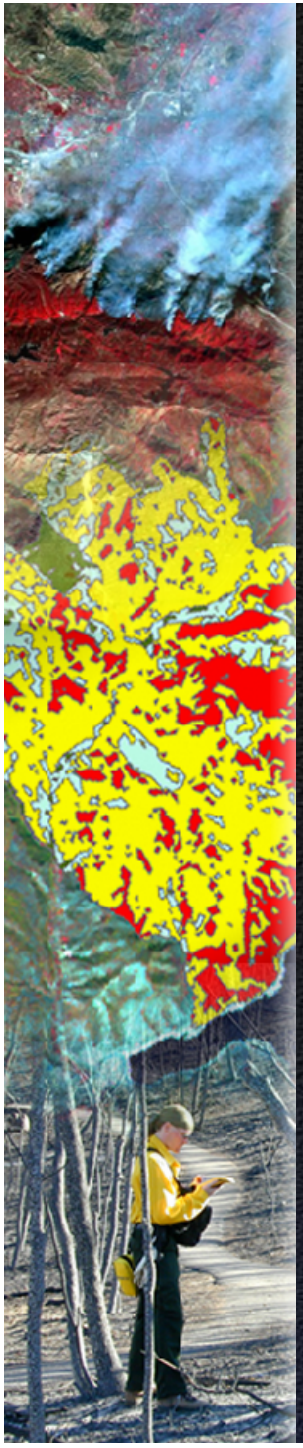
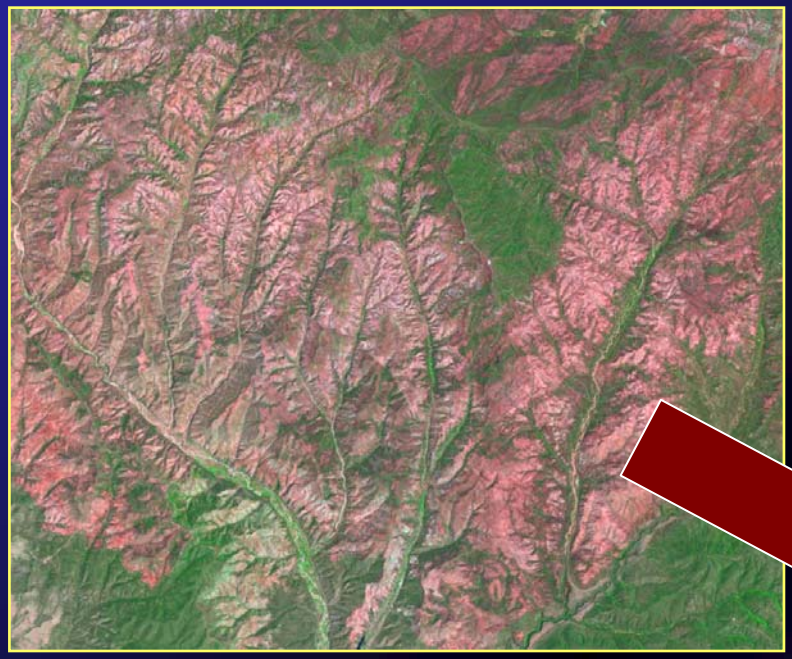


Deriving the BARC from Satellite Imagery

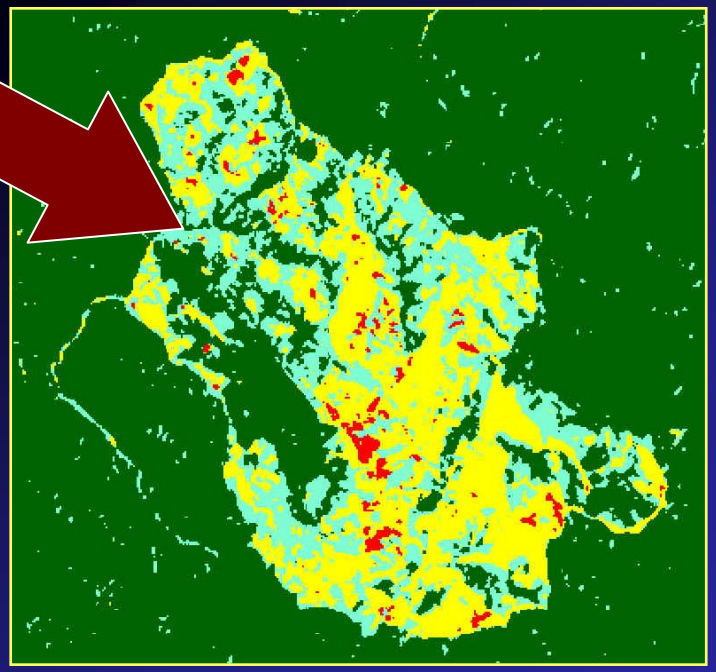
Demonstration Using ERDAS Imagine

Deriving the BARC from Satellite Imagery



Rodeo – Chediski Fire 2002 Landsat 7 ETM + Imagery

French Fire 2004 BARC Dataset

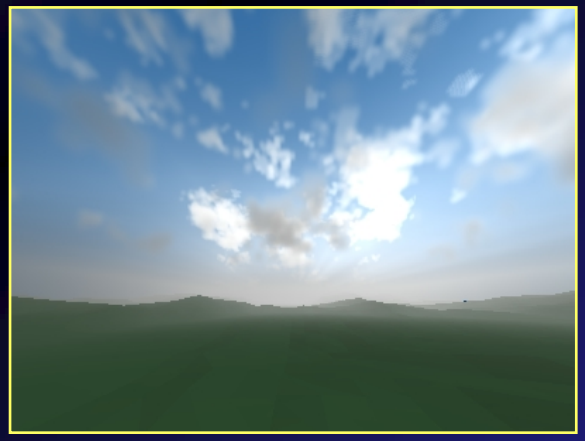


Overview: Pre-processing

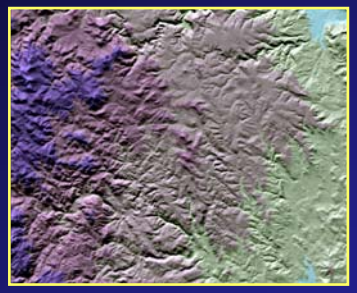
Step 1: Pre-processing

Import (pre and postfire)

