



1. Organizational Approach to GIT:

The Division of Forestry (<http://www.dnr.state.ak.us/forestry/>) has had some use of GIS and has recently expanded efforts with RS. The Division is a part of the Department of Natural Resources (DNR) (<http://www.dnr.state.ak.us/>), which is a leading user of GIT in Alaska state government. DNR's Land Records Info Section is one of the earliest and largest users of GIS among the 50 states. Much of the GIT being used is on an individualized and mostly uncoordinated basis throughout DNR and the Division because GIT activities are not funded by the state. Likewise, there are no state or internal policies concerning Division use of GIT. The Division therefore, supports GIT use by acquiring funding on an ad hoc basis via individual projects, with applications and data developed internally within the Division. Staffing currently consists of two people dedicated to GIT matters in the Northern Regional Office, where the majority of the Division's GIT is used. However, the Division hopes to expand its web-based GIS abilities and will be hiring a Cartographer/GIS specialist within its main office in the near future. The Division Cartographer is the system administrator, and is responsible for data maintenance. A continuing challenge for bringing GIT to mainstream use in Alaska resource agency projects is the cost of RS imagery and specialty RS products like IKONOS imagery. Another challenge is the lack of consistent, updated high-resolution map bases for topographic information across the state due to an antiquated system for updating and archiving of orthophoto quad map bases for Alaska. Lastly, there are financial constraints that limit the hiring of additional staff.

2. GIT Applications and Data Utilized:

DNR, which shares responsibilities with the Department of Environmental Conservation (DEC) and the Department of Fish and Game (DFG) for natural resources and environmental management, has used GIS extensively on its own and in coordination with other entities for such projects as timber sale data support since the 1970s. The Division has utilized GIS data from aerial surveys to provide forest health data for pest damage surveys and forest insect and disease occurrence and trends modeling. This work was aided by the digitizing of manual sketch-maps of annotated 1:250,000 scale USGS base maps of observed insect activity and pest signatures. Aerial photography has also been used by the Division for forest fire and wildlife habitat inventory, harvest level calculations, watershed planning, visual impact assessment, wildlife and vegetation monitoring, environmental analysis, road planning, forest productivity assessment, and recreation assessment, monitoring and planning. Further, the Division utilizes GIT for timber potential and utilization, forest harvest permitting, tracking and modeling, transportation systems mapping, surveying, and mapping administrative boundaries. The Division uses in-house processing and land cover characterization using various image processing programs and IKONOS imagery that has been geo-rectified from a combination of digital color infrared aerial photography and 25+ year old paper map orthophotos. While RS typically has been only a minor component in DNR's forest management tool box, its use has been established. DNR has used LANDSAT TM imagery in cooperative efforts to map land cover. An example is the Tanana River Erosion Study, which is a cooperative project conducted by the Division and the Tanana Chiefs Conference to perform change analyses of the River's channel locations based on comparing 1978 aerial photographs with 1998 satellite imagery of the channel (<http://www.tananachiefs.org/erosionstudy/>). A significant NASA grant was awarded in 2001 to expand these mapping efforts with the Vegetation and Community Mapping of the Tanana Valley project, in which the Division will be using rectified satellite imagery to aid fire management efforts through fuel hazard and road location mapping, as well as complimentary value-added products, like community mapping of service and structure locations. The project will also identify spruce beetle infested stands during the forest classification process, which will be taken into special consideration during fuels

mapping. A long-term goal of the project will be the development of base data necessary to run FARSITE, or similar fire behavior software.

3. Statewide and Other GIT Linkages:

DNR has unofficially served a lead role and helps to disseminate much of the state data for use with GIS. Information concerning state agency use of GIS is available through the DNR Land Records Information Section (<http://chugach.dnr.state.ak.us/cgi-bin/lris/landrecords>). Alaska does not have an official statewide GIT coordinator, though the Lt. Governor's Office leads many IT policy efforts in the state and has taken an increasingly strong role in encouraging GIT coordination statewide. DNR has had a strong role in coordinating inter-organizational GIT activities, including work with other agencies in the Alaska Geographic Data Committee (AGDC) (<http://agdc.usgs.gov/>), which includes federal, state, local and Native American government bodies as well as various nongovernmental organizations.

DNR makes information open to all state and local agencies as a low-cost means for improving public access to geographic data through the Alaska State Geo-Spatial Data Clearinghouse (ASGDC) (<http://www.asgdc.state.ak.us/>). The site includes metadata records, downloadable data, maps in PDF format, links to Internet mapping services, and links to respective agency GIS web pages. Although located within DNR, the Division of Forestry's practice of developing and applying GIT internally limits its working relationship with DNR and others on GIT matters.