Case Study Specific Indicators

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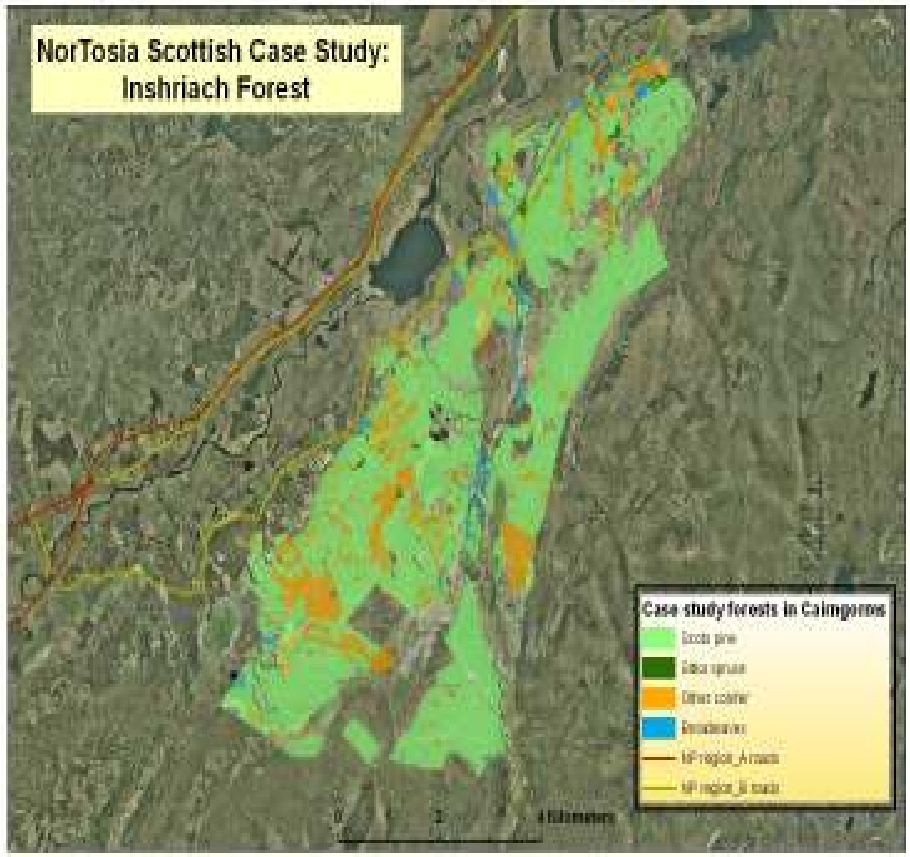
Forest Research
Scotland

Scottish Case Study in Inshriach



- 3,689 ha with a total harvested volume in 2008 of 10,832 m^3 and a mean annual increment of 17,920 m^3
- Mainly even-aged stands with commercial clearfelling
- Restoration of native pinewoods by removing exotic conifers and CCF
- Considerable recreational interest although timber production will remain a primary objective
- High numbers of the endangered Red squirrel and Capercaillie

Scottish Case Study
Cairngorms National Park

- Forest Level: Inshriach Forest
- Regional Level: Cairngorms National Park
- Enterprise Level: Impacts on individual enterprises in Cairngorms National Park (BSW, RussWood, Speyside Wildlife)
- Issues:

  Highly designated land area

  Large number of visitors

  Valuable habitat for key species

  Scottish Forest Strategy, planning process

  Biotic threats such as red-band needle blight

  Increased use of Continuous Cover Forestry

  Increased demand for timber with reducing area of forest
- Scenarios:

  Changes in mix of Forest Management Alternatives (FMAs)

Scottish Case Study: Indicators?