Atmospheric Correction



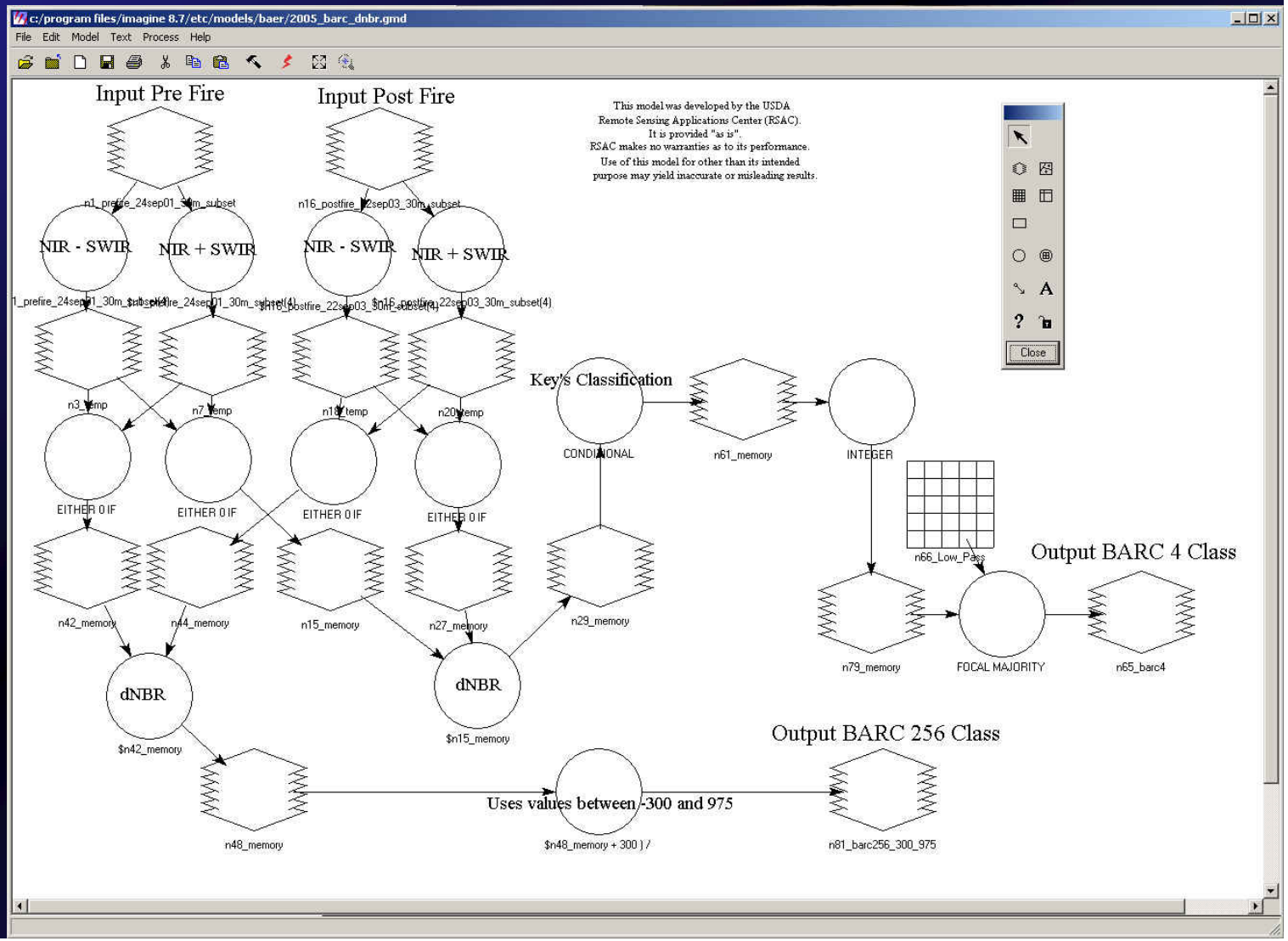
Terrain Correction



Subset

Overview: Modeling

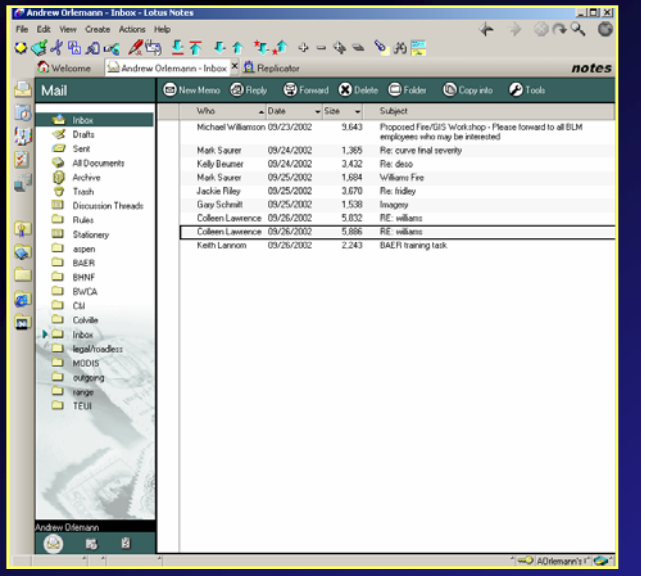
Step 2: Modeling



Overview: Post-processing and Delivery

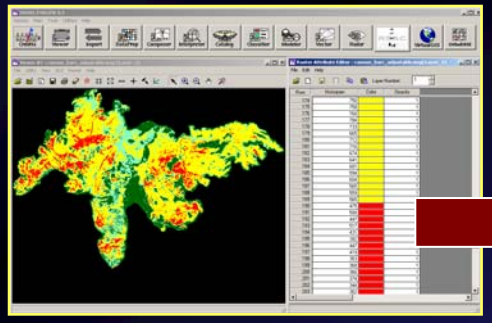
Step 3: Post-processing and Delivery

Email

