**Title:** Vegetative Phenology observations at the Andrews Experimental Forest, 2009 - Present

**Abstract:**

The vegetation phenology study is part of a larger effort to understand the influence of climate variability and change on trophic interactions in mountainous terrain. Phenology Core Sites were selected to capture the variation in elevation and topography across Lookout Creek watershed. Priority was given to sites with long-term air and soil temperature records (Reference stands) and previous phenology observations (Reference stands and stream gauging stations). Sixteen sites were established. At each site five individuals from each of 18 common species (if occurring within the site) from tree, shrub, and herb layers were mapped and marked for observation. Weekly observations are conducted each year beginning in March or April depending on winter conditions and snowpack and continuing through June or July. Plant vegetative and reproductive phenophases are scored using a numbered system adapted to each plant species.

**Keywords:** Air temperature; Biological diversity; Climate change; Environmental gradients; Forest ecology; Microclimate; Phenology; Plant community ecology; Populations; communities; populations; climate change; phenology; forest ecology; plant ecology; microclimate; air temperature; biodiversity; environmental gradients;

**Date data commenced:** 2009-03-01

**Date data terminated:** 2019-07-25

**Principal Investigator:** Mark D Schulze

**List of Entities:**
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2. Vegetative Phenology Flower and Fruit Estimates
3. Vegetative Phenology Text Comments
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### 1. Vegetative Phenology Observations

Plant observations

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### 2. Vegetative Phenology Flower and Fruit Estimates

Fruit and Flower maximum estimates

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### 3. Vegetative Phenology Text Comments

observation text comments

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### 4. Vegetative Phenology Plant Locations

Distance and bearing from plot center point for all plants

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Attributes Definitions:

**ANGLE**

Bearing angle from plot center to study plant (declination 16 East)

**COMMENT**

Non-conforming observation at plot
COMMENT_ID
   Comment number by plot by sample date

COMMENT2
   Continuation of non-conforming observation at plot

DBCODE
   FSDB Database Code

DISTANCE
   Distance in meters from plot center to study plant

ENTITY
   Entity number

FLOWERS
   Peak number of flowers

FRUIT
   Peak number of fruit

NEW_LEAVES
   Maximum number of new leaves

OLD_LEAVES
   Maximum number of old leaves

PLOT
   Site code

RPRO_CODE
   Code of observed reproductive stage

RPRO_COM
   Data comment code; applies to RPRO

SAMPLEDATE
   Date of Observation

SPECIES
   Plant species code

TAG
   Plant tag number. Negative tag numbers are temporary tags

VEG_CODE
   Code of observed vegetative stage

VEG_COM
   Data comment code, applies to VEG_CODE

YEAR
   Year of Observation

Enumerated Domains:
Enumerated Domain for Attribute: DBCODE
TV075  FSDB Database Code Terrestrial Vegetation 75

