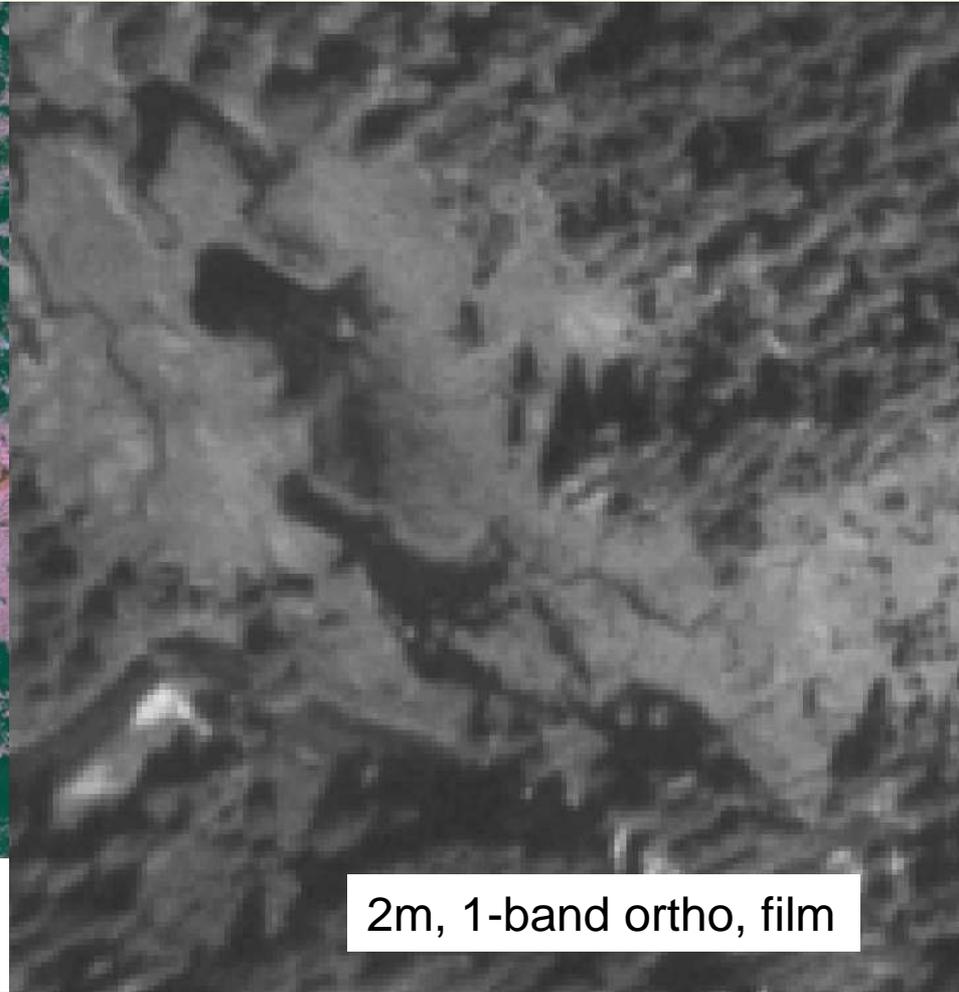
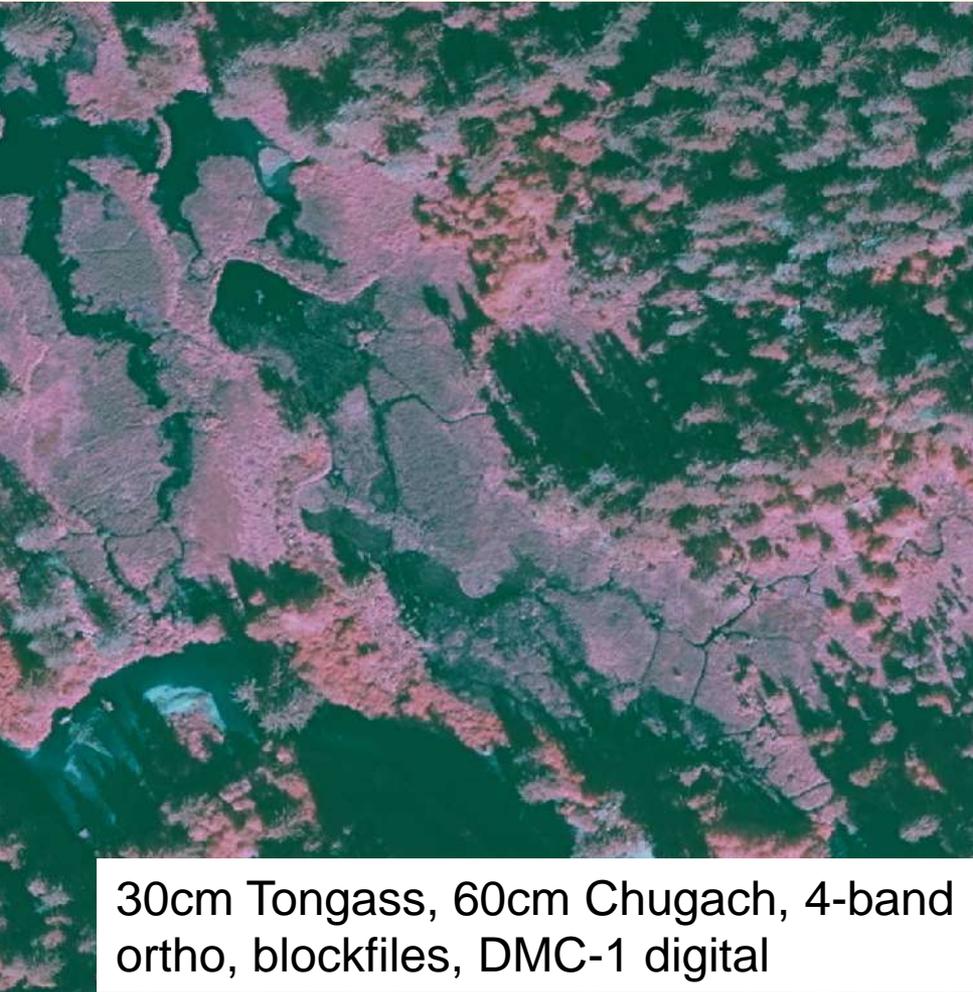
A grayscale topographic map of Alaska, showing the state's rugged terrain with various mountain ranges and valleys. The map is centered on the state, with the Aleutian Peninsula to the west and the Yukon-Charley Rivers National Preserve to the east.

