```
root
```

```
__element 'eml' in ns 'https://eml.ecoinformatics.org/eml-2.2.0' ('eml:eml')
       ___attribute 'packageId' = 'doi:10.18739/A2W85W'
        __attribute 'system' = 'https://arcticdata.io'
      \___attribute 'schemaLocation' in ns 'http://www.w3.org/2001/XMLSchema-instance'
      __text '\n '
     element 'access'
            \__attribute 'order' = 'allowFirst'
            \___attribute 'authSystem' = 'knb'
           __text '\n '
           __element 'allow'
                |___text '\n
                 __element 'principal'
                    ___text 'CN=arctic-data-admins,DC=dataone,DC=org'
                   _text '\n
                 __element 'permission'
                    ___text 'all'
                   text '\n '
             text '\n
             element 'allow'
                   text '\n
                  _element 'principal'
                    ___text 'http://orcid.org/0000-0002-5134-0334'
                   text '\n
                  _element 'permission'
                    ___text 'all'
                  text '\n
             _text '\n '
       _text '\n '
       _element 'dataset'
             _text '\n
             _element 'alternateIdentifier'
                   _text '16-140 Arctic Riparian Shrubs'
               |__
             text '\n
             _element 'title'
              ___text 'Vegetation, soils, and environmental data in Arctic Riparian :
           __text '\n
            __element 'creator'
                  \__attribute 'id' = '6232247788719394'
                 ___text '\n
                 ___element 'individualName'
                      ___text '\n
                      ___element 'givenName'
                          ___text 'Gerald'
                       __text '\n
                       __element 'surName'
                         ___text 'Frost'
                         _text '\n
                   _text '\n
                  _element 'organizationName'
                     ___text 'ABR, Inc. Environmental Research'
                   text '\n
                   _element 'positionName'
                     ___text 'Senior Scientist'
                   _text '\n '
                  _element 'address'
                      ___text '\n
                       __element 'deliveryPoint'
                          ___text 'P.O. Box 80410'
                         _text '\n
                        __element 'city'
                          ___text 'Fairbanks'
                         _text '\n
                         element 'administrativeArea'
                           | text 'Alaska'
```

```
_text '\n
             _element 'postalCode'
              ___text '99708'
             _text '\n
             element 'country'
                  _text 'USA'
             |___
            _text '\n
       text '\n
       _element 'phone'
            \___attribute 'phonetype' = 'voice'
            _text '(907)455-6777 ext. 142'
      text '\n
     __element 'phone'
          \__attribute 'phonetype' = 'facsimile'
         ___text '(907)455-6781'
       _text '\n
      _element 'electronicMailAddress'
        ___text 'jfrost@abrinc.com'
       text '\n
      _element 'onlineUrl'
        ___text 'http://abrinc.com/about/offices/fairbanks/gerald_v_frost
       text '\n
     element 'userId'
           __attribute 'directory' = 'https://orcid.org/'
            text 'https://orcid.org/0000-0002-5134-0334'
       text '\n
 _text '\n
__element 'metadataProvider'
      \___attribute 'id' = '2668757164824171'
      _text '\n
      _element 'individualName'
         ___text '\n '
           __element 'givenName'
             ___text 'Gerald'
            _text '\n '
           __element 'surName'
             ___text 'Frost'
       |___text '\n
_text '\n '
       element 'organizationName'
         ___text 'ABR, Inc. Environmental Research'
       text '\n
      _element 'positionName'
         ___text 'Senior Scientist'
      text '\n '
     __element 'address'
         ___text '\n
           __element 'deliveryPoint'
             ___text 'P.O. Box 80410'
           __text '\n
           __element 'city'
              ___text 'Fairbanks'
            _text '\n
           __element 'administrativeArea'
              |___text 'Alaska'
             _text '\n
            _element 'postalCode'
              ___text '99708'
             _text '\n '
             _element 'country'
             ___text 'USA'
             _text '\n
       _text '\n
       _element 'phone'
            \__attribute 'phonetype' = 'voice'
            _text '(907)455-6777 ext. 142'
       _text '\n
```

```
_element 'phone'
                _attribute 'phonetype' = 'facsimile'
             _text '(907)455-6781'
        _text '\n
        element 'electronicMailAddress'
         ___text 'jfrost@abrinc.com'
        _text '\n
        element 'onlineUrl'
         ___text 'http://abrinc.com/about/offices/fairbanks/gerald_v_frost
        _text '\n
       _element 'userId'
          | \__attribute 'directory' = 'https://orcid.org/'
          ___text 'https://orcid.org/0000-0002-5134-0334'
        _text '\n
__text '\n
___element 'associatedParty'
       \__attribute 'id' = '2876881058766889'
      text '\n
      element 'individualName'
          ___text '\n
           ___element 'givenName'
            ___text 'Anna'
            __text '\n
            element 'surName'
             ___text 'Liljedahl'
             _text '\n
        _text '\n
       _element 'organizationName'
         ___text 'University of Alaska Fairbanks'
        _text '\n
       _element 'positionName'
        ___text 'Research Professor'
       _text '\n '
       _element 'address'
          ___text '\n
           ___element 'deliveryPoint'
             ___text 'P.O. Box 755860'
             text '\n
            __element 'city'
              ___text 'Fairbanks'
             text '\n
             element 'administrativeArea'
              |___text 'Alaska'
            __text '\n
            ___element 'postalCode'
              ___text '99775'
            __text '\n
            __element 'country'
              ___text 'USA'
             __text '\n
       _text '\n
      __element 'phone'
             \__attribute 'phonetype' = 'voice'
             _text '(907)474-1951'
       text '\n
       _element 'phone'
                _attribute 'phonetype' = 'facsimile'
           \___
             _text '(907)474-7041'
        text '\n
       _element 'electronicMailAddress'
         ___text 'akliljedahl@alaska.edu'
       text '\n
       _element 'onlineUrl'
         ___text 'http://ine.uaf.edu/werc/people/faculty/anna-liljedahl/'
       text '\n
       _element 'userId'
          __attribute 'directory' = 'https://orcid.org/'
```

```
___text 'https://orcid.org/0000-0001-7114-6443'
        text '\n '
        _element 'role'
        | |__
             _text 'principalInvestigator'
       _text '\n
  _text '\n
  _element 'pubDate'
   ___text '2017-11-19'
  _text '\n
 _element 'abstract'
    |___text '\n
     ___element 'para'
        ___text 'These data pertain to vegetation, soils, and ecological
    ___text '\n
 _text '\n
___element 'keywordSet'
     ___text '\n
     ___element 'keyword'
        ___text 'Arctic tundra'
       _text '\n
      __element 'keyword'
        ___text 'vegetation species-composition'
       text '\n
      element 'keyword'
        ___text 'Leaf Area Index'
       _text '\n '
       _element 'keyword'
        ___text 'active-layer'
       _text '\n
       _element 'keyword'
        ___text 'permafrost soils'
       _text '\n
       _element 'keyword'
        ___text 'shrubs'
       _text '\n
       _element 'keyword'
        ___text 'riparian corridors'
        text '\n
        element 'keywordThesaurus'
        ___text 'None'
       _text '\n
  text '\n
 _element 'intellectualRights'
    ___text '\n
     ___element 'para'
        ___text '\nThis work is dedicated to the public domain under the
    ___text '\n '
__text '\n
__element 'distribution'
     ___text '\n
      __element 'offline'
          ___text '\n
           ____element 'mediumName'
            ___text 'digital '
             text '\n
       _text '\n
  text '\n
 _element 'coverage'
      _text '\n
       _element 'geographicCoverage'
          ___text '\n
            __element 'geographicDescription'
              ___text 'North Slope, Alaska along Dalton Highway corridor
             _text '\n
             _element 'boundingCoordinates'
                   _text '\n
                   _element 'westBoundingCoordinate'
```

```
___text '-149.4839'
                  text '\n '
                  element 'eastBoundingCoordinate'
                   ___text '-148.7728'
                  text '\n
                  _element 'northBoundingCoordinate'
                   ___text '69.2158'
                  text '\n
                  _element 'southBoundingCoordinate'
                  ___text '68.6294'
                  _text '\n
            _text '\n
      _text '\n
    __element 'temporalCoverage'
         ___text '\n
         ___element 'rangeOfDates'
               ___text '\n
                 __element 'beginDate'
                    ___text '\n
                     ____element 'calendarDate'
                      ___text '2016-08-21'
                       text '\n '
                 text '\n
                 element 'endDate'
                     text '\n
                     ___element 'calendarDate'
                      ___text '2016-08-27'
                       _text '\n
                 _text '\n
            _text '\n
      _text '\n
_text '\n
_element 'contact'
     \__attribute 'id' = '4467802539902052'
     __text '\n '
     __element 'individualName'
         ___text '\n
          __element 'givenName'
           |___text 'Gerald'
_text '\n '
           _element 'surName'
            |___text 'Frost'
      |___text '\n
_text '\n '
     _element 'organizationName'
       ___text 'ABR, Inc. Environmental Research'
      _text '\n '
      _element 'positionName'
       ___text 'Senior Scientist'
     _text '\n
     __element 'address'
          ___text '\n
           __element 'deliveryPoint'
            ___text 'P.O. Box 80410'
            text '\n
           _element 'city'
            ___text 'Fairbanks'
            _text '\n
            _element 'administrativeArea'
             |___text 'Alaska'
            _text '\n
            _element 'postalCode'
            ___text '99708'
            _text '\n
