Vegetation Departure Calculator for the Contiguous United States

Metadata also available as

Metadata:

- Identification_Information
- Data_Quality_Information
- Spatial_Data_Organization_Information
- Entity_and_Attribute_Information
- Distribution_Information
- Metadata_Reference_Information

Identification_Information:
    Citation:
    Citation_Information:
    Originator: The Nature Conservancy
    Publication_Date: 2010
    Title:
Vegetation Departure Calculator for the Contiguous United States
    Edition: 1
    Geospatial_Data_Presentation_Form: spreadsheet
    Other_Citation_Details:
The Nature Conservancy. Vegetation Departure Calculator for the Contiguous United States. 2010. [Webpage of the Global Fire Initiative, The Nature Conservancy], [Access date]. Available: <http://tncfire.org/AssessingVegetationConditions.htm> [Access Date].
    Online_Linkage: <http://tncfire.org/AssessingVegetationConditions.htm>
    Description:
    Abstract:
Vegetation departure is a measure of the difference between current vegetation conditions and pre-settlement vegetation conditions. The Calculator was designed to allow users to calculate vegetation departure for various geographies of interest within the contiguous U.S. using the following variables: Fire Regime Group, Lifeform , Region, State, Federal Agency, Wilderness Status, Ecoregion and Portfolio Status.
Users should carefully consider the accuracy of the underlying data, particularly the LANDFIRE Fire Regime Condition Class layer (see the section entitled LANDFIRE Fire Regime Condition Class Background below) before using this tool. Any value below ½ million acres generated by the Calculator should be interpreted with great caution. Users should inspect the base data to ensure that it is accurate enough for his or her particular use. Users are encouraged to round values generated by the Calculator to the nearest 100,000 acres.

METHODS & DATA: The data presented in the Calculator represent an overlay of the following spatial datasets: Fire Regime Condition Class (FRCC; LANDFIRE National FRCC grid), Fire Regime Group (FRG; LANDFIRE National FRG grid), Lifeform (LANDFIRE National Existing Vegetation Type grid, NVCS Order field), States (ESRI, October 1 2006, States shapefile), Federal Ownership (National Atlas of the United States December 2005, The Federal Lands of the United States shapefile), Ecoregions (The Nature Conservancy 2006, Terrestrial Ecoregions shapefile) and Portfolio Sites (The Nature Conservancy 2005, US Portfolios shapefile, updated for 12 ecoregions).

All analysis was conducted in ArcGIS version 9.3 and exported to MS Excel for pivot table creation. The analysis covers the contiguous U.S. as represented by the LANDFIRE FRCC grid. All datasets were clipped to this extent including The Nature Conservancy (TNC) ecoregions (i.e. numbers for ecoregions that cross the international boundary only include the area within the contiguous U.S.).

LANDFIRE FIRE REGIME CONDITION CLASS (I.E. VEGETATION DEPARTURE) BACKGROUND: FRCC (refered to as Vegetation Departure in the Calculator) is a measure of ecological departure. Fire may or may not be a factor impacting the resulting FRCC departure value in LANDFIRE, despite the name. LANDFIRE's FRCC map and the FRCC data presented in the Calculator measure only the departure of vegetation composition and structure from reference conditions as presented in the LANDFIRE Vegetation Dynamics Models and accompanying descriptions (available at <http://www.landfire.gov/NationalProductDescriptions24.php>). However, given the strong relationship between vegetation structure and composition and fire frequency and severity, an inference often can be made regarding these FRCC maps and the status of fire regimes. For example, an area with high departure (FRCC 3) is more likely to experience fires outside the natural range of variability, whereas an area with low departure (FRCC 1) is more likely to experience fires within the natural range of variability. High departure values may be due to multiple and many other factors including human disturbances and alteration of natural disturbances.

FRCC is a scale dependent metric. Because it compares the percent of the landscape in different seral stages (i.e. succession classes) for each LANDFIRE Biophysical Setting (BpS), under the reference condition versus the current condition, the landscape selected for the analysis must be large enough to potentially encompass the full suite of seral stages (Hann et al. 2008). LANDFIRE calculated FRCC for broad Ecological Subsections (Cleland et al. 2005) ranging in size from 35,586 ac to 1,903,312 ac (mean = 1,631,232 ac).

Reference conditions do not necessarily equate to desired future conditions. The FRCC calculation is based on departure from a reference condition. For LANDFIRE FRCC the reference period was defined as prior to Euro-American settlement. While this can be quite useful in understanding the natural disturbance regimes, successional pathways and the environmental envelope that a vegetation system occupies, it alone may not be adequate for setting desired future conditions.