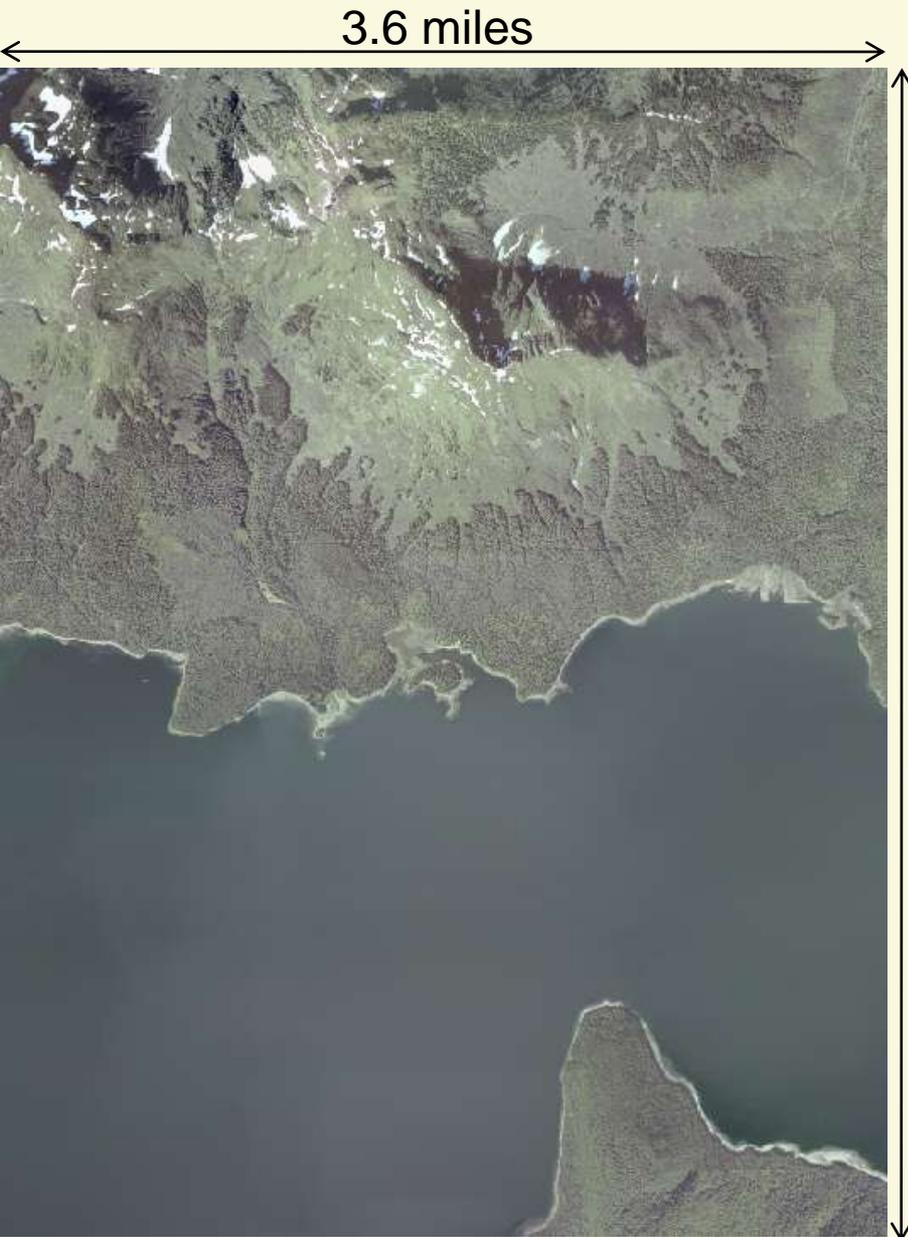
Region 10 Remote Sensing Update

USDA Planning and Coordination Meeting
December 2011

Mark Riley
Remote Sensing Specialist
Forest Service
Region 10, Alaska

New(ish) Tongass and Chugach ortho product suites



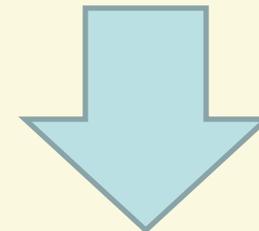