            _element 'country'
            |___text 'USA'
            _text '\n
```

```
_text '\n
       _element 'phone'
            \__attribute 'phonetype' = 'voice'
             _text '(907)455-6777 ext. 142'
       text '\n
      _element 'phone'
           \__attribute 'phonetype' = 'facsimile'
             _text '(907)455-6781'
       text '\n
       _element 'electronicMailAddress'
         |___text 'jfrost@abrinc.com'
       text '\n
       _element 'onlineUrl'
        ___text 'http://abrinc.com/about/offices/fairbanks/gerald_v_frost
      __text '\n
      __element 'userId'
            \__attribute 'directory' = 'https://orcid.org/'
          ___text 'https://orcid.org/0000-0002-5134-0334'
 _text '\n
__element 'methods'
      text '\n
     element 'methodStep'
            text '\n
            element 'description'
                   _text '\n
                  _element 'section'
                       ___text '\n
                       ___element 'title'
                          ___text 'Ecological sampling '
                        __text '\n
                       __element 'para'
                             ___text 'Ecological field plots were established
                               _element 'orderedlist'
                                  element 'listitem'
                                        ___element 'para'
                                              ___text 'Visual species-cover
                                      element 'listitem'
                                        ___element 'para'
                                              ___text 'Leaf Area Index (LA:
                                     element 'listitem'
                                        ___element 'para'
                                              ___text 'Maximum shrub canop'
                                      element 'listitem'
                                        ___element 'para'
                                              ___text 'Thaw depth'
                                     _element 'listitem'
                                        ___element 'para'
                                            ___text 'Categorical descript
                                      element 'listitem'
                                        ___element 'para'
                                              ___text 'Basic soil stratignates
                                     _element 'listitem'
                                        ___element 'para'
                                           ___text 'Soil chemistry (pH a
                               text '\n
                                                    Ecological field plot:
                         text '\n
                   text '\n
             _text '\n
       _text '\n
       _element 'sampling'
            __text '\n
             _element 'studyExtent'
                ___text '\n
                   element 'description'
                        __text '\n
                        __element 'para'
```

```
_text 'Data were collected 21-27 August 2016
                          text '\n
                    _text '\n
              _text '\n
             element 'samplingDescription'
                 ___text '\n
                    _element 'para'
                    text 'Ecological field plots were established in
                   _text '\n
              _text '\n
        _text '\n
___text '\n
___element 'project'
     ___text '\n
     ___element 'title'
         ___text 'Vegetation, Soils, and Environmental Data in Arctic Ripa
      __text '\n
      ___element 'personnel'
           ___text '\n
           ___element 'individualName'
                 ___text '\n
                  element 'givenName'
                  ___text 'Gerald'
                   text '\n
                   _element 'surName'
                   ___text 'Frost'
                   _text '\n
              _text '\n
            __element 'role'
              ___text 'originator'
              _text '\n
       _text '\n ''
       _element 'funding'
          ___text '\n
             _element 'para'
             ___text '1630360'
             _text '\n '
        _text '\n
'\n '
  text '\n
  _element 'dataTable'
     ___text '\n
       element 'entityName'
        ___text 'Frost_vegCover_Alaska_2016.csv'
        _text '\n
       __element 'entityDescription'
         ___text 'Categorization and coverage data of various species'
       _text '\n
      __element 'physical'
          | \__attribute 'id' = 'urn:uuid:fba52d65-7fc1-4298-bc33-c30d6ebx
            ___text '\n
            __element 'objectName'
               ___text 'Frost_vegCover_Alaska_2016.csv'
             __text '\n
            __element 'size'
                attribute 'unit' = 'bytes'
                   _text '24563'
             text '\n
             element 'authentication'
                      _attribute 'method' = 'SHA-1'
                   _text 'aee2171b5ecf7216a4d9b92756e7df0db93ebd66'
             _text '\n
            __element 'dataFormat'
                 ___text '\n
                   _element 'textFormat'
                      ___text '\n
                         _element 'numHeaderLines'
                           ___text '1'
```

```
_text '\n
                 element 'recordDelimiter'
                  ___text '\\n\\r'
                 _text '\n
                 element 'attributeOrientation'
                 |___text 'column'
                 _text '\n
                 _element 'simpleDelimited'
                   |___text '\n
                    ___element 'fieldDelimiter'
                    ___text ','
                   ___text '\n
                 _text '\n
           _text '\n
    __text '\n
    __element 'distribution'
         ___text '\n
          __element 'online'
              ___text '\n
               ___element 'url'
                   \__attribute 'function' = 'download'
                   text 'https://cn.dataone.org/cn/v2/resolve/u
                __text '\n '
           text '\n
      text '\n
_text '\n
_element 'attributeList'
    ___text '\n '
    ___element 'attribute'
          ___text '\n
           _element 'attributeName'
            ___text 'serial'
           _text '\n
           _element 'attributeDefinition'
            ___text 'primary key'
           _text '\n
          __element 'measurementScale'
              text '\n
                __element 'nominal'
                    ___text '\n
                      _element 'nonNumericDomain'
                           __text '\n
                           __element 'textDomain'
                               ___text '\n
                                ___element 'definition'
                                ___text 'primary key'
                              ___text '\n
                         ___text '\n
                   ___text '\n
               __text '\n
          __text '\n
      text '\n
     _element 'attribute'
           \___attribute 'id' = '6rH9CTGtx0'
           text '\n
          __element 'attributeName'
           |___text 'plot_id'
           text '\n
           element 'attributeDefinition'
            ___text 'field plot identifier'
           _text '\n
          __element 'measurementScale'
              |___text '\n
              ___element 'nominal'
                   ____text '\n
                      _element 'nonNumericDomain'
                        ___text '\n
```

```
_element 'textDomain'
                           text '\n
                              _element 'definition'
                              ___text 'field plot identific
                              text '\n
                        _text '\n
                  _text '\n
            text '\n
       text '\n
      _element 'annotation'
           \___attribute 'id' = 'sc4Wx5H3VT'
          ___text '\n
          ___element 'propertyURI'
               \__attribute 'label' = 'contains measurement
               text 'http://ecoinformatics.org/oboe/oboe.1
          ___text '\n
          ___element 'valueURI'
                \__attribute 'label' = 'plot identifier'
               text 'http://purl.dataone.org/odo/ECSO_0000:
      _text '\n
 text '\n
element 'attribute'
      \___attribute 'id' = 'cKeRaIJIhB'
      text '\n
      _element 'attributeName'
       ___text 'species'
       text '\n
      _element 'attributeDefinition'
       ___text 'vegetation taxon'
       _text '\n '
      __element 'measurementScale'
         ___text '\n
           ___element 'nominal'
               ___text '\n
                ___element 'nonNumericDomain'
                     ___text '\n
                        element 'textDomain'
                           |___text '\n
                              _element 'definition'
                              ___text 'Nomenclature follows
                              text '\n
                        _text '\n
                  text '\n
            text '\n
       _text '\n
      __element 'annotation'
          \__attribute 'id' = 'kxpomCz8Tw'
          ___text '\n '
          ___element 'propertyURI'
               | \__attribute 'label' = 'contains measurement
               ___text 'http://ecoinformatics.org/oboe/oboe.1
           __text '\n
          ___element 'valueURI'
               | \__attribute 'label' = 'species name'
| __text 'http://purl.dataone.org/odo/ECSO_0000:
            text '\n
       text '\n
 text '\n
 _element 'attribute'
    ___text '\n
       _element 'attributeName'
       ___text 'veg_lifeform_code'
       _text '\n
       element 'attributeDefinition'
       ___text 'categorical class for life form'
```

```
_element 'measurementScale'
         text '\n
           _element 'nominal'
              ___text '\n
                element 'nonNumericDomain'
                    ___text '\n
                      __element 'textDomain'
                         ___text '\n
                           __element 'definition'
                           ___text 'categorical class for
                            _text '\n
                       _text '\n
              ___text '\n
            _text '\n
      _text '\n
__text '\n
__element 'attribute'
    ___text '\n
     element 'attributeName'
       ___text 'veg_structure_class_code'
      _text '\n
      element 'attributeDefinition'
       ___text 'categorical class for structure'
      text '\n '
     element 'measurementScale'
         ___text '\n
         ___element 'nominal'
              ___text '\n
