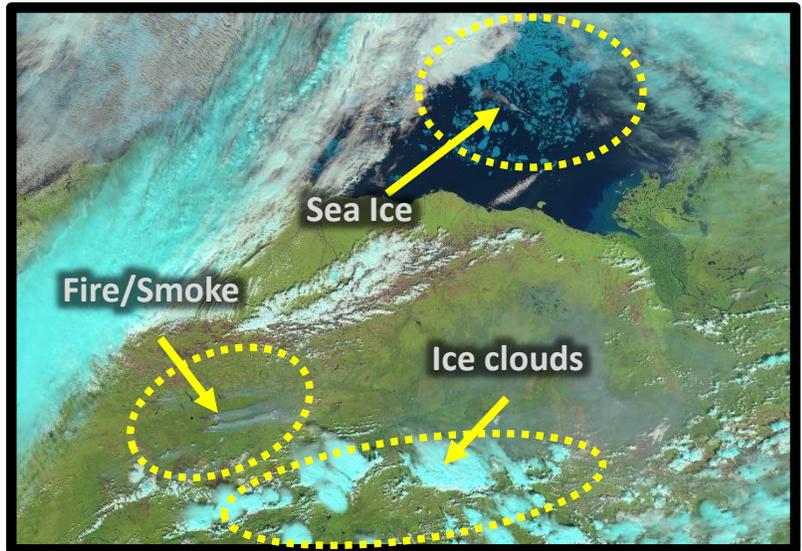


### One Product, Many Applications

This RGB (also known as “Natural Color” RGB) is extremely versatile. It shows burn scars, smoke, and large fires. It clearly differentiates between liquid and ice clouds, or surface ice/snow and low clouds. It shows differences in land surface between marshlands and arid regions. It washes, dries, and folds your laundry...well okay, no single tool literally does it all...

Since this product is composed of one visible and two near IR channels, it is only available during daylight hours. The good news is that these channels are common to many sensors including: VIIRS, MODIS, AVHRR, ABI, and AHI.



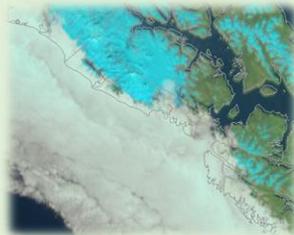
Day Land Cloud over northeast Alaska from SNPP VIIRS at 1947 UTC, 11 Jul 2017. Note that sea ice, water clouds, ice clouds, and smoke are all evident.

### Day Land Cloud RGB Recipe

Color	Band / Band Diff. (μm)	Physically Relates to...	Small contribution indicates...	Large Contribution indicates...
Red	1.61	Ice and Snow	Ice-phase clouds, snow/ice on the surface	Dry arid land, water clouds, fires
Green	0.86	Vegetation	Little vegetation, rocky or bare ground	Small ice or water particles, strong updrafts
Blue	0.64	Red Visible	No clouds	Water clouds

### Impact on Operations

**Separating Ice and Snow on the Surface from Low Clouds:** low clouds composed of liquid water will appear white while surface snow/ice will be shades of cyan.

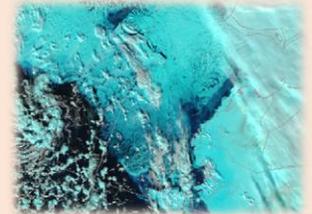


**Five-Alarm Fire:** salmon color indicates large fires, blue-grey streaks indicate smoke, and dark brown patches indicate burn scars.

**Land Features:** the cyan colors of ice/snow contrast with green vegetation and tan dry land.

### Limitations

**Goes to Bed at Night:** RGB is composed of three reflectance channels requiring incoming sunshine.



**Snow and ice on the surface appear similar to cirrus clouds:** Since both high level cirrus and surface ice/snow are frozen water they present a similar cyan color. The synoptic situation and evolution over time help differentiate these features.

