

Plantation ~ 55 yrs

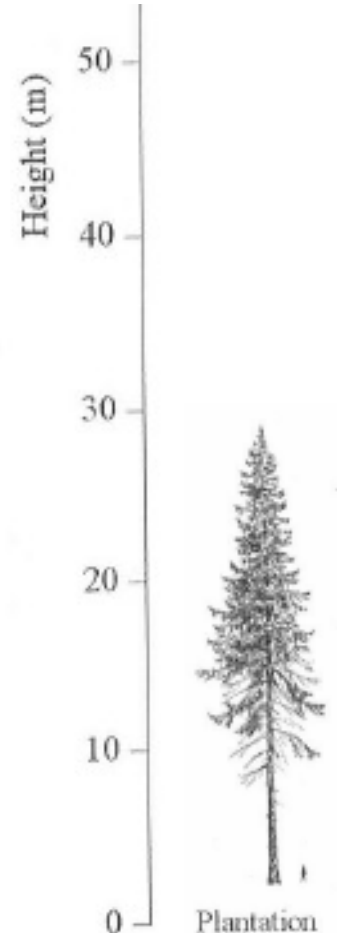
Information for Researchers

Transects 80 m long x 8 m wide

Transect 2 is the focus transect with rigged trees

**High clearance vehicle recommended,
Forest Service combination required for gate
lock to access sites**

This is the only stand where we tagged ≥ 15
cm dbh, rather than 25 cm dbh



Plantation – Site # 1



- For information on permitting for this site contact Sarah Greene at the Forest Service. sgreene@fs.fed.us

Plantation General Information

- Lodging – Forest Service bunkhouses, or camping, or motels in Carson, WA.
- Nearest store is in Carson, WA (~ 8 miles south of Stabler on Wind River Road)
- Nearest hospital:
 - **Mount Hood Memorial Hospital**
(<http://www.providence.org/HoodRiver/default.htm>), 811
13th St, Hood River, OR 97031, US Phone: 1-800-955-3911.

Local Lodging

- Lodging for the Wind River sites is available in the Forest Service 'bunk' houses. Cost is 3.76 per person per night.

Contact Annie Hamilton:

annieh@u.washington.edu, 509-427-7028, to make reservations, ask questions about the lodging, etc.

- If the lodging is booked, then there are campgrounds and hotels nearby.

Campgrounds

Panther Creek Campground (USDA FS)

Wind River Ranger District

(<http://www.fs.fed.us/gpnf/recreation/campgrounds/sites/panther-creek.shtml>)

From Highway 14 take Wind River Road north through Carson 6 miles to Forest Road 65. Forest Road 65 4 miles to campground.

Beaver Campground (USDA FS)

Wind River Ranger District

(509) 427-3200

Reservation Phone: 8002802267

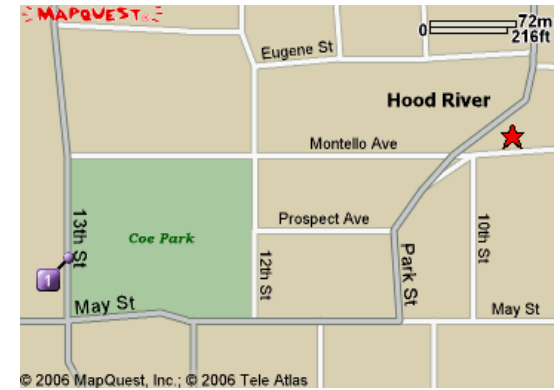


From SR 14, drive N from Carson for 13 mi along the Wind River Hwy.

Features: Shady river setting with large grassy field for day use

Closest Hospital

•Hood River Memorial (OR) Hospital is closest (~ 25 miles). There is another about the same distance on the Washington side in White Salmon Wa but it is not recommended!



Turn LEFT onto WA-14.

17.1 miles

Turn RIGHT onto HOOD RIVER BRIDGE (Portions toll).

