Database Code: TD023

Title: LTER Intersite Fine Litter Decomposition Experiment (LIDET), 1990 to 2002

Abstract:

The primary objective of this study is to examine the control that substrate quality and climate have on patterns of long-term decomposition and nitrogen accumulation in above- and below-ground fine litter. Of particular interest will be to examine the degree these two factors control the formation of stable organic matter and nitrogen after extensive decay.

Keywords: Carbon; Decay rates; Decomposition; Fine roots; Leaf litter; Litterfall; Nitrogen; Phosphorus; Roots; Wood; Inorganic nutrients; Organic matter; Decay rates; Decomposition; Litterfall; Inorganic nutrients; Wood; Carbon; Nitrogen; Phosphorus; Organic matter; Roots; Fine roots; Leaf litter;

Date data commenced: 1990-01-31

Date data terminated: 2007-06-12

Principal Investigator: Mark E. Harmon

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2. NIR Nitrogen, Lignin, and Cellulose Contents
3. Wet Chemical Data of Litter Subsamples
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12. ANGE Root Initial Ash Correction
13. Nitrogen concentration data

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5. Descriptions of the Soils for the Study Sites

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6. Site Descriptions, Elevations, Climate, and Vegetation

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10. Ash Content

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11. Nutrient Concentrations of Leaves, Roots, and Dowels

Attribute List:
12. ANGE Root Initial Ash Correction

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<td>char(1)</td>
<td>enum</td>
</tr>
<tr>
<td>NIR_NUM</td>
<td>N N</td>
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<td>range</td>
</tr>
<tr>
<td>STARTDATE</td>
<td>N Y</td>
<td>datetime</td>
<td>YYYY-MM-DD</td>
</tr>
<tr>
<td>N</td>
<td>N Y</td>
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<td>range</td>
</tr>
<tr>
<td>AL</td>
<td>N Y</td>
<td>numeric(7,1)</td>
<td>range</td>
</tr>
<tr>
<td>B</td>
<td>N Y</td>
<td>numeric(6,1)</td>
<td>range</td>
</tr>
<tr>
<td>CA</td>
<td>N Y</td>
<td>numeric(8,1)</td>
<td>range</td>
</tr>
<tr>
<td>CU</td>
<td>N Y</td>
<td>numeric(6,1)</td>
<td>range</td>
</tr>
<tr>
<td>FE</td>
<td>N Y</td>
<td>numeric(7,1)</td>
<td>range</td>
</tr>
<tr>
<td>K</td>
<td>N Y</td>
<td>numeric(8,0)</td>
<td>range</td>
</tr>
<tr>
<td>MG</td>
<td>N Y</td>
<td>numeric(7,1)</td>
<td>range</td>
</tr>
<tr>
<td>MN</td>
<td>N Y</td>
<td>numeric(6,1)</td>
<td>range</td>
</tr>
<tr>
<td>P</td>
<td>N Y</td>
<td>numeric(6,1)</td>
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<tr>
<td>S</td>
<td>N Y</td>
<td>numeric(6,0)</td>
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<tr>
<td>ZN</td>
<td>N Y</td>
<td>numeric(8,1)</td>
<td>range</td>
</tr>
<tr>
<td>NA</td>
<td>N Y</td>
<td>numeric(8,1)</td>
<td>range</td>
</tr>
<tr>
<td>LAB</td>
<td>N N</td>
<td>char(3)</td>
<td>enum</td>
</tr>
<tr>
<td>IODW</td>
<td>N N</td>
<td>numeric(7,3)</td>
<td>range</td>
</tr>
</tbody>
</table>