LANDFIRE FIRE REGIME GROUP BACKGROUND: Fire regime groups (FRG) are a classification of recurring fire characteristics, often including fire frequency and severity, for a given ecosystem and can be used to describe the historical or ecological role of fire. The LANDFIRE Simulated Historical Fire Regime Groups map represents FRGs in five classes based on the groups defined in the Interagency Fire Regime Condition Class

Guidebook (Hann et al. 2004). LANDFIRE FRG map classes include: • Fire Regime I:
<= 35 Year Fire Return Interval, Low and Mixed Severity; • Fire Regime II: <= 35 Year
Fire Return Interval, Replacement Severity; • Fire Regime III: 35 - 200 Year Fire Return
Interval, Low and Mixed Severity; • Fire Regime IV: 35 - 200 Year Fire Return Interval,
Replacement Severity; • Fire Regime V: > 200 Year Fire Return Interval, Any Severity.
The map was developed based on outputs of the LANDSUM (Keane et al 2006) model,
which simulates vegetation succession and disturbances in a spatial environment. As
described in the map metadata LANDFIRE's FRG product "is intended to describe one
component of simulated historical fire regime characteristics in the context of the broader
historical time period represented by the LANDFIRE Biophysical Settings layer and
LANDFIRE Biophysical Settings Model Documentation."

SCALE & USE OF LANDFIRE DATA: The LANDFIRE data were designed for
regional - to national - level strategic planning and for use on very large landscapes
(Rollins 2009). Although each spatial product is delivered with 30 meter raster resolution,
it is inappropriate for use at the level of an individual pixel or a small number of pixels.
Users applying the LANDFIRE data to smaller landscapes are cautioned to inspect the
data carefully and modify it as needed for local use (examples of local assessment and
modification of LANDFIRE data are provided in Provencher et al. 2009, Provencher et
al. 2008, Krasnow et al. 2009, Stratton 2009, Swetnam and Brown 2010).

The LANDFIRE team is currently in the process of improving its spatial products to
address known issues and to update the original maps, based on circa 2000 satellite
imagery, to include landscape changes (e.g. management activities and disturbances) up
to circa 2008 (for more information on product improvement visit
<http://www.landfire.gov/updating_products_overview.php>). Users are encouraged to
provide feedback on LANDFIRE products to improve subsequent products (feedback
should be sent to www.helpdesk@landfire.gov).

Using LANDFIRE products when pixel-level accuracies are less than expected. Pixel-by-
pixel accuracy is not necessarily required for many broad scale land planning efforts. If
the data accurately identify trends and patterns across a landscape they may still be useful
for planning purposes. A key factor in determining the suitability of LANDFIRE (or any
other data set) is to determine what exact information and level of thematic detail are
needed to answer the analysis questions at hand. Examples showing how LANDFIRE
data were evaluated, sometimes modified and used in a variety of land management
applications are provided on the project website
(<http://www.landfire.gov/products_applications.php>).

A raster map of a large landscape is made up of tremendous numbers of individual
elements called pixels (millions, perhaps). If mapping errors across pixels "average out"
(are unbiased in statistical parlance), the overall patterns and trends shown by the map
could still be useful for certain types of planning. This is analogous to a very large
sample where results for individual sampling units are poor but as an aggregate they
represent the overall population well. A LANDFIRE raster map is an outcome of a
mathematical process, and the law of large numbers applies.

LANDFIRE FRCC data provide a useful framework for understanding ecological
conditions across large landscapes. This type of information can be used for reaching a
shared understanding of landscape conditions among stakeholders, for framing
discussions on setting desired future conditions, for setting high level priorities on where

and how to achieve restoration activities, and/or to determine where finer scale assessments are needed. In many cases, ecological condition may be only one factor that is considered when making such decisions. Political, social and other issues might also be incorporated into the decision space.

REFERENCES Hann, W.; Shlisky, A.; Havlina, D.; Schon, K.; Barrett, S.; DeMeo, T.; Pohl, K.; Menakis, J.; Hamilton, D.; Jones, J.; Levesque, M.; Frame, C. 2004. Interagency Fire Regime Condition Class Guidebook. Last update January 2008: Version 1.3.0 [Homepage of the Interagency and The Nature Conservancy fire regime condition class website, USDA Forest Service, US Department of the Interior, The Nature Conservancy, and Systems for Environmental Management]. [Online]. Available: www.frcc.gov.