Enumerated Domain for Attribute: VEG_CODE

ABAM_01.0  ABAM Dormant - buds firm, brownish; no green visible through scales
ABAM_02.0  ABAM Buds swollen, scales becoming translucent
ABAM_03.0  ABAM Bud Break - needle tips visible at end of open bud
ABAM_03.5  ABAM First leaf expansion - 1st needles on new shoots are expanded
ABAM_04.0  ABAM Expanding needles <75% full size; new shoots elongating, needles expanding
ABAM_05.0  ABAM Needles >75% full size; most needles on new shoot full size and normal orientation
ABAM_05.5  ABAM Needles medium green, noticeably darker than when first expand
ABAM_06.0  ABAM Needles full size and dark green, difficult to distinguish from old needles from distance
ABAM_07.0  ABAM Buds set at branch tips
ABAM_08.0  ABAM Old needle yellowing/drop
ABAM_09.0  ABAM Old needle drop complete
ABPR_01.0  ABPR Dormant - buds firm, brownish; no green visible through scales
ABPR_02.0  ABPR Buds swollen, scales becoming translucent
ABPR_03.0  ABPR Bud Break - needle tips visible at end of open bud
ABPR_03.5  ABPR First leaf expansion - 1st needles on new shoots are expanded
ABPR_04.0  ABPR Expanding needles <75% full size; new shoots elongating, needles expanding
ABPR_05.0  ABPR Needles >75% full size; most needles on new shoot full size and normal orientation
ABPR_05.5  ABPR Needles medium green-blue, noticeably darker than when first expand
ABPR_06.0  ABPR Needles full size and dark green-blue, difficult to distinguish from old needles from distance
ABPR_07.0  ABPR Buds set at branch tips
ABPR_08.0  ABPR Old needle yellowing/drop
ABPR_09.0  ABPR Old needle drop complete
ACCI_01.0  ACCI Dormant - buds are hard with no separation of scales; usually red or mottled green and red
ACCI_02.0  ACCI Buds swollen - visible separation of bud scales, initially a green/white line appears at separation
ACCI_03.0  ACCI Bud Break; emerging green tip visible at end of separated bud scales
ACCI_04.0  ACCI Emerging leaves; folded leaves are inside a green sheath, which lengthens before opening
ACCI_04.5  ACCI Leaves emerge from green sheath; still folded
ACCI_05.0  ACCI Unfolding leaves < 75% size; leaves are tent-like, but have clearly begun unfolding and expanding
ACCI_06.0  ACCI Leaves >75% size; mature leaves range in size, but are almost flat when fully expanded
ACCI_07.0  ACCI Stem elongation; extension of new green branch
ACCI_08.0  ACCI First leaves turning color - yellow or red depending on whether in full sun
ACCI Majority of leaves have turned color; leaves dropping
ACCI majority of leaves have dropped
ACCI Leaf drop complete
ACMA Dormant - buds are hard with no separation of scales; usually red or mottled green and red
ACMA Buds swollen / elongating
ACMA Bud Break leaf tips visible past tip of bud
ACMA Emerging leaves, folded
ACMA Unfolding leaves < 75% size; leaves are tent-like, but have clearly begun unfolding and expanding
ACMA Leaves >75% size; mature leaves range in size, but are almost flat when fully expanded
ACMA Leaves dark green
ACMA First leaves turning color - yellow or red depending on whether in full sun
ACMA Majority of leaves have turned color; leaves dropping
ACMA majority of leaves have dropped
ACMA Leaf drop complete
CHUM Dormant- buds are compressed with no separation of scales
CHUM Buds swollen/elongating
CHUM Bud Break: leaf tips visible at tip of elongating bud
CHUM Emerging leaves; leaves outside bud, folded
CHUM Unfolded leaves < 75% size, compared to old leaves
CHUM Leaves >75% size, compared to old leaves
COCA Basal bud dormant, old leaves only
COCA Basal bud swell/expansion
COCA Basal bud break
COCA Emerging leaves, folded
COCA Leaves unfolding/expanding, <75% full size of old leaves on same plant
COCA Leaves >75% full size compared to previous years’ leaves present on plant
COLA No new leaves visible above ground, old leaves typically present
COLA New leaf shoot visible, begins as reddish stem with leaf tightly folded
COLA new leaf blades visible above ground
COLA Leaves unfolding, <75% full size of old leaves on same plant
COLA Leaves >75% full size compared to previous years’ leaves present on plant
CONU Dormant - buds are compressed with no separation of scales
CONU Buds swollen, separating
CONU Bud Break - leaf tips visible at tip of elongating bud
CONU_04.0  CONU4 Emerging leaves outside bud, folded
CONU_05.0  CONU4 Unfolding leaves <75% of full size, many oriented parallel or at angle to branch axis
CONU_06.0  CONU4 Leaves >75%, generally oriented perpendicular to branches
CONU_07.0  CONU4 Leaves dark green
CONU_08.0  CONU4 Leaves beginning to turn color to yellow-orange or red