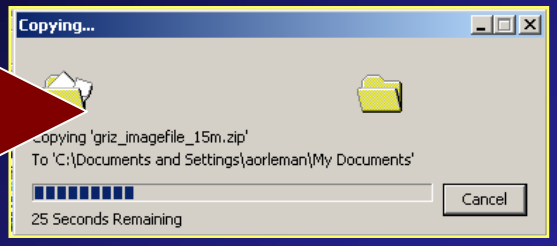


Reprojection

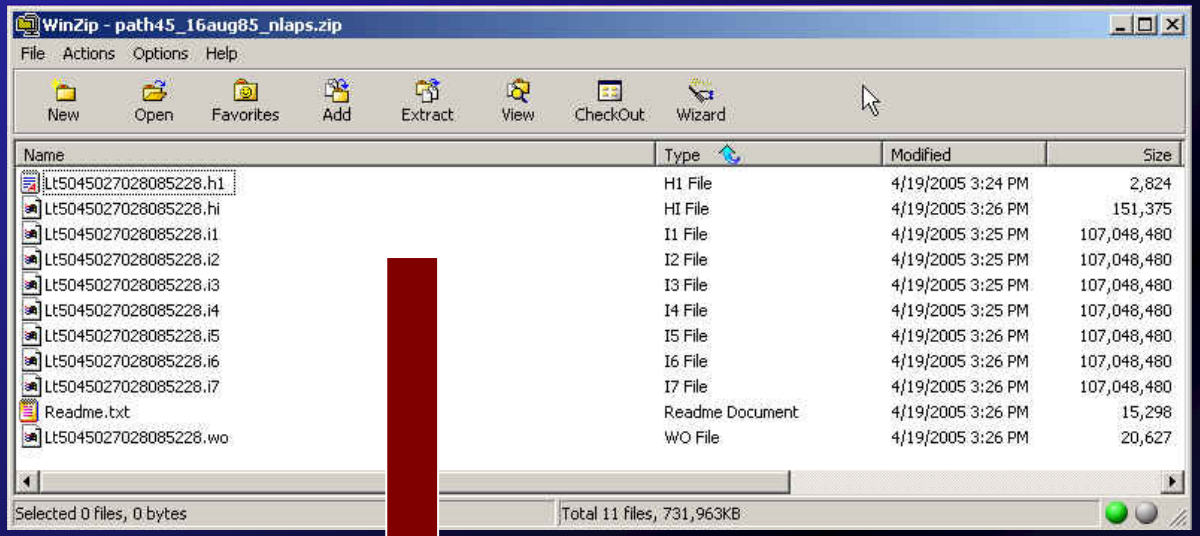
Coloring



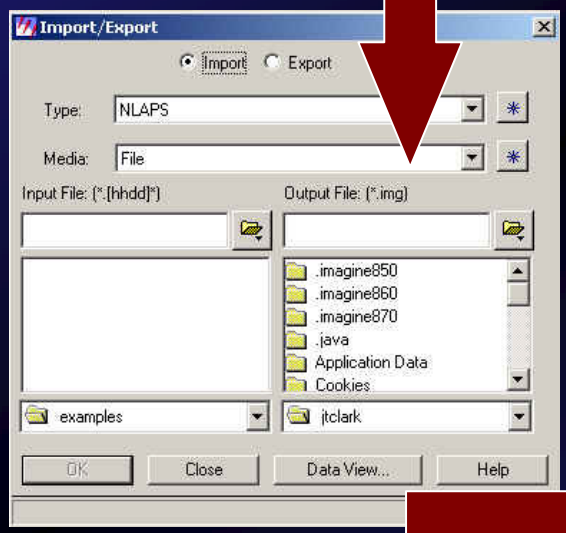
FTP



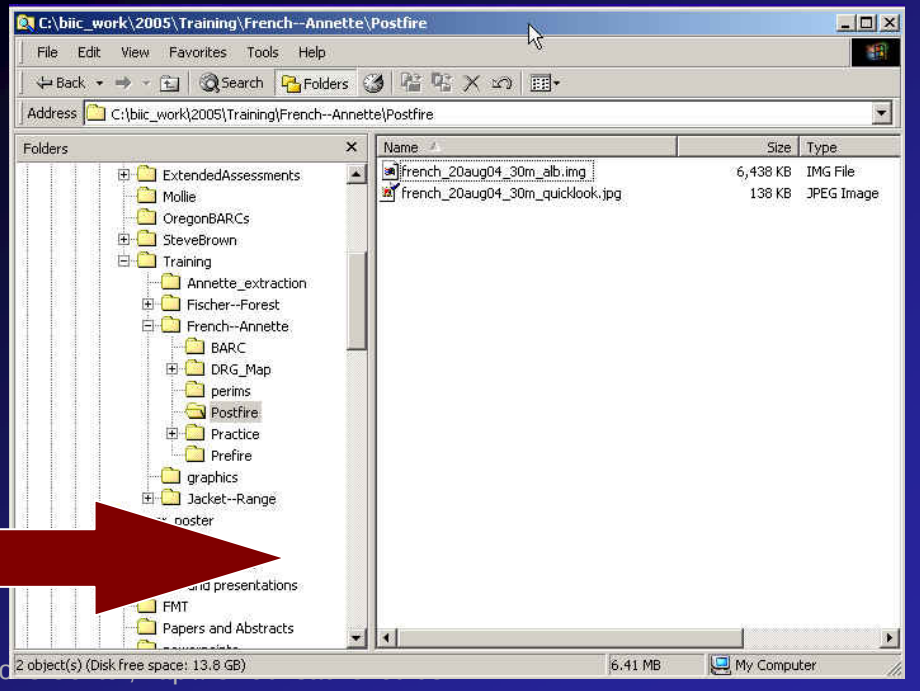
1: Pre-processing - Import



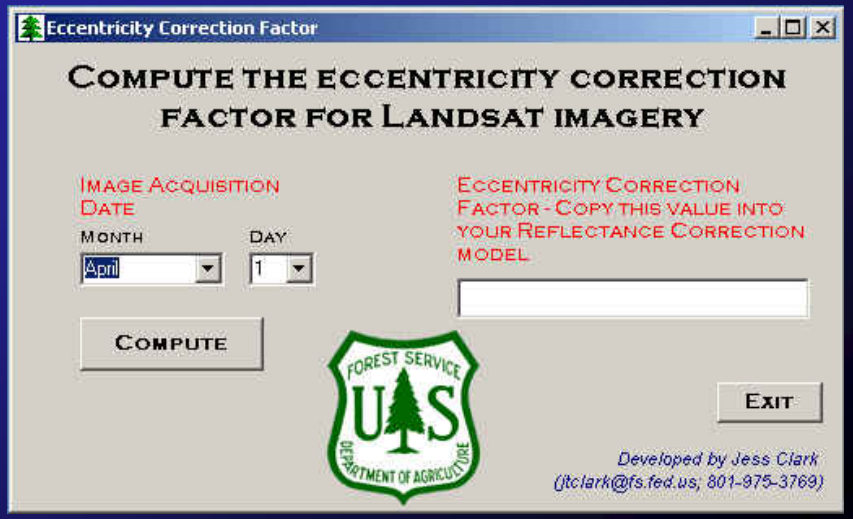
Raw data come in NLAPS format from the USGS