               ___element 'nonNumericDomain'
                    ___text '\n
                     ___element 'textDomain'
                         ___text '\n
                            _element 'definition'
                           |___text 'categorical class fo
                            _text '\n
                       _text '\n
                 _text '\n
            text '\n
      text '\n
 text '\n
 element 'attribute'
      \___attribute 'id' = 'vphIN8q6Qk'
     __text '\n
      _element 'attributeName'
      ___text 'cover_percent'
      _text '\n
     __element 'attributeDefinition'
       ___text 'visual estimate of live cover (0-100%)'
     __text '\n '
     __element 'measurementScale'
         ___text '\n
         ___element 'ratio'
              ___text '\n
               ___element 'unit'
                    ___text '\n
                      _element 'standardUnit'
                     ___text 'dimensionless'
                       _text '\n
                 text '\n
                __element 'numericDomain'
                    ___text '\n
                     ___element 'numberType'
                       ___text 'real'
                       _text '\n
                 _text '\n
            _text '\n
      _text '\n
```

```
_element 'annotation'
                        \__attribute 'id' = '2JFgqmbcqK'
                        _text '\n
                        _element 'propertyURI'
                                 attribute 'label' = 'contains measurement
                           | \__
                              _text 'http://ecoinformatics.org/oboe/oboe.1
                        _text '\n
                        _element 'valueURI'
                           | \__attribute 'label' = 'Plant Cover Percenta
                           text 'http://purl.dataone.org/odo/ECSO_0000
                         _text '\n
                   _text '\n
             _text '\n
       _text '\n
___text '\n
___element 'dataTable'
     ___text '\n
     ___element 'entityName'
        ___text 'Frost_shrubMetric_Alaska_2016.csv'
       _text '\n
      __element 'entityDescription'
        ___text 'Data on and categorization of shrubs'
       text '\n '
     element 'physical'
            \ attribute 'id' = 'urn:uuid:50b7b6a7-c40d-4b6f-86ea-ed1d69c'
            __text '\n
            __element 'objectName'
             ___text 'Frost_shrubMetric_Alaska_2016.csv'
             _text '\n
            __element 'size'
                attribute 'unit' = 'bytes'
                  _text '15821'
            __text '\n '
             _element 'authentication'
                attribute 'method' = 'SHA-1'
                   _text 'a47baa9163beaad8d6e4d00b76c4ff3464fb4587'
             _text '\n '
             element 'dataFormat'
                ___text '\n
                   _element 'textFormat'
                      ___text '\n
                      ___element 'numHeaderLines'
                       ___text '1'
                       __text '\n
                       ___element 'recordDelimiter'
                         ___text '\\n\\r'
                       __text '\n
                      ___element 'attributeOrientation'
                         ___text 'column'
                       __text '\n
                       __element 'simpleDelimited'
                           ___text '\n
                            ___element 'fieldDelimiter'
                             ____text ','
                             text '\n
                         text '\n
                   _text '\n
             text '\n
             element 'distribution'
                   _text '\n
                   _element 'online'
                      |___text '\n
                       ___element 'url'
                           attribute 'function' = 'download'
                              _text 'https://cn.dataone.org/cn/v2/resolve/u
                         _text '\n
                   _text '\n
```

```
___text '\n
_text '\n '
_element 'attributeList'
  ___text '\n '
     element 'attribute'
          _text '\n
           _element 'attributeName'
           ___text 'ID'
           text '\n
           _element 'attributeDefinition'
           ___text 'Primary key'
          __text '\n
         __element 'measurementScale'
             ___text '\n
              ___element 'nominal'
                   ___text '\n
                    ___element 'nonNumericDomain'
                          ___text '\n
                          ___element 'textDomain'
                               ___text '\n
                                ___element 'definition'
                                ___text 'Primary key'
                                 __text '\n
                         | text '\n
                     text '\n
                 text '\n
           _text '\n
     _text '\n
    _element 'attribute'
          _text '\n
           _element 'attributeName'
           ___text 'plot_id'
           _text '\n
           element 'attributeDefinition'
            ___text 'Plot identifier'
           _text '\n
           _element 'measurementScale'
             ___text '\n
                __element 'nominal'
                   ___text '\n
                      element 'nonNumericDomain'
                         ___text '\n
                           __element 'textDomain'
                               ___text '\n
                                ___element 'definition'
                                ___text 'Plot identifier'
                                 __text '\n
                        ___text '\n
                      _text '\n
               __text '\n
           text '\n
          _element 'annotation'
                \__attribute 'id' = 'tPyB6qNd1g'
                text '\n
               __element 'propertyURI'
                         _attribute 'label' = 'contains measurement
                      _text 'http://ecoinformatics.org/oboe/oboe.1
                text '\n
                _element 'valueURI'
                    \__attribute 'label' = 'plot identifier'
__text 'http://purl.dataone.org/odo/ECSO_0000:
           _text '\n
     text '\n
     _element 'attribute'
        __attribute 'id' = '2aoXY99PPD'
```

```
_text '\n
      element 'attributeName'
       ___text 'Date'
      text '\n
      element 'attributeDefinition'
       ___text 'Date of sampling'
      _text '\n
      _element 'measurementScale'
         ___text '\n
           __element 'dateTime'
              ___text '\n
               |___element 'formatString'
                  ___text 'YYYY-MM-DD'
              ___text '\n
        ___text '\n
     __text '\n
     __element 'annotation'
           \___attribute 'id' = '6xltXrlGT8'
          ___text '\n
          __element 'propertyURI'
              \__attribute 'label' = 'contains measurement
              text 'http://ecoinformatics.org/oboe/oboe.1
           text '\n
          element 'valueURI'
              \__attribute 'label' = 'date'
              text 'http://purl.dataone.org/odo/ECSO_0000:
            _text '\n
      _text '\n
_text '\n
_element 'attribute'
     _text '\n
      _element 'attributeName'
      ___text 'Point'
      _text '\n
      _element 'attributeDefinition'
       ___text 'Distance along transect centerline'
      text '\n
     _element 'measurementScale'
         ___text '\n
           __element 'ratio'
               |___text '\n
                ___element 'unit'
                    ___text '\n
                     ___element 'standardUnit'
                        ___text 'meter'
                    ___text '\n
                ___text '\n
               ___element 'numericDomain'
                    ___text '\n
                     ___element 'numberType'
                        ___text 'whole'
                       _text '\n
                  _text '\n
           text '\n
      text '\n
      _element 'annotation'
              _attribute 'id' = '1RS8zCksbf'
           _text '\n
           _element 'propertyURI'
                    _attribute 'label' = 'contains measurement
              | \__attribute 'label' = 'contains measurement
| __text 'http://ecoinformatics.org/oboe/oboe.1
           _text '\n
           _element 'valueURI'
              \__attribute 'label' = 'location along trans
                  _text 'http://purl.dataone.org/odo/ECSO_00001
```

```
_text '\n
       element 'annotation'
            \___attribute 'id' = 'h6RoHCsHCg'
            _text '\n
            _element 'propertyURI'
                \___attribute 'label' = 'has unit'
                  _text 'http://ecoinformatics.org/oboe/oboe.1
            text '\n
           __element 'valueURI'
                \___attribute 'label' = 'Meter'
               text 'http://ecoinformatics.org/oboe/oboe.1
             _text '\n
       _text '\n
__text '\n
__element 'attribute'
      __text '\n
       _element 'attributeName'
       ___text 'Max_Height'
       _text '\n
      _element 'attributeDefinition'
        ___text 'Maximum shrub canopy height within 20 cm of
       text '\n '
      element 'measurementScale'
           ___text '\n
          ___element 'ratio'
               ___text '\n
                ___element 'unit'
                     ___text '\n
                     ___element 'standardUnit'
                        ___text 'centimeter'
                        _text '\n
                  _text '\n
                 __element 'numericDomain'
                     ___text '\n
                     ___element 'numberType'
                        ___text 'natural'
                        text '\n
                  text '\n
             text '\n
       text '\n
       element 'annotation'
          \___attribute 'id' = 'vlpDqaikoM'
          ___text '\n
          ___element 'propertyURI'
               | \__attribute 'label' = 'contains measurement
               ___text 'http://ecoinformatics.org/oboe/oboe.1
           __text '\n
           ___element 'valueURI'
                \___attribute 'label' = 'maximum shear rate'
               ___text 'http://purl.dataone.org/odo/ECSO_0000
       _text '\n
      __element 'annotation'
            \___attribute 'id' = 'HpIzL1lnRy'
            text '\n
           __element 'propertyURI'
                     _attribute 'label' = 'has unit'
                  _text 'http://ecoinformatics.org/oboe/oboe.1
            _text '\n
            _element 'valueURI'
                     _attribute 'label' = 'Centimeter'
                  _text 'http://ecoinformatics.org/oboe/oboe.1
