This XML file does not appear to have any style information associated with it. The document tree is shown below.


```
<metadata>
  <idinfo>
    <citation>
      <citeinfo>
        <origin>U.S. Geological Survey</origin>
        <pubdate>20200213</pubdate>
        <title>National Land Cover Database (NLCD) 2016 Land Cover - Alaska (ver. 2.0, July 2020)</title>
        <edition>20200724</edition>
        <geoform>remote-sensing image</geoform>
        <pubinfo>
          <pubplace>Sioux Falls</pubplace>
          <publish>U.S. Geological Survey</publish>
        </pubinfo>
        <othercit>References: (1) Jin, S., Yang, L., Danielson, P., Homer, C., Fry, J., and Xian, G. 2013. A comprehensive change detection method for updating the National Land Cover Database to circa 2011. Remote Sensing of Environment, 132: 159 – 175. (2) Xian, G., Homer, C., Dewitz, J., Fry, J., Hossain, N., and Wickham, J., 2011. The change of impervious surface area between 2001 and 2006 in the conterminous United States. Photogrammetric Engineering and Remote Sensing, Vol. 77(8): 758-762. (3) Coulston, J. W., Moisen, G. G., Wilson, B. T., Finco, M. V., Cohen, W. B., and Brewer, C. K. 2012. Modeling percent tree canopy cover: a pilot study. Photogrammetric Engineering & Remote Sensing 78(7): 715-727. (4) Jin, Suming, Yang, Limin, Zhu, Zhe, Homer, Collin G., A land cover change detection and classification protocol for updating Alaska NLCD 2001 to 2011: Remote Sensing of Environment, v. 195, p. 44–55, at https://doi.org/10.1016/j.rse.2017.04.021. (5) Selkowitz, D. J., Stehman, S. V., Thematic accuracy of the National Land Cover Database (NLCD) 2001 land cover for Alaska: Remote Sensing of Environment, v. 115, no. 6, p. 1401–1407, at https://doi.org/10.1016/j.rse.2011.01.020. The USGS acknowledges the support of USGS and contractor NLCD 2016 Land Cover Mapping Teams in development of data for this map.</othercit>
        <onlink>https://doi.org/10.5066/P96HHBIE</onlink>
        <onlink>http://www.mrlc.gov</onlink>
      </citeinfo>
    </citation>
    <descript>
      <abstract>This update to the Alaska National Land Cover Database (NLCD) 2016 replaces the files dated 20200213. In this update the landcover footprint was extended along the northern coast to include the islands that were missed in previous versions, and several duplicate roads (offset by 1 or 2 pixels) were removed on the Aleutian Islands. The Alaska National Land Cover Database 2016 was created using change detection between the nominal dates of 2011 and 2016 utilizing Google Earth engine composites of Landsat imagery. Traditionally, previous classifications of Alaska used path row data and spectral comparisons between path rows along with ancillary data to derive areas of change. Alaska has many challenges for land cover classification, with the largest of these being a very short “leaf on” imagery season for acceptable phenology. This is compounded by persistent cloud cover during this growing season, and increasing terrain shadow and sun angle problems outside of this season. For this reason, the timeframe of 10 years was needed for the first update to the Alaska land cover in order to have enough acceptable imagery between these 2001 and 2011 nominal dates that met these criteria in order to provide reasonable change detection. For 2016, there was not enough complete path row imagery to do this similar change detection. Google Earth engine was employed to create a composite imagery mosaic that uses much smaller pieces of Landsat imagery to create a complete Landsat imagery snapshot used to create change detection between 2011 and 2016. Although this composite technique is not as scientifically rigorous as utilizing direct Landsat imagery, it was the only method available to us during production that would allow completion of change detection in the desired five year timeframe. The original published 2001 and 2011 Alaska NLCD classifications are generally unchanged, except for slight updates in the northern part of the state to remove perennial ice and snow that were a result of lack of suitable imagery in the 2001 timeframe representing minimum snow and ice extent. See the 2001 and 2011 Land Cover products for the specific metadata process steps associated with the creation of those datasets.</abstract>
      <purpose>The goal of this project is to provide the Nation with complete, current and consistent public domain information on its land use and land cover.</purpose>
      <supplinf>Corner Coordinates (projection meters) Upper Left Corner: -2232330(X), 2380110(Y) Lower Right Corner: 1494720(X), 344820(Y)</supplinf>
    </descript>
    <timeperd>
      <timeinfo>
        <rngdates>
          <begdate>20140101</begdate>
