

## ORNL DAAC BOREAS FOLLOW-ON DSP-10 REGRIDDED MOSS COVER MAPS FOR 1994

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#### **Summary:**

Existing 1-km moss cover classifications were reprocessed and are now available at multiple resolutions (2 km, 10x5 minutes, and 0.5 degree). These data were regrided for use by the BOREAS Follow-on Carbon and Hydro-Meteorological modeling groups to have a number of data sets available in common grid projections and scales for intercomparison studies. Characteristics of the individual products are described below.

#### **Maps included in this data set:**

[Regridded Moss Cover Maps, 2 kilometers](#)

[Regridded Moss Cover Maps, 10 by 5 minutes](#)

[Regridded Moss Cover Maps, 54 km](#)

#### **Data Citation:**

Cite this data set as follows (citation revised on October 30, 2002):

Hall, F., G. Rapalee, and D. Knapp. 2001. BOREAS Follow-On DSP-10 Regrided Moss Cover Maps for 1994. Data set. Available on-line [<http://www.daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A.

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## Processing:

If there are any questions about how this aggregation was done, please contact Gloria Rapalee (Gloria.Rapalee@gsfc.nasa.gov).

These regridDED maps may utilize class numbers that correspond to Lou Steyaert's AFM-12 classification or include data that cover the same area as the land cover classification. When referenced in the regridDED map description, please refer to the following Land Cover Classification table. For more information, please access the following BOREAS data set and documentation.

### [BOREAS AFM-12 1-km AVHRR Seasonal Land Cover Classification](#)

This regional land cover data set was developed as part of a multitemporal 1-km AVHRR land cover analysis approach that was used as the basis for regional land cover mapping, fire disturbance-regeneration, and multiresolution land cover scaling studies in the boreal forest ecosystem of central Canada (Steyaert et al., 1997). This land cover classification was derived by using regional field observations from ground and low-level aircraft transits to analyze spectral-temporal clusters that were derived from an unsupervised cluster analysis of monthly NDVI image composites (April-September 1992). This regional data set was developed for use by BOREAS investigators, especially those involved in simulation modeling, remote sensing algorithm development, and aircraft flux studies. Based on regional field data verification, this multitemporal 1-km AVHRR land cover mapping approach was effective in characterizing the biome-level land cover structure, embedded spatially heterogeneous landscape patterns, and other types of key land cover information of interest to BOREAS modelers.

<b>Lou Steyaert's Land Cover Classification</b>	
<b>Class ID</b>	<b>Class Name</b>
1	Wet Conifer (Low Stand Density)
2	Wet Conifer (Medium Stand Density)
3	Wet Conifer (High Stand Density)
4	Upland Conifer/Fen
5	Rock Outcrops/Bare Ground/Sparse Vegetation/ Slow Regeneration Burn Areas
6	NA
7	Open Water
8	NA
9	Regeneration (North: Within Canadian Shield Zone)
10	NA
11	Recent Visible Burn
12	Rangeland/Pasture/Hay/Aspen Patches
13	Mixed Agriculture/Predominately Grains

14	Mixed Agriculture/Predominately Pasture/Hay
15	Grassland Marshes
16	Mixed Forest (80% Coniferous)
17	Mixed Forest (50% Coniferous)
18	Mixed Forest (80% Deciduous)
19	Regeneration (South: generally south of Shield Zone)
20	Unknown

## Regridded Moss Cover Maps, 2 kilometers

These images were produced by aggregating the 1-km moss maps to a 2-km pixel size. The original 1-km moss map was derived from the 1-km land cover classification that was done by Lou Steyaert.

See the document [dsp09\\_moss\\_cover\\_doc.html](http://dsp09.moss.cover.doc.html) for more information on the original data product that this is based on.

### Image Specifications

Each image is 431 pixels by 336 lines and contains no leading header bytes. Each pixel in the image is represented by one-byte.

The following files contain the percentage of each class within each 2-km pixel. Th pixel values will be either 0, 25, 50, 75, or 100, since exactly four 1-km pixels are nested within a 2-km pixel.

<b>Moss Cover Maps, 2km</b>
moss00_2km.img
moss01_2km.img
moss02_2km.img
moss03_2km.img
moss04_2km.img
moss05_2km.img
moss06_2km.img

The class numbers correspond to the class numbers used by Gloria Rapalee in her classification.

<b>Rapalee Moss Cover Classification</b>	
<b>Class ID</b>	<b>Class Name</b>
Class 0	Outside of data area of image (edge pixels)
Class 1	Feather Moss
Class 2	Feather Moss/Sphagnum
Class 3	Sphagnum
Class 4	Feather/Brown/Spagnum Moss Mix

Class 5	No Moss
Class 6	Water

## Spatial Coverage

These data cover the same area as the land cover classification from Lou Steyaert.

Corner	X	Y	Longitude	Latitude
Upper Left	174.0707	785.4531	108°03'09.30" W	58°01'07.68" N
Upper Right	1036.0707	785.4531	93°48'17.52" W	56°53'52.87" N
Lower Left	174.0707	113.4531	108°27'59.25" W	51°59'32.04" N
Lower Right	1036.0707	113.4531	96°08'36.17" W	51°01'20.43" N

The X and Y coordinates are the BOREAS grid coordinates which are based on an Albers Equal Area Conic (AEAC) projection with the following parameters:

Origin: 111.00 deg W, 51.00 deg N

Standard Parallels: 52.5 deg N, 58.5 deg N

Units of Measure: kilometers

## Regridded Moss Cover Maps, 10 by 5 minutes

These images were produced by aggregating the 1-km moss cover classification by Gloria Rapalee to a 10' (horizontal) by 5' (vertical) pixel size in a straight latitude/longitude grid. This moss classification is based on Lou Steyaert's land cover classification.

