

Forests & Agriculture



The Forest and Agriculture Domain of the Spatial Informatics Group (SIG) helps clients develop management strategies that integrate multiple goals such as optimizing timber production, ecosystem service values, forest biomass, carbon sequestration, fire hazard reduction, wildlife habitat monitoring & assessments and sustainable procurement of forest biomass. SIG's forest and agriculture experts include: Thomas Buchholz, Charles Kerchner, Austin Troy, and John Gunn. Below you will find a few representative projects to illustrate our recent work. Please visit the website for additional detail.

BIOMASS, BIOENERGY, & FOREST PRODUCT ASSESSMENT

- ✔ Supply Assessments
- ✔ Greenhouse gas metrics accounting
- ✔ Integrated assessments, bioenergy plant impacts to natural infrastructure and wildlife

FOREST ECONOMICS

- ✔ NPV models
- ✔ High precision agricultural/forestry practices
- ✔ Timber—growth and yield & optimization modeling

SUSTAINABILITY ASSESSMENTS

- ✔ Criteria & indicator frameworks
- ✔ Monitoring & verification—voluntary certification (carbon, sustainable practices for biomass, agriculture, and forestry)

LAND USE DYNAMICS

- ✔ Ecosystem services trade-offs (e.g., agriculture, wildlife, timber, carbon, water)
- ✔ Impacts of climate change on vegetation
- ✔ Rehabilitation and restoration planning

FOREST INVENTORY & BIOMETRICS

- ✔ Carbon offsets: Full project support
- ✔ Carbon Accounting
- ✔ LCA: cradle-to-grave (biogenic & fossil carbon)
- ✔ Inventory design & implementation



WILDLIFE INVENTORY & VULNERABILITY ASSESSMENTS

- ✔ Habitat mapping & connectivity evaluation
- ✔ Wildlife inventory and monitoring development
- ✔ Response to land use change and climate change

STAFF CONTACTS

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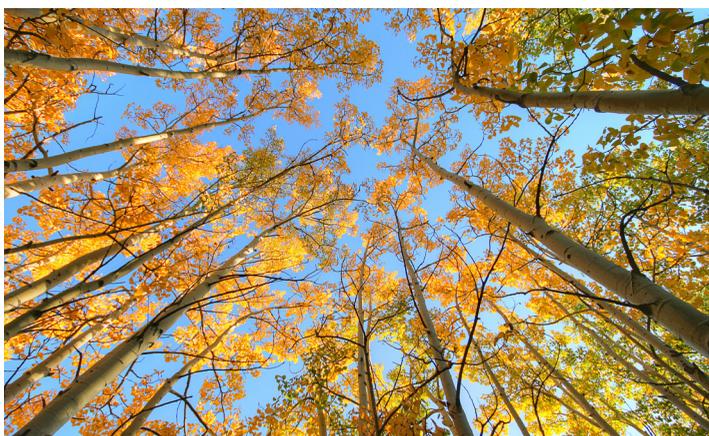


THE ECONOMICS OF CHANGING ENERGY USE PATHWAYS

SIG, in support to The Nature Conservancy Alaska, assessed the economic feasibility as well as environmental consequences of converting fuel-oil based heating systems to biomass based systems fueled by restoration thinning on Prince of Wales Island. The objective was to find a solution which balanced human demands with maintaining ecological values.

QUANTIFYING REDUCED GHG EMISSION FROM FOREST TREATMENTS

Millions of acres of overstocked forests are at risk of large, uncharacteristically severe wildfire. An emerging strategy for changing the economics of fuel treatments is through issuing carbon emission offset credits from avoided emissions due to wildfire. SIG teamed with several partners to develop a methodology to quantify potential carbon emissions based on the probability of wildfire in California illustrating the net benefit.



ECONOMIC ANALYSIS OF TIMBERLANDS

Traditionally, timber management is the single source of revenue from timber-lands, but additional revenue streams are being sought out. In collaboration with forest investors, SIG is developing innovative tools that are capable of incorporating alternative revenue streams into a forest economic assessment frameworks. These tools can simultaneously evaluate a range of predefined scenarios, management alternatives or optimize revenue from carbon offsets and timber harvests to meet multiple management objectives.