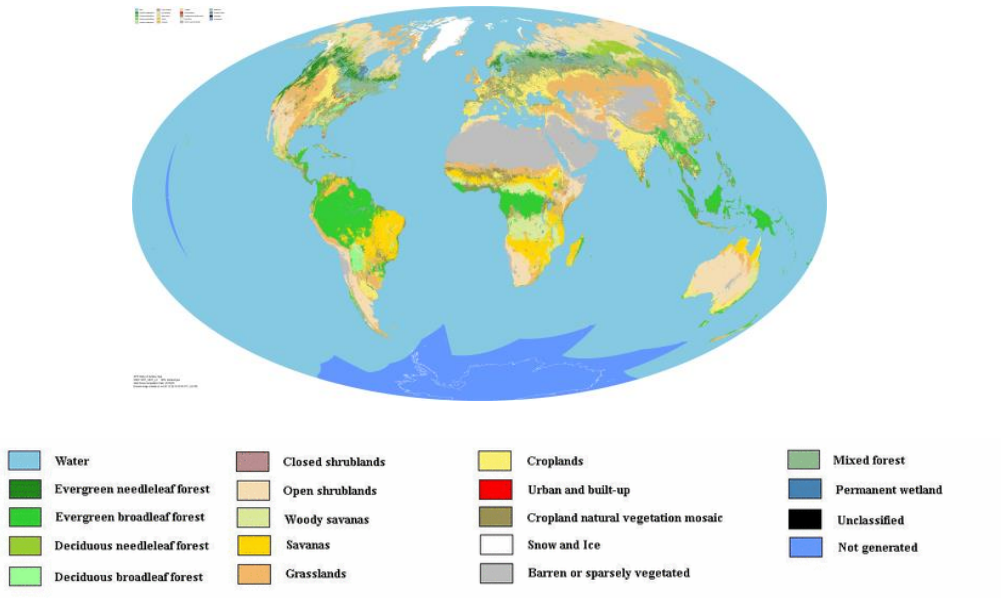
Surface_Type_L2

NPP_VSUT_L2

The Surface Type is determined at 1 km, the highest spatial resolution common to the VIIRS bands. The EDR will be produced for every VIIRS L2 granule. The Surface Type algorithm is built upon the VIIRS Gridded Surface Type Quarterly L3 Global IP at 1km resolution. This Gridded Surface Type Quarterly product is based on a classification method that uses MODIS and AVHRR training samples from land cover classes to train a decision tree classification algorithm. The current L2 swaths extracted from the VIIRS Gridded Surface Type and VIIRS Gridded Annual Min/Max Vegetation Index IPs, as well as current L2 swaths of Snow Cover, Active Fires, and Land Surface Reflectance are input to the algorithm toupdate the L2 Surface Type product.

The VIIRS Surface Type EDR is a swath product built by re-projecting the Gridded Quarterly Surface Type IP and overlaying it with the Active Fire ARP, Snow Cover EDR, and Vegetation Fractional Greenness product. It is produced at 1 km spatial resolution based on the previous 12 months of VIIRS data. The EDR will provide 17 surface type classes following the IGBP classification scheme. The requirement for this EDR is a 70 percent metric of correct classification. Off-the-shelf commercial software is used to generate the Gridded Quarterly Surface Type IP, which provides the foundation for the EDR. Specifically, the VIIRS Quarterly Surface Type IP algorithm uses the C5 ensemble decision tree classifier (www.rulequest.com) to perform a supervised classification of global VIIRS data using a set of global training sites. Input features include spectral information and temporal metrics developed from 12 months of VIIRS visible and infrared band information.

NPP_VSUT_L2



Dimensions

Along_Track:SurfType_EDR = 3072 ;
Along_Scan:SurfType_EDR = 3200 ;

Variables:

byte SurfaceType(Along_Track:SurfType_EDR, Along_Scan:SurfType_EDR)

FILL_VALUES:…NA_UINT8_FILL = 255
MISS_UINT8_FILL = 254
ONBOARD_PT_UINT8_FILL = 253
ONGROUND_PT_UINT8_FILL = 252
ERR_UINT8_FILL = 251
ELLIPSOID_UINT8_FILL = 250
VDNE_UINT8_FILL = 249
SOUB_UINT8_FILL = 248

byte QF1_VIIRSSTEDR(Along_Track:SurfType_EDR, Along_Scan:SurfType_EDR)

FILL_VALUES:…NA_UINT8_FILL = 255
MISS_UINT8_FILL = 254
ONBOARD_PT_UINT8_FILL = 253
ONGROUND_PT_UINT8_FILL = 252
ERR_UINT8_FILL = 251
ELLIPSOID_UINT8_FILL = 250
VDNE_UINT8_FILL = 249
SOUB_UINT8_FILL = 248

byte QF2_VIIRSSTEDR(Along_Track:SurfType_EDR, Along_Scan:SurfType_EDR)

FILL_VALUES:…NA_UINT8_FILL = 255
MISS_UINT8_FILL = 254
ONBOARD_PT_UINT8_FILL = 253
ONGROUND_PT_UINT8_FILL = 252
ERR_UINT8_FILL = 251
ELLIPSOID_UINT8_FILL = 250
VDNE_UINT8_FILL = 249
SOUB_UINT8_FILL = 248

byte VegetationFraction(Along_Track:SurfType_EDR, Along_Scan:SurfType_EDR) ;

VegetationFraction:Scale = 0.0099999998f ;
VegetationFraction:Offset = 0.f ;

FILL_VALUES = "NA_UINT8_FILL = 255,
MISS_UINT8_FILL = 254,

ONBOARD_PT_UINT8_FILL = 253,
ONGROUND_PT_UINT8_FILL = 252,
ERR_UINT8_FILL = 251
ELLIPSOID_UINT8_FILL = 250,
VDNE_UINT8_FILL = 249,
SOUB_UINT8_FILL = 248" ;