          <enddate>20171231</enddate>
        </rngdates>
      </timeinfo>
      <current>ground condition</current>
    </timeperd>
    <status>
      <progress>Complete</progress>
      <update>As needed</update>
    </status>
    <spdom>
      <descgeog>Land Cover Alaska</descgeog>
      <bounding>
        <westbc>-167.0000</westbc>
        <eastbc>-122.0000</eastbc>
        <northbc>77.0000</northbc>
        <southbc>40.0000</southbc>
      </bounding>
    </spdom>
    <keywords>
      <theme>
        <themekt>ISO 19115 Topic Category</themekt>
        <themekey>imageryBaseMapsEarthCover</themekey>
      </theme>
      <theme>
        <themekt>NGDA Portfolio Themes</themekt>
        <themekey>NGDA</themekey>
        <themekey>National Geospatial Data Asset</themekey>
        <themekey>Land Use Land Cover Theme</themekey>
      </theme>
      <theme>
        <themekt>None</themekt>
        <themekey>Land Cover</themekey>
        <themekey>GIS</themekey>
        <themekey>U.S. Geological Survey</themekey>
        <themekey>USGS</themekey>
        <themekey>digital spatial data</themekey>
      </theme>
      <place>
        <placekt>U.S. Department of Commerce, 1995, Countries, dependencies, areas of special sovereignty, and their principal administrative divisions, Federal Information Processing Standard 10-4,): Washington, D.C., National Institute of Standards and Technology</placekt>
        <placekey>United States</placekey>
        <placekey>U.S.</placekey>
```

```
        <placekey>US</placekey>
      </place>
      <place>
        <placekt>U.S. Department of Commerce, 1987, Codes for the identification of the States, the District of Columbia and the outlying areas of the
        United States, and associated areas (Federal Information Processing Standard 5-2): Washington, D.C., National Institute of Standards and
        Technology</placekt>
        <placekey>AK</placekey>
        <placekey>Alaska</placekey>
      </place>
    </keywords>
    <accconst>None. Please see 'Distribution Info' for details.</accconst>
    <useconst>None. Users are advised to read the dataset's metadata thoroughly to understand appropriate use and data limitations.</useconst>
    <ptcontac>
      <cntinfo>
        <cntperp>
          <cntper>Customer Services Representative</cntper>
          <cntorg>U.S. Geological Survey</cntorg>
        </cntperp>
        <cntaddr>
          <addrtype>mailing and physical</addrtype>
          <address>47914 252nd Street</address>
          <city>Sioux Falls</city>
          <state>SD</state>
          <postal>57198-0001</postal>
          <country>United States</country>
        </cntaddr>
        <cntvoice>605/594-6151</cntvoice>
        <cntfax>605/594-6589</cntfax>
        <cntemail>custserv@usgs.gov</cntemail>
      </cntinfo>
    </ptcontac>
    <datacred>U.S. Geological Survey</datacred>
    <native>Microsoft Windows 7 Version 6.1 (Build 7601: Service Pack 1); ESRI ArcCatalog 9.3.1.4000 (Service Pack 2)</native>
  </idinfo>
  <dataqual>
    <attracc>
      <attraccr>A formal accuracy assessment was completed for the original 2001 Land Cover product (citation 5). Change pixels were derived for the 2011
      and 2016 Land Cover products based on specific criteria. An accuracy assessment has not been conducted for those change pixels. See the process
      steps in the metadata of the 2011 and 2016 Land Cover products for more information about the creation of those datasets. This document and the
      described land cover map are considered "provisional" until a formal accuracy assessment is completed. The U.S. Geological Survey can make no
      guarantee as to the accuracy or completeness of this information, and it is provided with the understanding that it is not guaranteed to be correct
      or complete. Conclusions drawn from this information are the responsibility of the user.</attraccr>
    </attracc>
    <logic>Manual and automated QA/QC checks on the NLCD 2001 Land Cover Alaska dataset verified the positional accuracy of the pixel grid and confirmed
    that all thematic attributes belonged to one of the approved NLCD classes.</logic>
    <complete>This NLCD product of Alaska 2016 Land Cover layer is the version dated July 24, 2020.</complete>
    <posacc>
      <horizpa>
        <horizpar>N/A</horizpar>
      </horizpa>
      <vertacc>
        <vertaccr>N/A</vertaccr>
      </vertacc>
    </posacc>
    <lineage>
      <srcinfo>
        <srccite>
          <citeinfo>
            <origin>Collin Homer</origin>
            <origin>Jon Dewitz</origin>
            <origin>Limin Yang</origin>
            <pubdate>201505</pubdate>
            <title>Completion of the 2011 National Land Cover Database for the Conterminous United States - Representing a Decade of Land Cover Change