CONU_09.0  CONU4 Majority of leaves have turned color; leaves dropping
CONU_10.0  CONU4 Majority of leaves have fallen
CONU_11.0  CONU4 Leaf drop complete
LIBO_01.0  LIBO3 Buds dormant, no obvious swelling
LIBO_02.0  LIBO3 Bud swell/elongation
LIBO_03.0  LIBO3 Bud break - leaf tip visible at end of scales
LIBO_04.0  LIBO3 Emerging leaves, folded tight against stem; leaf shape not discernable
LIBO_04.1  LIBO3 Emerging leaves, flat against stem
LIBO_04.2  LIBO3 1st (bottom) pair of leaves unfolded, oriented parallel to stem
LIBO_04.3  LIBO3 1st pair of leaves perpendicular to stem; 2nd pair parallel
LIBO_04.4  LIBO3 2nd pair of leaves perpendicular to stem
LIBO_06.0  LIBO3 1st and 2nd pairs of leaves full sized compared to old leaves
PSME_01.0  PSME Dormant - buds are small and brown/tan with no swelling; no green tint visible through scales
PSME_02.0  PSME Buds swollen - some expansion in width and extension in length; tip of bud becomes light brown or yellow
PSME_03.0  PSME Bud Break - needle tips visible at end of open bud
PSME_03.5  PSME First leaf expansion - 1st needles on new shoots are expanded
PSME_04.0  PSME Expanding needles <75% full size; new shoots elongating, needles expanding
PSME_05.0  PSME Needles >75% full size; most needles on new shoot full size and normal orientation; color still lighter green than old leaves
PSME_05.5  PSME Needles medium green, noticeably darker than when first fully expanded
PSME_06.0  PSME Needles full size and dark green, difficult to distinguish from old needles from distance
PSME_07.0  PSME Buds set at branch tips
PSME_08.0  PSME Old needle yellowing/drop
PSME_09.0  PSME Old needle drop complete
RHMA_01.0  RHMA Dormant - buds are compressed with no separation of scale
RHMA_02.0  RHMA Buds swollen/elongating
RHMA_03.0  RHMA Bud break - leaf tips visible at tip of elongating bud
RHMA_04.0  RHMA Emerging leaves outside bud, folded
RHMA_05.0  RHMA Unfolding leaves <75% of size of old leaves
RHMA_06.0  RHMA Leaves >75% size, compared to old leaves
VAME_04.0 VAME Emerging leaves; leaves outside bud, folded
VAME_04.2 VAME First leaf from buds unfolded; others still folded
VAME_04.5 VAME Terminal leaf from buds unfolded
VAME_05.0 VAME Unfolding leaves <75% size; some leaves full size, but others still expanding, somewhat droopy
VAME_06.0 VAME Leaves >75% size; mature leaves range in size, but are almost flat when fully expanded
VAME_07.0 VAME Leaves noticeably darker green; stem elongation
VAME_08.0 VAME First leaves turning color
VAME_09.0 VAME Majority of leaves have turned color; leaves dropping
VAME_10.0 VAME Majority of leaves fallen
VAME_11.0 VAME Leaf drop complete
VAPA_01.0 VAPA Dormant - red buds are compressed with no separation of scales
VAPA_02.0 VAPA Buds swollen - visible separation of bud scales, and obvious swelling
VAPA_03.0 VAPA Bud Break; emerging green tip visible at end of separated bud scales
VAPA_04.0 VAPA Emerging leaves; leaves outside bud, folded
VAPA_04.2 VAPA First leaf from buds unfolded; others still folded
VAPA_04.5 VAPA Terminal leaves from buds unfolded
VAPA_05.0 VAPA Unfolding leaves <75% size; some leaves full size, but others still expanding, somewhat droopy
VAPA_06.0 VAPA Leaves >75% size; mature leaves range in size, but are almost flat when fully expanded
VAPA_07.0 VAPA Leaves noticeably darker green; stem elongation
VAPA_08.0 VAPA First leaves turning color
VAPA_09.0 VAPA Majority of leaves have turned color; leaves dropping
VAPA_10.0 VAPA Majority of leaves fallen
VAPA_11.0 VAPA Leaf drop complete
VISE_01.0 VISE3 No new leaves visible above ground, old leaves typically present
VISE_04.0 VISE3 New leaf shoot visible aboveground, leaf rolled tightly
VISE_05.0 VISE3 Leaves unrolling/expanding, <75% full size
VISE_06.0 VISE3 Leaves >75% full size compared to previous years’ leaves present on plant
NA No value assigned
SYRE_03.0 SYRE Bud break - basal buds have broken; very rarely visible in this species without damaging plant
TROV_07.0 TROV2 Leaves full size and dark green; no sign of end of season color change (This is rarely used since we don't generally track into late summer)
ABAM_02.1 ABAM Buds heavily swollen, scales translucent green needles visible within scales, budbreak imminent
ABPR_02.1 ABPR Buds heavily swollen, scales translucent green needles visible within scales, budbreak imminent
PSME_02.1 PSME Buds heavily swollen, scales translucent very light brown/yellow, green needles visible within scales, budbreak imminent
TSHE_02.1 TSHE Buds heavily swollen, scales translucent green needles visible within
scales, budbreak imminent