Cleland, D.T., J.A. Freeouf, J.E. Keys, G.J. Nowacki, C.A. Carpenter and W.H. McNab. 2005. Ecological subregions: Sections and subsections for the contiguous United States. Presentation scale 1:3,500,000, colored. USDA Forest Service, Washington, DC. Also available on CD-ROM consisting of GIS coverage in ArcINFO format.

Keane, R.E., L. Holsinger and S. Pratt. 2006. Simulating historical landscape dynamics using the landscape fire succession model LANDSUM version 4.0. USDA Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory. RMRS-GTR-171CD.

Krasnow, K., T. Schoennagel and T. Veblen. 2009. Forest fuel mapping and evaluation of LANDFIRE fuel maps in Boulder County, Colorado, USA. Forest Ecology and Management. 257(7): 1603-1612.

Provencher, L., K. Blankenship, J. Smith, J. Campbell and M. Polly. 2009. Comparing locally derived and LANDFIRE geo-layers in the Great Basin, USA. Fire Ecology 5(2): 126-132.

Provencher, L., J. Campbell and J. Nachlinger. 2008. Implementation of mid-scale fire regime condition class mapping. International Journal of Wildland Fire 17: 390-406.

Rollins, M.G. 2009. LANDFIRE: a nationally consistent vegetation, wildland fire, and fuel assessment. International Journal of Wildland Fire 18: 235-249.

Stratton, Richard D. 2009. Guidebook on LANDFIRE fuels data acquisition, critique, modification, maintenance, and model calibration. Gen. Tech. Rep. RMRS-GTR-220. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 54 p.

Swetnam, Tyson L. and Peter M. Brown. 2010. Comparing selected fire regime condition class (FRCC) and LANDFIRE vegetation model results with tree-ring data. International Journal of Wildland Fire 19: 1-13.

Purpose:
The Vegetation Departure Calculator Tool for the Contiguous U.S. was designed to allow users to calculate vegetation departure for various geographies of interest within the contiguous U.S. Vegetation departure provides a consistent metric for evaluating vegetation conditions on large landscapes and for disparate geographies (e.g. comparing conditions in Florida to conditions in Oregon) using consistent data.

Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:

Beginning_Date: Unknown
Ending_Date: Unknown
Currentness_Reference: Not Applicable
Status:
Progress: Complete
Maintenance_and_Update_Frequency: None planned
Spatial_Domain:
Keywords:
Theme:
Theme_Keyword_Thesaurus: None
Theme_Keyword: Ecological Departure
Theme_Keyword: Vegetation Departure
Theme_Keyword: Fire Regime Condition Class
Theme_Keyword: FRCC
Theme_Keyword: Fire Regime Groups
Theme_Keyword: reference condition
Theme_Keyword: LANDFIRE
Theme:
Theme_Keyword_Thesaurus: None
Theme_Keyword: Vegetation Departure Calculator
Place:
Place_Keyword_Thesaurus: U.S., US, U.S.A., USA
Place_Keyword: United States
Place_Keyword: United States of America
Access_Constraints:
None. All data are provided as is. The Nature Conservancy makes no warranty as to the currency, completeness, accuracy or utility of any specific data. This disclaimer applies both to individual use of the data and aggregate use with other data. It is strongly recommended that careful attention be paid to the contents of the metadata file associated with these data.
Use_Constraints:
The Nature Conservancy shall not be held liable for improper or incorrect use of the data described and/or contained herein.
Point_of_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: The Nature Conservancy -- LANDFIRE Team
Contact_Address:
Address_Type: mailing and physical
City:
State_or_Province:
Postal_Code:
Contact_Voice_Telephone:
Contact_Electronic_Mail_Address: landfire@tnc.org
Data_Set_Credit:

The Calculator was developed by The Nature Conservancy's Oregon Field Office and North America Region Science LANDFIRE team.
Native_Data_Set_Environment:
Microsoft Office Professional Plus 2007, Microsoft Office Excel 2007. The Calculator was designed for use in Windows 2007 and may not work in earlier versions of Windows or on Mac operating systems.

Data_Quality_Information:
    Attribute_Accuracy:
    Attribute_Accuracy_Report:
    Attribute accuracy varies depending on the source of the input data. The metatdata for most of the individaul source datasets contain an accuracy report.
    Logical_Consistency_Report: Refer to the metatdata of the source datasets.
    Completeness_Report: Refer to the metatdata of the source datasets.
    Lineage:
    Source_Information:
    Source_Citation:
    Citation_Information:
    Originator: United States Forest Service
    Publication_Date: 2007
    Title: LANDFIRE.FRCC
    Geospatial_Data_Presentation_Form: raster digital data
    Publication_Information:
    Publication_Place: Missoula MT
    Publisher: USDA Forest Service
    Online_Linkage: www.landfire.gov
    Type_of_Source_Media:
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    Time_Period_Information:
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    Ending_Date: Unknown
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    Source_Contribution:
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    Source_Citation:
    Citation_Information:
    Originator: United States Forest Service
    Publication_Date: 2006
    Title: LANDFIRE.FIRE_REGIME_GROUPS
    Geospatial_Data_Presentation_Form: raster digital data
    Publication_Information:
    Publication_Place: Missoula MT
    Publisher: USDA Forest Service
    Online_Linkage: www.landfire.gov