1.0 miles

Merge onto I-84 W toward HOOD RIVER / PORTLAND.

0.3 miles

Take EXIT 63 toward HOOD RIVER / CITY CENTER.

0.1 miles

Turn LEFT onto 2ND ST.

0.1 miles

Turn RIGHT onto OAK ST / US-30 / OR-35.

0.6 miles

Turn LEFT onto 13TH ST.

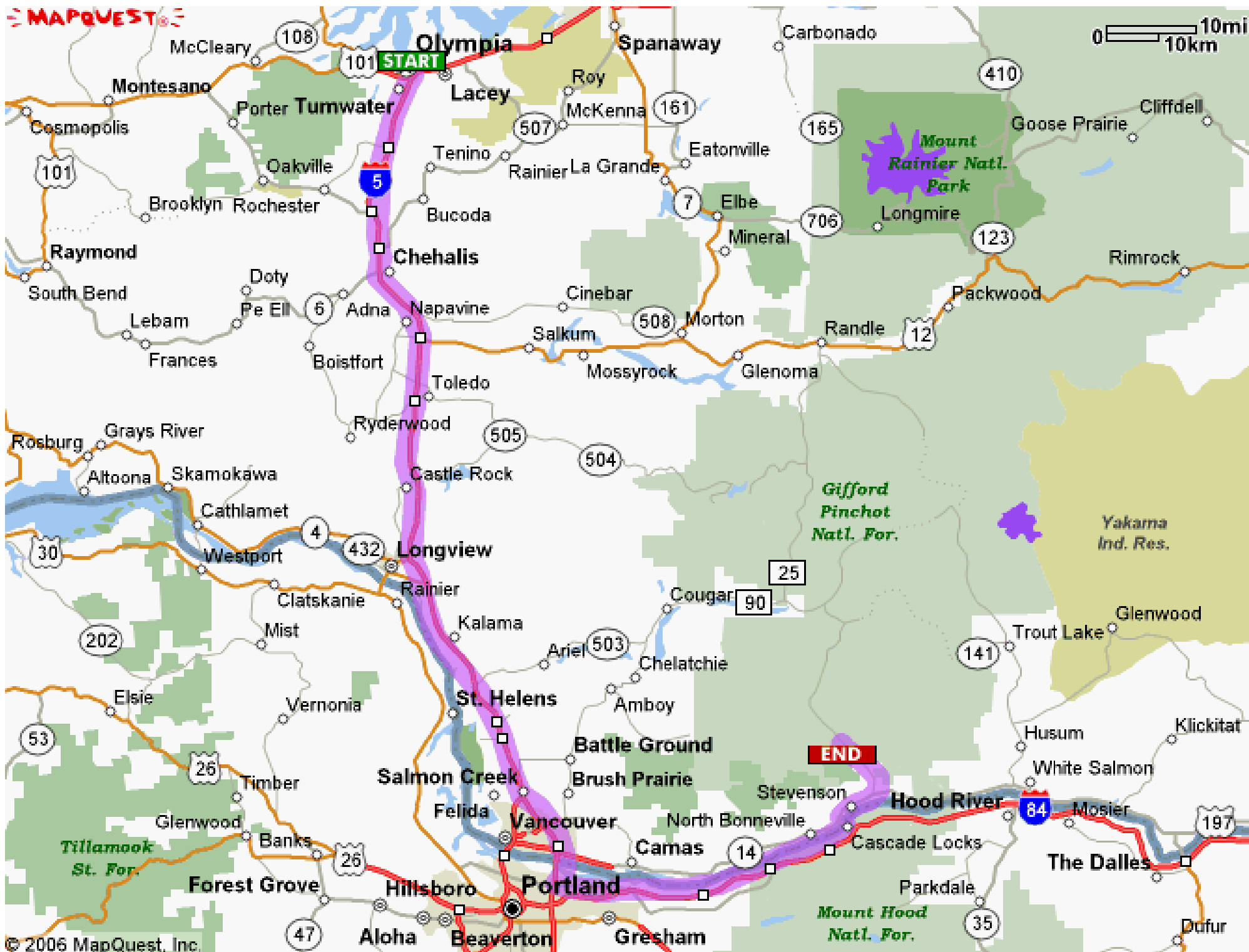
0.2 miles

End at **Hood River Memorial Hospital**

811 13th St, Hood River, OR 97031, US

Driving Directions

From Hwy 101, merge onto I-5 S toward PORTLAND	97 miles
Merge onto I-205 S via EXIT 7 toward WA-14 / SALEM / I-84.	14.7 miles
Merge onto I-84 E / US-30 E via EXIT 22 toward THE DALLES	34.6 miles
Take the US-30 exit- EXIT 44- toward CASCADE LOCKS / STEVENSON	0.3 miles
Stay STRAIGHT to go onto WA-NA-PA ST / US-30.	0.1 miles
Turn LEFT onto BRIDGE OF THE GODS (1.00 toll to cross this bridge)	0.3 miles
Turn RIGHT onto WA-14 / EVERGREEN HWY. Continue to follow WA-14. You will go through Stevenson.	5.9 miles
Turn SLIGHT LEFT onto WIND RIVER RD and continue on the main road (Wind River HWY) to Stabler. You will pass through Carson. The sign to turn onto Wind River Road will mention that you are heading into the Wind River Recreation Area.	8.5 miles
In Stabler turn left onto Hemlock Road. Cross over the Wind River and continue to the Wind River Work Center.	1.2 miles
Turn right just past the Wind River Work Center onto Road #43 (the road that goes to the Wind River Canopy Crane) – continue straight on this road (i.e. do not turn off or follow anymore of the Canopy Crane signs) until you reach a road on the right (north) side of the road - Road # 4303. There is a GATE that you will need to get the combination for from us.	3.2 miles
Turn right onto Road 4303 (you will pass the road on your left that leads to Trout Creek at~ 0.35 miles and 0.85 miles)) and follow to a plantation that is predominantly on the North side of the road. Park here at the start of Plantation to access T2-T4.	1.1 miles
To access T1 continue up the road to an old road/pullout on your right. If you reach a logging road on your left beyond the plantation then you have gone too far.	0.3 miles
Note: High clearance recommended for the stretch on 43 as there are numerous waterbars, Forest Service combination required to access gated Road 4303.	