Enumerated Domain for Attribute: RPRO_CODE
ABAM_01.0 ABAM Reproductive cones not swollen/visible
ABAM_02.0 ABAM Reproductive cones visible, swollen
ABAM_03.0 ABAM Pollen cones open
ABAM_04.0 ABAM Full pollen release
ABAM_05.0 ABAM Pollen release over, cones wilted or dried
ABAM_06.0 ABAM Immature seed cones visible
ABAM_07.0 ABAM Mature seed cones visible
ABAM_08.0 ABAM No cones visible
ABAM_09.0 ABAM Dispersing seed
ABAM_10.0 ABAM Fruiting over - may have residual old cones seed dispersed
ABAM_11.0 ABAM Cones aborted
ABPR_01.0 ABPR Reproductive cones not swollen/visible
ABPR_02.0 ABPR Reproductive cones visible, swollen
ABPR_03.0 ABPR Pollen cones open
ABPR_04.0 ABPR Full pollen release
ABPR_05.0 ABPR Pollen release over, cones wilted or dried
ABPR_06.0 ABPR Immature seed cones visible
ABPR_07.0 ABPR Mature seed cones visible
ABPR_08.0 ABPR No cones visible
ABPR_09.0 ABPR Dispersing seed
ABPR_10.0 ABPR Fruiting over - may have residual old cones seed dispersed
ABPR_11.0 ABPR Cones aborted
ACCI_01.0 ACCI No Flower buds visible
ACCI_02.0 ACCI Flower buds visible, closed
ACCI_03.0 ACCI Flowers open
ACCI_04.0 ACCI Peak flowering, majority of flower buds at stage 3
ACCI_05.0 ACCI Past Peak; majority of flowers have passed stage 3, wilted or petals have dropped
ACCI_06.0 ACCI Flowering over
ACCI_07.0 ACCI Immature (green) fruit visible
ACCI_08.0 ACCI Majority of fruits visible
ACCI_09.0 ACCI Mature Fruits visible - red or reddish brown
ACCI_09.5 ACCI Mature fruits have begun dispersing
ACCI_10.0  ACCI Fruiting over
ACCI_11.0  ACCI Flower or fruit aborted
ACMA_01.0  ACMA3 Dormant - noticeably larger buds at branch tips are hard with no separation of scales; will have flowers and leaves
ACMA_02.0  ACMA3 Flower buds (larger buds near branch tips have flrs & lvs) swollen
ACMA_02.1  ACMA3 Terminal buds open, flowers out, petals closed
ACMA_03.0  ACMA3 Flowers open
ACMA_04.0  ACMA3 Peak flowering, majority of flowers open
ACMA_05.0  ACMA3 Majority of flowers past peak;
ACMA_06.0  ACMA3 Flowering over
ACMA_07.0  ACMA3 Immature fruit visible - green samara developing
ACMA_08.0  ACMA3 Majority in stage 7 or aborted
ACMA_09.0  ACMA3 Mature fruit - brown dried samara
ACMA_10.0  ACMA3 Fruiting over - all fruits dispersed
ACMA_11.0  ACMA3 All Flowers or fruits aborted
CHUM_01.0  CHUM No flowers buds visible
CHUM_02.0  CHUM Flower buds visible, closed
CHUM_03.0  CHUM Some flowers open
CHUM_04.0  CHUM Peak Flowering - majority of flowers open
CHUM_05.0  CHUM Past Peak - majority of flowers have wilted or lost petals
CHUM_06.0  CHUM Flowering over
CHUM_07.0  CHUM Immature fruit visible - noticeably swollen green to red capsule
CHUM_08.0  CHUM Majority in stage 7 or aborted
CHUM_09.0  CHUM Mature fruit - brown capsule open and seed exposed
CHUM_10.0  CHUM Fruiting over - all capsules open, seed dispersed
CHUM_11.0  CHUM All flowers or fruits aborted
COCA_01.0  COCA13 Flower buds not present or visible above ground
COCA_02.0  COCA13 Floral bracts visible but closed and green
COCA_03.0  COCA13 Floral bracts open, green; flowers closed
COCA_03.1  COCA13 Floral bracts white, elongated; some flowers open
COCA_04.0  COCA13 Majority of flowers open
COCA_05.0  COCA13 Floral bract turning brown at edges; majority of flowers past peak
COCA_06.0  COCA13 Flowering over
COCA_07.0  COCA13 Immature fruit developing
COCA_08.0  COCA13 Majority have reached stage 7 or aborted
COCA_09.0  COCA13 Mature fruit - bright red
COCA_10.0  COCA13 Fruiting over
COCA_11.0  COCA13 Flowers or fruits aborted
COLA_01.0  COLA3 Flowers buds not visible above ground
COLA_02.0  COLA3 Flower buds visible, closed
COLA_03.0  COLA3 Flowers partly to mostly open
COLA_04.0  COLA3 Flowers fully open, stamens with pollen
COLA_05.0  COLA3 Petals, stamens wilting
COLA_06.0  COLA3 Petals have dropped
COLA_07.0  COLA3 Immature fruit developing, ovaries expanding
COLA_09.0  COLA3 Mature fruits full size, tan or light brown papery capsule
COLA_10.0  COLA3 All capsule tips open seeds dispersed
COLA_11.0  COLA3 Flower or Fruit aborted
CONU_01.0  CONU4 Flower buds absent or present & dormant; floral bracts green, haven’t begun elongating
CONU_02.0  CONU4 Floral bracts elongating, green; flowers closed
CONU_03.0  CONU4 Floral bracts elongating turning to white, flowers closed
CONU_03.1  CONU4 floral bract elongated and white, some flowers open
CONU_04.0  CONU4 Peak flowering, majority of flowers open
CONU_05.0  CONU4 Floral bract turning brown at edges; many flowers past peak
CONU_06.0  CONU4 Flowering over