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Source_Citation:
Citation_Information:
Originator: United States Forest Service
Publication_Date: 2006
Title: LANDFIRE.EXISTING_VEGETATION_TYPE
Geospatial_Data_Presentation_Form: raster digital data
Publication_Information:
Publication_Place: Missoula MT
Publisher: USDA Forest Service
Online_Linkage: www.landfire.gov
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Source_Citation_Abbreviation:
Source_Contribution:
Source_Information:
Source_Citation:
Citation_Information:
Originator: ESRI
Publication_Date: 20061001
Title: U.S. States (Generalized)
Geospatial_Data_Presentation_Form: vector digital data
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Source_Citation_Abbreviation:
Source_Contribution:
Source_Information:

Source_Citation:
Citation_Information:
Originator: National Atlas of the United States
Publication_Date: 200512
Title: The Federal Lands of the United States
Geospatial_Data_Presentation_Form: vector digital data
Online_Linkage: <http://www.nationalatlas.gov/metadata/fedlanp020.faq.html>
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Source_Time_Period_of_Content:
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Source_Currentness_Reference:
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Source_Contribution:
Source_Information:
Source_Citation:
Citation_Information:
Originator: The Nature Conservancy
Publication_Date: 2006
Title: Terrestrial Ecoregions
Geospatial_Data_Presentation_Form: vector digital data
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Originator: The Nature Conservancy
Publication_Date: 2005
Title: US Portfolios
Geospatial_Data_Presentation_Form: vector digital data
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Range_of_Dates/Times:
Beginning_Date: Unknown
Ending_Date: Unknown
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Source_Citation_Abbreviation:
Source_Contribution:
Process_Step:
Process_Description:
1. Pre-processed the states shapefile. Projected the states shapefile to the LANDFIRE projection and converted it from shape to grid using the snap option to align the pixel cells with one of the Fire Regime Condition Class mapzone grids (see step 2) in ArcInfo. Created a new grid for the eastern, central and western regions based on the states that comprise each region (regions based on The Nature Conservancy's North America Region Divisions). A new attribute field was created for each of the regions grids called EAST_WEST, which classified the eastern and central regions into a category called "East" and the western region into a category called "West."

Process_Date: 2010
Process_Step:
Process_Description:
2. Pre-processed the Fire Regime Condition Class (FRCC) grid which was obtained by mapzone on DVD from the USDA Forest Service Remote Sensing Data Application Center. Merged the FRCC grids together then masked with the regions in ArcInfo-Grid resulting in a FRCC grid for each region. Reattached attributes in ArcInfo-Grid using a CSV file with the FRCC attribute table for the conterminous U.S. provided by LANDFIRE staff. In ArcToolbox, ran a Lookup on the FRCC grids assigning values from the fields "FRCC_W", "FRCC_C", and "FRCC_E", respectively, as the output grid values.

Process_Date: 2010
Process_Step:
Process_Description:
3. Pre-processed the LANDFIRE Fire Regime Group (FRG) grids which were obtained by mapzone on DVD from the USDA Forest Service Remote Sensing Data Application Center. Reclassified grid values of -9999 in the FRG grids for mapzones 32, 37, 46, 98 and 99 as no data to match all other zones using the setnull command in ArcInfo-Grid (it is unclear why LANDFIRE classified some no data pixels in these 5 zones as -9999 but LANDFIRE staff verified that the -9999 pixels did represent no data). Merged the FRG grids together using the regions grids as a mask using the merge command in ArcInfo-Grid.

Process_Date: 2010
Process_Step:
Process_Description:
4. Pre-processed the LANDFIRE Existing Vegetation Type (EVT) grids which were obtained by mapzone on DVD from the USDA Forest Service Remote Sensing Data Application Center. Reclassified grid values of -9999 in the EVT grids for mapzones 32, 37, 98 and 99 as no data to match all other zones using the setnull command in ArcInfo-Grid. Merged EVT grids (at MapZone extents) to three new extents fully overlapping each of the three respective regions. Ran Selectmask on resulting merged grids, masking to each of the region-wide FRCC grids. A Lifeform grid was created from the EVT grid by creating a "lifeform" field in the attribute table that was assigned a numeric code to each unique value in the NVCS Order field using a Lookup table in ArcToolbox and

creating a new grid based on the lifeform field. The attributes of the lifeform grid were updated to include a field with a textual description for each numeric code.