            Information</title>
            <geoform>publication</geoform>
            <onlink>https://www.researchgate.net/publication/282254893_Completion_of_the_2011_National_Land_Cover_Database_for_the_Conterminous_United_Sta
            _Representing_a_Decade_of_Land_Cover_Change_Information</onlink>
          </citeinfo>
        </srccite>
        <typesrc>Digital and/or Hardcopy</typesrc>
        <srctime>
          <timeinfo>
            <sngdate>
              <caldate>201505</caldate>
            </sngdate>
          </timeinfo>
          <srccurr>publication date</srccurr>
        </srctime>
        <srccitea>Landsat ETM</srccitea>
        <srccontr>Landsat Enhanced Thematic Mapper (ETM)</srccontr>
      </srcinfo>
      <srcinfo>
        <srccite>
          <citeinfo>
            <origin>Collin Homer</origin>
            <origin>Jon Dewitz</origin>
            <origin>Limin Yang</origin>
            <pubdate>201505</pubdate>
            <title>Completion of the 2011 National Land Cover Database for the Conterminous United States - Representing a Decade of Land Cover Change
            Information</title>
            <geoform>publication</geoform>
            <onlink>https://www.researchgate.net/publication/282254893_Completion_of_the_2011_National_Land_Cover_Database_for_the_Conterminous_United_Sta
            _Representing_a_Decade_of_Land_Cover_Change_Information</onlink>
          </citeinfo>
        </srccite>
        <typesrc>Digital and/or Hardcopy</typesrc>
        <srctime>
          <timeinfo>
```

```
        <sngdate>
          <caldate>201505</caldate>
        </sngdate>
      </timeinfo>
      <srccurr>publication date</srccurr>
    </srctime>
    <srccitea>USDA</srccitea>
    <srccontr>United States Department of Agriculture (USDA)</srccontr>
  </srcinfo>
  <srcinfo>
    <srccite>
      <citeinfo>
        <origin>USDA Forest Service</origin>
        <pubdate>20181102</pubdate>
        <title>Forest Inventory & Analysis: What is Forest Inventory and Analysis?</title>
        <geoform>publication</geoform>
        <othercit>What_is_FIA_FS_2018_update.pdf</othercit>
        <onlink>https://www.fia.fs.fed.us/</onlink>
      </citeinfo>
    </srccite>
    <typesrc>Digital and/or Hardcopy</typesrc>
    <srctime>
      <timeinfo>
        <sngdate>
          <caldate>20181102</caldate>
        </sngdate>
      </timeinfo>
      <srccurr>publication date</srccurr>
    </srctime>
    <srccitea>FIA</srccitea>
    <srccontr>Forest Inventory and Analysis (FIA) Program of the U.S. Forest Service</srccontr>
  </srcinfo>
  <srcinfo>
    <srccite>
      <citeinfo>
        <origin>Collin Homer</origin>
        <origin>Jon Dewitz</origin>
        <origin>Limin Yang</origin>
        <pubdate>201505</pubdate>
        <title>Completion of the 2011 National Land Cover Database for the Conterminous United States - Representing a Decade of Land Cover Change
        Information</title>
        <geoform>publication</geoform>
        <onlink>https://www.researchgate.net/publication/282254893_Completion_of_the_2011_National_Land_Cover_Database_for_the_Conterminous_United_Sta
        _Representing_a_Decade_of_Land_Cover_Change_Information</onlink>
      </citeinfo>
    </srccite>
    <typesrc>Digital and/or Hardcopy</typesrc>
    <srctime>
      <timeinfo>
        <sngdate>
          <caldate>201505</caldate>
        </sngdate>
      </timeinfo>
      <srccurr>publication date</srccurr>
    </srctime>
    <srccitea>DEM</srccitea>
    <srccontr>Digital Elevation Model (DEM)</srccontr>
  </srcinfo>
  <srcinfo>
    <srccite>
      <citeinfo>
        <origin>Collin Homer</origin>
        <origin>Jon Dewitz</origin>
        <origin>Limin Yang</origin>
        <pubdate>201505</pubdate>
        <title>Completion of the 2011 National Land Cover Database for the Conterminous United States - Representing a Decade of Land Cover Change
        Information</title>
        <geoform>publication</geoform>
        <onlink>https://www.researchgate.net/publication/282254893_Completion_of_the_2011_National_Land_Cover_Database_for_the_Conterminous_United_Sta
        _Representing_a_Decade_of_Land_Cover_Change_Information</onlink>
      </citeinfo>
    </srccite>
    <typesrc>Digital and/or Hardcopy</typesrc>
    <srctime>
      <timeinfo>
        <sngdate>
          <caldate>201505</caldate>
        </sngdate>
      </timeinfo>
      <srccurr>publication date</srccurr>
    </srctime>
    <srccitea>USGS/EROS</srccitea>
    <srccontr>United States Geological Survey (USGS) Earth Resources Observation and Science (EROS) Center</srccontr>
  </srcinfo>
  <srcinfo>
    <srccite>
      <citeinfo>
        <origin>Collin Homer</origin>
