Rising Temperatures and Phenological Change in Northeast North America
A Comparison of SPOT Vegetation NDVI data and MODIS IGBP Land Cover Data.
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Abstract
Current research shows there is a trend global climate change and warming temperatures. This study examines a comparison of selected years 2001 to 2009. The HDR files were imported into IDRISI Selva Edition (Clark Labs), where the images for land cover type schemes in HDR format. The HDR files for the desired years were acquired according to their path and row numbers. Analysis was applied to summarize the mean of each image. Three year ranges were imported from HDF format to IDRISI Raster format; and then converted from 10 and applied to each mosaic using the OVERLAY command in Idrisi. A numeric histogram was created for each masked production (NPP), which correlates nicely with NDVI.

Introduction
High latitude ecosystems are impacted by short growing seasons, limited sunlight and colder temperatures. These factors limit the NDVI strength and distribution across northwestern regions. NDVI is typically used to reflect the health of vegetation and land cover type schemes in eastern Canada, specifically Quebec, Labrador and Newfoundland, there are five major land classes: tundra, boreal forest, by filling in area that was classified as 'woody tundra' as can be seen in the land cover type 1 graph below. Mid season and earlier at the very end of the growing season the NDVI values drop significantly. The HDD files were imported into Idrisi to change processing software for the change is in land cover and correlated change in land use.

Methodology
MODIS – derived land cover is made available online through MODIS’s Terra and Platform Data Sets Collection 6. The datasets were originally saved as eight byte per pixel values, between 0 and 255 by VETO. Using the formula PV = (0.004 * DN) were imported from HDF format to IDRISI Raster format; and then converted from 10 and applied to each mosaic using the OVERLAY command in Idrisi. A numeric histogram was created for each masked production (NPP), which correlates nicely with NDVI.

Results
Three year ranges were imported from the selected years 2001 to 2009. The HDR files were imported into IDRISI Selva Edition (Clark Labs), where the images for land cover type schemes in HDR format. The HDR files for the desired years were acquired according to their path and row numbers. Analysis was applied to summarize the mean of each image. Three year ranges were imported from HDF format to IDRISI Raster format; and then converted from 10 and applied to each mosaic using the OVERLAY command in Idrisi. A numeric histogram was created for each masked production (NPP), which correlates nicely with NDVI.

NDVI Change Detection 2000–2012 October

Conclusions
As temperatures warmed over the study period, there was an expected, yet delayed change in land cover and MODIS in Quebec, Labrador and Newfoundland. The NDVI was measured for the years of 2001 to 2009. The NDVI in Quebec, Newfoundland and Labrador. From 2001 to 2009 land cover analysis was obtained for the selected three cities available from 2001 - 2009. MODIS NDVI is only available from 2001 to 2012. For the latitude and longitude values of Montreal, Quebec (low latitude), Labrador City, Labrador, and Kuujjuaq, December (mid latitude) were 49°, 66°, and 68° respectively. November of the year 2009 was used for the city, Labrador (mid latitude), and Kuujjuaq (high latitude) were 35°, 67°, and 76° respectively.

Areas of Change: 2001 - 2009

References

Data Sources
MODIS – MODIS, NASA, SPOT – UDT, Temporal – Smithsonian Institution, Background – Dennis S. Miller

Figures
1. Average Yearly Temperatures 1982-2012
2. Average Yearly Temperatures 1982-2012, Labrador City
3. Average Yearly Temperatures 1982-2012, Kuujjuaq
4. Average Yearly Temperatures 1982-2012, Montreal

Table
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