             _text '\n
       text '\n
 _element 'attribute'
```

```
__attribute 'id' = 'hBb3dhQhKM'
      text '\n
      element 'attributeName'
      ___text 'Canopy_Species'
      text '\n
      _element 'attributeDefinition'
       ___text 'Shrub species that forms the top of the cand
      text '\n
     _element 'measurementScale'
        ___text '\n
          __element 'nominal'
              ___text '\n
               ___element 'nonNumericDomain'
                    ___text '\n
                    ___element 'textDomain'
                          ___text '\n
                           ___element 'definition'
                             ___text 'Shrub species that :
                           __text '\n
                    ___text '\n
                 _text '\n
           text '\n
     text '\n
     element 'annotation'
           attribute 'id' = 'Ij6W3ni9rF'
         ___text '\n
          __element 'propertyURI'
              | \__attribute 'label' = 'contains measuremen'
| __text 'http://ecoinformatics.org/oboe/oboe.1
         ___text '\n
         ___element 'valueURI'
              | \__attribute 'label' = 'species name'
                 _text 'http://purl.dataone.org/odo/ECSO_0000
      _text '\n
_text '\n
_element 'attribute'
     \___attribute 'id' = 'CAoPaoC6Xi'
      text '\n
      _element 'attributeName'
      ___text 'LAI_mean'
      text '\n
    __element 'attributeDefinition'
      ___text 'Average of 5 LAI measurements taken at first
    __text '\n __'
    __element 'measurementScale'
        ___text '\n
         ___element 'ratio'
              ___text '\n
               ___element 'unit'
                    ___text '\n
                      __element 'standardUnit'
                      ___text 'dimensionless'
                      __text '\n
                text '\n
                __element 'numericDomain'
                    ___text '\n
                       _element 'numberType'
                     ___text 'real'
                       _text '\n
                 _text '\n
           _text '\n
      _text '\n
      _element 'missingValueCode'
        ___text '\n
           _element 'code'
            ___text '-999'
```

```
_text '\n
            _element 'codeExplanation'
             ___text 'The LAI instrument was configured to :
            _text '\n
      text '\n
      _element 'annotation'
           \___attribute 'id' = 'L4n6gl2YUk'
           __text '\n
          __element 'propertyURI'
              | \__attribute 'label' = 'contains measurement
              text 'http://ecoinformatics.org/oboe/oboe.1
          ___text '\n
         ___element 'valueURI'
              | \__attribute 'label' = 'Leaf Area Index'
              ___text 'http://purl.dataone.org/odo/ECSO_0000
      _text '\n
_text '\n
element 'attribute'
      \___attribute 'id' = '9ATXSFebth'
     __text '\n
      element 'attributeName'
       ___text 'LAI_stddev'
      text '\n
      element 'attributeDefinition'
      ___text 'Average of 5 LAI measurements taken at first
      _text '\n '
     __element 'measurementScale'
         ___text '\n
         ___element 'ratio'
              ___text '\n
               ___element 'unit'
                    ___text '\n
                     ___element 'standardUnit'
                       ___text 'dimensionless'
                       _text '\n
                 _text '\n
                element 'numericDomain'
                    ___text '\n
                       _element 'numberType'
                      |___text 'real'
                       text '\n
                  _text '\n
            _text '\n
     text '\n
     __element 'missingValueCode'
         ___text '\n
         ___element 'code'
          ___text '-999'
          __text '\n
         ___element 'codeExplanation'
             ___text 'The LAI instrument was configured to :
          __text '\n
      _text '\n
     element 'annotation'
          \___attribute 'id' = '5EMtUfom2k'
           __text '\n
          __element 'propertyURI'
                    _attribute 'label' = 'contains measurement
                 _text 'http://ecoinformatics.org/oboe/oboe.1
           _text '\n
          element 'valueURI'
               __attribute 'label' = 'Leaf Area Index'
                 _text 'http://purl.dataone.org/odo/ECSO_0000
            text '\n
      _text '\n
_text '\n
```

```
element 'attribute'
         _attribute 'id' = 'Egoq0rooB3'
      _text '\n
      _element 'attributeName'
       ___text 'Thaw_Depth'
      _text '\n
      _element 'attributeDefinition'
       ___text 'Depth of thaw'
      _text '\n
      _element 'measurementScale'
         |___text '\n
          ___element 'ratio'
               ___text '\n
               ___element 'unit'
                    ___text '\n
                     |___element 'standardUnit'
                        ___text 'centimeter'
                       _text '\n '
                __text '\n
                ___element 'numericDomain'
                     ___text '\n
                      element 'numberType'
                      ___text 'natural'
                    ___text '\n
                 text '\n
            text '\n
      _text '\n
      _element 'missingValueCode'
         ___text '\n
          ___element 'code'
            ___text '-999'
            _text '\n
            _element 'codeExplanation'
            ___text 'This field was recorded opportunistication
            _text '\n
      _text '\n
      __element 'annotation'
           \__attribute 'id' = 'v0lAJ0gd8R'
          __text '\n '
            _element 'propertyURI'
              __attribute 'label' = 'contains measurement
                  _text 'http://ecoinformatics.org/oboe/oboe.1
          ___text '\n
           __element 'valueURI'
              | \__attribute 'label' = 'Depth of Thaw'
               ___text 'http://www.purl.dataone.org/odo/ECSO_(
          __text '\n
     __text '\n
     __element 'annotation'
          \___attribute 'id' = '2A9PfhwdwJ'
          ___text '\n '
          ___element 'propertyURI'
              __attribute 'label' = 'has unit'
                __text 'http://ecoinformatics.org/oboe/oboe.1
           text '\n
           __element 'valueURI'
              attribute 'label' = 'Centimeter'
                 _text 'http://ecoinformatics.org/oboe/oboe.1
            text '\n
      _text '\n
 _text '\n
__element 'attribute'
    ___text '\n
      _element 'attributeName'
       ___text 'Rock_Depth'
      text '\n
      _element 'attributeDefinition'
```

```
text 'Depth to rock'
                  text '\n '
                  _element 'measurementScale'
                    ___text '\n
                       element 'ratio'
                          ___text '\n
                          ___element 'unit'
                                ___text '\n
                                  _element 'standardUnit'
                                   ___text 'centimeter'
                                   _text '\n
                           ___text '\n
                           ___element 'numericDomain'
                               ___text '\n
                                ___element 'numberType'
                                   ___text 'natural'
                               ___text '\n
                             _text '\n
                       text '\n
                 __text '\n
                __element 'missingValueCode'
                      text '\n
                     element 'code'
                       ___text '-999'
                       _text '\n
                       _element 'codeExplanation'
                       ___text 'Rock depths were not measured'
                       _text '\n
                 _text '\n
            _text '\n
      _text '\n
_text '\n
_element 'dataTable'
   ___text '\n
      _element 'entityName'
       ___text 'Frost_environmentData_Alaska_2016.csv'
      _text '\n
      element 'entityDescription'
       ___text 'Description and data on electrical conductivity, coverage
      text '\n
      _element 'physical'
           \__attribute 'id' = 'urn:uuid:lac52886-f068-4517-9f20-3df3889@
          ___text '\n '
          __element 'objectName'
            ___text 'Frost_environmentData_Alaska_2016.csv'
          __text '\n
          ___element 'size'
              | \__attribute 'unit' = 'bytes'
              ___text '4816'
          __text '\n
          __element 'authentication'
               \___attribute 'method' = 'SHA-1'
                 __text '449b5c9b6912257ef584dfa13f959e3b686e081e'
           _text '\n
           element 'dataFormat'
                 _text '\n
                 element 'textFormat'
                      __text '\n
                      __element 'numHeaderLines'
                       ___text '1'
                       _text '\n
                      __element 'recordDelimiter'
                        ___text '\\n\\r'
                       _text '\n
                       element 'attributeOrientation'
                        ___text 'column'
                       _text '\n
```

```
_element 'simpleDelimited'
                    ___text '\n
                       _element 'fieldDelimiter'
                       ____text ','
                       text '\n
                 _text '\n
            _text '\n
      _text '\n
      _element 'distribution'
           __text '\n
            _element 'online'
              ___text '\n
               ___element 'url'
                   | \___attribute 'function' = 'download'
                   text 'https://cn.dataone.org/cn/v2/resolve/u
                 _text '\n '
            _text '\n
      _text '\n
_text '\n
__element 'attributeList'
    ___text '\n
     element 'attribute'
           text '\n
          element 'attributeName'
            |___text 'ID'
            _text '\n
            _element 'attributeDefinition'
            ___text 'primary key for table'
            _text '\n
           __element 'measurementScale'
              ___text '\n
               ___element 'nominal'
                    ___text '\n
                    ___element 'nonNumericDomain'
                         ___text '\n
                            __element 'textDomain'
                               ___text '\n
                                  element 'definition'
                                  ___text 'primary key for tab
                                  _text '\n
                             _text '\n