DOSQ

Digital Orthoimage
Sexadecimal Quadrangle
(1/16 full 15' AK quad)
\$1801.32/DOSQ

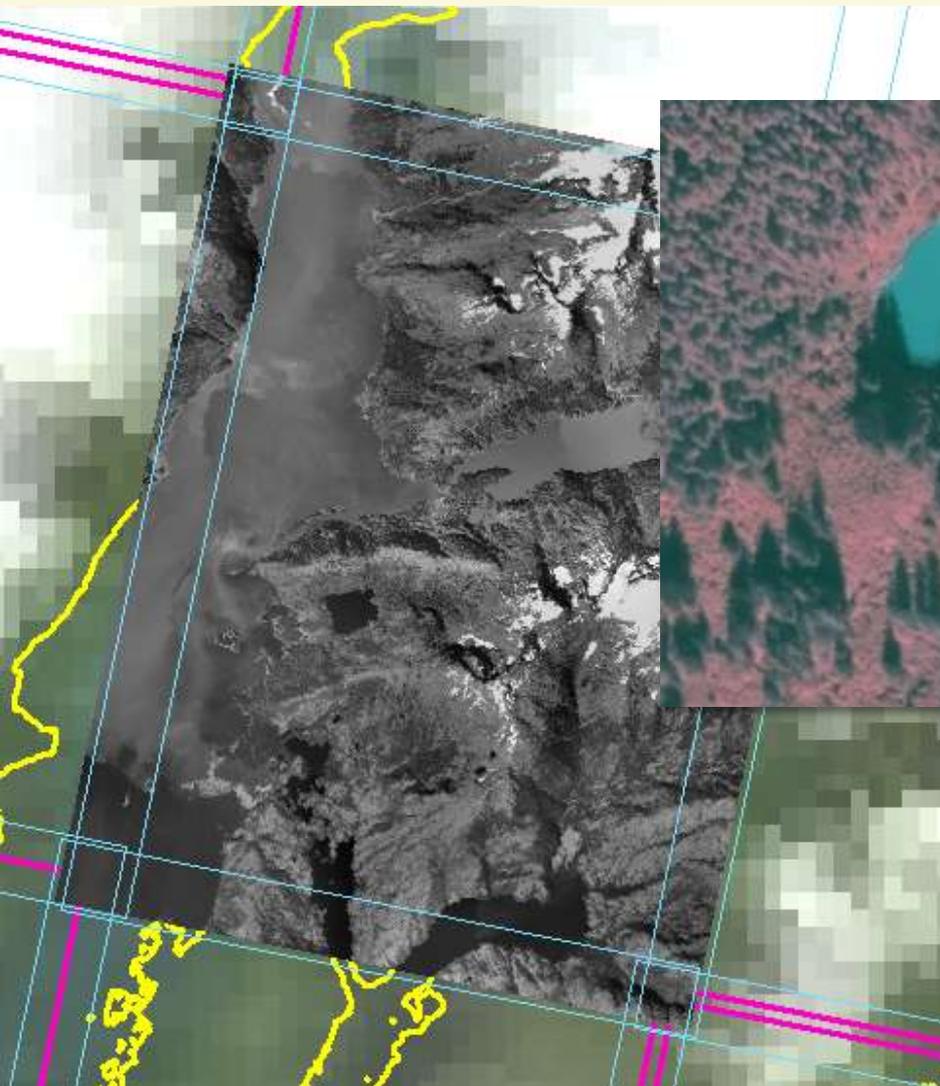
New file naming
convention

anca1sw.tif

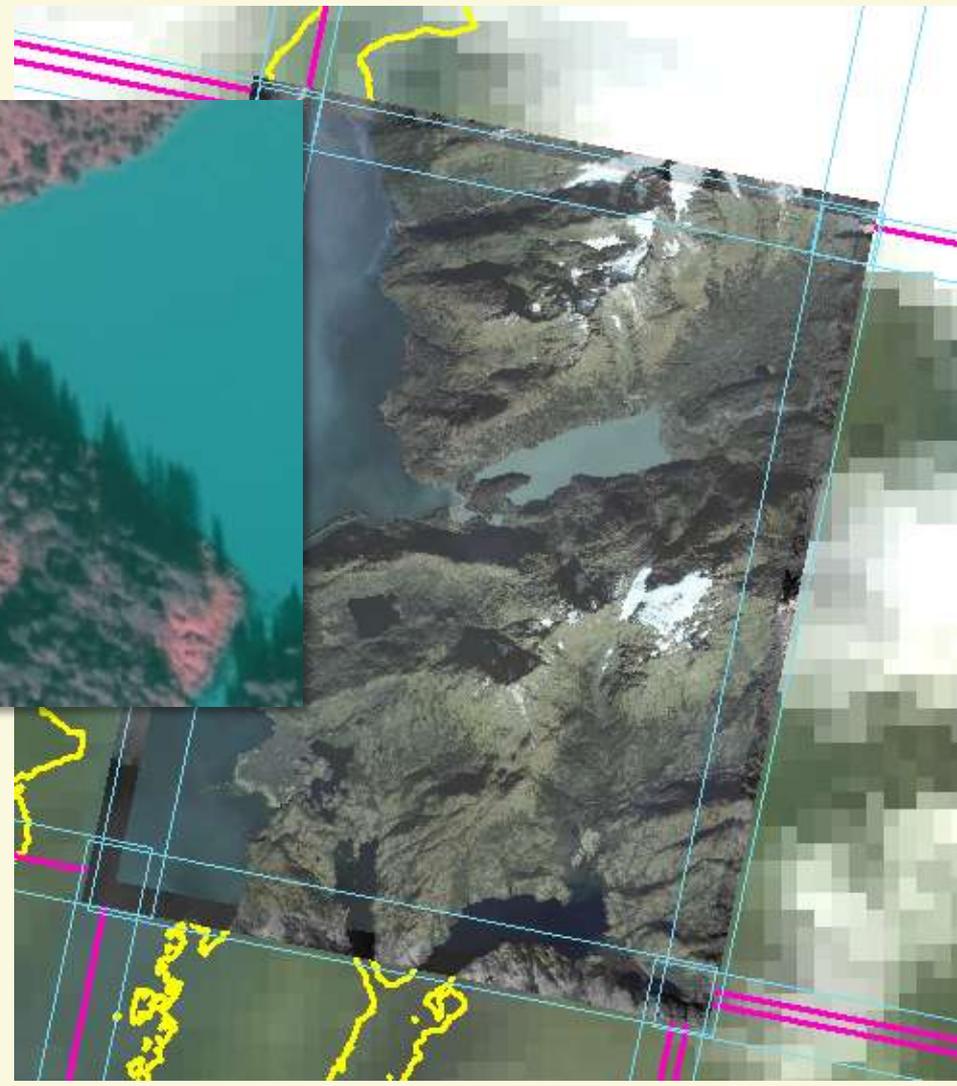
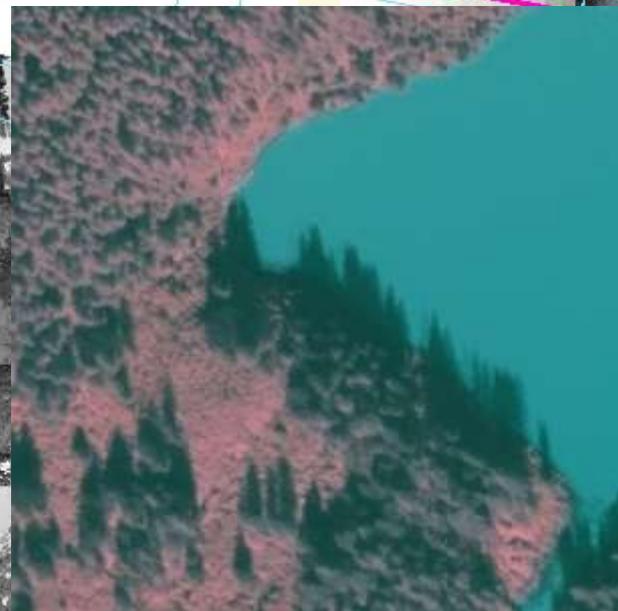