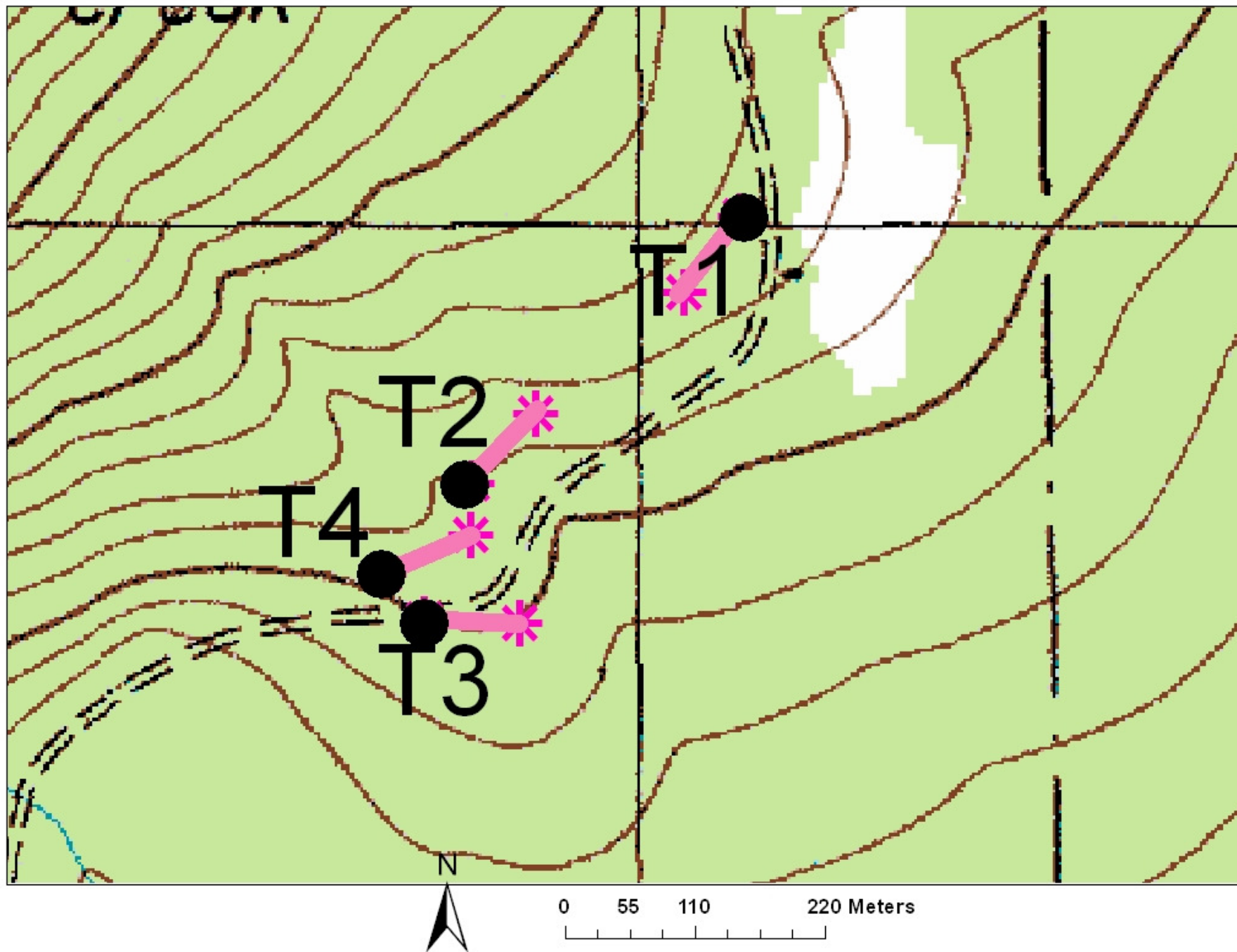


Transect Locations

T1	To access T1 continue up the road from the entrance to the clearcut to an old road on your right. If you reach a logging road on your left beyond the plantation then you have gone too far. (~0.3 miles). Walk north up the road and you will see red flagging and a ~ 20 cm dbh PSME that is adjacent to a similar sized TSHE on the west side of the road. This tree should have a silver rectangular tag on it. From this tree travel 20 m at a bearing of 240 degrees to the start of T1.
T2	Walk up from where you parked at the beginning of the plantation to around the first bend and look for a tree (~ 45 cm dbh) on the north side of the road that has a silver rectangular tag. There will also be red flagging on the north side of the road. From this tree walk 35 m at a bearing of 300 degrees to the start of T2. This is the focus transect with rigged trees.
T3	Walk up from where you parked at the beginning of the plantation to flagging on the south side of the road and the entrance to T3. There is a silver rectangular tag on a ~ 40 cm dbh PSME. From this tree travel ~18 m at a bearing of 175 degrees.
T4	Walk up from where you parked at the beginning of the plantation to your first set of flagging on the north side of the road. This is the entrance to the start of T4. You will see a silver rectangular tag on a small (~ 10 cm dbh) hardwood. From this tree travel ~15 m directly North to the start of T4.
	Note: All transects should be flagged red, Transects are 80m long x 8 m wide. Transect 2 is the transect with rigged trees. High clearance recommended for the stretch on 43 as there are numerous waterbars, Forest Service combination required to access gated Road 4303.