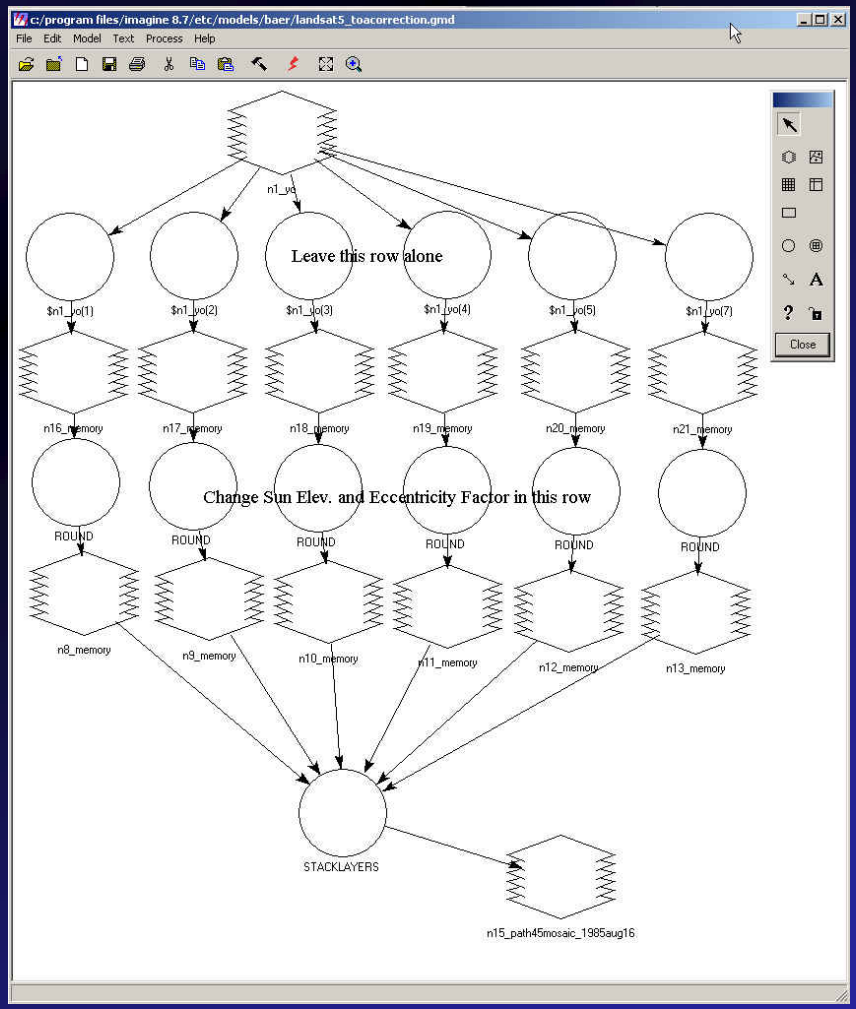
Using ERDAS Imagine, we import the imagery into *.img format



1: Pre-processing – Atmospheric Correction

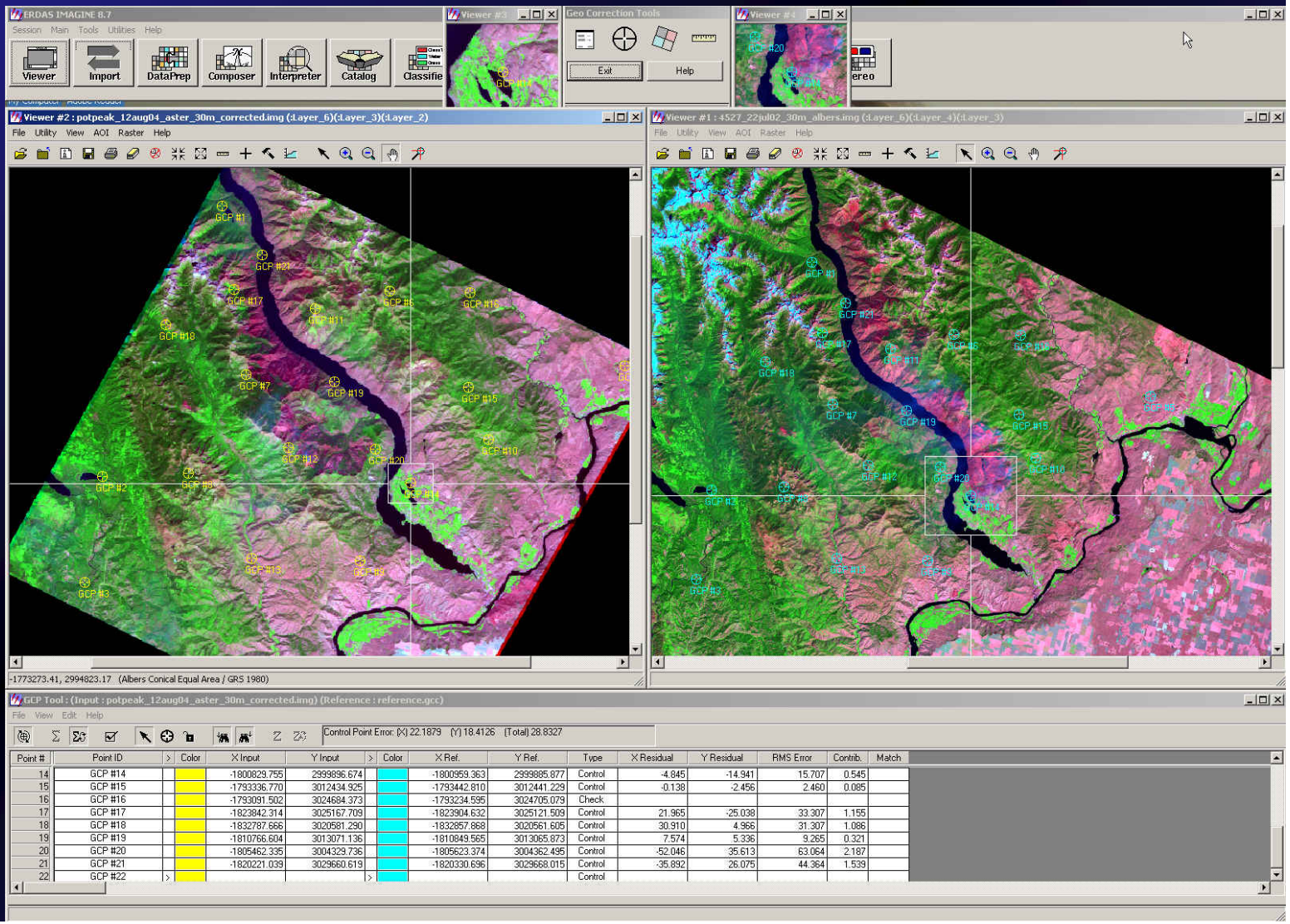


Accounting for sun angle and other atmospheric variables, we perform a top-of-atmospheric reflectance correction on Landsat imagery.