**Attribute Descriptions:**
- **STCODE**: N N char(5) enum
- **FORMAT**: N N numeric(2,0) range 11.0000 11.0000 number
- **SITE**: N N char(9) place
- **REP**: N N char(1) enum
- **DURATION**: N N numeric(2,0) range 0.0000 20.0000 years
- **SPECIES**: N N char(6) taxa
- **TYPE**: N N char(1) enum
- **NIR_NUM**: N N numeric(5,0) range 0.0000 99999.0000 number
- **STARTDATE**: N Y datetime range 8/10/1992 12:00:00 AM 6/17/2007 12:00:00 AM YYYY-MM-DD
- **N**: N Y numeric(6,2) range 0.1000 2.2600 %
- **AL**: N Y numeric(7,1) range 0.0000 31420.0000 ppm
- **B**: N Y numeric(6,1) range 0.3000 372.2000 ppm
- **CA**: N Y numeric(8,1) range 44.0000 167092.0000 ppm
- **CU**: N Y numeric(6,1) range 0.1000 428.0000 ppm
- **FE**: N Y numeric(7,1) range 14.5000 11810.0000 ppm
- **K**: N Y numeric(8,0) range 22.0000 14233.0000 ppm
- **MG**: N Y numeric(7,1) range 3.3000 9400.0000 ppm
- **MN**: N Y numeric(6,1) range 0.5000 2343.2200 ppm
- **P**: N Y numeric(6,1) range 0.0000 1600.0000 ppm
- **S**: N Y numeric(6,0) range 14.0000 20000.0000 ppm
- **ZN**: N Y numeric(8,1) range 0.4000 439.0000 ppm
- **NA**: N Y numeric(8,1) range 8.0000 43010.0000 ppm
- **LAB**: N N char(3) enum

**IODW**: N N numeric(7,3) range 3.8100 9.3320 g
### Attribute List:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Size</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOW</td>
<td>numeric(7,3)</td>
<td>range</td>
<td>0.0500 - 7.9800</td>
</tr>
<tr>
<td>IASH</td>
<td>numeric(7,3)</td>
<td>range</td>
<td>0.2000 - 100.0000</td>
</tr>
<tr>
<td>FASH</td>
<td>numeric(7,3)</td>
<td>range</td>
<td>0.6300 - 100.0000</td>
</tr>
<tr>
<td>I_ASH_MASS</td>
<td>numeric(7,3)</td>
<td>range</td>
<td>0.0130 - 6.4370</td>
</tr>
<tr>
<td>I_RT_MASS</td>
<td>numeric(7,3)</td>
<td>range</td>
<td>0.1900 - 8.1150</td>
</tr>
<tr>
<td>NEW_IASH</td>
<td>numeric(7,3)</td>
<td>range</td>
<td>0.0000 - 100.0000</td>
</tr>
</tbody>
</table>

### Attributes Definitions:

**ACIDSOL**

Acid soluble extractives

**AET**

The site mean actual evapotranspiration, this is for the general area and not the specific location of the litter bags.
AF_F_NITRO
Percent final ashfree nitrogen content of individual sample after incubation

AF_I_NITRO
Percent initial ashfree nitrogen content of individual sample

AL
Aluminum concentration (icap inductively coupled argon spectrophotometry)

ANALY_DATE
Date the analysis was performed

ASCARB
Percent acid soluble carbohydrates as measured by ryan et al. method.

ASH
Percent of sample that was composed of ash

ASHFREE
Proportion of sample that was ash free

B
Boron concentration (icap inductively coupled argon spectrophotometry)

BATCH
Batch number that represents whether a sample run was repeated or not.

BIOME
The biome represented by the site, based on Whittaker, 1975

CA
Calcium concentration (icap inductively coupled argon spectrophotometry)

CARBON
Carbon content

COMMENT
Coded comments

CRASH
Weight of crucible and ash. Ashing was at 400 c for 4 hours

CRSWT
Weight of the crucible and sample

CRWT
Crucible weight prior to adding sample

CU
Copper concentration (icap inductively coupled argon spectrophotometry)

DATEIN
The date the litter bag was harvested from the field.

DATEOUT
The date the bags were placed out in the field.