Process_Date: 2010

Process_Step:

Process_Description:

5. Created a "base extent grid" for each region where all cells had a value of 0 using the Reclassify tool in the Spatial Analyst toolbox of ArcGIS. These grids represent the exact extent of the analysis area for each region (i.e. equal in extent to the FRCC grids) and were used to recode values of no data in some of the base layers to a value of 0 so that in the subsequent combine step the areas of no data would not be removed from the analysis. This process was completed for the eastern and western regions. The central region had the largest spatial extent and the reclassify failed because the capacity of a grid in the Count field was exceeded (the maximum number that can be stored in any field in a grid is one half of 232 or 2,147,483,648). Therefore, the cent_states grid was classified based on the SUB_REGION value. This created a grid with 4 values (0, 1, 2 and 3) for the central region.

Process_Date: 2010

Process_Step:

Process_Description:

6. Pre-processed the federal lands layer. Created intermediate grids-1 from the shapefile, projected to the LANDFIRE projection and extracted the regions using the Extract by Analysis Mask tool in the Spatial Analysis toolbox of ArcGIS with the snap raster option applied to snap the output grid to the FRCC grid. The source data did not code for wilderness areas separately; to account for them the "wild" field was added to the intermediate grids-1; all non-wilderness areas were coded 0 and all wilderness areas were coded as 1 based on the information in the "Feature_1" field. Recoded the "gridcode" field so that it had a unique number for each agency with and without wilderness areas. Created intermediate grids-2 based on the recoded "gridcode" field in ArcInfo-Grid. All non-federal lands in the intermediate grids and the source data were coded as no data but to account for them in the final combine step of the GIS analysis, the no data values were changed to match the value of the base extent grids using the Mosaic to New Raster tool from the Data Management toolbox of ArcGIS creating the final federal lands grid. The attributes were joined and areas with a value of 0, 1, 2 or 3 from the base extent grid were recoded as "non-federal."

Process_Date: 2010

Process_Step:

Process_Description:

7. Pre-processed the TNC Portfolio shapefile. Obtained the TNC July 2005 US Portfolio shapefile from TNC's Conservation Data and Information Systems Team. Using an August 2006 Northwest conservation areas shapefile obtained from GIS staff at TNC's Washington Field Office the 2005 shapefile was updated for 12 ecoregions (Canadian Rocky Mountains, Columbia Plateau, East Cascades – Modoc Plateau, Great Basin, Klamath Mountains, Middle Rockies – Blue Mountains, North Cascades, Okanagan, Pacific Northwest Coast, West Cascades, Willamette Valley - Puget Trough - Georgia Basin: Temperate Broadleaf and Mixed Forests and Willamette Valley – Puget Trough - Georgia Basin: Temperate Conifer Forests). The updated shapefile was converted to an

intermediate grid, projected to the LANDFIRE projection and extracted to regions using the Extract by Analysis Mask tool in the Spatial Analysis toolbox of ArcGIS with the snap raster option applied to snap the output grid to the FRCC grid. The source data coded all areas outside of the portfolio as no data; to account for the no data areas in the final combine step of the GIS analysis a value other than no data was assigned using the base extent grids. Values within portfolio sites were recoded with a value of "99" using the Reclassify tool in the Spatial Analyst toolbox of ArcGIS. No data values were changed to 0, 1, 2 or 3 using the Mosaic to New Raster tool from the Data Management toolbox of ArcGIS and the base extent grids described above. A "TNC_STATUS" field was added to the attribute table and areas with a value of 0, 1, 2 or 3 were recoded as "other" and values of"99" were recoded as "TNC_Portfolio."