m_5914706NE_06_60_20090830_v1.tif

2009-2011 complete Chugach National Forest 4-band ortho Coverage

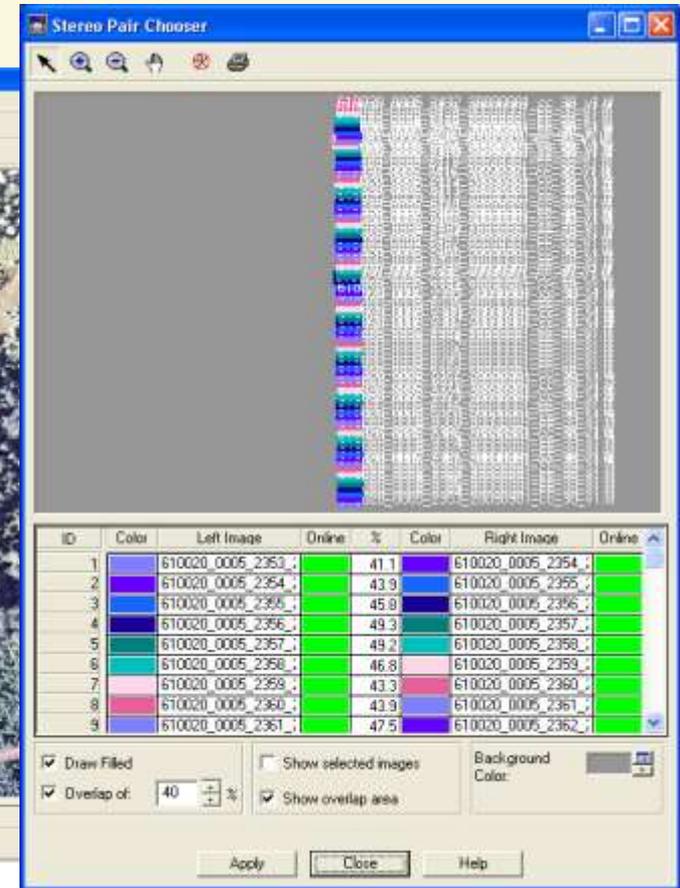
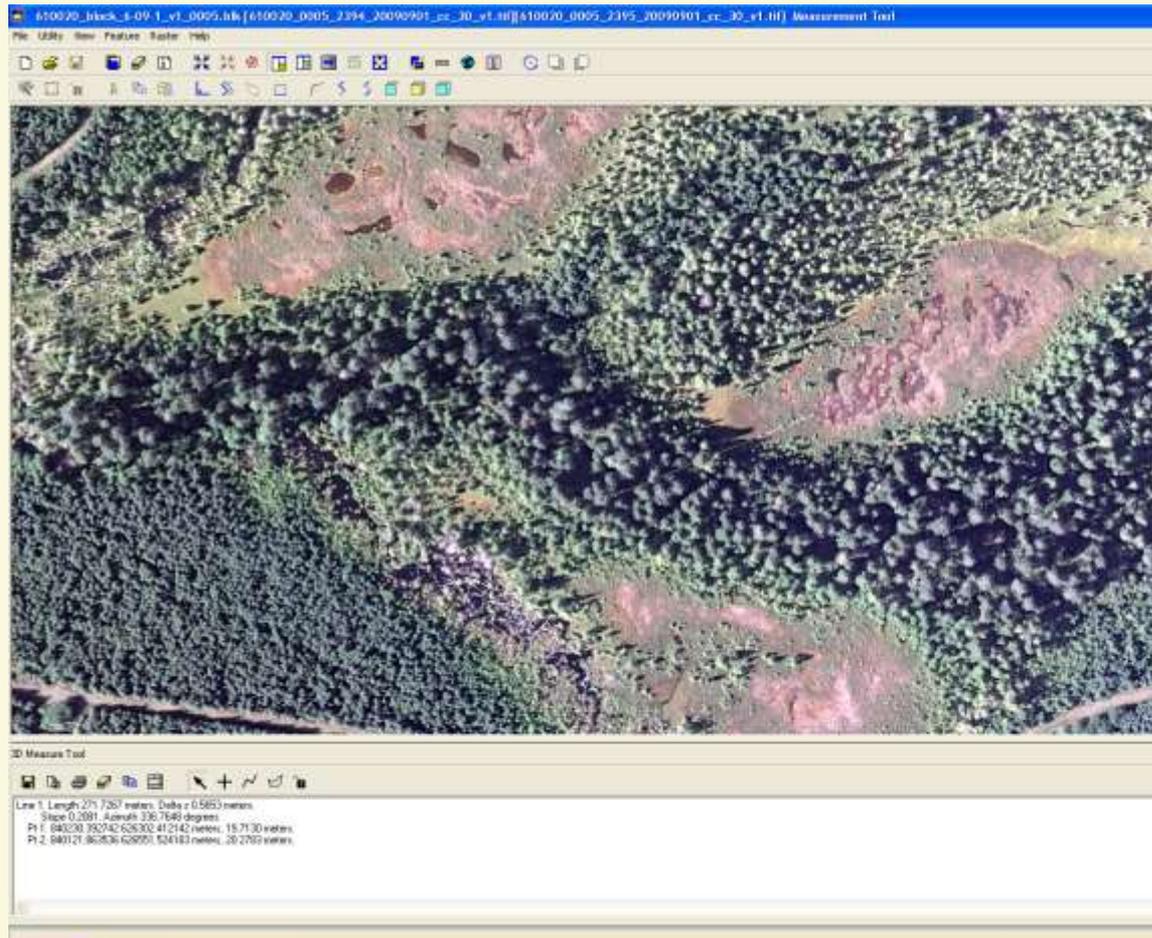


2003, 2m panchromatic film



2009-2010, 60cm 4-band
Complete CNF coverage 2009-2011

Redefined contract deliverable to include oriented digital stereo pairs -- blockfile
 Nvidia 3d Vision + 120Hz monitor, ~\$600 – active shutter/quad-buffered stereo
 Compatible with ERDAS Imagine and ArcGIS Stereo Analyst
 Vastly improved interpretation and measurement capability
 Can produce lidar-like point clouds using Imagine eATE
 3D workstation at all AK Region Supervisor Offices



Data discovery and distribution



Network Access Storage for the Alaska Region Issues and Considerations

Business Requirements

Network Access Storage (NAS) drives will be used to store forest data and cartographic raster-based data sets as NAS is a graceful, low-cost solution that works particularly in remote areas, with Local Area Network information. NAS is a local data solution at