**DUP**
Indicates if a sample measurement was repeated to check measurements.

**DURATION**
The length of time (number of years) the litter will remain on site before it is harvested.

**ELEV**
The site elevation

**ENDYR**
The year the record ended

**EST**
Indicates if a pooled sample was used to estimate the ashfree content. all weights are blank for this condition.

**F_N_CONT**
Final nitrogen content \( ((AF\_F\_NITRO/100)\*FAFW) \)

**F_NITRO**
Percent final nitrogen content of individual sample after incubation

**FAFW**
Final ash free weight \((fow*fash)\)

**FASH**
Percent final ash content of individual sample after incubation

**FE**
Iron concentration (icap inductively coupled argon spectrophotometry)

**FILL_DATE**
Date the bags were filled with litter

**FLAG**
Flag for outliers

**FORMAT**
Entity number

**FOW**
The final oven dry weight (55 deg C) of the litter bag contents.

**FWW**
The final wet weight of the litter bag contents.

**HLZ**
The Holdridge life zone represented by the site.

**I_ASH_MASS**
Initial ash mass (see documentation for description of why this is needed) \((fow*(fash/100))\) assumption: final ash mass = initial ash mass

**I_N_CONT**
Initial nitrogen content \( ((AF\_I\_NITRO/100)\*IAFW) \)
I_NITRO
Percent initial nitrogen content of individual sample

I_RT_MASS
Initial root mass (iodw-initial ash mass)

IADW
The initial air dry weight of the contents of the litterbag, or dowel

IADW1
Wooden dowel variable, initial air dry weight for above or below part of dowel (applies only to type A or B)

IAFW
Initial ash free weight (iodw*iash)

IASH
Percent initial ash content

ID_NR
The database record number, it serves as an identical relation variable when updating the database.

IODW
The initial oven dry weight

IODW1
Wooden dowel variable, initial oven dry weight for above or below part of dowel (applies only to type A or B)

K
Potassium concentration (icap inductively coupled argon spectrophotometry)

KAFW
Decay rate ash free weight basis (fafw/iafw)

KDW
Decay rate dry weight basis iow/fow

LAB
Laboratory name where analysis was performed

LATDEG
The site latitude in degrees. All are north latitudes

LATMIN
The site latitude in minutes

LENGTH
The length of wooden dowels, the sum of above and below length should be 61.0 cm

LIGNIN
Lignin as measured by Ryan et al method.

LOCATION
Site location description

LONGDEG
The site longitude in degrees, all are west longitude.

LONGMIN
The site longitude in minutes

MAXTEMP
Mean monthly maximum temperature

MCF
Moisture correction factor: \( \text{mcf} = \text{dry weight} / \text{wet weight} \)

MEANTEMP
The mean monthly air temperature

MEAS_MONTH
The month value was collected. January=1 ... December=12

MESH
The mesh size of the bag. for leaves this corresponds to the top side of the bag; all the bottoms were 0.1 mm for leaves.

MG
Magnesium concentration (icap inductively coupled argon spectrophotometry)

MINTEMP
Mean minimum temperature for the month

MN
Manganese concentration (icap inductively coupled argon spectrophotometry)

N
Nitrogen concentration (micro Kjeldahl N)

N_CONC
Nitrogen concentration/proportion remaining after incubation \( (F_{N\_CONT} / I_{N\_CONT}) \)

NA
Sodium concentration (icap inductively coupled argon spectrophotometry)

NEW_IASH
New percent initial ash content \( (i_{ash\_mass}/\text{total initial mass}) \)

NIR_ASH
Percent ash as predicted by near infra-red reflectance method

NIR_ASHFRE
Ashfree proportion as predicted by near infra-red reflectance method

NIR_EST
Indicates if prediction is estimated from pooled sample or other rep.

NIR_LAB
Laboratory name where nir analysis was performed

NIR_LIGNIN
Total lignin as measured by near infra-red reflectance method.
NIR_N
Total nitrogen as measured by near infra-red reflectance method.

NIR_NPE
Non-polar extractives as measured by near infra-red reflectance method.