1: Pre-processing – Terrain Correct

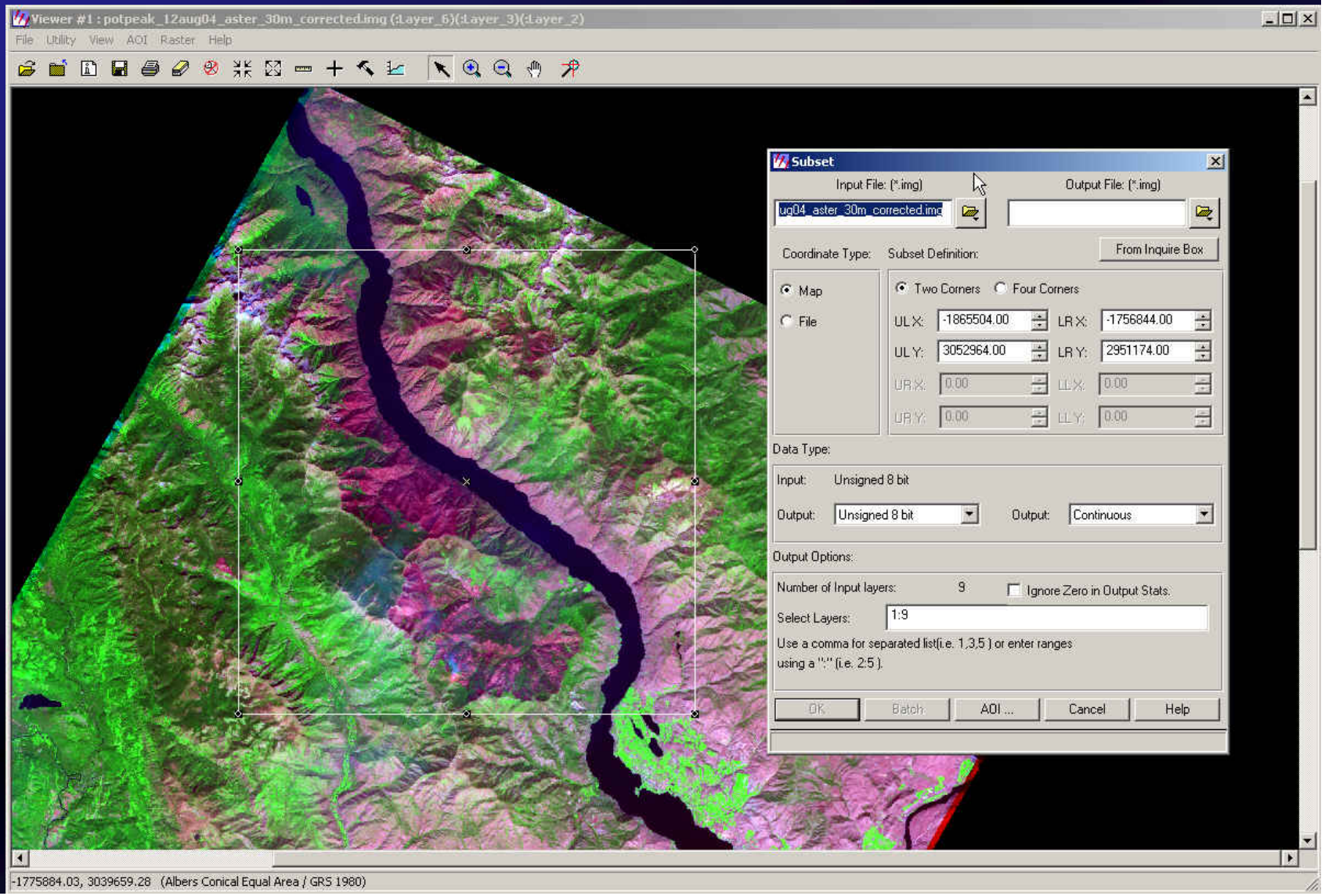
Not necessary for Landsat imagery…



Point #	Point ID	Color	X Input	Y Input	Color	X Ref.	Y Ref.	Type	X Residual	Y Residual	RMS Error	Contrib.	Match
14	GCP #14		-1800829.755	2999896.674		-1800959.363	2999885.877	Control	-4.845	-14.941	15.707	0.545	
15	GCP #15		-1793336.770	3012434.925		-1793442.810	3012441.229	Control	-0.138	-2.456	2.460	0.085	
16	GCP #16		-1793091.502	3024684.373		-1793234.595	3024705.079	Check					
17	GCP #17		-1823842.314	3025167.709		-1823904.632	3025121.509	Control	21.965	-25.038	33.307	1.155	
18	GCP #18		-1832787.666	3020581.290		-1832857.868	3020561.605	Control	30.910	4.966	31.307	1.086	
19	GCP #19		-1810766.604	3013071.136		-1810849.565	3013065.873	Control	7.574	5.336	9.265	0.321	
20	GCP #20		-1805462.335	3004329.736		-1805623.374	3004362.495	Control	-52.046	35.613	63.064	2.187	
21	GCP #21		-1820221.039	3029660.619		-1820330.696	3029668.015	Control	-35.892	26.075	44.364	1.539	
22	GCP #22							Control					