                       text '\n
                 _text '\n
            _text '\n
      text '\n
     __element 'attribute'
          \___attribute 'id' = 'IvS4b2iXjS'
           _text '\n
          __element 'attributeName'
            ___text 'plot_id'
            _text '\n
           __element 'attributeDefinition'
            ___text 'plot identifier'
           _text '\n
           element 'measurementScale'
              ___text '\n
                __element 'nominal'
                    ___text '\n
                      _element 'nonNumericDomain'
                           __text '\n
                            _element 'textDomain'
                               ___text '\n
                                 __element 'definition'
                                   ___text 'plot identifier'
                                  _text '\n
                             _text '\n
                       _text '\n
```

```
|___text '\n
       text '\n
       _element 'annotation'
          \___attribute 'id' = 'd0MdaXZtJd'
           __text '\n
           __element 'propertyURI'
               __attribute 'label' = 'contains measurement
                  _text 'http://ecoinformatics.org/oboe/oboe.1
            text '\n
            _element 'valueURI'
               | \__attribute 'label' = 'plot identifier'
               text 'http://purl.dataone.org/odo/ECSO_0000:
             _text '\n
       _text '\n
__text '\n
__element 'attribute'
      \___attribute 'id' = 'UemFvSd6Nz'
      text '\n
      element 'attributeName'
        ___text 'Date'
       _text '\n
      element 'attributeDefinition'
        ___text 'date that data was recorded on'
       text '\n
      element 'measurementScale'
          |___text '\n
           __element 'dateTime'
               ___text '\n
                ___element 'formatString'
                  ___text 'YYYY-MM-DD'
                  _text '\n
             _text '\n
       _text '\n
       _element 'annotation'
          \___attribute 'id' = 'A6ePAB17bF'
            __text '\n
          ___element 'propertyURI'
               | \__attribute 'label' = 'contains measurement
                  text 'http://ecoinformatics.org/oboe/oboe.1
           ___text '\n
           __element 'valueURI'
               | \__attribute 'label' = 'date'
                  _text 'http://purl.dataone.org/odo/ECSO_0000
             text '\n
      _text '\n
 _text '\n
__element 'attribute'
     ___text '\n
      __element 'attributeName'
       ___text 'X'
       _text '\n
      __element 'attributeDefinition'
        ___text 'X coordinate of plot center'
      _text '\n
      element 'measurementScale'
          ___text '\n
           element 'interval'
                ___text '\n
                  element 'unit'
                     ___text '\n
                       __element 'standardUnit'
                     | ___text 'meter'
                         _text '\n
                   _text '\n
                   element 'numericDomain'
                        _text '\n
                     ___element 'numberType'
```

```
___text 'natural'
                      __text '\n
                  _text '\n
            _text '\n
      text '\n
 text '\n
 _element 'attribute'
      \___attribute 'id' = 'dhfmOppZs1'
      _text '\n
      _element 'attributeName'
       |___text 'Y'
       _text '\n
      _element 'attributeDefinition'
       ___text 'Y coordinate of plot center'
      _text '\n
     __element 'measurementScale'
         ___text '\n
          ___element 'interval'
              ___text '\n
               ___element 'unit'
                    ___text '\n
                     element 'standardUnit'
                      ___text 'meter'
                       text '\n
                  text '\n
                 __element 'numericDomain'
                    |___text '\n
                     ___element 'numberType'
                       ___text 'natural'
                       _text '\n
                  _text '\n
            _text '\n
      _text '\n
      _element 'annotation'
          \___attribute 'id' = '9NuB1R9VBh'
           __text '\n
          ___element 'propertyURI'
              attribute 'label' = 'contains measuremen'
                  text 'http://ecoinformatics.org/oboe/oboe.1
          ___text '\n
           __element 'valueURI'
              | \__attribute 'label' = 'UTM northing coordin
                 _text 'http://purl.dataone.org/odo/ECSO_0000
            text '\n
   ___text '\n
 _text '\n
__element 'attribute'
      \___attribute 'id' = 'gKXE6fAuBc'
     __text '\n
     __element 'attributeName'
       ___text 'Elevation'
      _text '\n
     __element 'attributeDefinition'
       ___text 'elevation of plot center reported by GPS'
      text '\n
     __element 'measurementScale'
         ___text '\n
          element 'ratio'
              ___text '\n
                 __element 'unit'
                   |___text '\n
                      ___element 'standardUnit'
                        ___text 'meter'
                       _text '\n
                  text '\n
                 _element 'numericDomain'
                   ___text '\n
```

```
_element 'numberType'
                        ___text 'natural'
                        _text '\n
                  _text '\n
            _text '\n
      text '\n
      _element 'annotation'
           \___attribute 'id' = 'zwkvA72EXA'
          __text '\n
           _element 'propertyURI'
              __attribute 'label' = 'contains measuremen'
              text 'http://ecoinformatics.org/oboe/oboe.1
         ___text '\n
         ___element 'valueURI'
              \__attribute 'label' = 'elevation'
              ___text 'http://purl.dataone.org/odo/ECSO_0000
          __text '\n
      _text '\n
     __element 'annotation'
           \__attribute 'id' = 'EGSkwXaQ0x'
          ___text '\n
          __element 'propertyURI'
               \__attribute 'label' = 'has unit'
              text 'http://ecoinformatics.org/oboe/oboe.1
           text '\n
          __element 'valueURI'
              __attribute 'label' = 'Meter'
              text 'http://ecoinformatics.org/oboe/oboe.1
            _text '\n
      _text '\n
_text '\n
_element 'attribute'
    ___text '\n
      _element 'attributeName'
      |___text 'Veg_completeness'
      _text '\n
      _element 'attributeDefinition'
      \mid text 'To what degree of completeness the species : text '\n '
     _element 'measurementScale'
         ___text '\n
          __element 'nominal'
              ___text '\n
                __element 'nonNumericDomain'
                    ___text '\n
                      ___element 'enumeratedDomain'
                          ___text '\n
                            __element 'codeDefinition'
                                ___text '\n
                                  ___element 'code'
                                  |___text 'full'
                                   _text '\n
                                  __element 'definition'
                                    ___text 'complete spec:
                                   text '\n
                              text '\n
                             element 'codeDefinition'
                                 ___text '\n
                                  _element 'code'
                                    ___text 'dominant'
                                   _text '\n
                                  __element 'definition'
                                    ___text 'all shrub spec
                                   _text '\n
                              _text '\n
                        _text '\n
                  _text '\n
```

```
_text '\n
      _text '\n '
_text '\n
_element 'attribute'
     text '\n
      _element 'attributeName'
      ___text 'Mean_shrub_height'
      _text '\n
      _element 'attributeDefinition'
      ___text 'mean maximum shrub height for plot'
      _text '\n
     _element 'measurementScale'
        ___text '\n
         ___element 'ratio'
              ___text '\n
              ___element 'unit'
                   ___text '\n
                    ___element 'standardUnit'
                     ___text 'centimeter'
                   ___text '\n '
                _text '\n
               element 'numericDomain'
                    ___text '\n
                    element 'numberType'
                    |___text 'real'
                      _text '\n
                 _text '\n
           _text '\n
      _text '\n
_text '\n
_element 'attribute'
    ___text '\n
      _element 'attributeName'
      ___text 'Mean_LAI'
      _text '\n
      _element 'attributeDefinition'
      ___text 'mean Leaf Area Index (LAI) for plot'
      text '\n
     _element 'measurementScale'
        |___text '\n
          __element 'interval'
              ___text '\n
               ___element 'unit'
                   ___text '\n
                    ___element 'standardUnit'
                      ___text 'dimensionless'
                   ___text '\n '
              ___text '\n
               ___element 'numericDomain'
                   ___text '\n
                   ___element 'numberType'
                   |___text '\n
                __text '\n
           text '\n
      text '\n
text '\n
_element 'attribute'
        _attribute 'id' = 'DyvlullFHw'
      _text '\n
      _element 'attributeName'
      ___text 'cover_Shrub_tall'
      _text '\n
      _element 'attributeDefinition'
      ___text 'visual estimate of live cover (0-100%) for
      text '\n
      _element 'measurementScale'
```

```
_text '\n
           element 'ratio'
               ___text '\n
                 _element 'unit'
                    ___text '\n
                       _element 'standardUnit'
                        ___text 'dimensionless'
                       _text '\n '
                 _text '\n
                 _element 'numericDomain'
                    ___text '\n
                     __element 'numberType'
                       ___text 'whole'
                    |___text '\n
                 _text '\n
           _text '\n
     _text '\n
     element 'annotation'
          \___attribute 'id' = '5huou0wa4D'
          ___text '\n
         ___element 'propertyURI'
              \ attribute 'label' = 'contains measurement
              text 'http://ecoinformatics.org/oboe/oboe.1
           text '\n
         element 'valueURI'
                \__attribute 'label' = 'shrub cover percent;