NIR_NUM
Unique sample number

NIR_PAFNN
Percent ashfree nir nitrogen (nitrogen/ashfree proportion)

NIR_TANNIN
Tannin as measured by near infra-red reflectance method

NIR_WSCARB
Water soluable sugars as measured by near infra-red reflectance method

NITROGEN
Total nitrogen as measured by kjeldahl method.

NPE
Non-polar extractives

NUMBER
Accounts for mistakes in recording of tag number

P
Phosphorus concentration (icap inductively coupled argon spectrophotometry)

PAFRM
Percent ash free remaining mass (fafw/iafw)

PET
The site potential evapotranspiration

PRECIP
The site mean annual precipitation, this is for general area not specific location of the litter bags.

PRECIP_TM
The total precipitation for the month

PRM
Percent remaining mass

REP
Replicate code

S
Sulfur concentration (icap inductively coupled argon spectrophotometry)

SAMPLEDATE
Date of sampling

SITE
Site code

SITENAME
Full description name of site

SPECIES
Litter species code

STARTDATE
Date experiment started

STARTYR
The year the record started

STCODE
Database code

STRR
The string and rep that the bag number was initially supposed to go on.

TAG_NUM
The tag number on the litter bag

TANNIN
Tannin measured against tannic acid standard using denis-folin reagent

TEMP
The site mean annual temperature, this is for general area not specific location of the litter bags.

TIMEOUT
Time in years that litter sample incubated in field

TYPE
The substrate of the litter: leaves, roots, wood

TYPE1
The substrate of the litter: leaves, roots, wood

VEG
The dominant species- veg. type where the litterbags were placed.

WHERE_GO
Where the bag actually went instead of the initially planned string

WS
Water soluble extractives

WSCARB
Percent water soluble carbohydrates as measured by ryan et al. method.

ZN
Zinc concentration (icap inductively coupled argon spectrophotometry)

Enumerated Domains:

Enumerated Domain for Attribute: REP
1 Indicates replicate 1
2 Indicates replicate 2
3 Indicates replicate 3
4 Indicates replicate 4
P Indicates pooled sample
I Indicates initial sample of original material
0 Indicates unused extra sample
5 Indicates replicate 5

Enumerated Domain for Attribute: STCODE
TD023 FSDB Database Code TD023

Enumerated Domain for Attribute: TYPE
A Above part of wooden dowels
B Below part of wooden dowels
L Leaves
M Mineral soil
R Fine roots
W Wooden dowels

Enumerated Domain for Attribute: COMMENT
X Bag torn with obvious sample loss
T Bag torn with sample loss unknown
U Tag disconnected; id questionable
F Foreign material in sample (i.e. rocks)
M Sample missing
D Tag disconnected; id good
XF Torn bag with sample loss and foreign material
TF Torn bag sample loss unknown and foreign material
TU Torn bag and tag disconnected
TD Torn bag loss unknown; id good
TFU Torn bag with foreign material tag disconnected; id questionable
TX Torn bag with obvious sample loss
UF Tag disconnected; id questionable plus foreign material
UT Tag disconnected; id questionable and torn bag
UX Tag disconnected; id questionable and torn bag with obvious sample loss
XFU Torn bag with sample loss and foreign material plus tag disconnected
FLA Flagged as outlier
FLA  Flagged outlier
E    Estimated length
TE   Torn mesh sample loss unknown; estimated length
XE   Torn mesh with sample loss; estimated length
SP1  Species was coded as PIEL1
SP2  Species was coded as PIEL2

Enumerated Domain for Attribute: DUP
1    First sample
2    2nd repeated sample
3    3rd repeated sample
4    4th repeated sample

Enumerated Domain for Attribute: LAB
MBL  Marine Biological Laboratory
OSU  Oregon State University
CAL  Central Analytical Lab, OSU Soil & Horticulture dept.
UMD  University of Minnesota, Duluth
UNH  University of New Hampshire
MMI  Micro-macro International, Athens, GA