CONU_07.0  CONU4 Immature fruit - noticeably swollen but green
CONU_08.0  CONU4 Majority in stage 7 or aborted
CONU_09.0  CONU4 Ripe fruits - bright red
CONU_10.0  CONU4 Fruiting over - all dropped or removed
CONU_11.0  CONU4 All flowers or fruits aborted
LIBO_01.0  LIBO3 Flower buds not present
LIBO_02.0  LIBO3 Flower buds present, closed and green
LIBO_02.1  LIBO3 Petals visible, closed
LIBO_03.0  LIBO3 Some flowers open
LIBO_04.0  LIBO3 Majority of flowers open
LIBO_05.0  LIBO3 Majority of flowers past peak - petals wilted or dropped
LIBO_06.0  LIBO3 Flowering over
LIBO_07.0  LIBO3 Immature green fruit developing
LIBO_08.0  LIBO3 Majority of have reached stage 7 or aborted
RUUR_08.0 RUUR Majority in stage 7 or aborted
RUUR_09.0 RUUR Mature fruits - purple black
RUUR_10.0 RUUR Fruiting over - all dropped or removed
RUUR_11.0 RUUR All flowers or fruits aborted
SYRE_01.0 SYRE No flower buds or stems visible above ground
SYRE_02.0 SYRE Flowers stems and closed buds visible above ground; no purple visible
SYRE_02.1 SYRE Purple petals visible but closed
SYRE_03.0 SYRE Flowers open
SYRE_04.0 SYRE Majority of flowers on majority of stalks are open
SYRE_05.0 SYRE Majority of flowers have shriveled or lost petals; some flowers still at peak
SYRE_06.0 SYRE Flowering over; no active flowers left
SYRE_07.0 SYRE Immature fruit visible; noticeable swelling but green
SYRE_08.0 SYRE Majority of fruits visible, still immature
SYRE_09.0 SYRE Mature fruits; capsule dark tan to brown significantly larger than sepals
SYRE_10.0 SYRE Fruiting over; all capsules have opens
SYRE_11.0 SYRE Flowers or fruits aborted
TROV_01.0 TROV2 No flower bud visible
TROV_02.0 TROV2 Flower bud visible; at veg stage 4.5 if flowering
TROV_03.0 TROV2 Petals partway to mostly open
TROV_04.0 TROV2 Flower fully open, pollen release from stamens
TROV_05.0 TROV2 Petals turning pink
TROV_05.1 TROV2 Petals fully pink/purple
TROV_06.0 TROV2 Flowering over - petals shriveled or fallen off
TROV_07.0 TROV2 Immature fruit visible, noticeable swelling of fruit since end of flowering
TROV_08.0 TROV2 Immature fruit nearly full size - 1.2 - 2.5 cm - but green
TROV_09.0 TROV2 Fruit mature - yellow or yellow green and fleshy
TROV_10.0 TROV2 Fruiting over
TROV_11.0 TROV2 Flower or fruit aborted
TSHE_01.0 TSHE Reproductive cones not swollen/visible
TSHE_02.0 TSHE Reproductive cones visible, swollen
TSHE_03.0 TSHE Pollen cones open
TSHE_04.0 TSHE Full pollen release
TSHE_05.0 TSHE Pollen release over, cones wilted or dried
TSHE_06.0 TSHE Immature seed cones visible
TSHE_07.0  TSHE Mature seed cones visible
TSHE_08.0  TSHE No cones visible
TSHE_09.0  TSHE Dispersing seed
TSHE_10.0  TSHE Fruiting over - may have residual old cones seed dispersed
TSHE_11.0  TSHE Cones aborted
VAME_01.0  VAME No Flower buds visible
VAME_02.0  VAME Flower buds visible, closed
VAME_03.0  VAME Flowers open
VAME_04.0  VAME Peak flowering, majority of flower buds at stage 3
VAME_05.0  VAME Past Peak; majority of flowers have passed stage 3
VAME_06.0  VAME Flowering over
VAME_07.0  VAME Immature fruit visible - noticeable swelling of green fruit
VAME_08.0  VAME Majority of fruits have swollien noticeably
VAME_09.0  VAME Mature fruits - deep purple
VAME_10.0  VAME Fruiting over
VAME_11.0  VAME Flower or fruit aborted
VAPA_01.0  VAPA No Flower buds visible
VAPA_02.0  VAPA Flower buds visible, closed
VAPA_03.0  VAPA Flowers open
VAPA_04.0  VAPA Peak flowering, majority of flower buds at stage 3
VAPA_05.0  VAPA Past Peak; majority of flowers have passed stage 3
VAPA_06.0  VAPA Flowering over
VAPA_07.0  VAPA Immature fruit visible - noticeable swelling of green fruit
VAPA_08.0  VAPA Majority of fruits have swollien noticeably
VAPA_09.0  VAPA Mature fruits - red and round
VAPA_10.0  VAPA Fruiting over
VAPA_11.0  VAPA Flower or fruit aborted
VISE_01.0  VISE3 Flower buds not present or visible above ground
VISE_02.0  VISE3 Flowers closed, yellow petals not visible
VISE_02.1  VISE3 Flowers closed, yellow petals visible
VISE_03.0  VISE3 Flower partly to mostly open
VISE_04.0  VISE3 Majority of flowers fully open
VISE_05.0  VISE3 Flower wilting, or if multiple flowers majority wilting
VISE_06.0  VISE3 Flowering over
VISE_07.0  VISE3 Immature fruit developing
VISE_08.0  VISE3 If multiple flowers, majority reached stage 7
VISE_09.0  VISE3 Mature fruits - mottled purple capsules
VISE_10.0  VISE3 All capsule have opened, seeds dispersed
VISE_11.0  VISE3 Flower or fruit aborted
NA      No value assigned