        <origin>Jon Dewitz</origin>
        <origin>Limin Yang</origin>
        <pubdate>201505</pubdate>
        <title>Completion of the 2011 National Land Cover Database for the Conterminous United States - Representing a Decade of Land Cover Change
        Information</title>
        <geoform>publication</geoform>
        <onlink>https://www.researchgate.net/publication/282254893_Completion_of_the_2011_National_Land_Cover_Database_for_the_Conterminous_United_Sta
        _Representing_a_Decade_of_Land_Cover_Change_Information</onlink>
      </citeinfo>
    </srccite>
```

```
      <typesrc>Digital and/or Hardcopy</typesrc>
      <srctime>
        <timeinfo>
          <sngdate>
            <caldate>201505</caldate>
          </sngdate>
        </timeinfo>
        <srccurr>publication date</srccurr>
      </srctime>
      <srccitea>USGS NLCD</srccitea>
      <srccontr>United States Geological Survey (USGS) National Land Cover Database (NLCD)</srccontr>
    </srcinfo>
    <procstep>
      <procdesc>Alaska NLCD 2016 was generated using Google Earth engine composite imagery mosaics. A single 2011 Google Earth engine image utilized USGS Landsat five top of atmosphere data from 2008 through 2011. Two composites for 2016 were generated using USGS Landsat eight tier 1 top of atmosphere data from 2015 to 2017, and another from 2014 to 2017. Two composites for the 2016 nominal date were used to allow a wider time window needed to address persistent cloud and shadow problems along with terrain shadow problems throughout Alaska. All three of these dates utilized median value based compositing. These three composites also utilized temporal filtering to restrict the dates and months used in the composite. These composites also utilized cloud masking from the Landsat collection one level I quality assessment band to capture clouds and shadows. The median value was computed for each band per pixel and the imagery was clipped to the NLCD Alaska boundary extent. These images were exported as a tagged image file to Google Drive. The data were downloaded and reprojected to create the final imagery mosaics in the NLCD Alaska Albers projection. To further improve the ability to create valid change detection, the two 2016 images were used to create a single composite image. A model was created to identify potential cloud and shadow areas in the 2015 to 2017 composite image. These cloud and shadow areas were replaced with pixels from the 2014 to 2017 composite image which utilized a longer timeframe to minimize cloud and shadow areas. Problem areas still persisted in southern perennial ice and snow mountain areas. These were manually filled to create a seamless composite. Once these two comparable composite images were created, the change detection process was similar to the 2011 process referenced here. Jin, Suming, Yang, Limin, Zhu, Zhe, Homer, Collin G., A land cover change detection and classification protocol for updating Alaska NLCD 2001 to 2011: Remote Sensing of Environment, v. 195, p. 44–55, at https://doi.org/10.1016/j.rse.2017.04.021 These were combined into a vegetation disturbance layer to create a disturbance map from approximately 1940 until current. Tasseled cap, normalized burn ratio (NBR), normalized difference vegetation index (NDVI) and normalized difference water index (NDWI) images were calculated. Ancillary data included: - Digital elevation model (DEM) and derivatives (slope and aspect), - Fire and forest thinning polygons obtained from the state of Alaska, Landfire, and the Monitoring Trends in Burn Severity (MTBS) Fire disturbance areas were directly downloaded from the MTBS website. . https://mtbs.gov/direct-download, I directly download U.S. 1984-2016 Burned Areas Boundaries Dataset (mtbs_perims_DD.shp). These were utilized to create a fire year image for the entire Alaska timeframe that was available. Forest harvest disturbance was download from the Forest Service website. https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=harvest _USA.Activity_TimberHarvest.shp. These were combined to make a vegetation disturbance layer from 1940 to the current date. - Moderate Resolution Imaging Spectroradiometer (MODIS) snow/ice raster data, and - 2001 NLCD. Change detection and classification models used NLCD and ancillary data to predict land cover classes for changed areas. The general modeling process was as follows: 1. Biomass increase was calculated from spectral and DEM derivatives, plus 2001 land cover. 2. Biomass increase was added to the disturbance data, yielding a disturbance template. 3. The disturbance template plus the spectral derivatives (NBR, NDVI) were compared to the 2001 land cover to model updated vegetation change areas. 