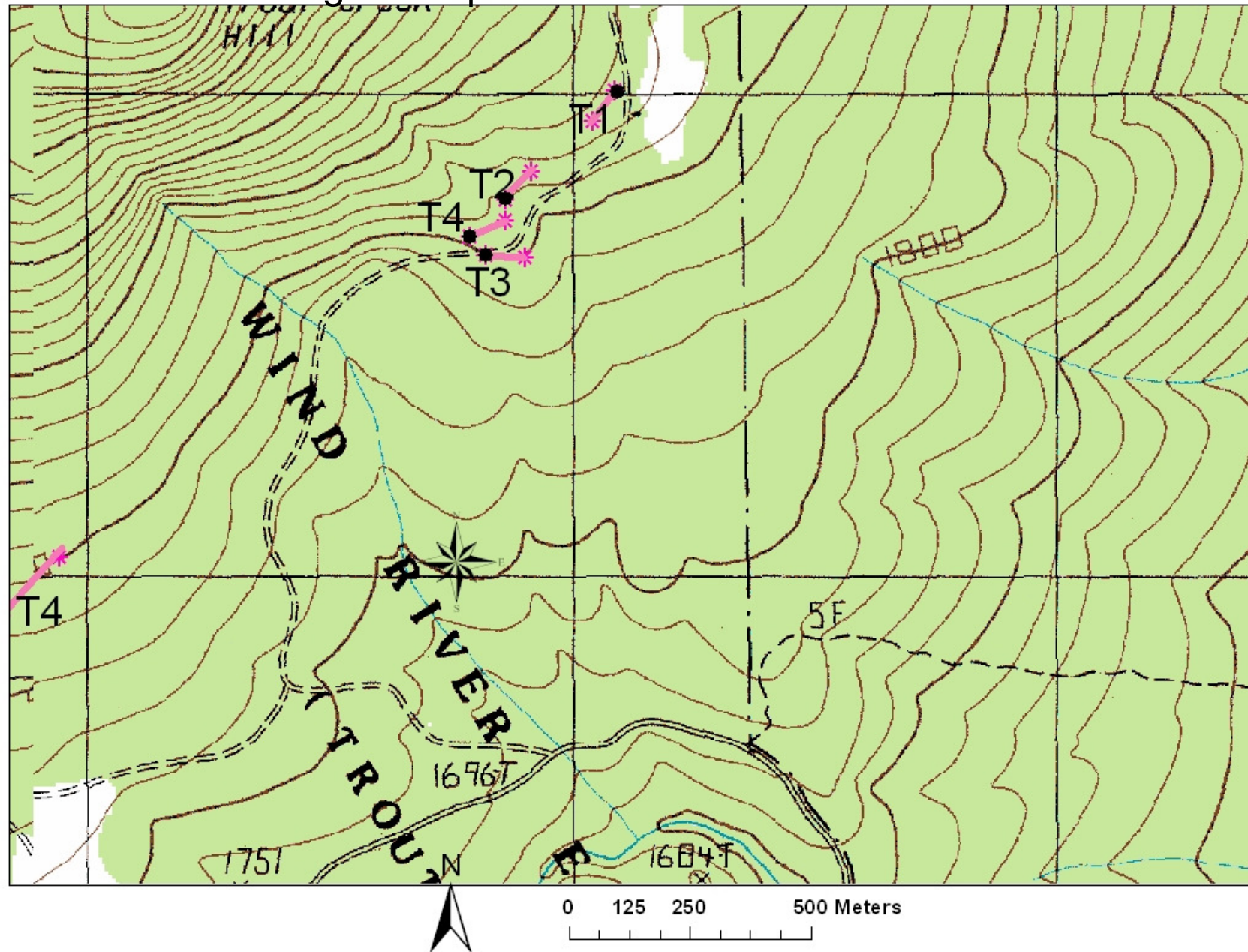
Plantation ~ 55 yrs

Note: Road missing on map that is north of T1 and heads west