                __text 'http://purl.dataone.org/odo/ECSO_0000
           _text '\n
      _text '\n
_text '\n
_element 'attribute'
     \___attribute 'id' = 'YcRN2rG8Jy'
     _text '\n
      _element 'attributeName'
      ___text 'cover_Shrub_low'
      _text '\n
      _element 'attributeDefinition'
      |__text 'visual estimate of live cover (0-100%) for : text '\n '
     _element 'measurementScale'
        ___text '\n
          __element 'ratio'
              ___text '\n
               ___element 'unit'
                   ___text '\n
                     ___element 'standardUnit'
                       ___text 'dimensionless'
                      __text '\n
               __text '\n
               ___element 'numericDomain'
                    ___text '\n
                      __element 'numberType'
                      ___text 'natural'
                      __text '\n
                 text '\n
           text '\n
      text '\n
     _element 'annotation'
              _attribute 'id' = 'EOWjg5KU6V'
           _text '\n
           _element 'propertyURI'
              \__attribute 'label' = 'contains measurement
                 _text 'http://ecoinformatics.org/oboe/oboe.1
           _text '\n
           _element 'valueURI'
               \__attribute 'label' = 'shrub cover percenta
                 _text 'http://purl.dataone.org/odo/ECSO_00001
```

```
___text '\n
     text '\n
text '\n
_element 'attribute'
       attribute 'id' = 'dqZ2Nlascn'
     _text '\n
     _element 'attributeName'
      ___text 'cover_Shrub_dwarf'
     text '\n
     _element 'attributeDefinition'
      ___text 'visual estimate of live cover (0-100%) for (
    __text '\n
    __element 'measurementScale'
        ___text '\n
        ___element 'ratio'
             ___text '\n
              ___element 'unit'
                   ___text '\n
                    ___element 'standardUnit'
                     ___text 'dimensionless'
                   ___text '\n
               text '\n
              element 'numericDomain'
                   ___text '\n
                    element 'numberType'
                    ___text 'real'
                     _text '\n
                 _text '\n
           _text '\n
     _text '\n
    _element 'annotation'
          \___attribute 'id' = 'Yu7npAUyN9'
          __text '\n '
           _element 'propertyURI'
             | \__attribute 'label' = 'contains measurement
                _text 'http://ecoinformatics.org/oboe/oboe.1
          __text '\n
           element 'valueURI'
             attribute 'label' = 'shrub cover percenta
                _text 'http://purl.dataone.org/odo/ECSO_00001
           text '\n
     text '\n
text '\n
_element 'attribute'
    \___attribute 'id' = 'iv8UK3ObJ8'
    __text '\n
   ___element 'attributeName'
      ___text 'cover_Whole_Tussocks'
    __text '\n
    __element 'attributeDefinition'
      ___text 'visual estimate of total cover (0-100%) of
    _text '\n
    __element 'measurementScale'
        ___text '\n
         element 'ratio'
              ___text '\n
               element 'unit'
                   ___text '\n
                     __element 'standardUnit'
                   | |___text 'dimensionless'
                      _text '\n
                _text '\n
                _element 'numericDomain'
                   ___text '\n
                     __element 'numberType'
                      ___text 'real'
                      _text '\n
```

```
__text '\n
              |_
             text '\n
       text '\n
       _element 'annotation'
               _attribute 'id' = 'vfDFz3AN6j'
           __text '\n
           __element 'propertyURI'
               attribute 'label' = 'contains measurement
               text 'http://ecoinformatics.org/oboe/oboe.1
           __text '\n
            _element 'valueURI'
               | \__attribute 'label' = 'Plant Cover Percenta
               text 'http://purl.dataone.org/odo/ECSO_0000
            _text '\n
       _text '\n
__text '\n
__element 'attribute'
      \___attribute 'id' = 'vatqyXyiIw'
      text '\n
      __element 'attributeName'
       ___text 'cover_Graminoids'
       text '\n
      element 'attributeDefinition'
       ___text 'visual estimate of live cover (0-100%) for (
       text '\n '
      _element 'measurementScale'
         ___text '\n
          ___element 'ratio'
               ___text '\n
                ___element 'unit'
                    ___text '\n
                     ___element 'standardUnit'
                        ___text 'dimensionless'
                        _text '\n
                  _text '\n
                ___element 'numericDomain'
                     ___text '\n
                        element 'numberType'
                       |___text 'real'
                        text '\n
                  _text '\n
            text '\n
       text '\n
      _element 'annotation'
         \__attribute 'id' = 'VfUnI0omrn'
          ___text '\n
          ___element 'propertyURI'
               \__attribute 'label' = 'contains measurement
               text 'http://ecoinformatics.org/oboe/oboe.1
           __text '\n
           __element 'valueURI'
                \__attribute 'label' = 'graminoid cover pero
                 __text 'http://purl.dataone.org/odo/ECSO_0000
      text '\n
 text '\n
 _element 'attribute'
         _attribute 'id' = '1S7u1xdIT1'
      text '\n
      _element 'attributeName'
       ___text 'cover_Forbs'
       _text '\n
       _element 'attributeDefinition'
       ___text 'visual estimate of live cover (0-100%) for :
       text '\n
       _element 'measurementScale'
        ___text '\n
```

```
_element 'ratio'
              text '\n
                __element 'unit'
                   ___text '\n
                      element 'standardUnit'
                       ___text 'dimensionless'
                       _text '\n
                __text '\n
               ___element 'numericDomain'
                   |___text '\n
                      _element 'numberType'
                    | ___text 'real'
                   ___text '\n
              ___text '\n
        ___text '\n
    __text '\n
    __element 'annotation'
          \__attribute 'id' = 'hotZUF0uUt'
          __text '\n
          __element 'propertyURI'
              \__attribute 'label' = 'contains measurement
              text 'http://ecoinformatics.org/oboe/oboe.1
          text '\n
          element 'valueURI'
              \ attribute 'label' = 'forb cover percentage
             ___text 'http://purl.dataone.org/odo/ECSO_0000
           _text '\n
      _text '\n
_text '\n
_element 'attribute'
     _text '\n
      _element 'attributeName'
      ___text 'cover_Feathermoss'
      _text '\n
      _element 'attributeDefinition'
      ___text 'visual estimate of live cover (0-100%) for :
      text '\n '
     _element 'measurementScale'
        |___text '\n
          __element 'ratio'
              ___text '\n
               ___element 'unit'
                   ___text '\n
                    ___element 'standardUnit'
                       ___text 'dimensionless'
                   ___text '\n '
               ___text '\n
               ___element 'numericDomain'
                   ___text '\n
                    ___element 'numberType'
                    | |___text 'real'
                     __text '\n
                __text '\n
           text '\n
      text '\n
     element 'annotation'
          \___attribute 'id' = 'K9BYM8LNnM'
           _text '\n
           _element 'propertyURI'
              | \__attribute 'label' = 'contains measuremen'
| __text 'http://ecoinformatics.org/oboe/oboe.1
           _text '\n
           _element 'valueURI'
             attribute 'label' = 'moss cover percentage
                 _text 'http://purl.dataone.org/odo/ECSO_00001
```

```
___text '\n
text '\n
_element 'attribute'
     \___attribute 'id' = 'MkNlhvhvM3'
     text '\n
     _element 'attributeName'
      ___text 'cover_Sphagnum'
      text '\n
     _element 'attributeDefinition'
      ___text 'visual estimate of live cover (0-100%) for :
     _text '\n
     _element 'measurementScale'
        ___text '\n
        ___element 'ratio'
             ___text '\n
              ___element 'unit'
                  ___text '\n
                   ___element 'standardUnit'
                    ___text 'dimensionless'
                   ___text '\n '
               __text '\n
               element 'numericDomain'
                   ___text '\n
                   element 'numberType'
                    ___text 'whole'
                      _text '\n
                _text '\n
           _text '\n
     _text '\n
    _element 'annotation'
        \___attribute 'id' = 'CYzPXzDxbA'
          __text '\n
        ___element 'propertyURI'
             attribute 'label' = 'contains measuremen'
                _text 'http://ecoinformatics.org/oboe/oboe.1
          __text '\n
        ___element 'valueURI'
             __attribute 'label' = 'moss cover percentage
                text 'http://purl.dataone.org/odo/ECSO 00001
           text '\n
     text '\n
text '\n
_element 'attribute'
    \___attribute 'id' = 'rWGKi5ug1h'
    ___text '\n
   ___element 'attributeName'
      ___text 'cover_Total_moss'
     _text '\n
    __element 'attributeDefinition'
      text 'visual estimate of live cover (0-100%) for
    __text '\n '
    __element 'measurementScale'
        ___text '\n '
        ___element 'ratio'
             ___text '\n
               __element 'unit'
                   |___text '\n
                      element 'standardUnit'
                    ___text 'dimensionless'
                      _text '\n
                _text '\n
              ___element 'numericDomain'
                   ___text '\n
                      _element 'numberType'
                      ___text 'natural'
                      _text '\n
                _text '\n
```

```
|___text '\n
       text '\n
       _element 'annotation'
          \___attribute 'id' = 'WiRGUMsCMZ'
          ___text '\n
           __element 'propertyURI'
               __attribute 'label' = 'contains measurement
                 _text 'http://ecoinformatics.org/oboe/oboe.1
            text '\n
            _element 'valueURI'
               | \__attribute 'label' = 'moss cover percentac
               text 'http://purl.dataone.org/odo/ECSO_0000
            _text '\n
       _text '\n
__text '\n
__element 'attribute'
      \___attribute 'id' = 'FyguJDBbEZ'