1: Pre-processing - Subset

We create the BARC on a square subset



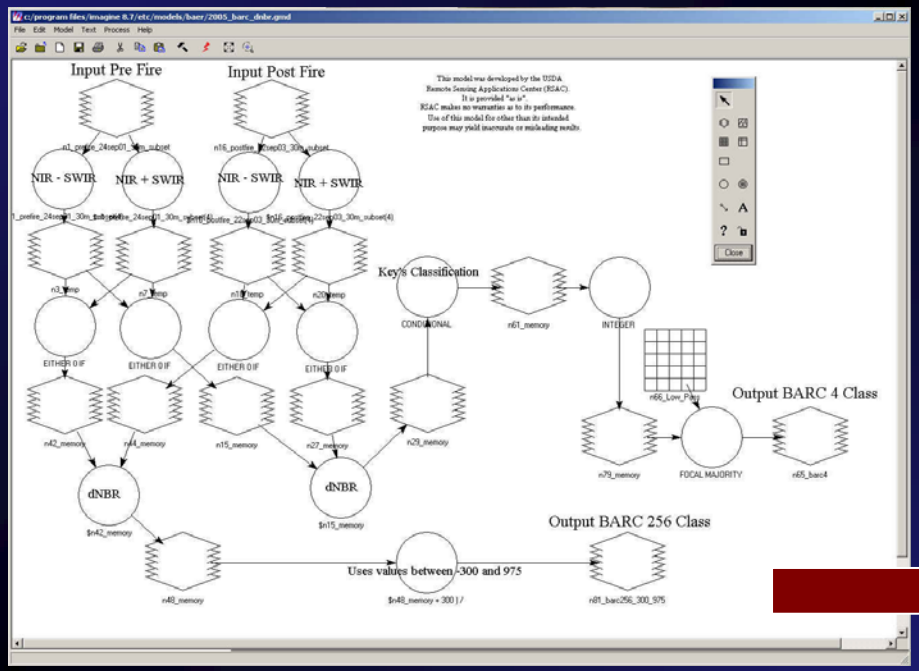
2: Modeling

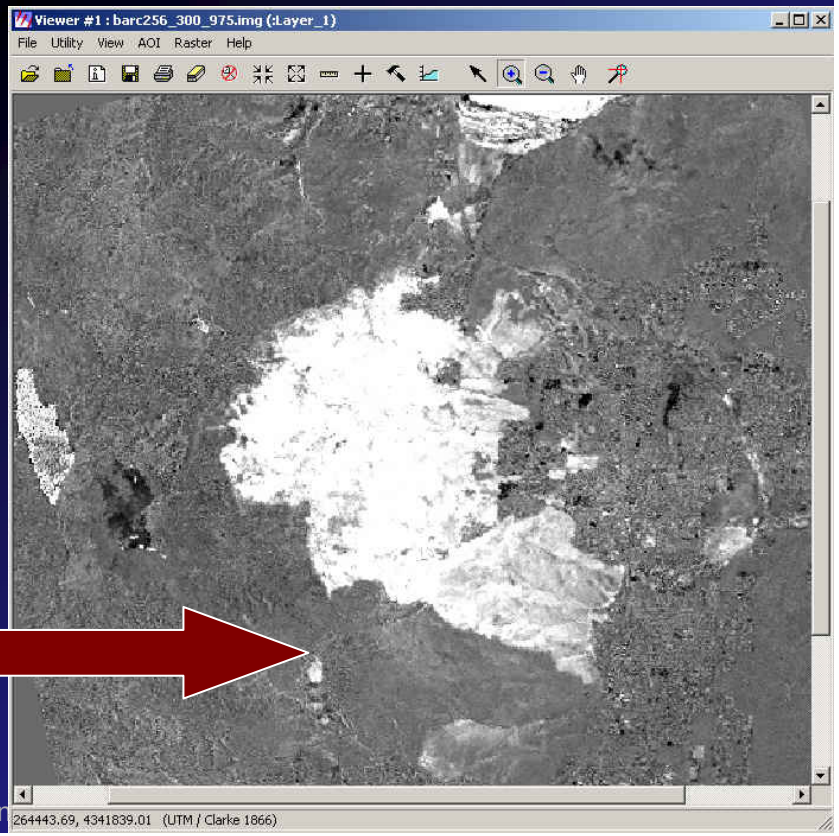
Normalized Burn Ratio (NBR)

NBR = (NIR – Mid IR) / (NIR + Mid IR)

Differenced Normalized Burn Ratio (dNBR)