Enumerated Domain for Attribute: REP
1    Indicates replicate 1
2    Indicates replicate 2
3    Indicates replicate 3
4    Indicates replicate 4
P    Indicates pooled sample
I    Indicates initial sample of original material
0    Indicates unused extra sample
5    Indicates replicate 5

Enumerated Domain for Attribute: STCODE
TD023 FSDB Database Code TD023

Enumerated Domain for Attribute: TYPE
A    Above part of wooden dowels
B    Below part of wooden dowels
L    Leaves
M    Mineral soil
R  Fine roots
W  Wooden dowels

Enumerated Domain for Attribute: BATCH
1  Sample run only once
2  Sample run is second run of the same sample

Enumerated Domain for Attribute: DUP
1  First sample
2  2nd repeated sample
3  3rd repeated sample
4  4th repeated sample

Enumerated Domain for Attribute: LAB
MBL  Marine Biological Laboratory
OSU  Oregon State University
CAL  Central Analytical Lab, OSU Soil & Horticulture dept.
UMD  University of Minnesota, Duluth
UNH  University of New Hampshire
MMI  Micro-macro International, Athens, GA

Enumerated Domain for Attribute: REP
1  Indicates replicate 1
2  Indicates replicate 2
3  Indicates replicate 3
4  Indicates replicate 4
P  Indicates pooled sample
I  Indicates initial sample of original material
0  Indicates unused extra sample
5  Indicates replicate 5

Enumerated Domain for Attribute: STCODE
TD023  FSDB Database Code TD023

Enumerated Domain for Attribute: TYPE1
A  Above part of wooden dowels
B  Below part of wooden dowels
L  Leaves
M  Mineral soil
R  Fine roots
W  Wooden dowels
G  Green Leaves
H  Brown Leaves

Enumerated Domain for Attribute: MEAS_MONTH
01  January
02  February
03  March
04  April
05  May
06  June
07  July
08  August
09  September
10  October
11  November
12  December

Enumerated Domain for Attribute: STCODE
TD023  FSDB Database Code TD023

Enumerated Domain for Attribute: REP
1  Indicates replicate 1
2  Indicates replicate 2
3  Indicates replicate 3
4  Indicates replicate 4
P  Indicates pooled sample
I  Indicates initial sample of original material
0  Indicates unused extra sample
5  Indicates replicate 5

Enumerated Domain for Attribute: STCODE
TD023  FSDB Database Code TD023

Enumerated Domain for Attribute: BIOME
BTF  Boreal-taiga forests, includes subalpine forests
CSDS  Cool semi-desert shrub
TDF  Temperate deciduous forest
TEF  Temperate evergreen forest
TGS  Temperate short grass
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGT</td>
<td>Temperate tall grass</td>
</tr>
<tr>
<td>TRDF</td>
<td>Tropical dry forest</td>
</tr>
<tr>
<td>TREW</td>
<td>Tropical elfinwood-cloud forest</td>
</tr>
<tr>
<td>TRF</td>
<td>Temperate rainforest</td>
</tr>
<tr>
<td>TRRF</td>
<td>Tropical rainforest</td>
</tr>
<tr>
<td>TRSF</td>
<td>Tropical seasonal forest</td>
</tr>
<tr>
<td>TS</td>
<td>Temperate shrubland-chaparral</td>
</tr>
<tr>
<td>TUN</td>
<td>Tundra including arctic and alpine</td>
</tr>
<tr>
<td>TW</td>
<td>Temperate woodland</td>
</tr>
<tr>
<td>WSDS</td>
<td>Warm semidesert shrub</td>
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</tbody>
</table>