4. The updated vegetation change areas were inserted into the 2011 land cover to create training data for a classification and regression tree (CART) model. 5. A CART classification was used to detect unmapped disturbances and change. 6. The vegetation classification was refined to detect and correct for areas of shadow and succession after forest fires, clearing or thinning. 7. Snow/ice change was detected using an algorithm based on NDWI plus topography (correction for shadows) and MODIS snow/ice data, which yielded snow/ice change areas. 8. Water change was detected using a Landsat-based water change detection algorithm, refined by land cover and topography data (shadow areas) to detect changes. 9. The vegetation, snow/ice, and water change areas were combined to update the overall classification and to derive a set of change pixels. 10. Change pixels in urban/developed areas were created by modeling change in major cities. Manual editing was used to add developed change for small towns and other features. After all mapping units were processed, the change pixels were mosaicked and checked for consistency and quality. Manual edits were used to clean up areas that were incorrectly classified. Snow, ice, and water extents were mapped directly from Landsat imagery. As a result, the extent of snow, ice, and water reflects the year and season when the imagery was recorded. Differences in snow, ice, and water extent between 2001 and 2011 may not reflect perennial changes in their extent, but simply reflect seasonal change between the two time periods.</procdesc>
      <srcused>Landsat ETM</srcused>
      <srcused>USDA</srcused>
      <srcused>FIA</srcused>
      <srcused>DEM</srcused>
      <srcused>USGS/EROS</srcused>
      <procdate>20200724</procdate>
      <srcprod>USGS NLCD</srcprod>
      <proccont>
        <cntinfo>
          <cntperp>
            <cntper>Customer Services Representative</cntper>
            <cntorg>U.S. Geological Survey</cntorg>
          </cntperp>
          <cntaddr>
            <addrtype>mailing address</addrtype>
            <address>47914 252nd Street</address>
            <city>Sioux Falls</city>
            <state>SD</state>
            <postal>57198-0001</postal>
            <country>United States</country>
          </cntaddr>
          <cntvoice>605/594-6151</cntvoice>
          <cntfax>605/594-6589</cntfax>
          <cntemail>custserv@usgs.gov</cntemail>
        </cntinfo>
      </proccont>
    </procstep>
  </lineage>
</dataqual>
<spdoinfo>
  <direct>Raster</direct>
  <rastinfo>
    <rasttype>Pixel</rasttype>
    <rowcount>67844</rowcount>
    <colcount>124236</colcount>
    <vrtcount>1</vrtcount>
  </rastinfo>
</spdoinfo>
<spref>
  <horizsys>
    <planar>
      <mapproj>
        <mapprojn>Albers Conical Equal Area</mapprojn>
        <albers>
          <stdparll>55.000000</stdparll>
          <stdparll>65.000000</stdparll>
          <longcm>-154.000000</longcm>
```

```
            <latprjo>50.000000</latprjo>
            <feast>0.000000</feast>
            <fnorth>0.000000</fnorth>
          </albers>
        </mapproj>
        <planci>
          <plance>coordinate pair</plance>
          <coordrep>
            <absres>30.000000</absres>
            <ordres>30.000000</ordres>
          </coordrep>
          <plandu>meters</plandu>
        </planci>
      </planar>
      <geodetic>
        <horizdn>World Geodetic System 1984 (WGS 84)</horizdn>
        <ellips>WGS_1984</ellips>
        <semiaxis>6378137.000000</semiaxis>
        <denflat>298.257222</denflat>
      </geodetic>
    </horizsys>
  </spref>
  <eainfo>
    <detailed>
      <enttyp>
        <enttypl>None</enttypl>
        <enttypd>NLCD Land Cover Layer</enttypd>
        <enttypds>National Land Cover Database 2016</enttypds>
      </enttyp>
      <attr>
        <attrlabl>ObjectID</attrlabl>
        <attrdef>Internal feature number</attrdef>
        <attrdefs>ESRI</attrdefs>
        <attrdomv>
          <udom>Sequential unique whole numbers that are automatically generated</udom>
        </attrdomv>
      </attr>
      <attr>
        <attrlabl>Count</attrlabl>
        <attrdef>A nominal integer value that designates the number of pixels that have each value in the file; histogram column in ERDAS Imagine raster
        attributes table</attrdef>
        <attrdefs>NLCD</attrdefs>
        <attrdomv>
          <udom>Integer</udom>
        </attrdomv>
      </attr>
      <attr>
        <attrlabl>Value</attrlabl>
        <attrdef>Land Cover Class Code Value: Land cover defines the material on the land’s surface. The categories, or classes, used by the NLCD are
        from a modified Anderson Land Cover Classification System</attrdef>
        <attrdefs>NLCD</attrdefs>