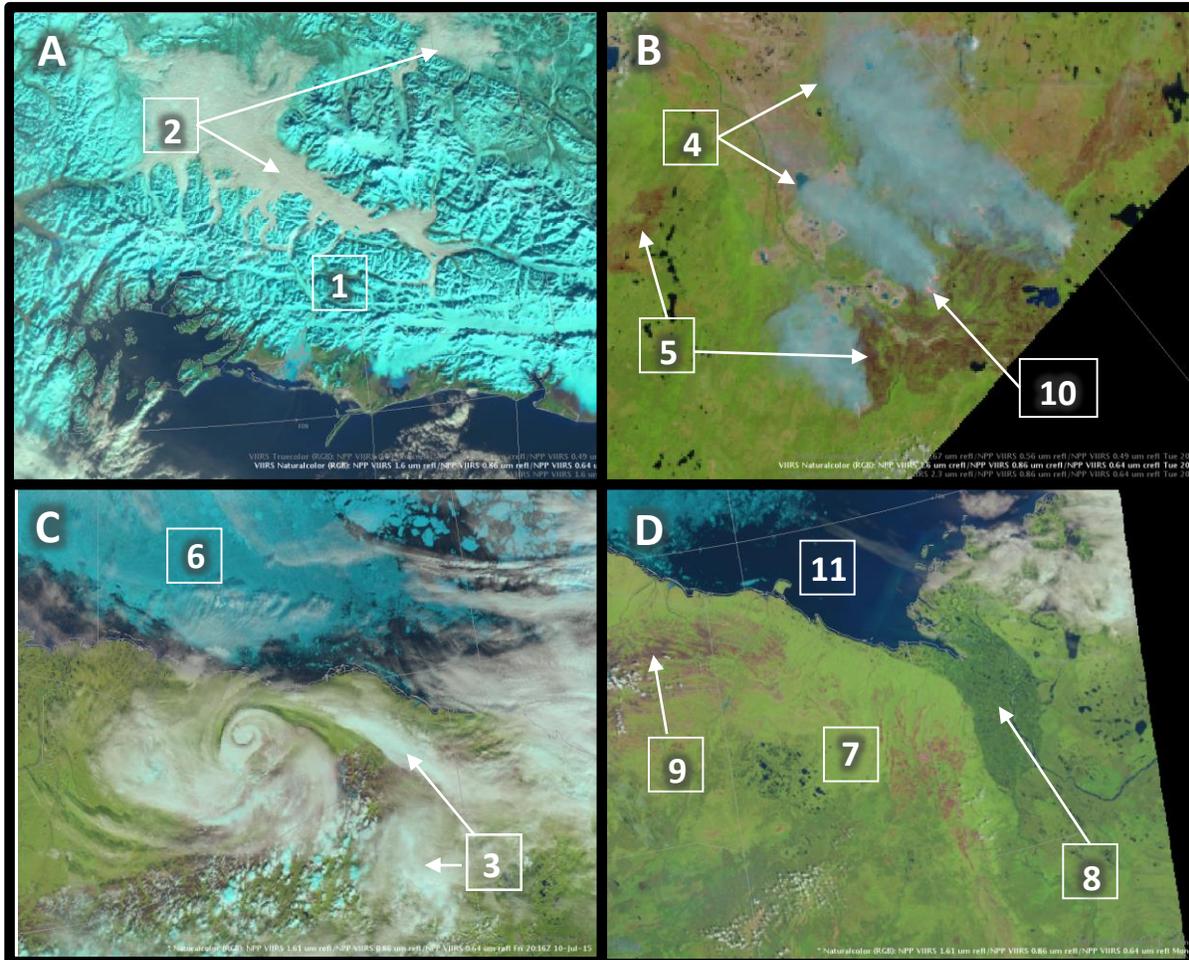
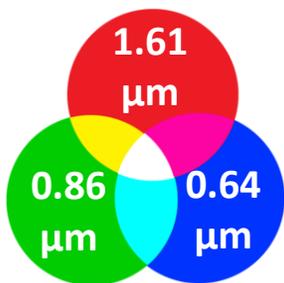
**Vegetation is exaggerated:** the green from the 0.86 um “veggie” channel makes the earth appear more vegetated than it is in reality.

### RGB Interpretation

- 1** Snow/Ice  
(cyan)
- 2** Water clouds  
(white)
- 3** Ice Clouds (cirrus)  
(whispy cyan)
- 4** Smoke  
(bluish grey)
- 5** Burn scars  
(brown)
- 6** Sea Ice  
(Blue to cyan)
- 7** Vegetation  
(green)
- 8** Wet marshy land  
(darker green)
- 9** Dry or rocky land  
(beige to brown)
- 10** Active Fires  
(salmon)
- 11** Open Ocean/Lakes  
(dark blue or black)

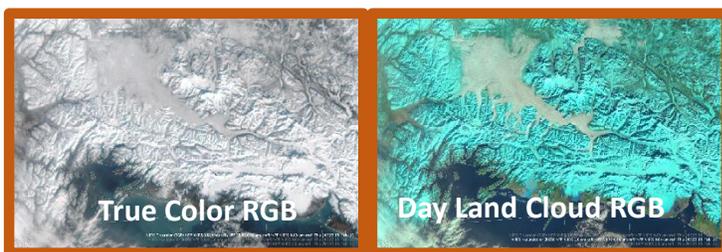
Note: colors may vary diurnally, seasonally, and latitudinally!

### RGB Color Guide



Day Land Cloud RGB from SNPP VIIRS at (A) 2032 UTC, 18 Feb 201; (B) 2031 UTC, 24 May 2016; (C) 2016 UTC, 10 Jul 2015; and (D) 2312 UTC, 06 Jul 2015.

**How to find a Polar Bear in a Snowstorm:**  
 The True Color RGB provides an excellent view of the earth as the human eye might see it, but clouds, snow, and ice all appear white. The Day Land Cloud RGB clearly differentiates the low clouds from snow and ice. For VIIRS the Day Land Cloud RGB resolution is 375 m while True Color is 750 m.



### Resources

**EUMETRAIN RGB Color Interpretation Guide**  
[http://www.eumetrain.org/RGBguid\\_e/rgbs.html](http://www.eumetrain.org/RGBguid_e/rgbs.html)

**CIRA VIIRS imagery Blog**  
<http://rammb.cira.colostate.edu/projects/alaska/blog/index.php/uncategorized/oh-how-the-seasons-change/>

**CIMSS GOES Imagery Blog**  
<http://cimss.ssec.wisc.edu/goes/blog/archives/23441>

**Hyperlinks not available when viewing material in AIR Tool**