COLA_08.0  COLA3 Fruits have expanded to full size but still green, capsule tips not open
(In practice there is little difference between 7 and 8 in this species)

Enumerated Domain for Attribute: RPRO_COM
B      Plant buried in snow - observation impossible
D      Dead plant
E      Reproductive tissue entirely or partially eaten by herbivore
EPB    Reproductive tissue entirely or partially eaten by herbivore; plant partially buried in snow
NA      No Comment
NEW    New plant added in mid-season
P      Possible presence of another rpro_code stage
P1     Possible presence of rpro_code stage 1.0
P10    Possible presence of rpro_code stage 10.0
P11    Possible presence of rpro_code stage 11.0
P2     Possible presence of rpro_code stage 2.0
P2.1   Possible presence of rpro_code stage 2.1
P3     Possible presence of rpro_code stage 3.0
P4     Possible presence of rpro_code stage 4.0
P5     Possible presence of rpro_code stage 5.0
P6     Possible presence of rpro_code stage 6.0
P7     Possible presence of rpro_code stage 7.0
P8     Possible presence of rpro_code stage 8.0
P9     Possible presence of rpro_code stage 9.0
PB     Plant is partially buried in snow
PE     Reproductive tissue partially eaten by herbivore
T10    Trace of rpro_code stage 10.0
T11    Trace of rpro_code stage 11.0
T2     Trace of rpro_code stage 2.0
T2.1   Trace of rpro_code stage 2.1
T2.1PE Trace of rpro_code stage 2.1; reproductive tissue partially eaten by herbivore
T2.5 Trace of rpro_code stage 2.5
T2PE Trace of rpro_code stage 2.0; reproductive tissue partially eaten by herbivore
T2T2.1 Trace of rpro_code stage 2.0; trace of rpro_code stage 2.1
T3 Trace of rpro_code stage 3.0
T3.1 Trace of rpro_code stage 3.1
T3.5 Trace of rpro_code stage 3.5
T4 Trace of rpro_code stage 4.0
T5 Trace of rpro_code stage 5.0
T5.1 Trace of rpro_code stage 5.1
T6 Trace of rpro_code stage 6.0
T6PE Trace of rpro_code stage 6.0; reproductive tissue partially eaten by herbivore
T7 Trace of rpro_code stage 7.0
T7PE Trace of rpro_code stage 7.0; reproductive tissue partially eaten by herbivore
T8 Trace of rpro_code stage 8.0
T9 Trace of rpro_code stage 9.0
T2T9 Trace of rpro_code stage 2.0; trace of rpro_code stage 9.0
TB Plant buried by treefall; will not be possible to observe in future
W Wilted foliage
Mi Listed RUUR rpro_code stage applies to multiple points on stem
BaMi Listed RUUR rpro_code stage applies to basal bud and multiple points on stem
MiP11 Listed RUUR rpro_code stage applies to multiple points on stem; possible presence of rpro_code stage 11.0
Te Listed RUUR rpro_code stage applies to terminal bud
BaMi3Te Listed RUUR rpro_code stage applies to basal bud and multiple points on stem; terminal bud is rpro_code stage 3.0
Te3Mi Listed RUUR rpro_code stage applies to terminal bud; multiple points on stem are rpro_code stage 3.0
BaMi7Te Listed RUUR rpro_code stage applies to basal bud and multiple points on stem; terminal bud is rpro_code stage 7.0
Ba Listed RUUR rpro_code stage applies to basal bud