Process_Date: 2010
Process_Step:
Process_Description:

8. Pre-processed the TNC 2006 Terrestrial Ecoregions shapefile. Converted the shapefile to grid, projected to the LANDFIRE projection and extracted to regions creating intermediate grids-1 using the Extract by Analysis Mask tool in the Spatial Analysis toolbox of ArcGIS with the snap raster option applied to snap the output grid to the FRCC grid. The ecoregion data were simplified along the coastline and therefore their spatial extent did not match the FRCC and other datasets. The extent of the ecoregions grid was expanded to match the base extent grid so that all input datasets had the same extent – this did not affect the ecoregion boundaries in any way but allowed the analyst to account for all pixels within the analysis extent throughout the many processing steps of the analysis. Since both the ecoregions grids and the base extent grids included values 1-3, the Ecoregion intermediate grids-1 were reclassified with values from 1001 – 1069, by adding 1000 to each value creating intermediate grids-2. Intermediate grids-2 were mosaiced with the base extent grids using the Mosaic to New Raster tool in the Data Management toolbox of ArcGIS (where the grids overlapped the value was pulled from intermediate grids-2, elsewhere the values came from the base extent grids) creating intermediate grids-3. The final ecoregion grids were created by reclassifying intermediate grids-3 so that any value less than 1000 (i.e. values from the base extent grids) were reclassified to 0 and any value greater than 1000 (i.e. values from the ecoregions grids) was subtracted by 1000 to get its original ecoregion value back. The attribute table was joined and values of 0 were classified as "Outside TNC Ecoregion" since there was no TNC Ecoregion for those areas.

Process_Date: 2010
Process_Step:
Process_Description:

9. Combined the input grids using the Combine Tool from the Spatial Analysis Toolbox in ArcGIS for each region. Joined the attributes from the input grids to the combined grids based on the value. Created an "Acres" field for the combined grid and calculated its value using the formula [COUNT] * 0.222394843 in the Field Calculator.

Process_Date: 2010
Process_Step:
Process_Description:

10. Appended the table from each combined grid using the Append Tool in the Data Management toolbox in ArcGIS.
Process_Date: 2010
Process_Step:
Process_Description:
11. The appended table was opened in Access and unnecessary fields removed.
Process_Date: 2010
Process_Step:
Process_Description:
12. Imported the table from Step 11 into the Raw Data worksheet in Excel. Renamed fields as follows (Name in Access Table – Name in Excel Raw Data worksheet): FRCC_Description ~~ Vegetation Departure, FRG _Label ~~ Fire Regime Label, FRG_Description ~~ Fire Regime Description, Lifeform ~~ Dominant Cover Lifeform, East_West ~~ Region (E/W), TNC_Div ~~ Region (E/C/W), Owner_Label ~~ Federal Agency (detailed), Owner_Agency ~~ Federal Agency (general), Wild ~~ Wilderness Status, TNC_Status ~~ Portfolio Status. A pivot table was built from the Raw Data worksheet.
Process_Date: 2010

Spatial_Data_Organization_Information:
  Indirect_Spatial_Reference: Not Applicable

Entity_and_Attribute_Information:
  Detailed_Description:
  Entity_Type:
  Entity_Type_Label: FRCC
  Entity_Type_Definition: Fire Regime Condition Class
  Entity_Type_Definition_Source: LANDFIRE
  Attribute:
  Attribute_Label: Vegetation Departure
  Attribute_Definition:
  This field contains the description for each Fire Regime Condition Class (FRCC) group. LANDFIRE FRCC is a measure of the difference between current vegetation structure and composition (as mapped from satellite imagery and plot data) and pre-European settlement reference conditions (as modeled using literature, local data and expert input). Values in this field include: High Vegetation Departure, Moderate Vegetation Departure, Low Vegetation Departure, Agriculture, Barren, Snow/Ice, Sparsely Vegetated, Urban and Water. The source data for this field was the LANDFIRE National FRCC grid. Complete metadata for this grid can be found at www.landfire.gov.
  Attribute_Definition_Source: LANDFIRE
  Detailed_Description:
  Entity_Type:
  Entity_Type_Label: FRG
  Entity_Type_Definition: Fire Regime Group
  Entity_Type_Definition_Source: LANDFIRE
  Attribute:

Attribute_Label: Fire Regime Label
Attribute_Definition:
This field contains the label for each Fire Regime Group (FRG). LANDFIRE FRGs describe fire characteristics based on fire frequency and severity. Values in this field include: Fire Regime Group I, Fire Regime Group II, Fire Regime Group III, Fire Regime Group IV, Fire Regime Group V, Indeterminate Fire Regime Characteristics, Barren, Snow/Ice, Sparsely Vegetated and Water. The source data for this field was the LANDFIRE National FRG grid. Complete metadata for this grid can be found at www.landfire.gov.
Attribute_Definition_Source: LANDFIRE
Attribute:
Attribute_Label: Fire Regime Description
Attribute_Definition:
This field contains the description for each Fire Regime Group (FRG). LANDFIRE FRG describes fire characteristics based on fire frequency and severity. Values in this field include: <= 35 Year Fire Return Interval, Low and Mixed Severity; <= 35 Year Fire Return Interval, Replacement Severity; 35 - 200 Year Fire Return Interval, Low and Mixed Severity; 35 - 200 Year Fire Return Interval, Replacement Severity; > 200 Year Fire Return Interval, Any Severity; Indeterminate Fire Regime Characteristics; Barren; Snow/Ice; Sparsely Vegetated and Water. The source data for this field was the LANDFIRE National FRG grid. Complete metadata for this grid can be found at www.landfire.gov.
Attribute_Definition_Source: LANDFIRE
Detailed_Description:
Entity_Type:
Entity_Type_Label: Lifeform
Entity_Type_Definition:
Physiognomic order (lifeform) for the dominant existing vegetation type based on the National Vegetation Classification System.
Entity_Type_Definition_Source: LANDFIRE
Attribute:
Attribute_Label: Dominant Cover Lifeform
Attribute_Definition:
This field contains the physiognomic order (lifeform) for the dominant existing vegetation type based on the National Vegetation Classification System. Values in this field include: Herbaceous / Nonvascular-dominated, Shrub-dominated, Tree-dominated, No Dominant Lifeform and Non-vegetated. The source data for this field was the LANDFIRE National Existing Vegetation Type grid NVCS Order field. Complete metadata for this grid can be found at www.landfire.gov.
Attribute_Definition_Source: LANDFIRE
Detailed_Description:
Entity_Type:
Entity_Type_Label: State
Entity_Type_Definition: United States
Entity_Type_Definition_Source: ESRI
Attribute:

Attribute_Label: Region (E/W)
Attribute_Definition:
This field classifies states into East and West categories based on The Nature
Conservancy's North America Region Divisions. The western region was classified as
West and the eastern and central regions were classified as East (see the description of
the "Region (E/C/W)" field for a listing of states in each region). The source data for this
field was the ESRI, October 1 2006, U.S. States (Generalized) shapefile.
Attribute_Definition_Source: ESRI
Attribute:
Attribute_Label: Region (E/C/W)
Attribute_Definition:
This field classifies states into Eastern, Central and Western categories based on The
Nature Conservancy's North America Region Divisions. Eastern states include: Alabama,
Connecticut, Delaware, District of Columbia, Florida, Georgia, Maine, Maryland,
Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania,
Rhode Island, South Carolina, Vermont, Virginia and West Virginia. Central states
include: Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan,
Minnesota, Mississippi, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South
Dakota, Tennessee, Texas and Wisconsin. Western states include: Arizona, California,
Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and
Wyoming. The source data for this field was the ESRI, October 1 2006, U.S. States
(Generalized) shapefile.
Attribute_Definition_Source: ESRI
Attribute:
Attribute_Label: State Name
Attribute_Definition:
This field contains the state names for the contiguous U.S. The source data for this field
was the ESRI, October 1 2006, U.S. States (Generalized) shapefile.
Attribute_Definition_Source: ESRI
Detailed_Description:
Entity_Type:
Entity_Type_Label: Federal Lands
Entity_Type_Definition: Land owned or administered by the United States government.
Entity_Type_Definition_Source: National Atlas of the United States
Attribute:
Attribute_Label: Federal Agency (detailed)
Attribute_Definition:
This field contains the major federal agencies that manage land and the wilderness status
of those lands in the U.S. The source data for this field was the National Atlas of the
United States's December 2005 "The Federal Lands of the United States" shapefile. The
codes are as follows: BIA – Bureau of Indian Affairs lands, BLM – Bureau of Land
Management non-wilderness designated lands, BLM Wilderness - Bureau of Land
Management wilderness designated lands, BOR – Bureau of Reclamation lands, DOD –
Department of Defense lands, FS – Forest Service non-wilderness designated lands, FS
Wilderness – Forest Service wilderness designated lands, FWS – United States Fish and
Wildlife Service non-wilderness designated lands, FWS Wilderness – United States Fish

and Wildlife Service wilderness designated lands, NPS – National Park Service non-wilderness designated lands, NPS Wilderness – National Park Service wilderness designated lands, Non-Federal – Land not managed or owned by a federal government agency.

Attribute_Definition_Source: National Atlas of the United States

Attribute:

Attribute_Label: Federal Agency (general)

Attribute_Definition:

This field contains the major federal agencies that manage land in the U.S. The source data for this field was the National Atlas of the United States's December 2005 "The Federal Lands of the United States" shapefile. The codes are as follows: BIA – Bureau of Indian Affairs, BLM – Bureau of Land Management, BOR – Bureau of Reclamation, DOD – Department of Defense, FS – Forest Service, FWS – United States Fish and Wildlife Service, NPS – National Park Service, Non_Fed – Land not managed or owned by a federal government agency.