Enumerated Domain for Attribute: HLZ

<table>
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<th>Code</th>
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<tr>
<td>AMT</td>
<td>Alpine moist tundra</td>
</tr>
<tr>
<td>AWT</td>
<td>Alpine wet tundra</td>
</tr>
<tr>
<td>BMF</td>
<td>Boreal moist forest</td>
</tr>
<tr>
<td>BRF</td>
<td>Boreal rain forest</td>
</tr>
<tr>
<td>CTDB</td>
<td>Cool temperate desert bush</td>
</tr>
<tr>
<td>CTRF</td>
<td>Cool temperate rain forest</td>
</tr>
<tr>
<td>CTS</td>
<td>Cool temperate steppe</td>
</tr>
<tr>
<td>CTWF</td>
<td>Cool temperate wet forest</td>
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<td>LMWF</td>
<td>Lower montane wet forest</td>
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<td>SAMF</td>
<td>Subalpine moist forest</td>
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<td>SPDT</td>
<td>Subpolar dry tundra</td>
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<tr>
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<td>TMF</td>
<td>Tropical moist forest</td>
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<td>TRF</td>
<td>Tropical rain forest</td>
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<tr>
<td>WTDB</td>
<td>Warm temperate desert brush</td>
</tr>
<tr>
<td>WTDF</td>
<td>Warm temperate dry forest</td>
</tr>
<tr>
<td>WTTW</td>
<td>Warm temperate thorn woodland</td>
</tr>
<tr>
<td>WTWF</td>
<td>Warm temperate wet forest</td>
</tr>
</tbody>
</table>

Enumerated Domain for Attribute: STCODE

TD023 FSDB Database Code TD023

Enumerated Domain for Attribute: TYPE

TD023 FSDB Database Code TD023

Enumerated Domain for Attribute: TYPE
<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>Above part of wooden dowels</td>
</tr>
<tr>
<td>B</td>
<td>Below part of wooden dowels</td>
</tr>
<tr>
<td>L</td>
<td>Leaves</td>
</tr>
<tr>
<td>M</td>
<td>Mineral soil</td>
</tr>
<tr>
<td>R</td>
<td>Fine roots</td>
</tr>
<tr>
<td>W</td>
<td>Wooden dowels</td>
</tr>
</tbody>
</table>

Enumerated Domain for Attribute: COMMENT

<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Bag torn with obvious sample loss</td>
</tr>
<tr>
<td>T</td>
<td>Bag torn with sample loss unknown</td>
</tr>
<tr>
<td>U</td>
<td>Tag disconnected; id questionable</td>
</tr>
<tr>
<td>F</td>
<td>Foreign material in sample (i.e. rocks)</td>
</tr>
<tr>
<td>M</td>
<td>Sample missing</td>
</tr>
<tr>
<td>D</td>
<td>Tag disconnected; id good</td>
</tr>
<tr>
<td>XF</td>
<td>Torn bag with sample loss and foreign material</td>
</tr>
<tr>
<td>TF</td>
<td>Torn bag sample loss unknown and foreign material</td>
</tr>
<tr>
<td>TU</td>
<td>Torn bag and tag disconnected</td>
</tr>
<tr>
<td>TD</td>
<td>Torn bag loss unknown; id good</td>
</tr>
<tr>
<td>TFU</td>
<td>Torn bag with foreign material tag disconnected; id questionable</td>
</tr>
<tr>
<td>TX</td>
<td>Torn bag with obvious sample loss</td>
</tr>
<tr>
<td>UF</td>
<td>Tag disconnected; id questionable plus foreign material</td>
</tr>
<tr>
<td>UT</td>
<td>Tag disconnected; id questionable and torn bag</td>
</tr>
<tr>
<td>UX</td>
<td>Tag disconnected; id questionable and torn bag with obvious sample loss</td>
</tr>
<tr>
<td>XFU</td>
<td>Torn bag with sample loss and foreign material plus tag disconnected</td>
</tr>
<tr>
<td>FLA</td>
<td>Flagged as outlier</td>
</tr>
<tr>
<td>E</td>
<td>Estimated length</td>
</tr>
<tr>
<td>TE</td>
<td>Torn mesh sample loss unknown; estimated length</td>
</tr>
<tr>
<td>XE</td>
<td>Torn mesh with sample loss; estimated length</td>
</tr>
<tr>
<td>SP1</td>
<td>Species was coded as PIEL1</td>
</tr>
<tr>
<td>SP2</td>
<td>Species was coded as PIEL2</td>
</tr>
</tbody>
</table>