Solution Summary and Scope

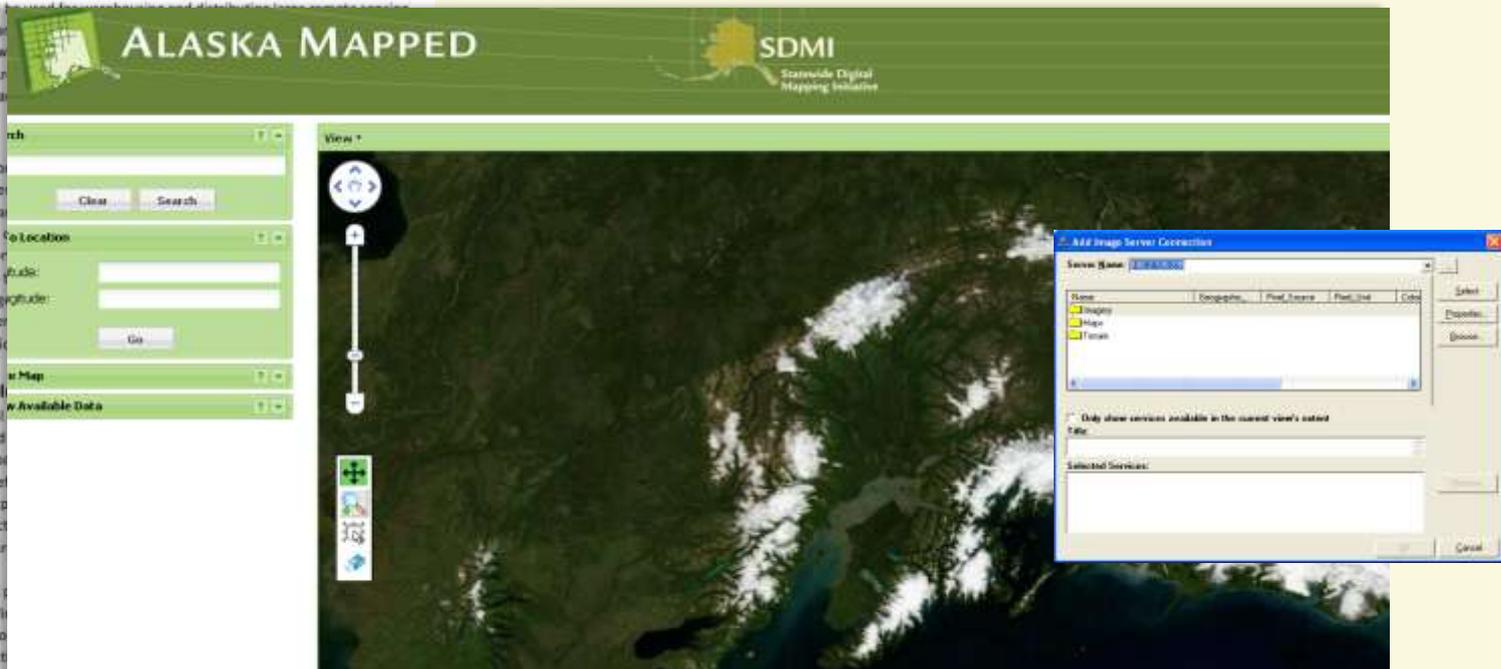
The Network Access Storage (NAS) network stores geospatial information at multiple independent locations to save hundreds to thousands of hours of travel to another or waiting for large raster-based data (e.g. Data Center). NAS drives are also portable because the NAS is directly connected to a PC with a PC-connected Direct Access Storage Device (DAS) read only for the vast majority of end users. This is a complement to the Data Center mission.

Primary Benefit and Risk if Not Implemented

The NAS will forego the need for external data updated remotely. There is an urgent need to update Chugach National Forests, to make geospatial data available to Forest Service end-users in a timely and efficient manner. Data volume is large, landscape extents are expansive. Data moves much more quickly and effectively in the case of internet outage, the local area network is available.

The NAS is a direct strategic solution and NAS operates behind the Forest Service fire management system. Multiple NAS drives can be updated from a central location. And the NAS solution is a direct strategic solution.

- 1) Image Server: Forest Service
- 2) NAS drives: Regional (RO, SO, RD, PNW)
- 3) UAF GINA: Public licensing



letter of 1/1390

	Office	Physical Location	Office	Forest data	NAS Name	IP address	Subnet mask (static)	Gateway address	DNS address
1	Supervisor's Office	Anchorage	SO	Chugach	sxancsnap001	199.131.82.183	255.255.255.0	199.131.82.191	
2	Cordova RD	Cordova	RD	Chugach	sxcdvsnap001	199.131.86.183	255.255.255.0	199.131.86.191	
3	Craig RD	Craig	RD	Tongass	sxcgasnap001	199.131.73.186	255.255.255.0	199.131.73.244	
4	Glacier RD	Girdwood	RD	Chugach	sxaqysnap001	199.131.85.183	255.255.255.0	199.131.85.191	
5	Hoonah RD	Hoonah	RD	Tongass	sxhnhsnap001	199.131.97.181	255.255.255.0	199.131.97.254	
1	Regional Office	Juneau	RO	Tongass	sjxnusnap001	199.131.101.238	255.255.255.0	199.131.101.253	199.130.101.181
2	Regional Office	Juneau	RO	Chugach	sjjnusnap002	199.131.101.239	255.255.255.0	199.131.101.253	199.131.101.181
3	PNW and FSL	Juneau	FSL	Tongass	sjjnusnap003	199.131.101.5	255.255.255.0	199.131.101.253	
4	PNW and FSL	Juneau	FSL	Chugach	sjjnusnap004	199.131.101.6	255.255.255.0	199.131.101.253	