Attribute_Definition_Source: National Atlas of the United States

Attribute:

Attribute_Label: Wilderness Status

Attribute_Definition:

This field classifies federal lands into Wilderness or Non-Wilderness regardless of the managing agency. The source data for this field was the National Atlas of the United States's December 2005 "The Federal Lands of the United States" shapefile. The codes are as follows: 0 – Non-Wilderness, 1 – Wilderness.

Attribute_Definition_Source: National Atlas of the United States

Detailed_Description:

Entity_Type:

Entity_Type_Label: Ecoregion

Entity_Type_Definition:

Geographic units used to assess biodiversity that share similar species, ecological dynamics and environmental conditions.

Entity_Type_Definition_Source: The Nature Conservancy

Attribute:

Attribute_Label: Ecoregion Name

Attribute_Definition:

This field contains the names of the ecoregions in the contiguous U.S. The data source for this field was The Nature Conservancy's 2006 Terrestrial Ecoregions shapefile.

Attribute_Definition_Source: The Nature Conservancy

Detailed_Description:

Entity_Type:

Entity_Type_Label: Portfolio

Entity_Type_Definition:

A set of places that together represent the biodiviersity of an ecoregion and meet the conservation goals set for that region.

Entity_Type_Definition_Source: The Nature Conservancy

Attribute:

Attribute_Label: Portfolio Status

Attribute_Definition:
This field identifies all land that is within a Nature Conservancy Portfolio site. Portfolio sites are areas that together represent the biodiversity of an ecoregion and efficiently meet conservation goals for that region. Values in this field include TNC_Portfolio (land within the portfolio) and Other (land outside of the portfolio). The data source for this field was The Nature Conservancy's July 2005 U.S. Portfolios shapefile updated for 12 ecoregions using an August 2006 Northwest conservation areas shapefile.
Attribute_Definition_Source: The Nature Conservancy
Detailed_Description:
Entity_Type:
Entity_Type_Label: Acres
Entity_Type_Definition: Acres
Entity_Type_Definition_Source: NA
Attribute:
Attribute_Label: Acres
Attribute_Definition:
This field contains the number of acres for a given pivot table combination and is calculated based on the number of 30m x 30m pixel cells in that combination.
Attribute_Definition_Source: NA

Distribution_Information:
    Distributor:
    Contact_Information:
    Contact_Organization_Primary:
    Contact_Organization: The Nature Conservancy -- LANDFIRE Team
    Contact_Address:
    Address_Type:
    City:
    State_or_Province:
    Postal_Code:
    Contact_Voice_Telephone:
    Contact_Electronic_Mail_Address: landfire@tnc.org
    Distribution_Liability:
The Nature Conservancy makes no warranty, expressed or implied, as to the use or appropriateness of use of the data, nor are there warranties of merchantability or fitness for a particular purpose or use. No representation is made as to the currency, accuracy or completeness of the data set or of the data sources on which it is based. The Nature Conservancy shall not be liable for any lost profits or consequential damages, or claims against the user by third parties.
    Standard_Order_Process:
    Digital_Form:
    Digital_Transfer_Information:
    Format_Name: XLSX
    Format_Version_Number: 1
    File_Decompression_Technique: No compression applied
    Digital_Transfer_Option:

Online_Option:
Computer_Contact_Information:
Network_Address:
Network_Resource_Name: <http://tncfire.org/AssessingVegetationConditions.htm>
Access_Instructions:
The URL <http://tncfire.org/AssessingVegetationConditions.htm> provides an interface that allows customers to download the Vegetation Departure Calculator (XLSX file). The Calculator can be saved to the customer's computer as an XLSX file. The Calculator was designed for use in Windows 2007 and may not work in earlier versions of Windows or on Mac operating systems.
Online_Computer_and_Operating_System: Not available for dissemination.
Fees: None
Turnaround: Variable

Metadata_Reference_Information:
Metadata_Date: 20100531
Metadata_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: The Nature Conservancy -- LANDFIRE Team
Contact_Address:
Address_Type:
City:
State_or_Province:
Postal_Code:
Contact_Voice_Telephone:
Contact_Electronic_Mail_Address: landfire@tnc.org
Metadata_Standard_Name:
Content Standard for National Biological Information Infrastructure Metadata
Metadata_Standard_Version: FGDC-STD-001.1-1999
Metadata_Access_Constraints: None
Metadata_Use_Constraints: None
Metadata_Security_Information:
Metadata_Security_Classification_System: None
Metadata_Security_Classification: Unclassified
Metadata_Security_Handling_Description: None

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