Economic

Environmental

Social

Economic	Environmental	Social
Gross value added Production costs	Greenhouse gas emissions and carbon stocks Forest biodiversity and resources	Employment Recreation

Swedish Case Study
Malå

- Three different scenarios
  - Nature Conservation
  - Reindeer husbandry
  - Synergy between forest conservation and reindeer husbandry
- Malå Sami village
  - Only forest Sami village in Västerbotten
  - Directly affected by what happens in the forest
- Competing land use: Forestry, tourism, hunting, industry, hydro-power, wind power, mining, peat extraction, farming, other Sami village, etc.
- Need to deal with new processes: calving, transport of animals, slaughter
- Need new indicators. Need to be relevant and need to be able to collect data relatively easily

Swedish Case Study: Indicators?

- Amount of lichens/reindeer/year
- Height of lichens
- Amount of wavy hair grass (*Deschampia flexuosa*)
- Area of winter grazing land
- Reindeer husbandary value/year/ha
- Production cost for reindeer
- Income indicators, e.g. taxes to municipality
- Transport cost/reindeer/year
- Helicopter transport cost

Finnish Case Study
North Karelia

- Bioenergy utilization
- Traditional strong status of forest industry
- Transition period with increasing use of wood chips
- Increasing demand for round wood + continuing forest biodiversity programme + increasing demand for wood chips
- Use ToSIA as part of regional development to analyse future directions in forest useage
- Two levels
  - Whole of North Karelia
  - 2 examples of energy production schemes, one small scale & one medium scale (Tuupovaara COOP, Outokumpu Energy Inc.)

Finnish Case Study: Indicators?

- Economic
  - Subsidies on forest production
  - LVA
  - Trade balance
  - Enterprise structure
  - Price paid for solid wood fuels
- Environmental
  - Biodiversity: effect of energy wood harvesting on volume of dead wood, biotypes, area of burned forest
  - Energy generation. Harvesting-transport-combustion-heat distribution
- Social
  - Recreational use of forests (hunting, hiking, fishing, picking berries and mushrooms)
  - Activity of regional development in projects related to bioenergy and heat production

Norwegian Case Study
Helgeland

- ~70% state owned land (mainly inland along border with Sweden)
- Forest in the interior valleys
- 15-20,000 private forest owners in Nordland
- 3 national parks in the area
- Split forest into conifer (unprotected and protected) and broadleaved (unprotected and protected) and also split between public and private ownership
- Modelling forest wood chain in the region (don't follow flow to final end-user)
- Add tourism process in the protected areas
- Challenge: Tourism is based on coastal region and how to encourage visitors into the interior region

Norwegian Case Study: Questions?

- How will the timber-industry be influenced by the reopening of a big sawmill
- How would the timber-industry be influenced by an increase in the protection of forest land
- How would the tourism-industry be influenced by an increase in the area of protected areas.

Norwegian Case Study: Indicators?

- Environmental Indicators
  - Forest biodiversity
  - GHG emission and carbon stock, energy use, forest resources
- Social Indicators
  - Employment
  - Marketing and PR
  - Occupational health and safety
  - Education and training
- Economic Indicators
  - Revenue
  - Production costs
  - Transport
  - Recreational use

Discussion about Cases

- What aspect of sustainability and specific indicators are important in each case and why?
- What similarities are there between case studies?
- What differences are there between case studies?
- Should we have select common indicators across case studies?
- What can other countries learn from case studies in specific countries?
- Who are the end-users in each case study area?
- How would the work/tool fit into the decision making process?

Some Issues of Interest

- Differences in approach between countries (e.g. National Parks in Scotland and Norway)
- Issues of competing land use (e.g. reindeer herding and forestry)
- How to value activities in a region (e.g. Is tourism more valuable than forestry in Helgeland?)
- How do we manage changes in demand for wood products that might affect existing enterprises (e.g. wood chips in North Karelia)
- What is impact of changes in forest policy and management on local communities and enterprises (e.g. impact of conversion of forestry to CCF on sawmills and tourism in Cairngorms)
- Contrast between different scales (e.g. individual sawmill versus whole region)
- What are the consequences of the way we manage the forest resource?
- Time scale of sustainability assessments??