See the document [dsp09\\_moss\\_cover\\_doc.html](http://dsp09_moss_cover_doc.html) for more information on the original data product that this is based on.

## Image Specifications

Each image is 66 pixels by 60 lines and contains no leading header bytes. Each pixel in the image is represented by one byte. The DN is the percentage of the pixel which falls in a given class.

The following files contain the percentage of each class within each 10' by 5' pixel.

Moss Cover Maps, 10 by 5 minutes
moss00_10by5min.img
moss01_10by5min.img
moss02_10by5min.img
moss03_10by5min.img
moss04_10by5min.img
moss05_10by5min.img
moss06_10by5min.img

The class numbers correspond to the class numbers used by Gloria Rapalee in her classification.

<b>Rapalee Moss Cover Classification</b>	
<b>Class ID</b>	<b>Class Name</b>
Class 0	Outside of data area of image (edge pixels)
Class 1	Feather Moss
Class 2	Feather Moss/Sphagnum
Class 3	Sphagnum
Class 4	Feather/Brown/Sphagnum Moss Mix
Class 5	No Moss
Class 6	Water

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## The Pixel-Area Image

The file "0\_pixel\_area\_10by5min.img" is an image that provides the area for each of the 10 by 5 minute cells. The area for each pixel is given in hectares. One hectare equals 10,000 square meters.

Each pixel value is represented as a 2-byte integer. This image has the low-order byte first. On some systems, the bytes may need to be swapped in order to read the 2-byte integers correctly. On UNIX systems, this can be done with the following command.

```
dd if=input_file_name conv=swab of=output_file_name
```

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## Spatial Coverage

These data cover the same area as the regional meteorological parameters assembled by Val Pauwels. The data are in a straight latitude/longitude grid. The BOREAS grid coordinates listed below are simply given for reference purposes. The corner coordinates are identical to the upper left corner of Val's regional data set.

Corner	X	Y	Longitude	Latitude
Upper Left	242.697	675.191	107°00'00.00" W	57°00'00.00" N
Upper Right	903.583	765.939	96°00'00.00" W	57°00'00.00" N
Lower Left	274.686	119.043	107°00'00.00" W	52°00'00.00" N
Lower Right	1022.683	221.752	96°00'00.00" W	52°00'00.00" N

The X and Y coordinates listed above are the BOREAS grid coordinates which are based on an Albers Equal Area Conic (AEAC) projection with the following parameters:

Origin: 111.00 deg W, 51.00 deg N

Standard Parallels: 52.5 deg N, 58.5 deg N

Units of Measure: kilometers

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## Regridded Moss Cover Maps, 54 km

These images were produced by aggregating the 1-km moss maps to a 54-km pixel size. 54-km roughly equals one-half a degree (30 minutes) of latitude. The original 1-km moss map was derived from the 1-km land cover classification that was done by Lou Steyaert.

See the document [dsp09\\_moss\\_cover\\_doc.html](http://dsp09.moss.cover.doc.html) for more information on the original data product that this

is based on.

## Image Specifications

Each image is 16 pixels by 12 lines and contains no leading header bytes. Each pixel in the image is represented by one-byte.

The following files contain the percentage of each class within each 54-km pixel.

Moss Cover Maps, 54 km
moss00_54km.img
moss01_54km.img
moss02_54km.img
moss03_54km.img
moss04_54km.img
moss05_54km.img
moss06_54km.img

The class numbers correspond to the class numbers used by Gloria Rapalee in her classification.

Rapalee Moss Cover Classification	
Class ID	Class Name
Class 0	Outside of data area of image (edge pixels)
Class 1	Feather Moss
Class 2	Feather Moss/Sphagnum
Class 3	Sphagnum
Class 4	Feather/Brown/Spagnum Moss Mix
Class 5	No Moss
Class 6	Water

## Spatial Coverage

These data cover the same area as the land cover classification from Lou Steyaert. The upper left corner is identical to the upper left corner of Lou Steyaert's classification. Due to rounding off to the nearest 54-km pixel, the other corners are in slightly different locations.

Corner	X	Y	Longitude	Latitude
Upper Left	174.0707	785.4531	108°03'09.30" W	58°01'07.68" N
Upper Right	1038.0707	785.4531	93°46'22.83" W	56°53'37.06" N
Lower Left	174.0707	137.4531	108°27'13.26" W	52°12'28.30" N
Lower Right	1038.0707	137.4531	96°02'33.91" W	51°13'46.60" N

The X and Y coordinates are the BOREAS grid coordinates which are based on an Albers Equal Area Conic (AEAC) projection with the following parameters:

Origin: 111.00 deg W, 51.00 deg N  
 Standard Parallels: 52.5 deg N, 58.5 deg N

Units of Measure: kilometers

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## References:

Steyaert, L.T., F.G. Hall, and T.R. Loveland. 1997. Land Cover Mapping, Fire Disturbance-Regeneration, and Multiresolution Land Cover Scaling Studies in the BOREAS Forest Ecosystem with Multiresolution 1-km AVHRR. *J. Geophys. Res.*102: 29581-29598.

## Citation

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