SPOT 5 HRS DEM

Source: Astrium SPOT Image
Programming request

Type: DSM, tiled mosaic
Method: optical stereo pair
Posting: 20m

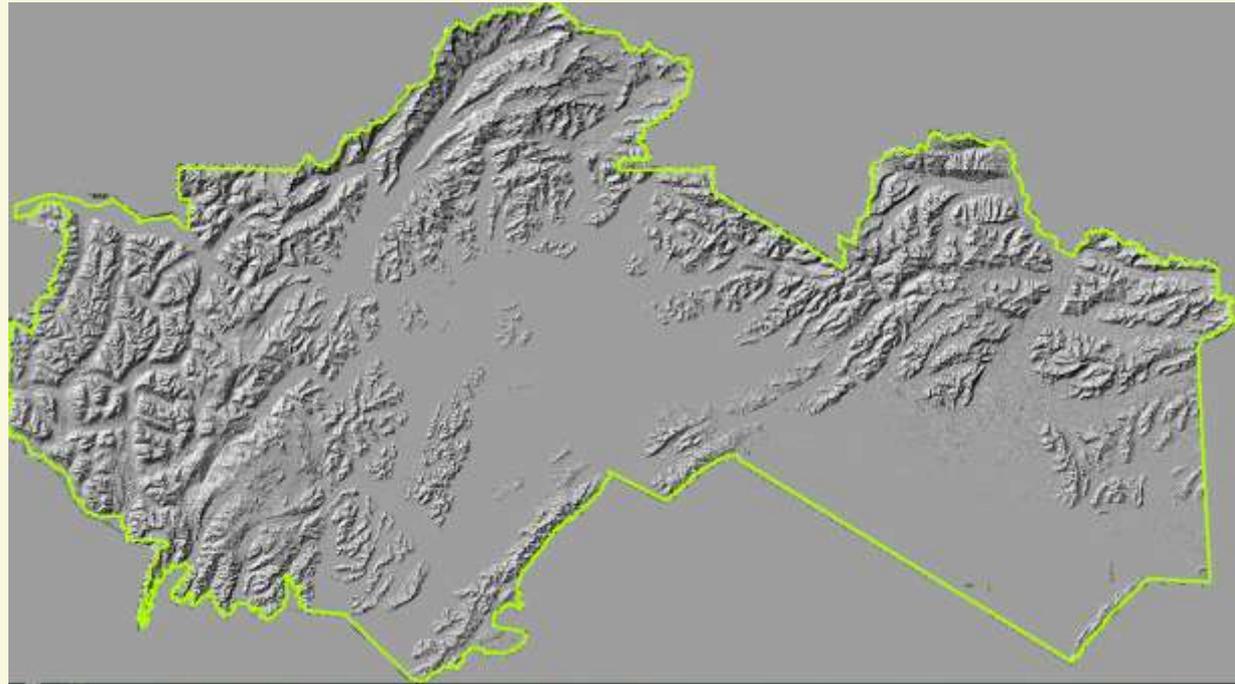
Cost: \$4/sq km (\$152,500 for CNF, \$330,000 for TNF)

Licensing: public with some restriction (\$14,000 uplift CNF only) TNF Fed only

Era: 3+ years (2006-2009) to collect cloud-free stereo (2-3 day repeat)

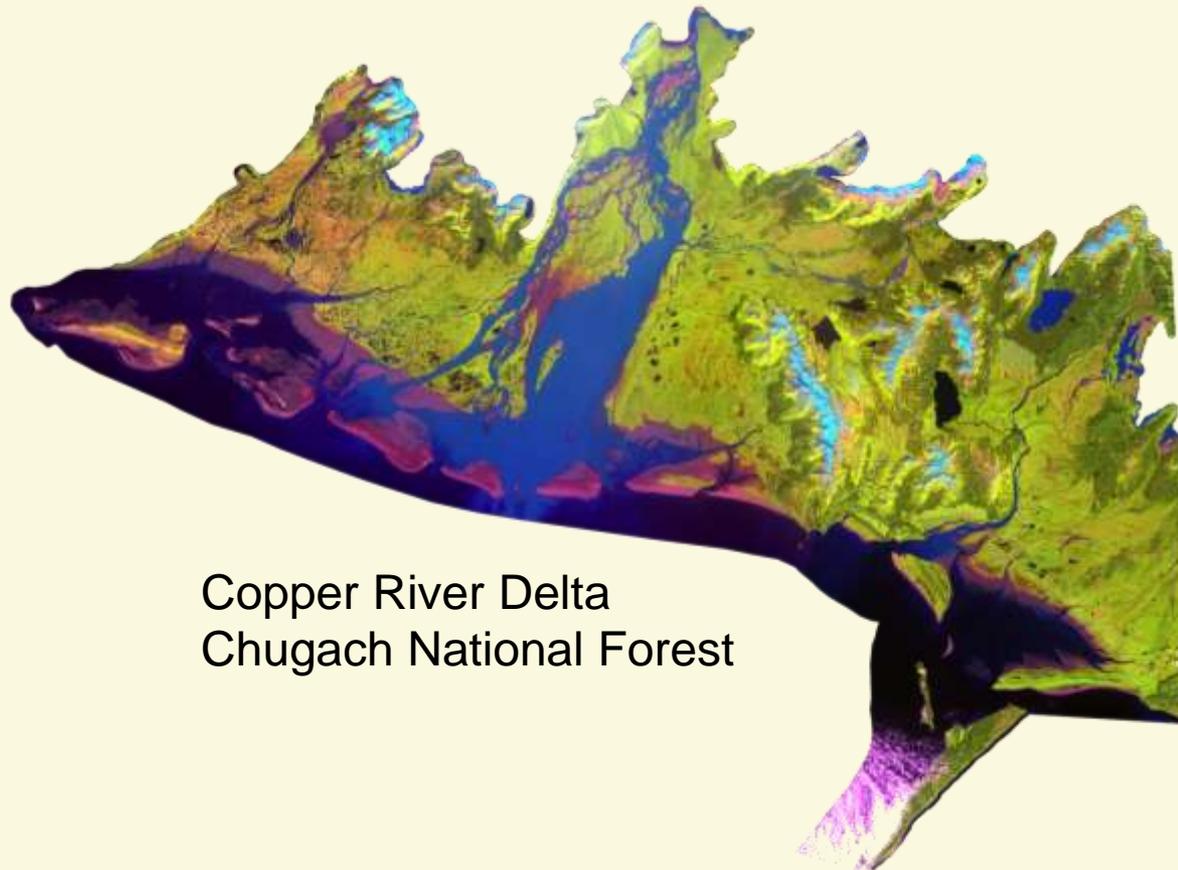
10-15 m H and V accuracy specified by SPOT Image with a decrease consistent with steeper slope and higher elevation

Current statewide IDIQ for P- and X-band ifSAR DEMs (\$200k for 1-degree cell)