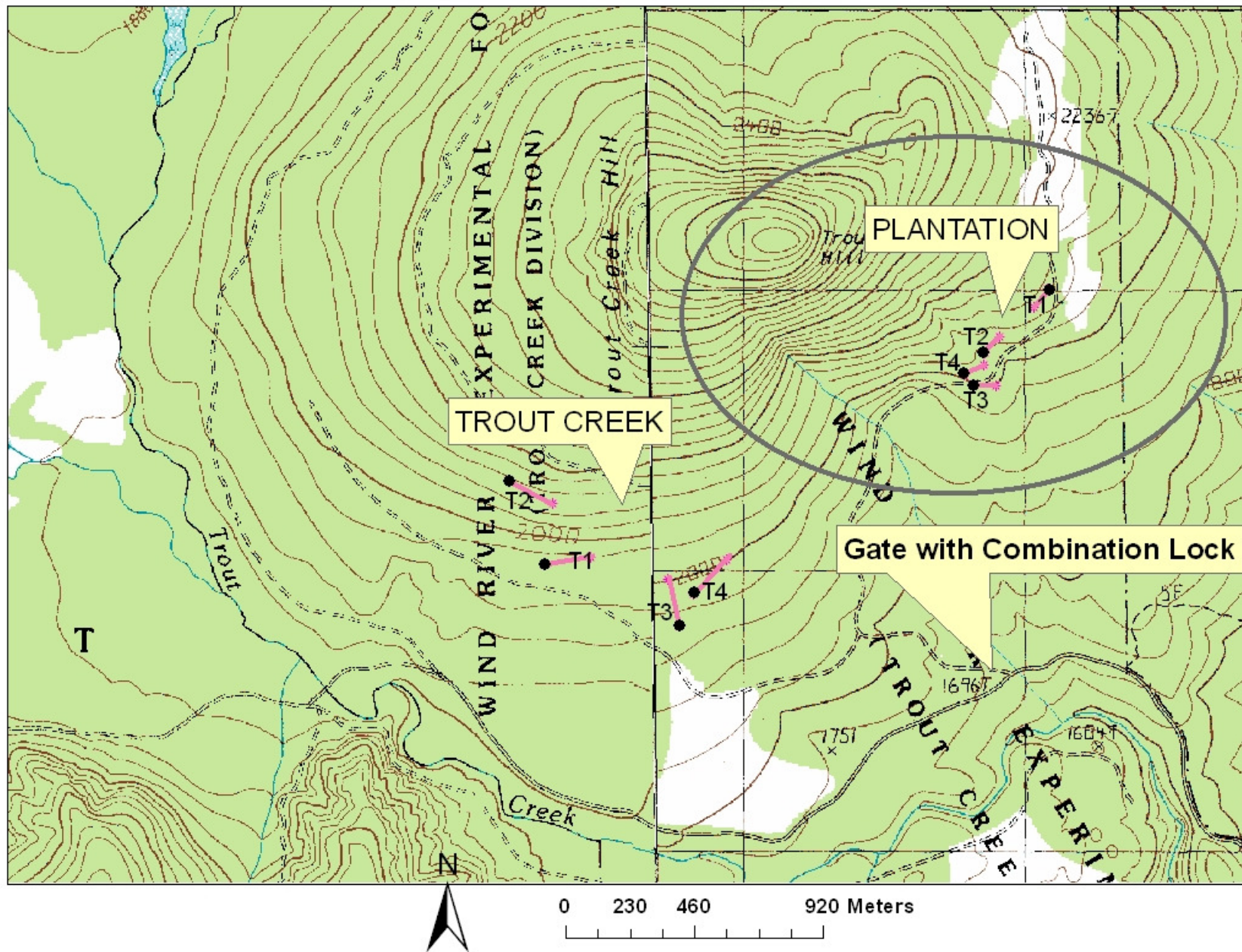
Plantation

Note: Road missing on map that is north of T1 and heads west