Enumerated Domain for Attribute: VEG_COM
Ba Listed RUUR veg_code stage applies to basal bud
Ba1Mi Listed RUUR veg_code stage applies to basal bud; multiple points on stem are veg_code stage 1.0
Ba1Te Listed RUUR veg_code stage applies to basal bud; terminal bud is veg_code stage 1.0
Ba2Mi Listed RUUR veg_code stage applies to basal bud; multiple points on stem are veg_code stage 2.0
Ba2Mi5Te Listed RUUR veg_code stage applies to basal bud; multiple points on stem are veg_code stage 2.0; terminal bud is veg_code stage 5.0
Ba2MiTe Listed RUUR veg_code stage applies to basal bud; multiple points on stem and terminal bud are veg_code stage 2.0
Ba2Te Listed RUUR veg_code stage applies to basal bud; terminal bud is veg_code stage 2.0
Ba2TeR Listed RUUR veg_code stage applies to basal bud; terminal bud is veg_code stage 2.0; points on stem are rooted
Ba3Mi Listed RUUR veg_code stage applies to basal bud; multiple points on stem are veg_code stage 3.0
Ba3MiTe Listed RUUR veg_code stage applies to basal bud; multiple points on stem and terminal bud are veg_code stage 3.0
Ba3Te Listed RUUR veg_code stage applies to basal bud; terminal bud is veg_code stage 3.0
Ba4Mi Listed RUUR veg_code stage applies to basal bud; multiple points on stem are veg_code stage 4.0
Ba4MiTe Listed RUUR veg_code stage applies to basal bud; multiple points on stem and terminal bud are veg_code stage 4.0
Ba4Te Listed RUUR veg_code stage applies to basal bud; terminal bud is veg_code stage 4.0
Ba5Mi Listed RUUR veg_code stage applies to basal bud; multiple points on stem are veg_code stage 5.0
Ba5Mi3Te Listed RUUR veg_code stage applies to basal bud; multiple points on stem are veg_code stage 5.0; terminal bud is veg_code stage 3.0
Ba5Mi4Te Listed RUUR veg_code stage applies to basal bud; multiple points on stem are veg_code stage 5.0; terminal bud is veg_code stage 4.0
Ba5Mi5Te Listed RUUR veg_code stage applies to basal bud; multiple points on stem are veg_code stage 5.0; terminal bud is veg_code stage 5.0
Ba5MiTe Listed RUUR veg_code stage applies to basal bud; multiple points on stem and terminal bud are veg_code stage 5.0
Ba5MiTeR Listed RUUR veg_code stage applies to basal bud; multiple points on stem and terminal bud are veg_code stage 5.0; points on stem are rooted
Ba5Te Listed RUUR veg_code stage applies to basal bud; terminal bud is veg_code stage 5.0
Ba6Mi Listed RUUR veg_code stage applies to basal bud; multiple points on stem are veg_code stage 6.0
Ba6Te Listed RUUR veg_code stage applies to basal bud; terminal bud is veg_code stage 6.0
BaMi Listed RUUR veg_code stage applies to basal bud and multiple points on stem
BaMi3Te Listed RUUR veg_code stage applies to basal bud and multiple points on stem; terminal bud is veg_code stage 3.0
BaMi4Te Listed RUUR veg_code stage applies to basal bud and multiple points on stem; terminal bud is veg_code stage 4.0
BaMi5Te Listed RUUR veg_code stage applies to basal bud and multiple points on stem; terminal bud is veg_code stage 5.0
BaMiE Listed RUUR veg_code stage applies to basal bud and multiple points on stem; leaf tissue eaten by herbivore
BaMiPE Listed RUUR veg_code stage applies to basal bud and multiple points on stem; leaf tissue partially eaten by herbivore
BaMiTe Listed RUUR veg_code stage applies to basal bud and multiple points on stem and terminal bud
BaPB Listed RUUR veg_code stage applies to basal bud; plant is partially buried in snow
BaPE Listed RUUR veg_code stage applies to basal bud; leaf tissue partially eaten by herbivore
BaTe Listed RUUR veg_code stage applies to basal bud and terminal bud
BaTe5Mi Listed RUUR veg_code stage applies to basal bud and terminal bud; multiple points on stem are veg_code stage 5.0
BaTe6Mi Listed RUUR veg_code stage applies to basal bud and terminal bud; multiple points on stem are veg_code stage 6.0
BaTeE Listed RUUR veg_code stage applies to basal bud and terminal bud; leaf tissue eaten by herbivore
BaTeR Listed RUUR veg_code stage applies to basal bud and terminal bud; points on stem are rooted
Mi Listed RUUR veg_code stage applies to multiple points on stem
Mi2Ba Listed RUUR veg_code stage applies to multiple points on stem; basal bud is veg_code stage 2.0
Mi3Ba Listed RUUR veg_code stage applies to multiple points on stem; basal bud is veg_code stage 3.0
Mi3BaTe Listed RUUR veg_code stage applies to multiple points on stem; basal bud and
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mi3Te</td>
<td>Listed RUUR veg_code stage applies to multiple points on stem; terminal bud is veg_code stage 3.0</td>
</tr>
<tr>
<td>Mi4Ba</td>
<td>Listed RUUR veg_code stage applies to multiple points on stem; basal bud is veg_code stage 4.0</td>
</tr>
<tr>
<td>Mi5Ba</td>
<td>Listed RUUR veg_code stage applies to multiple points on stem; basal bud is veg_code stage 5.0</td>
</tr>
<tr>
<td>Mi6Ba</td>
<td>Listed RUUR veg_code stage applies to multiple points on stem; basal bud is veg_code stage 6.0</td>
</tr>
<tr>