SPOT 5 for vegetation mapping

Statewide contract through 2013



Copper River Delta
Chugach National Forest

ALOS Palsar evaluation for vegetation mapping

Remote Sensing Steering Committee Project

Objectives

1. Assess feasibility and value of integrating SAR into current vegetation mapping processes or having it stand alone as a sole data source for mapping vegetation in cloud-prone regions
 - Determine the efficacy of using SAR in conjunction with multispectral imagery and other auxiliary layers.
2. Model dominant vegetation types
3. Document fundamentals of using SAR data for vegetation mapping

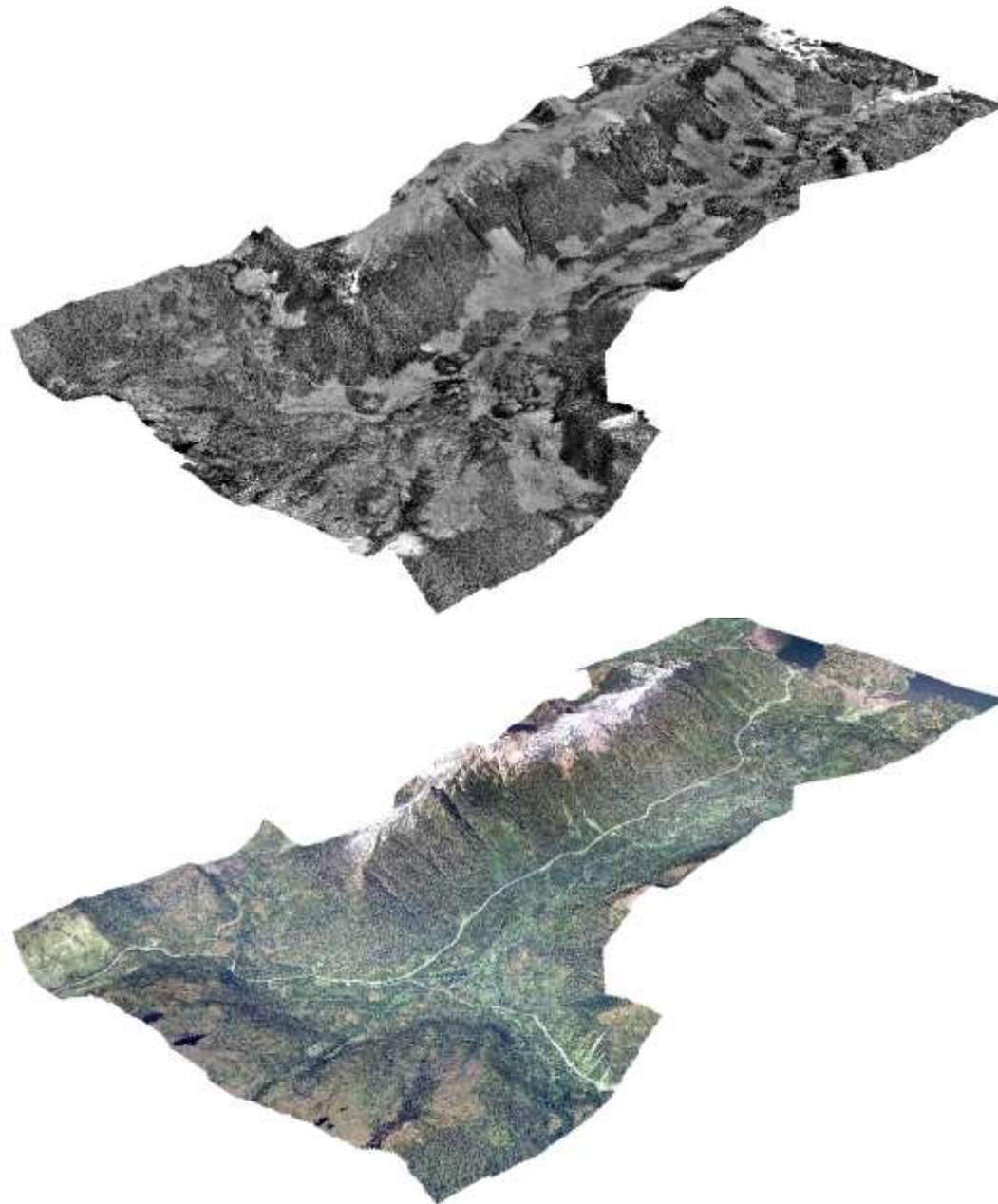


Harris River

Stream Restoration
1961 and 2006

Examining woody debris
and hydro-morphology

Orthorectification, mosaicking,
and DEM generation



Room for improvement

Slow motion 1-year+ turn around between collection and delivery

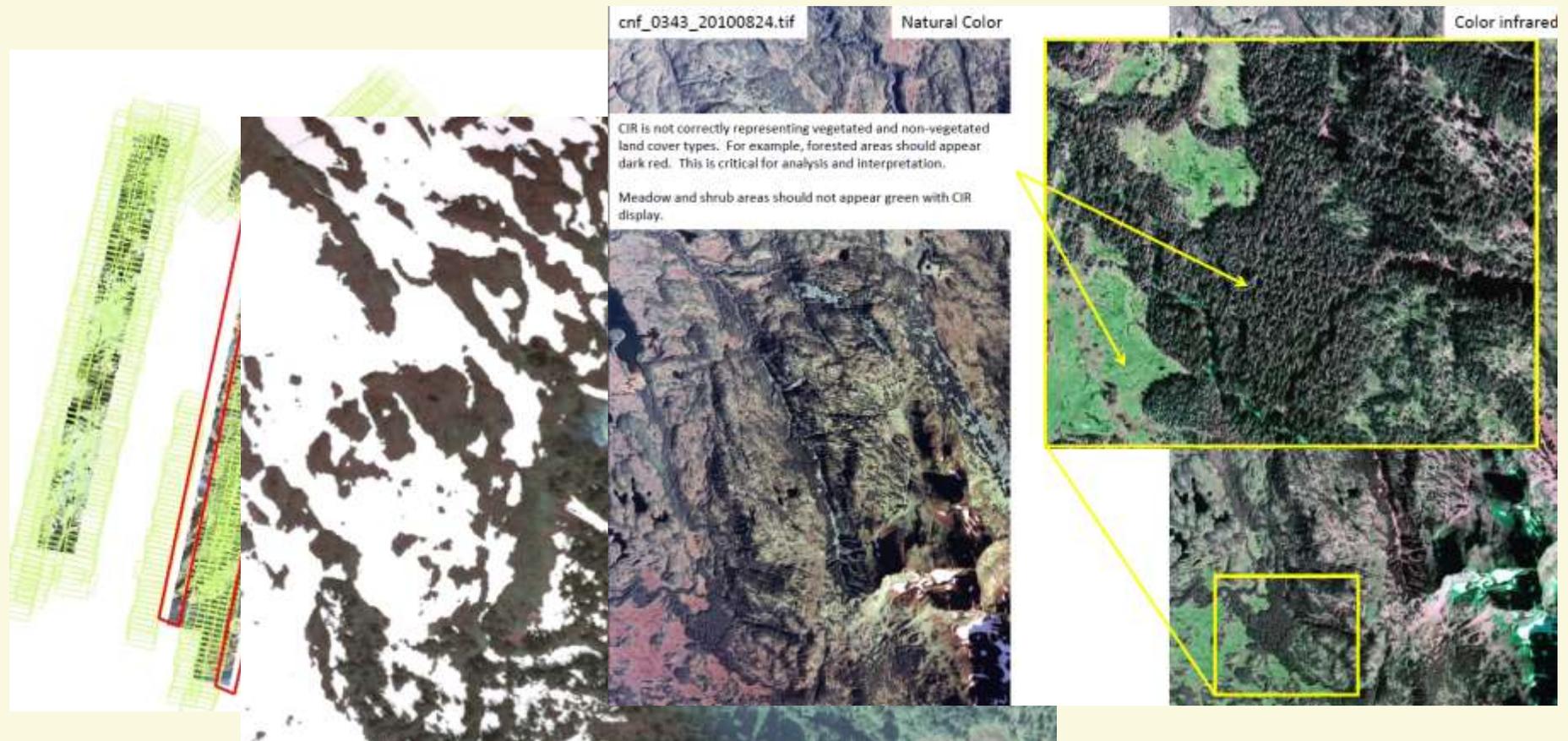
Far too much processing in Adobe Photoshop