Enumerated Domain for Attribute: REP

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Indicates replicate 1</td>
</tr>
<tr>
<td>2</td>
<td>Indicates replicate 2</td>
</tr>
<tr>
<td>3</td>
<td>Indicates replicate 3</td>
</tr>
</tbody>
</table>
4 Indicates replicate 4
P Indicates pooled sample
I Indicates initial sample of original material
0 Indicates unused extra sample
5 Indicates replicate 5

Enumerated Domain for Attribute: STCODE
TD023 FSDB Database Code TD023

Enumerated Domain for Attribute: TYPE
A Above part of wooden dowels
B Below part of wooden dowels
L Leaves
M Mineral soil
R Fine roots
W Wooden dowels

Enumerated Domain for Attribute: TYPE1
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B Below part of wooden dowels
L Leaves
M Mineral soil
R Fine roots
W Wooden dowels
G Green Leaves
H Brown Leaves

Enumerated Domain for Attribute: COMMENT
X Bag torn with obvious sample loss
T Bag torn with sample loss unknown
U Tag disconnected; id questionable
F Foreign material in sample (i.e. rocks)
M Sample missing
D Tag disconnected; id good
XF Torn bag with sample loss and foreign material
TF Torn bag sample loss unknown and foreign material
TU Torn bag and tag disconnected
TD Torn bag loss unknown; id good
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFU</td>
<td>Torn bag with foreign material tag disconnected; id questionable</td>
</tr>
<tr>
<td>TX</td>
<td>Torn bag with obvious sample loss</td>
</tr>
<tr>
<td>UF</td>
<td>Tag disconnected; id questionable plus foreign material</td>
</tr>
<tr>
<td>UT</td>
<td>Tag disconnected; id questionable and torn bag</td>
</tr>
<tr>
<td>UX</td>
<td>Tag disconnected; id questionable and torn bag with obvious sample loss</td>
</tr>
<tr>
<td>XFU</td>
<td>Torn bag with sample loss and foreign material plus tag disconnected</td>
</tr>
<tr>
<td>FLA</td>
<td>Flagged as outlier</td>
</tr>
<tr>
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</tr>
<tr>
<td>E</td>
<td>Estimated length</td>
</tr>
<tr>
<td>TE</td>
<td>Torn mesh sample loss unknown; estimated length</td>
</tr>
<tr>
<td>XE</td>
<td>Torn mesh with sample loss; estimated length</td>
</tr>
<tr>
<td>SP1</td>
<td>Species was coded as PIEL1</td>
</tr>
<tr>
<td>SP2</td>
<td>Species was coded as PIEL2</td>
</tr>
</tbody>
</table>

Enumerated Domain for Attribute: FLAG
- X Flagged as outlier

Enumerated Domain for Attribute: REP
- 1 Indicates replicate 1
- 2 Indicates replicate 2
- 3 Indicates replicate 3
- 4 Indicates replicate 4
- P Indicates pooled sample
- I Indicates initial sample of original material
- 0 Indicates unused extra sample
- 5 Indicates replicate 5

Enumerated Domain for Attribute: STCODE
- TD023 FSDB Database Code TD023

Enumerated Domain for Attribute: TYPE
- A Above part of wooden dowels
- B Below part of wooden dowels
- L Leaves
- M Mineral soil
- R Fine roots
- W Wooden dowels

Enumerated Domain for Attribute: TYPE1
A  Above part of wooden dowels
B  Below part of wooden dowels
L  Leaves
M  Mineral soil
R  Fine roots
W  Wooden dowels
G  Green Leaves
H  Brown Leaves

