LF Remap offers the first national application of the National Vegetation Classification

LANDFIRE (LF), working in partnership with the National Gap Analysis Program (GAP), is pleased to announce a "new" product that that is now available in the existing vegetation product suite. In addition to improvements to the Existing Vegetation Type (EVT), Existing Vegetation Cover (EVC), and Existing Vegetation Height (EVH) products, the release of LF Remap offers the National Vegetation Classification (NVC) product.

What is this? To better explain, "Group" level vegetation products tied to the National Vegetation Classification Standard (NVCS) are now offered independently in addition to the Ecological Systems products LF has provided in the past. (Within the NVC hierarchy, "Groups" are defined as combinations of relatively narrow sets of diagnostic plant species, including dominants and co-dominants, broadly similar composition, and diagnostic growth forms.) This NVC mapping work is the first national application of the standard with tangible, usable products.

A little about NVC's background

The Federal Geographic Data Committee (FGDC)-Vegetation Sub-Committee approved the NVCS in 2008. This is a process standard in that it did not contain a formal set of NVC units, but rather outlined the process by which such units should be described, peer-reviewed, and maintained. Vegetation classifications are based on the process of describing stands of vegetation together based on shared characteristics (e.g. growthform, dominant species, diagnostic species).

LF and GAP partnered with several agencies and NatureServe to develop the descriptions at the Group level in the hierarchy along with a new NVC auto-key. The NVC product represents the distribution of vegetation groups within the U.S. National Vegetation Classification circa 2016 based on Landsat data.

Why did LF develop this product and why now?

LF produces consistent, comprehensive, geospatial products and databases that describe vegetation, wildland fuel, and fire regimes across the United States and insular areas. This multi-partner program is a cornerstone of a fully integrated national data information framework. A key tenet of this cornerstone is that LF focuses on developing and improving vegetation and fuels products that are based on the best available authoritative data and science. In addition, the LF charter specifies that products and practices will comply with relevant FGDC and National Wildfire Coordinating Group standards.

LF implemented the NVC within LF Remap because:

- It was good timing. As LF completed national mapping in 2010 the timing was right to take the 2008 approved standard and partner with others in developing the units, descriptions, and peer review so the classification could be included in the 2016 remap.
- It ensures the LF program complies with FGDC standards for vegetation classification and mapping.
- It demonstrates that LF is a collaborative partner in the development of the classification.
- It provides agency leaders and managers with consistent products to increase collaboration opportunities in cross-boundary all lands landscape work for national and regional planning, analysis, and assessments (wildland fire/fuels, resource management, wildlife, etc.).
- It will help facilitate user communication, collaboration, and data sharing across administrative units.
- It was needed. Leadership from many agencies have issued direction to either use the NVC or to crosswalk to it.

How is the NVC product developed?

NVC groups were mapped using decision tree models informed by field reference data, Landsat imagery, elevation, and biophysical gradient inputs. Models were developed separately for each life-form, including tree, shrub, herbaceous, and sparse vegetation, and generated for each Environmental Protection Agency (EPA) Level III Ecoregion.

- Riparian, alpine, sparse, and other site-specific EVTs were constrained by predetermined masks.
- Urban and developed areas were derived from the National Land Cover Database whereas agricultural lands originated from the Cropland Data Layer and Common Land Unit database.
- Developed ruderal classes were identified by combining wildland-urban interface data with population density information from the U.S. Census Bureau.
- Disturbance products were also included in LF Remap products to describe areas on the landscape that have experienced change within the previous 10-year period.

The NVC product was reconciled through QA/QC measures to ensure life-form is synchronized with both EVC and EVH.

What does this mean for me, the user? How will this work with previous LF versions?

Because of the independence between the two mapping pathways and the separate Auto-Key processes for plot assignment, the final Ecological Systems (ES) and NVC products may look dissimilar for mapping units with similar names. The underlying logic of the two legends (ES and NVC) is different and users should not expect the two maps to look the same.

The methods and procedures LF had developed were engineered and structured around ES. It makes sense, then, that LF continued to map the ES classification as part of LF Remap.

The new NVC products allow users to evaluate each of the classifications and associated auto-keys and provides a path to compare the results to on-the-ground vegetation stands. This will help users and mappers identify where improvements are needed to capture the diagnostics of land cover elements. As NVC products in a standalone data set are applied and understood, it may encourage further exploration of the data flows and weaknesses in the mapping process and help move the NVC forward in refining the application of the standard that has been approved.

What does this mean for future products?

LF plans to review the NVC products and potentially reengineer and structure the mapping methods and procedures around this classification across the suite of LF products.

Additional Information:

Descriptions for each natural NVC Group can be found in the LF Natural NVC Groups Descriptions for Western US and the LF Natural NVC Groups Descriptions for Eastern US. Descriptions for each ruderal NVC Group is provided in the LF Ruderal NVC Groups Descriptions for CONUS. All of these include species, distribution, and classification information.