- **Restoration for future conditions**
 - **Long-lived species at the edge of their range**
 - **Move communities**
 - **Design novel ecosystems**



Keys to Restoration Success

- **Define expectations for restoring system components**
- **Establish causality between interventions and changes from baseline conditions**
- **Consider temporal effects such as stand dynamics in evaluating success**

Pay attention to the social dimension



- **Inform and educate as to intermediate conditions, operations**
- **Understand social impacts of restoration; not always (if ever) win/win**

If targets are socially or politically determined, silviculturist provide

- **Cost-effective methods**
- **Estimates of feasibility/likelihood of success**
- **Knowledge to determine acceptability of intermediate conditions and operations**