Block file stereo pair adjustment, size

Spectral and radiometric issues

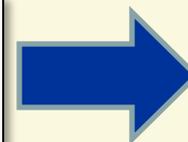
Seamlines, repeated features, overlap

Geometry is pretty good (IMU, GNSS/GPS)





APFO contracting and inspection process



Michelle, Sherry, Zach, Mark, and RSAC

(James Monty, Scott McClarin, Jeremy Webb)

For future contracting...

Request for Information

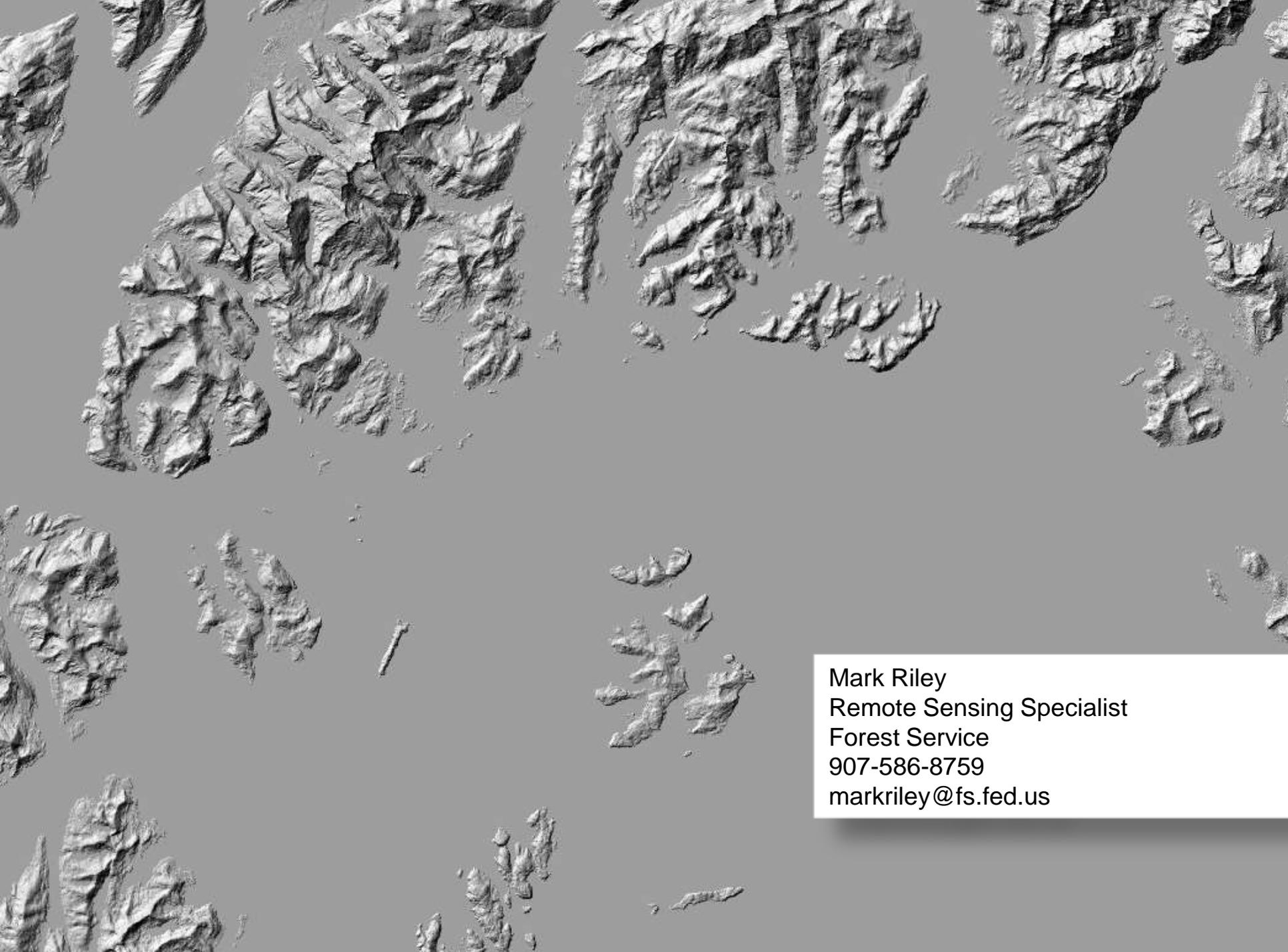
To generate more competition, determine interest, increase awareness

Refined contract specifications

To better define expectations and consistency

IDIQ

To accommodate year-end funds and provide AK continuity



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