        <attrdomv>
          <edom>
            <edomv>0</edomv>
            <edomvd>Background/No Data</edomvd>
            <edomvds>NLCD land cover class descriptions</edomvds>
          </edom>
        </attrdomv>
        <attrdomv>
          <edom>
            <edomv>1</edomv>
            <edomvd>No data value, Alaska zones only</edomvd>
            <edomvds>NLCD land cover class descriptions</edomvds>
          </edom>
        </attrdomv>
        <attrdomv>
          <edom>
            <edomv>11</edomv>
            <edomvd>Open Water - All areas of open water, generally with less than 25% cover or vegetation or soil</edomvd>
            <edomvds>NLCD land cover class descriptions</edomvds>
          </edom>
        </attrdomv>
        <attrdomv>
          <edom>
            <edomv>12</edomv>
            <edomvd>Perennial Ice/Snow - All areas characterized by a perennial cover of ice and/or snow, generally greater than 25% of total
            cover</edomvd>
            <edomvds>NLCD land cover class descriptions</edomvds>
          </edom>
        </attrdomv>
        <attrdomv>
          <edom>
            <edomv>21</edomv>
            <edomvd>Developed, Open Space - Includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn
            grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family
            housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic
            purposes</edomvd>
            <edomvds>NLCD land cover class descriptions</edomvds>
          </edom>
        </attrdomv>
        <attrdomv>
          <edom>
            <edomv>22</edomv>
            <edomvd>Developed, Low Intensity -Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-
            49 percent of total cover. These areas most commonly include single-family housing units</edomvd>
            <edomvds>NLCD land cover class descriptions</edomvds>
          </edom>
        </attrdomv>
```

```
<attrdomv>
  <edom>
    <edomv>23</edomv>
    <edomvd>Developed, Medium Intensity - Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for
    50-79 percent of the total cover. These areas most commonly include single-family housing units</edomvd>
    <edomvds>NLCD land cover class descriptions</edomvds>
  </edom>
</attrdomv>
<attrdomv>
  <edom>
    <edomv>24</edomv>
    <edomvd>Developed, High Intensity - Includes highly developed areas where people reside or work in high numbers. Examples include apartment
    complexes, row houses and commercial/industrial. Impervious surfaces account for 80 to 100 percent of the total cover</edomvd>
    <edomvds>NLCD land cover class descriptions</edomvds>
  </edom>
</attrdomv>
<attrdomv>
  <edom>
    <edomv>31</edomv>
    <edomvd>Barren Land (Rock/Sand/Clay) - Barren areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris,
    sand dunes, strip mines, gravel pits and other accumulations of earthen material. Generally, vegetation accounts for less than 15% of total
    cover</edomvd>
    <edomvds>NLCD land cover class descriptions</edomvds>
  </edom>
</attrdomv>
<attrdomv>
  <edom>
    <edomv>41</edomv>
    <edomvd>Deciduous Forest - Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover.
    More than 75 percent of the tree species shed foliage simultaneously in response to seasonal change</edomvd>
    <edomvds>NLCD land cover class descriptions</edomvds>
  </edom>
</attrdomv>
<attrdomv>
  <edom>
    <edomv>42</edomv>
    <edomvd>Evergreen Forest - Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover.
    More than 75 percent of the tree species maintain their leaves all year. Canopy is never without green foliage</edomvd>
    <edomvds>NLCD land cover class descriptions</edomvds>
  </edom>
</attrdomv>
<attrdomv>
  <edom>
    <edomv>43</edomv>
    <edomvd>Mixed Forest - Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. Neither
    deciduous nor evergreen species are greater than 75 percent of total tree cover</edomvd>
    <edomvds>NLCD land cover class descriptions</edomvds>
  </edom>
</attrdomv>
<attrdomv>
  <edom>
    <edomv>51</edomv>
    <edomvd>Dwarf Scrub - Alaska only areas dominated by shrubs less than 20 centimeters tall with shrub canopy typically greater than 20% of
    total vegetation. This type is often co-associated with grasses, sedges, herbs, and non-vascular vegetation tundra and may be periodically or
    seasonally wet and/or saturated with wate. This type commonly occurs in alpine or tundra areas and may contain permafrost</edomvd>
    <edomvds>NLCD land cover class descriptions</edomvds>
  </edom>
</attrdomv>
<attrdomv>
  <edom>
    <edomv>52</edomv>
    <edomvd>Shrub/Scrub - Areas dominated by shrubs less than 5 meters tall with shrub canopy typically greater than 20% of total vegetation.