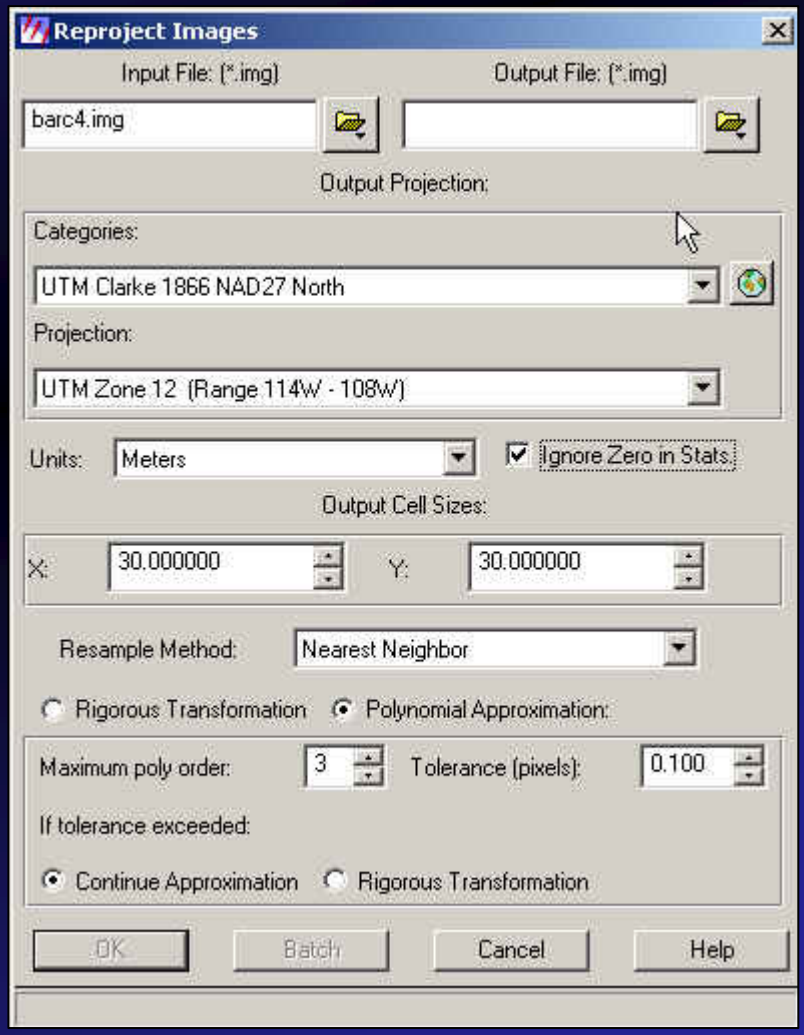
dNBR = Pre NBR – Post NBR





3: Post-processing - Reproject

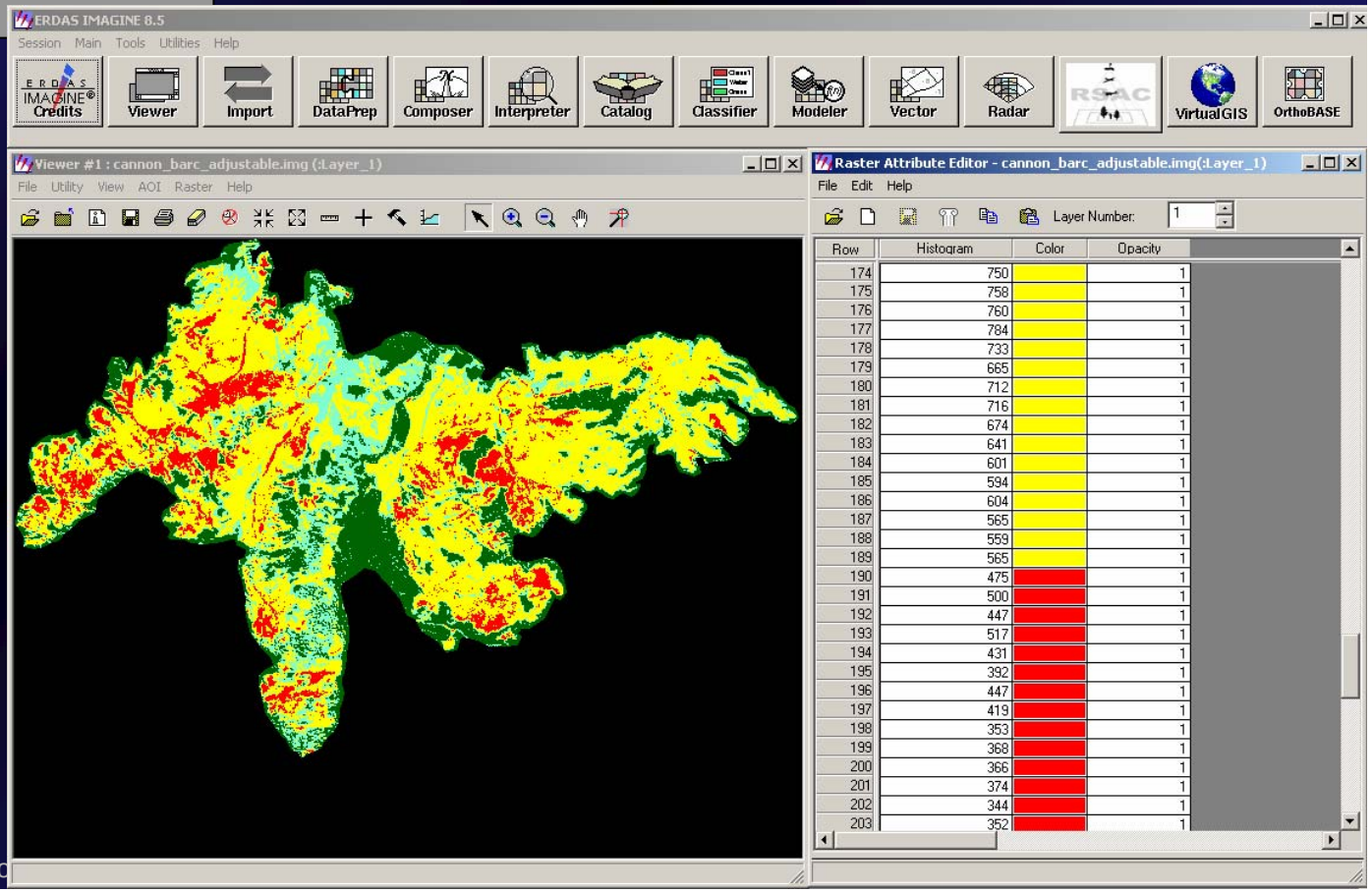
We do all our processing in Albers Conical Equal Area projection. We then reproject the delivered products to the projection needed by the end user.