     text '\n
     element 'attributeName'
       ___text 'cover_Cladonia_Cladina'
      __text '\n
      element 'attributeDefinition'
       text 'visual estimate of live cover (0-100%) for (
      text '\n '
      element 'measurementScale'
         ___text '\n
           __element 'ratio'
               ___text '\n
                ___element 'unit'
                    ___text '\n
                     ___element 'standardUnit'
                     | |___text 'dimensionless'
                       _text '\n
                  _text '\n
                ___element 'numericDomain'
                     ___text '\n
                       _element 'numberType'
                     |___text 'real'
___text '\n
                  text '\n
            text '\n
       text '\n
      _element 'annotation'
          \___attribute 'id' = 'WKKCR6Fjsn'
          ___text '\n '
          ___element 'propertyURI'
               \__attribute 'label' = 'contains measurement
               ___text 'http://ecoinformatics.org/oboe/oboe.1
           __text '\n
          ___element 'valueURI'
               \__attribute 'label' = 'lichen cover percent
               ___text 'http://purl.dataone.org/odo/ECSO_0000
            _text '\n '
      _text '\n
 text '\n
 _element 'attribute'
         _attribute 'id' = 'XKBexjgsGp'
      text '\n
      element 'attributeName'
       ___text 'cover_Total_lichen'
       _text '\n
      _element 'attributeDefinition'
       ___text 'visual estimate of live cover (0-100%) for
       _text '\n
       element 'measurementScale'
         ___text '\n '
           __element 'ratio'
```

```
_text '\n
                 element 'unit'
                   ___text '\n
                      _element 'standardUnit'
                       ___text 'dimensionless'
                      _text '\n '
                 _text '\n
                _element 'numericDomain'
                   ___text '\n
                      _element 'numberType'
                      ___text 'real'
                   ___text '\n
                 _text '\n
           _text '\n
    __text '\n
     __element 'annotation'
          \__attribute 'id' = 'HVMqLyPZCW'
         ___text '\n
         ___element 'propertyURI'
              \__attribute 'label' = 'contains measurement
              text 'http://ecoinformatics.org/oboe/oboe.1
          text '\n
         element 'valueURI'
                \ attribute 'label' = 'lichen cover percent
             text 'http://purl.dataone.org/odo/ECSO_0000
           _text '\n '
      _text '\n
text '\n
_element 'attribute'
     _text '\n
      _element 'attributeName'
      ___text 'cover_Litter'
      _text '\n
      element 'attributeDefinition'
      ___text 'visual estimate of total cover (0-100%) for
      _text '\n '
      _element 'measurementScale'
        |___text '\n
          __element 'ratio'
              ___text '\n
                _element 'unit'
                   ___text '\n
                     ___element 'standardUnit'
                     ___text 'dimensionless'
                   ___text '\n
               ___text '\n
              ___element 'numericDomain'
                   ___text '\n
                    ___element 'numberType'
                    ___text 'natural'
                     __text '\n
                 _text '\n
           _text '\n
      text '\n
      _element 'annotation'
          \___attribute 'id' = 'TM34TFnIWX'
           _text '\n
          __element 'propertyURI'
              \__attribute 'label' = 'contains measurement
                _text 'http://ecoinformatics.org/oboe/oboe.1
          text '\n
           _element 'valueURI'
             attribute 'label' = 'litter cover percent
                _text 'http://purl.dataone.org/odo/ECSO_00001
           _text '\n
      _text '\n
```

```
_text '\n
element 'attribute'
     \__attribute 'id' = 'vK1GQLd54z'
     _text '\n
     element 'attributeName'
      ___text 'cover_Rock_fragments'
     _text '\n
     element 'attributeDefinition'
      ___text 'visual estimate of total cover (0-100%) of :
     _text '\n '
     _element 'measurementScale'
        ___text '\n
        ___element 'ratio'
             ___text '\n
              ___element 'unit'
                   ___text '\n
                    ___element 'standardUnit'
                    ___text 'dimensionless'
                   text '\n '
               __text '\n
              ___element 'numericDomain'
                   ___text '\n
                    element 'numberType'
                    ___text 'real'
                     text '\n
                _text '\n
           _text '\n
     _text '\n
    __element 'annotation'
          \___attribute 'id' = 'HLX14oggPH'
         ___text '\n '
          _element 'propertyURI'
             __attribute 'label' = 'contains measurement
                _text 'http://ecoinformatics.org/oboe/oboe.1
          __text '\n
          _element 'valueURI'
             | \__attribute 'label' = 'rock cover percentage
                text 'http://purl.dataone.org/odo/ECSO 00001
           text '\n
     text '\n
text '\n
element 'attribute'
    \___attribute 'id' = 'tVUC0fEaFU'
    __text '\n
    __element 'attributeName'
      ___text 'cover_Bare_soil'
     _text '\n
    __element 'attributeDefinition'
      text 'visual estimate of total cover (0-100%) of ]
    __text '\n
    __element 'measurementScale'
        ___text '\n
         ___element 'ratio'
             ___text '\n
               element 'unit'
                   ___text '\n
                     __element 'standardUnit'
                   | ___text 'dimensionless'
                      text '\n
                _text '\n
                _element 'numericDomain'
                   ___text '\n
                   ___element 'numberType'
                      ___text 'real'
                      text '\n
                 _text '\n
           _text '\n
```

```
_text '\n
       element 'annotation'
            \__attribute 'id' = '6sVCKAAj3P'
            _text '\n
            _element 'propertyURI'
                \___attribute 'label' = 'contains measurement
                  _text 'http://ecoinformatics.org/oboe/oboe.1
            text '\n
            __element 'valueURI'
                \__attribute 'label' = 'bare soil cover perd
               text 'http://purl.dataone.org/odo/ECSO_0000
             _text '\n
       _text '\n
__text '\n
__element 'attribute'
      \___attribute 'id' = 'GCPXgiwjwK'
     __text '\n
       _element 'attributeName'
       ___text 'cover_Water'
       _text '\n
      _element 'attributeDefinition'
        ___text 'visual estimate of total cover (0-100%) of :
       text '\n '
      element 'measurementScale'
           ___text '\n
          ___element 'ratio'
               ___text '\n
                ___element 'unit'
                     ___text '\n
                      ___element 'standardUnit'
                       ___text 'dimensionless'
                        _text '\n
                  _text '\n
                 __element 'numericDomain'
                     ___text '\n
                     ___element 'numberType'
                        ___text 'real'
                        text '\n
                  text '\n
             text '\n
       text '\n
       element 'annotation'
          \___attribute 'id' = 'WMGu4rI8Il'
          ___text '\n
          ___element 'propertyURI'
               | \__attribute 'label' = 'contains measurement
               text 'http://ecoinformatics.org/oboe/oboe.1
           __text '\n
           __element 'valueURI'
               | \__attribute 'label' = 'water cover percenta
               ___text 'http://purl.dataone.org/odo/ECSO_0000
      _text '\n
 text '\n
 element 'attribute'
      \___attribute 'id' = 'FNbC1j2nrE'
       text '\n
       _element 'attributeName'
       ___text 'Slope'
       _text '\n
       _element 'attributeDefinition'
        ___text 'slope angle (deg) at plot center'
       _text '\n
       _element 'measurementScale'
         |___text '\n
            _element 'ratio'
             ___text '\n
```

```
_element 'unit'
                   text '\n
                      _element 'standardUnit'
                       ___text 'degree'
                       text '\n
                 _text '\n
                __element 'numericDomain'
                    |___text '\n
                      _element 'numberType'
                     ___text 'whole'
                       _text '\n
                 _text '\n
           _text '\n
   __text '\n
    __element 'annotation'
          \___attribute 'id' = 'FzN10kUQ8j'
         ___text '\n
         ___element 'propertyURI'
             \__attribute 'label' = 'contains measurement
             text 'http://ecoinformatics.org/oboe/oboe.1
          __text '\n
          element 'valueURI'
                \__attribute 'label' = 'surface slope'
             text 'http://purl.dataone.org/odo/ECSO_0000
           _text '\n
     _text '\n
     _element 'annotation'
          \___attribute 'id' = 'xo7QsHfJiC'
          __text '\n
           _element 'propertyURI'
             __attribute 'label' = 'has unit'
                _text 'http://ecoinformatics.org/oboe/oboe.1
          _text '\n
           _element 'valueURI'
             | \__attribute 'label' = 'Degree'
                _text 'http://ecoinformatics.org/oboe/oboe.1
           _text '\n
     _text '\n
text '\n
_element 'attribute'
    \___attribute 'id' = '3TwOVA3EFV'
     text '\n
    __element 'attributeName'
     ___text 'Aspect'
    __text '\n
   ___element 'attributeDefinition'
      ___text 'slope aspect (deg true) at plot center'
    __text '\n
    __element 'measurementScale'
        |___text '\n
          __element 'ratio'
              ___text '\n
               __element 'unit'
                   ___text '\n
                     ___element 'standardUnit'
                    | ___text 'degree'
                      _text '\n
                 _text '\n
                _element 'numericDomain'
                    ___text '\n
                     __element 'numberType'
                    ___text 'natural'
                       _text '\n
                 _text '\n
           text '\n
     _element 'missingValueCode'
```

```
_text '\n
           _element 'code'
             ___text '-999'
           _text '\n
            element 'codeExplanation'
                 _text '-999 was recorded when the hillslope a
           _text '\n