    This class includes true shrubs, young trees in an early successional stage or trees stunted from environmental conditions</edomvd>
    <edomvds>NLCD land cover class descriptions</edomvds>
  </edom>
</attrdomv>
<attrdomv>
  <edom>
    <edomv>71</edomv>
    <edomvd>Grassland/Herbaceous - Areas dominated by grammanoid or herbaceous vegetation, generally greater than 80% of total vegetation. These
    areas are not subject to intensive management such as tilling, but can be utilized for grazing</edomvd>
    <edomvds>NLCD land cover class descriptions</edomvds>
  </edom>
</attrdomv>
<attrdomv>
  <edom>
    <edomv>72</edomv>
    <edomvd>Sedge/Herbaceous - Alaska only areas dominated by sedges and forbs, generally greater than 80% of total vegetation. This type can
    occur with significant other grasses or other grass like plants, and includes sedge tundra, and sedge tussock tundra and may be periodically
    or seasonally wet and/or saturated. This type may contain permafrost</edomvd>
    <edomvds>NLCD land cover class descriptions</edomvds>
  </edom>
</attrdomv>
<attrdomv>
  <edom>
    <edomv>74</edomv>
    <edomvd>Moss- Alaska only areas dominated by mosses generally greater than 80% of total vegetation</edomvd>
    <edomvds>NLCD land cover class descriptions</edomvds>
  </edom>
</attrdomv>
<attrdomv>
  <edom>
    <edomv>81</edomv>
    <edomvd>Pasture/Hay - Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay
    crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20 percent of total vegetation</edomvd>
    <edomvds>NLCD land cover class descriptions</edomvds>
  </edom>
</attrdomv>
```

```
        <attrdomv>
          <edom>
            <edomv>82</edomv>
            <edomvd>Cultivated Crops - Areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also
            perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20 percent of total vegetation. This class
            also includes all land being actively tilled</edomvd>
            <edomvds>NLCD land cover class descriptions</edomvds>
          </edom>
        </attrdomv>
        <attrdomv>
          <edom>
            <edomv>90</edomv>
            <edomvd>Woody Wetlands - Areas where forest or shrub land vegetation accounts for greater than 20 percent of vegetative cover and the soil or
            substrate is persistently saturated with or covered with water</edomvd>
            <edomvds>NLCD land cover class descriptions</edomvds>
          </edom>
        </attrdomv>
        <attrdomv>
          <edom>
            <edomv>95</edomv>
            <edomvd>Emergent Herbaceous Wetlands - Areas where perennial herbaceous vegetation accounts for greater than 80 percent of vegetative cover
            and the soil or substrate is persistently saturated with or covered with water</edomvd>
            <edomvds>NLCD land cover class descriptions</edomvds>
          </edom>
        </attrdomv>
      </attr>
      <attr>
        <attrlabl>Red</attrlabl>
        <attrdef> Numeric code for Red color in RGB slice format for image display purposes. The value is arbitrarily assigned by the display software
        package, unless defined by user</attrdef>
        <attrdefs>NLCD</attrdefs>
        <attrdomv>
          <rdom>
            <rdommin>0</rdommin>
            <rdommax>100</rdommax>
            <attrunit>CSS Color Value Percentage</attrunit>
            <attrmres>0.1</attrmres>
          </rdom>
        </attrdomv>
      </attr>
      <attr>
        <attrlabl>Green</attrlabl>
        <attrdef>Numeric code for Green color in RGB slice format for image display purposes. The value is arbitrarily assigned by the display software
        package, unless defined by user</attrdef>
        <attrdefs>NLCD</attrdefs>
        <attrdomv>
          <rdom>
            <rdommin>0</rdommin>
            <rdommax>100</rdommax>
            <attrunit>CSS Color Value Percentage</attrunit>
            <attrmres>0.1</attrmres>
          </rdom>
        </attrdomv>
      </attr>
      <attr>
        <attrlabl>Blue</attrlabl>
        <attrdef>Numeric code for Blue color in RGB slice format for image display purposes. The value is arbitrarily assigned by the display software