3: Post-processing – Coloring

We color all the classes as an initial classification for end users

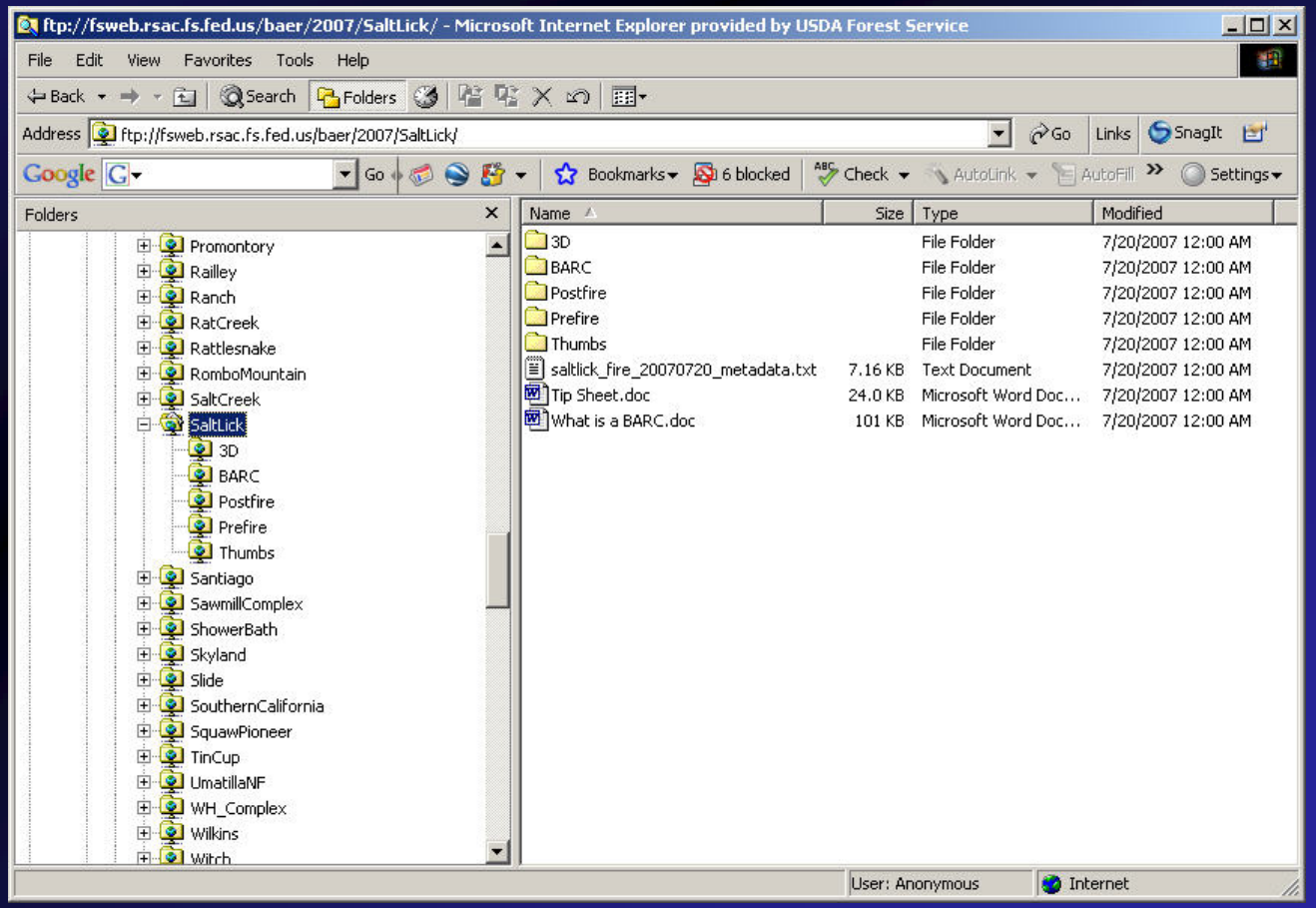
Green = Unburned / Very Low
Aquamarine = Low
Yellow = Moderate
Red = High



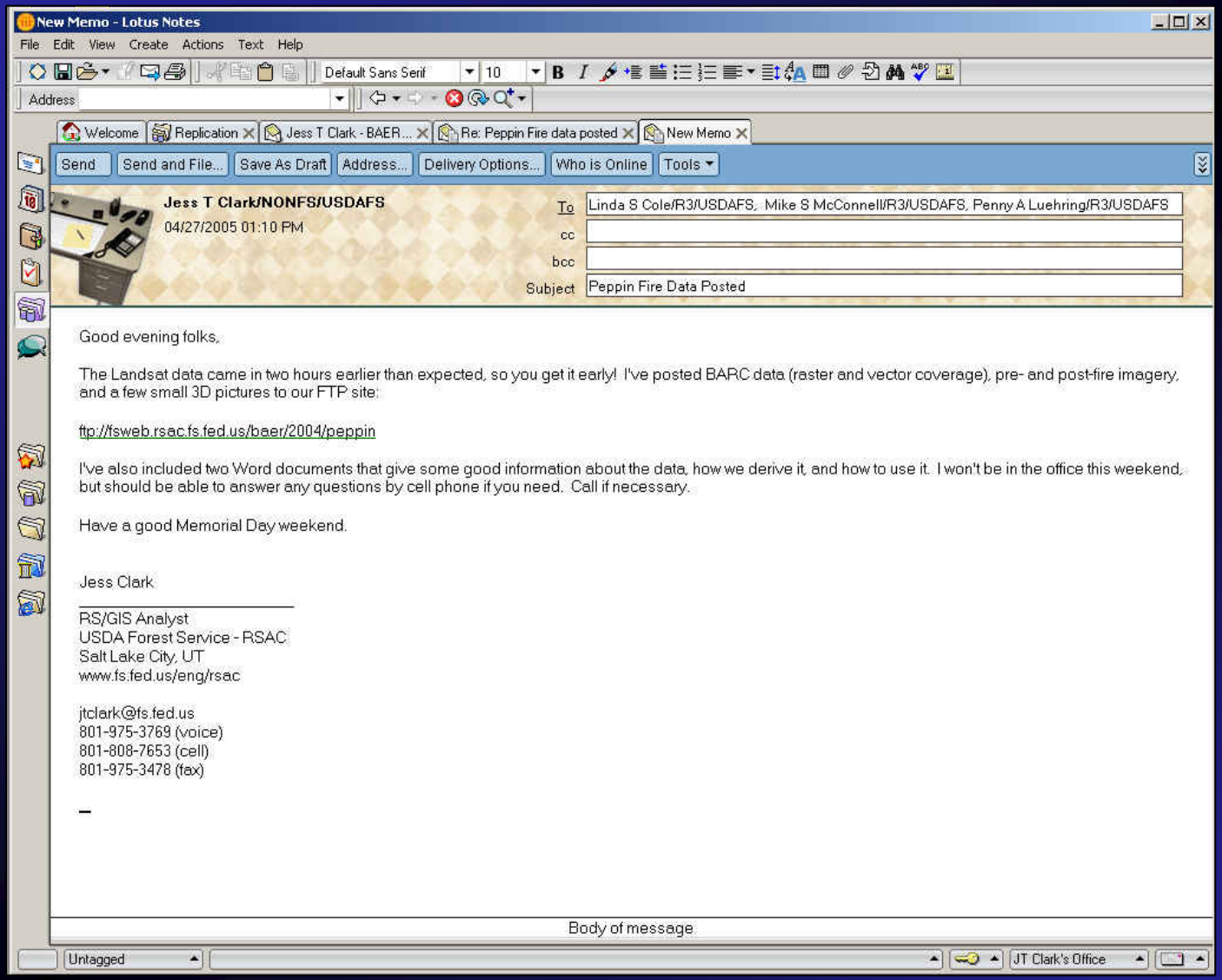
3: Delivery – FTP

Fires with Forest Service BAER teams are posted to the FSWEB FTP site. Interagency BAER teams can find their data on our public FTP server (ftp://ftp2.fs.fed.us/incoming/rsac/baer).

Included on the FTP site are pre- and postfire image subsets as well as the BARC datasets. Each dataset is in raster format.



3: Delivery – Email



Emails are sent out as soon as data is posted to FTP site.

Note the cell phone number. We are available on weekends and holidays via the cell phone.

The End