<td>Mi5Te</td>
<td>Listed RUUR veg_code stage applies to multiple points on stem; terminal bud is veg_code stage 5.0</td>
</tr>
<tr>
<td>MiE</td>
<td>Listed RUUR veg_code stage applies to multiple points on stem; leaf tissue eaten by herbivore</td>
</tr>
<tr>
<td>MiTe</td>
<td>Listed RUUR veg_code stage applies to multiple points on stem and terminal bud</td>
</tr>
<tr>
<td>MiTe3Ba</td>
<td>Listed RUUR veg_code stage applies to multiple points on stem and terminal bud; basal bud is veg_code stage 3.0</td>
</tr>
<tr>
<td>Te</td>
<td>Listed RUUR veg_code stage applies to terminal bud</td>
</tr>
<tr>
<td>Te2Ba</td>
<td>Listed RUUR veg_code stage applies to terminal bud; basal bud is veg_code stage 2.0</td>
</tr>
<tr>
<td>Te3Ba</td>
<td>Listed RUUR veg_code stage applies to terminal bud; basal bud is veg_code stage 3.0</td>
</tr>
<tr>
<td>Te3Mi</td>
<td>Listed RUUR veg_code stage applies to terminal bud; multiple points on stem are veg_code stage 3.0</td>
</tr>
<tr>
<td>Te4Ba</td>
<td>Listed RUUR veg_code stage applies to terminal bud; basal bud is veg_code stage 4.0</td>
</tr>
<tr>
<td>Te4Mi</td>
<td>Listed RUUR veg_code stage applies to terminal bud; multiple points on stem are veg_code stage 4.0</td>
</tr>
<tr>
<td>Te5Ba</td>
<td>Listed RUUR veg_code stage applies to terminal bud; basal bud is veg_code stage 5.0</td>
</tr>
<tr>
<td>Te5BaMi</td>
<td>Listed RUUR veg_code stage applies to terminal bud; basal bud and multiple points on stem are veg_code stage 5.0</td>
</tr>
<tr>
<td>Te5BaPE</td>
<td>Listed RUUR veg_code stage applies to terminal bud; basal bud is veg_code stage 5.0; leaf tissue partially eaten by herbivore</td>
</tr>
<tr>
<td>Te6Ba</td>
<td>Listed RUUR veg_code stage applies to terminal bud; basal bud is veg_code stage 6.0</td>
</tr>
<tr>
<td>Te6BaMi</td>
<td>Listed RUUR veg_code stage applies to terminal bud; basal bud and multiple points on stem are veg_code stage 6.0</td>
</tr>
<tr>
<td>P4.4PE</td>
<td>Possible presence of veg_code stage 4.4; leaf tissue partially eaten by herbivore</td>
</tr>
<tr>
<td>B</td>
<td>Plant buried in snow - observation impossible</td>
</tr>
<tr>
<td>D</td>
<td>Dead plant</td>
</tr>
<tr>
<td>E</td>
<td>Leaf tissue eaten by herbivore</td>
</tr>
<tr>
<td>EPB</td>
<td>Leaf tissue eaten by herbivore; plant partially buried in snow</td>
</tr>
<tr>
<td>EW</td>
<td>Leaf tissue eaten by herbivore; wilted foliage</td>
</tr>
<tr>
<td>NA</td>
<td>No comment</td>
</tr>
<tr>
<td>NEW</td>
<td>New plant added in mid-season</td>
</tr>
<tr>
<td>P</td>
<td>Possible presence of another veg_code stage</td>
</tr>
<tr>
<td>P1</td>
<td>Possible presence of veg_code stage 1.0</td>
</tr>
<tr>
<td>P2</td>
<td>Possible presence of veg_code stage 2.0</td>
</tr>
<tr>
<td>P3</td>
<td>Possible presence of veg_code stage 3.0</td>
</tr>
<tr>
<td>P3.5</td>
<td>Possible presence of veg_code stage 3.5</td>
</tr>
</tbody>
</table>
P4 Possible presence of veg_code stage 4.0
P4.5 Possible presence of veg_code stage 4.5
P5 Possible presence of veg_code stage 5.0
P6 Possible presence of veg_code stage 6.0
P7 Possible presence of veg_code stage 7.0
P8 Possible presence of veg_code stage 8.0
PB Plant is partially buried in snow
PE Leaf tissue partially eaten by herbivore
T Trace of another veg_code stage
T1 Trace of veg_code stage 01.0
T10 Trace of veg_code stage 10.0
T11 Trace of veg_code stage 11.0
T2 Trace of veg_code stage 02.0
T2PB Trace of veg_code stage 02.0; plant partially buried in snow
T3 Trace of veg_code stage 03.0
T3.5 Trace of veg_code stage 03.5
T3PB Trace of veg_code stage 03.0; plant partially buried in snow
T3PE Trace of veg_code stage 03.0; leaf tissue partially eaten by herbivore
T4 Trace of veg_code stage 04.0
T4.1 Trace of veg_code stage 04.1
T4.2 Trace of veg_code stage 04.2
T4.2W Trace of veg_code stage 04.2; wilted foliage
T4.3 Trace of veg_code stage 04.3
T4.4 Trace of veg_code stage 04.4
T4.5 Trace of veg_code stage 04.5
T4.5PE Trace of veg_code stage 04.5; leaf tissue partially eaten by herbivore
T4PE Trace of veg_code stage 04.0; leaf tissue partially eaten by herbivore
T4W Trace of veg_code stage 04.0; wilted foliage
T5 Trace of veg_code stage 05.0
T5.5 Trace of veg_code stage 05.5
T5PB Trace of veg_code stage 05.0; plant partially buried in snow
T6 Trace of veg_code stage 06.0
T6PB Trace of veg_code stage 06.0; plant partially buried in snow
T6PE Trace of veg_code stage 06.0; leaf tissue partially eaten by herbivore
T6W    Trace of veg_code stage 06.0; wilted foliage
T7     Trace of veg_code stage 07.0
T8     Trace of veg_code stage 08.0
T9     Trace of veg_code stage 09.0
T9W    Trace of veg_code stage 09.0; wilted foliage
TB     Plant buried by treefall; will not be possible to observe in future
W      Wilted foliage
P5.5   Possible presence of veg_code stage 5.5
T2.1   Trace of veg_code stage 02.1

Enumerated Domain for Attribute: DBCODE
TV075  FSDB Database Code Terrestrial Vegetation 75

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