      text '\n
     _element 'annotation'
          \__attribute 'id' = 'UYM6SIKD1F'
         ___text '\n
         ___element 'propertyURI'
              \__attribute 'label' = 'contains measurement
              text 'http://ecoinformatics.org/oboe/oboe.1
         ___text '\n
         ___element 'valueURI'
               \__attribute 'label' = 'aspect'
              ___text 'http://purl.dataone.org/odo/ECSO_0000:
      _text '\n
     __element 'annotation'
           \ attribute 'id' = 'eiTqGhFT08'
           text '\n
          __element 'propertyURI'
              \ attribute 'label' = 'has unit'
                __text 'http://ecoinformatics.org/oboe/oboe.1
           _text '\n
          __element 'valueURI'
              \__attribute 'label' = 'Degree'
              text 'http://ecoinformatics.org/oboe/oboe.1
           _text '\n
      _text '\n
_text '\n
_element 'attribute'
   ___text '\n
     __element 'attributeName'
      ___text 'Geomorphic_Unit'
      text '\n
      element 'attributeDefinition'
      ___text 'generalized category for surficial deposits
      text '\n
     _element 'measurementScale'
        ___text '\n
          ___element 'nominal'
              ___text '\n
               ___element 'nonNumericDomain'
                    ___text '\n
                     ___element 'textDomain'
                         ___text '\n
                           __element 'definition'
                            ___text 'generalized category
                            __text '\n
                      _text '\n
                __text '\n
           text '\n
      _text '\n
text '\n
element 'attribute'
    __text '\n
     _element 'attributeName'
      ___text 'Macrotopography_class'
      _text '\n
     _element 'attributeDefinition'
       ___text 'generalized category for macrotopography cla
      text '\n
      _element 'measurementScale'
       ___text '\n
```

```
_element 'nominal'
               text '\n
                 _element 'nonNumericDomain'
                    ___text '\n
                       element 'textDomain'
                          ___text '\n
                             _element 'definition'
                             ___text 'generalized category
                             _text '\n
                       _text '\n
                  _text '\n
            _text '\n
       _text '\n
__text '\n
__element 'attribute'
    ___text '\n
      _element 'attributeName'
       ___text 'Microtopography_class'
       text '\n
      _element 'attributeDefinition'
       ___text 'generalized category for microtopography cla
       text '\n '
     element 'measurementScale'
         ___text '\n
          element 'nominal'
               ___text '\n
                __element 'nonNumericDomain'
                     ___text '\n
                     ___element 'textDomain'
                          ___text '\n
                           ___element 'definition'
                             ___text 'generalized categor
                            __text '\n
                       _text '\n
                  _text '\n
            _text '\n
      _text '\n
 text '\n
 element 'attribute'
     __text '\n
      _element 'attributeName'
       ___text 'Surface_organic_depth'
       text '\n
      _element 'attributeDefinition'
       ___text 'total thickness of surface organic material
     __text '\n
     __element 'measurementScale'
         ___text '\n
          ___element 'ratio'
               ___text '\n
                 __element 'unit'
                    ___text '\n
                      ___element 'standardUnit'
                     ___text 'centimeter'
                       __text '\n
                  text '\n
                 __element 'numericDomain'
                    ___text '\n
                      __element 'numberType'
                     |___text 'whole'
                       _text '\n
                  text '\n
            _text '\n
       _text '\n
       _element 'missingValueCode'
          ___text '\n
            _element 'code'
```

```
___text '-999'
            text '\n
            _element 'codeExplanation'
            ___
                 _text 'This was not measured at one plot due
      _text '\n
_text '\n
_element 'attribute'
      text '\n
      _element 'attributeName'
       ___text 'Dominant_mineral_texture'
      _text '\n
      _element 'attributeDefinition'
       ___text 'generalized category for mineral soil textu
    __text '\n
    __element 'measurementScale'
        ___text '\n
         ___element 'nominal'
              ___text '\n
               ___element 'nonNumericDomain'
                    ___text '\n
                      element 'textDomain'
                          ___text '\n
                           ___element 'definition'
                             ___text 'generalized category
                             _text '\n
                       _text '\n
                 text '\n
            _text '\n
      _text '\n
_text '\n
_element 'attribute'
     \___attribute 'id' = 'a6yMpExL67'
      _text '\n
      _element 'attributeName'
       ___text 'Water_depth'
      _text '\n
      element 'attributeDefinition'
       |___text 'depth of water (negative if below surface)'
      text '\n
     _element 'measurementScale'
         ___text '\n
          ___element 'ratio'
              ___text '\n
                ___element 'unit'
                    ___text '\n
                    ___element 'standardUnit'
                       ___text 'centimeter'
                    ___text '\n '
                ___text '\n
                ___element 'numericDomain'
                    ___text '\n
                     ___element 'numberType'
                     ___text 'natural'
                       text '\n
                  text '\n
           text '\n
      text '\n
      element 'missingValueCode'
          __text '\n
          __element 'code'
          |___text '-999'
           _text '\n
            _element 'codeExplanation'
            ___text 'This was not measured at one plot due
            _text '\n
      _text '\n
```

```
_element 'annotation'
          \___attribute 'id' = 'Lk4Uw0Eunx'
           _text '\n
           _element 'propertyURI'
              | \___
                    attribute 'label' = 'contains measurement
                 _text 'http://ecoinformatics.org/oboe/oboe.1
           _text '\n
           _element 'valueURI'
              | \__attribute 'label' = 'Stream Depth'
              ___text 'http://purl.dataone.org/odo/ECSO_0000
            _text '\n
    ___text '\n
     __element 'annotation'
          \___attribute 'id' = 'M8hbsgSvAe'
         ___text '\n
         ___element 'propertyURI'
              \__attribute 'label' = 'has unit'
              ___text 'http://ecoinformatics.org/oboe/oboe.1
          __text '\n
         ___element 'valueURI'
               \__attribute 'label' = 'Centimeter'
              text 'http://ecoinformatics.org/oboe/oboe.1
           text '\n
      text '\n
text '\n
_element 'attribute'
     _text '\n
     __element 'attributeName'
      ___text 'Thaw_depth'
      _text '\n
     __element 'attributeDefinition'
      ___text 'depth of thaw'
      _text '\n
     _element 'measurementScale'
         ___text '\n
         ___element 'ratio'
              ___text '\n
                element 'unit'
                    ___text '\n
                      __element 'standardUnit'
                       ___text 'centimeter'
                   |___text '\n
               ___text '\n
               ___element 'numericDomain'
                    ___text '\n
                    ___element 'numberType'
                       ___text 'natural'
                    ___text '\n
                 _text '\n
          __text '\n
      text '\n
     _element 'annotation'
          \__attribute 'id' = 'g6whL4aHR0'
          text '\n
          __element 'propertyURI'
                    _attribute 'label' = 'contains measurement
                 _text 'http://ecoinformatics.org/oboe/oboe.1
           text '\n
           _element 'valueURI'
                    _attribute 'label' = 'Depth of Thaw'
                 _text 'http://www.purl.dataone.org/odo/ECSO_(
            _text '\n
      _text '\n
      element 'annotation'
           \___attribute 'id' = 'C80LMCltgc'
           _text '\n
```

```
_element 'propertyURI'
                    _attribute 'label' = 'has unit'
                 _text 'http://ecoinformatics.org/oboe/oboe.1
           _text '\n
           element 'valueURI'
               ___attribute 'label' = 'Centimeter'
                 _text 'http://ecoinformatics.org/oboe/oboe.1
           text '\n
      text '\n
_text '\n
_element 'attribute'
     \___attribute 'id' = '7hDaHYLWas'
    ___text '\n
     _element 'attributeName'
      ___text 'pH'
      _text '\n
      _element 'attributeDefinition'
      ___text 'pH of soil at 10cm'
     _text '\n
     __element 'measurementScale'
        ___text '\n
         element 'interval'
               text '\n
               element 'unit'
                    text '\n
                     ___element 'standardUnit'
                     ___text 'dimensionless'
                       _text '\n
                 _text '\n
               ___element 'numericDomain'
                    ___text '\n
                    ___element 'numberType'
                       ___text 'real'
                       _text '\n
                 _text '\n
           _text '\n
      _text '\n
      element 'annotation'
         \__attribute 'id' = 'jJFiRnS0b0'
          ___text '\n
          __element 'propertyURI'
              __attribute 'label' = 'contains measurement
              text 'http://ecoinformatics.org/oboe/oboe.1
          __text '\n
          ___element 'valueURI'
              | \__attribute 'label' = 'soil pH'
              text 'http://purl.dataone.org/odo/ECSO_0000
          __text '\n
     _text '\n
_text '\n
_element 'attribute'
     \___attribute 'id' = 'm0SrRVQLKR'
     _text '\n
     __element 'attributeName'
      ___text 'Electrical_conductivity'
      text '\n
     _element 'attributeDefinition'
      ___text 'electrical conductivity at 10 cm'
      text '\n
     _element 'measurementScale'
        ___text '\n
         ___element 'ratio'
              ___text '\n
              ___element 'unit'
                   ___text '\n
                       _element 'customUnit'
                        ___text 'microsiemen'
```