Enumerated Domain for Attribute: ASH_LAB
OSU  Oregon State University

Enumerated Domain for Attribute: COMMENT
X  Bag torn with obvious sample loss
T  Bag torn with sample loss unknown
U  Tag disconnected; id questionable
F  Foreign material in sample (i.e. rocks)
M  Sample missing
D  Tag disconnected; id good
XF  Torn bag with sample loss and foreign material
TF  Torn bag sample loss unknown and foreign material
TU  Torn bag and tag disconnected
TD  Torn bag loss unknown; id good
TFU  Torn bag with foreign material tag disconnected; id questionable
TX  Torn bag with obvious sample loss
UF  Tag disconnected; id questionable plus foreign material
UT  Tag disconnected; id questionable and torn bag
UX  Tag disconnected; id questionable and torn bag with obvious sample loss
XFU  Torn bag with sample loss and foreign material plus tag disconnected
FLA  Flagged as outlier
SP1  Species was coded as PIEL1
SP2  Species was coded as PIEL2
Enumerated Domain for Attribute: EST

- E: Indicates a pooled sample was used to estimate the ashfree proportion.
- BLANK: Indicates actual sample was ashed
- ?: Indicates questionable sample, may have been lost
- P: Indicates pooled sample

Enumerated Domain for Attribute: NIR_EST

- E: Indicates a pooled sample was used to estimate an ash free portion
- BLANK: Indicates actual sample was ashed

Enumerated Domain for Attribute: NIR_LAB

- OSU: Oregon state university nir lab

Enumerated Domain for Attribute: REP

- 1: Indicates replicate 1
- 2: Indicates replicate 2
- 3: Indicates replicate 3
- 4: Indicates replicate 4
- P: Indicates pooled sample
- I: Indicates initial sample of original material
- 0: Indicates unused extra sample
- 5: Indicates replicate 5

Enumerated Domain for Attribute: STCODE

- TD023: FSDB Database Code TD023

Enumerated Domain for Attribute: TYPE

- A: Above part of wooden dowels
- B: Below part of wooden dowels
- L: Leaves
- M: Mineral soil
- R: Fine roots
- W: Wooden dowels

Enumerated Domain for Attribute: LAB

- MBL: Marine Biological Laboratory
- OSU: Oregon State University
- CAL: Central Analytical Lab, OSU Soil & Horticulture dept.
- UMD: University of Minnesota, Duluth
- UNH: University of New Hampshire
- MMI: Micro-macro International, Athens, GA
Enumerated Domain for Attribute: REP
1  Indicates replicate 1
2  Indicates replicate 2
3  Indicates replicate 3
4  Indicates replicate 4
P  Indicates pooled sample
I  Indicates initial sample of original material
0  Indicates unused extra sample
5  Indicates replicate 5

Enumerated Domain for Attribute: STCODE
TD023  FSDB Database Code TD023

Enumerated Domain for Attribute: TYPE
A  Above part of wooden dowels
B  Below part of wooden dowels
L  Leaves
M  Mineral soil
R  Fine roots
W  Wooden dowels
W Wooden dowels

Enumerated Domain for Attribute: COMMENT
X Bag torn with obvious sample loss
T Bag torn with sample loss unknown
U Tag disconnected; id questionable
F Foreign material in sample (i.e. rocks)
M Sample missing
D Tag disconnected; id good
XF Torn bag with sample loss and foreign material
TF Torn bag sample loss unknown and foreign material
TU Torn bag and tag disconnected
TD Torn bag loss unknown; id good
TFU Torn bag with foreign material tag disconnected; id questionable
TX Torn bag with obvious sample loss
UF Tag disconnected; id questionable plus foreign material
UT Tag disconnected; id questionable and torn bag
UX Tag disconnected; id questionable and torn bag with obvious sample loss
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FLA Flagged as outlier
FLA Flagged outlier
E Estimated length
TE Torn mesh sample loss unknown; estimated length
XE Torn mesh with sample loss; estimated length
SP1 Species was coded as PIEL1
SP2 Species was coded as PIEL2

Enumerated Domain for Attribute: REP
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P Indicates pooled sample
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