

Readme file

Introduction:

This document gives a short description of the properties of the files available via this DOI and a reference code to read and visualise data.

Description of the data:

The tiff files contains classified maps of Canada (10 land types, and 0 as background) for 2018 and 2019. The class label corresponding to each land type, the colour composition for visualisation and corresponding classification accuracy (class accuracy) for every month are provided in Table below.

CLASS LABEL	CLASS NAME	CLASS COLOUR COMPOSITION	FEB 18/19	MAR 18/19	APR 18/19	MAY 18/19	JUN 18/19	JUL 18/19	AUG 18/19	SEP 18/19	OCT 18/19
1	Bog	[119 172 048]	20.36/13.51	5.93/1.25	2.59/3.36	10.31/6.37	29.06/11.59	15.15/16.01	14.22/5.85	12.76/9.09	6.03/3.40
2	Fen	[000 255 000]	12.72/10.70	10.84/11.73	12.79/13.73	7.84/8.62	12.42/12.62	12.27/15.38	13.05/13.21	17.52/7.23	5.27/6.77
3	Marsh	[255 019 166]	43.85/45.45	83.49/77.59	81.98/77.79	57.97/61.88	59.41/60.88	62.63/58.96	49.51/53.04	56.33/68.65	14.67/37.74
4	Swamp	[255 255 000]	61.53/41.28	40.48/43.30	62.19/66.45	16.66/27.80	22.80/21.69	17.44/21.60	24.01/19.63	58.90/58.11	4.34/24.04
5	Shallow water	[077 190 238]	11.25/14.46	19.89/12.37	28.91/13.65	2.32/3.13	9.67/2.03	6.96/3.09	3.05/2.69	2.37/3.35	2.43/1.61
6	Deep water	[000 000 255]	6.87/6.04	9.43/17.93	30.85/9.62	10.47/6.34	1.70/1.09	1.37/1.07	1.33/1.23	1.04/1.62	0.17/1.26
7	Forest	[135 038 056]	28.84/54.02	63.80/62.56	47.99/26.27	66.67/66.06	53.33/30.21	47.67/40.29	49.46/37.70	54.41/40.82	53.30/59.02
8	Grassland	[255 170 000]	5.82/4.17	81.81/80.64	86.69/83.49	79.60/78.48	26.86/17.44	56.16/43.01	38.46/44.84	21.75/54.64	11.72/9.20
9	Cropland	[161 128 053]	24.99/22.02	32.31/52.14	55.01/70.65	88.82/83.78	75.18/46.70	28.19/52.60	9.25/15.28	6.12/14.36	38.13/24.82
10	Barren land	[166 166 166]	9.63/9.06	50.57/55.22	48.95/54.31	54.44/56.89	59.59/29.78	46.47/49.57	30.55/41.40	33.02/37.80	11.49/12.16

The TIFF images labelled Canada_Map_55_*.tif contains pixels with class accuracy >55%.

Other details about the data:

2D Image information	
Format	Tiff
Columns, rows	567, 1768
Pixel type	Signed integer
Pixel depth	32 bit
Compression	PACKBITS
No. of bands (per image)	1

Spatial extent	
Top	70.0146160885
Bottom	41.6635806886
Right	-52.5987638983
Left	-141.001992447
Map projection	
Coordinate system	GCS_WGS_1984
Datum	D_WGS_1984

Instructions on how to read the tiff files and visualize its contents:

Reference code to open the data in Matlab (v.2018a and above) is given as follows –

```
[img R] = geotiffread('Canada_Map_MMMYY.tif');
info = geotiffinfo('Canada_Map_MMMYY.tif');
```

```
%MMM = month (first 3 letters); YY = year (18 / 19);
```

For selecting only a specific class to view and analyse –

```
n = class label;
```

```
[x y z] = size(img); %getting the size of the image (same as mentioned in Table 2)
```

```
img_res = reshape(img, x*y, z); %vectorise image
```

```
[xx_n yy_n] = find(img_res == n); %find the pixels related to the desired class
```

```
%separate out the pixels, and place it in a new empty file
```

```
img_res_n = zeros(x*y,z);
```

```
img_res_n(xx_n,:) = img_res;
```

```
%de-vectorise the new image having only desired class (from 2D to 3D)
```

```
img_n = reshape(img_res_n,x,y,z);
```

```
figure; imagesc(img_n); axis off; %to view the image
```

For any other query about accessing data, please email at sbhatnag@tcd.ie.