        package, unless defined by user</attrdef>
        <attrdefs>NLCD</attrdefs>
        <attrdomv>
          <rdom>
            <rdommin>0</rdommin>
            <rdommax>100</rdommax>
            <attrunit>CSS Color Value Percentage</attrunit>
            <attrmres>0.1</attrmres>
          </rdom>
        </attrdomv>
      </attr>
      <attr>
        <attrlabl>Opacity</attrlabl>
        <attrdef>A measure of how opaque, or solid, a color is displayed in a layer</attrdef>
        <attrdefs>NLCD</attrdefs>
        <attrdomv>
          <rdom>
            <rdommin>0</rdommin>
            <rdommax>100</rdommax>
            <attrunit>percentage</attrunit>
            <attrmres>0.1</attrmres>
          </rdom>
        </attrdomv>
      </attr>
    </detailed>
    <overview>
      <eaover>Attributes defined by USGS and ESRI. Class Red Green Blue 0 0.000000000 0.000000000 0.000000000 1 0.000000000 1.000000000 0.000000000 11
      0.325490196 0.462745098 0.662745098 12 0.854901961 0.913725490 1.000000000 21 0.913725490 0.819607843 0.815686275 22 0.890196078 0.615686275
      0.545098039 23 0.976470588 0.000000000 0.000000000 24 0.705882353 0.000000000 0.000000000 31 0.741176471 0.725490196 0.670588235 41 0.443137255
      0.701960784 0.419607843 42 0.137254902 0.423529412 0.231372549 43 0.752941176 0.827450980 0.607843137 51 0.694117647 0.588235294 0.235294118 52
      0.835294118 0.764705882 0.533333333 71 0.925490196 0.925490196 0.796078431 72 0.823529412 0.823529412 0.505882353 74 0.513725490 0.725490196
      0.619607843 81 0.901960784 0.882352941 0.282352941 82 0.709803922 0.486274510 0.200000000 90 0.760784314 0.878431373 0.949019608 95 0.486274510
      0.674509804 0.772549020</eaover>
      <eadetcit>Attribute accuracy is described, where present, with each attribute defined in the Entity and Attribute Section</eadetcit>
    </overview>
  </eainfo>
  <distinfo>
    <distrib>
      <cntinfo>
        <cntperp>
          <cntper>GS ScienceBase</cntper>
```

```
          <cntorg>U.S. Geological Survey</cntorg>
        </cntperp>
        <cntaddr>
          <addrtype>mailing address</addrtype>
          <address>Denver Federal Center, Building 810, Mail Stop 302</address>
          <city>Denver</city>
          <state>CO</state>
          <postal>80225</postal>
          <country>United States</country>
        </cntaddr>
        <cntvoice>1-888-275-8747</cntvoice>
        <cntemail>sciencebase@usgs.gov</cntemail>
      </cntinfo>
    </distrib>
    <distliab>Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose
    for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for
    release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data on any other
    system or for general or scientific purposes, nor shall the act of distribution constitute any such warranty.</distliab>
    <stdorder>
      <digform>
        <digtinfo>
          <formname>Digital Data</formname>
        </digtinfo>
        <digtopt>
          <onlinopt>
            <computer>
              <networka>
                <networkr>https://doi.org/10.5066/P96HHBIE</networkr>
              </networka>
            </computer>
          </onlinopt>
        </digtopt>
      </digform>
      <fees>None</fees>
    </stdorder>
  </distinfo>
  <metainfo>
    <metd>20200924</metd>
    <metc>
      <cntinfo>
        <cntperp>
          <cntper>Customer Services Representative</cntper>
          <cntorg>U.S. Geological Survey</cntorg>
        </cntperp>
        <cntaddr>
          <addrtype>mailing and physical</addrtype>
          <address>47914 252nd Street</address>
          <city>Sioux Falls</city>
          <state>SD</state>
          <postal>57198-0001</postal>
          <country>United States</country>
        </cntaddr>
        <cntvoice>605/594-6151</cntvoice>
        <cntfax>605/594-6589</cntfax>
        <cntemail>custserv@usgs.gov</cntemail>
      </cntinfo>
    </metc>
    <metstdn>FGDC Biological Data Profile of the Content Standard for Digital Geospatial Metadata</metstdn>
    <metstdv>FGDC-STD-001.1-1999</metstdv>
  </metainfo>
</metadata>
```