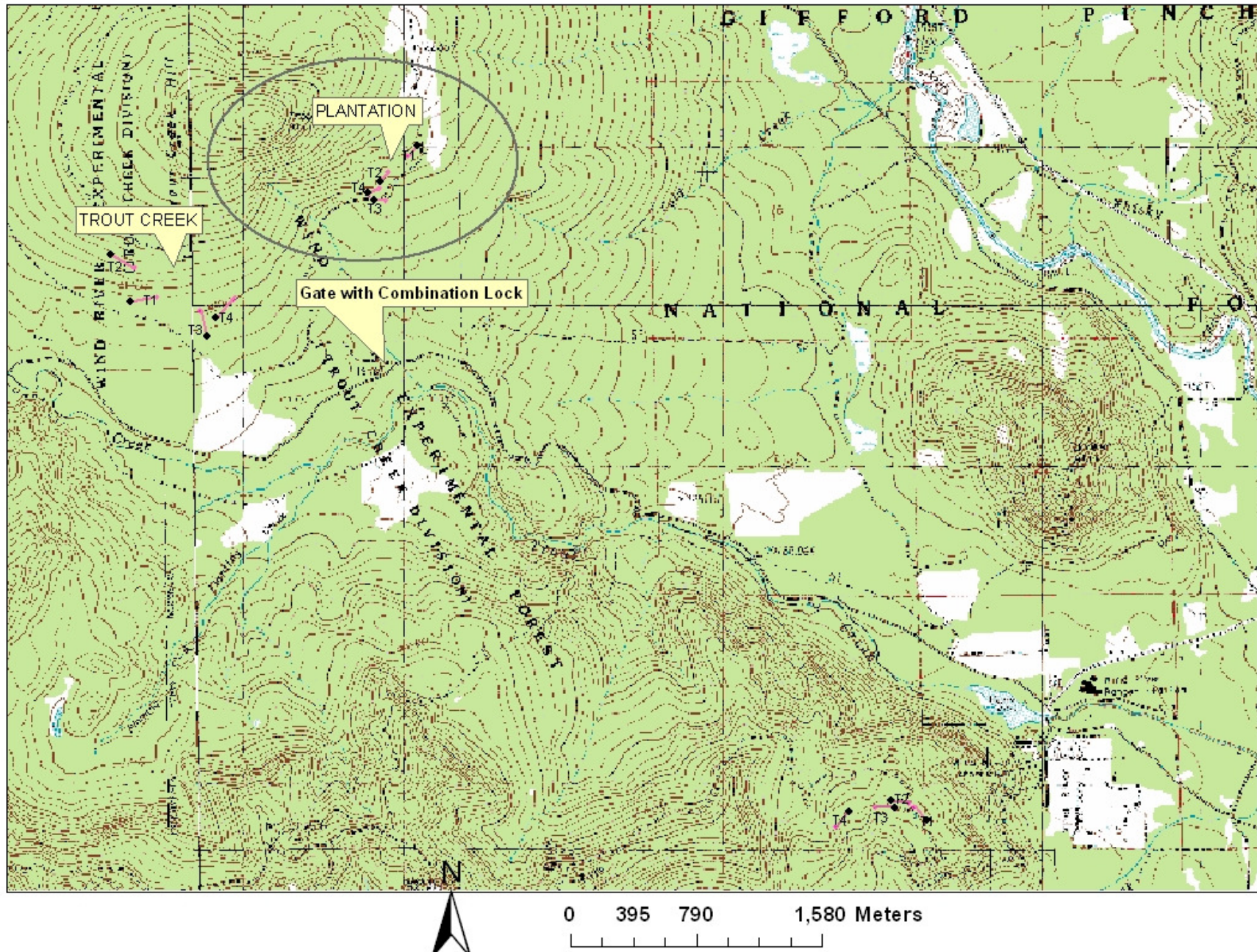
Plantation

Note: Road missing on map that is north of T1 and heads west

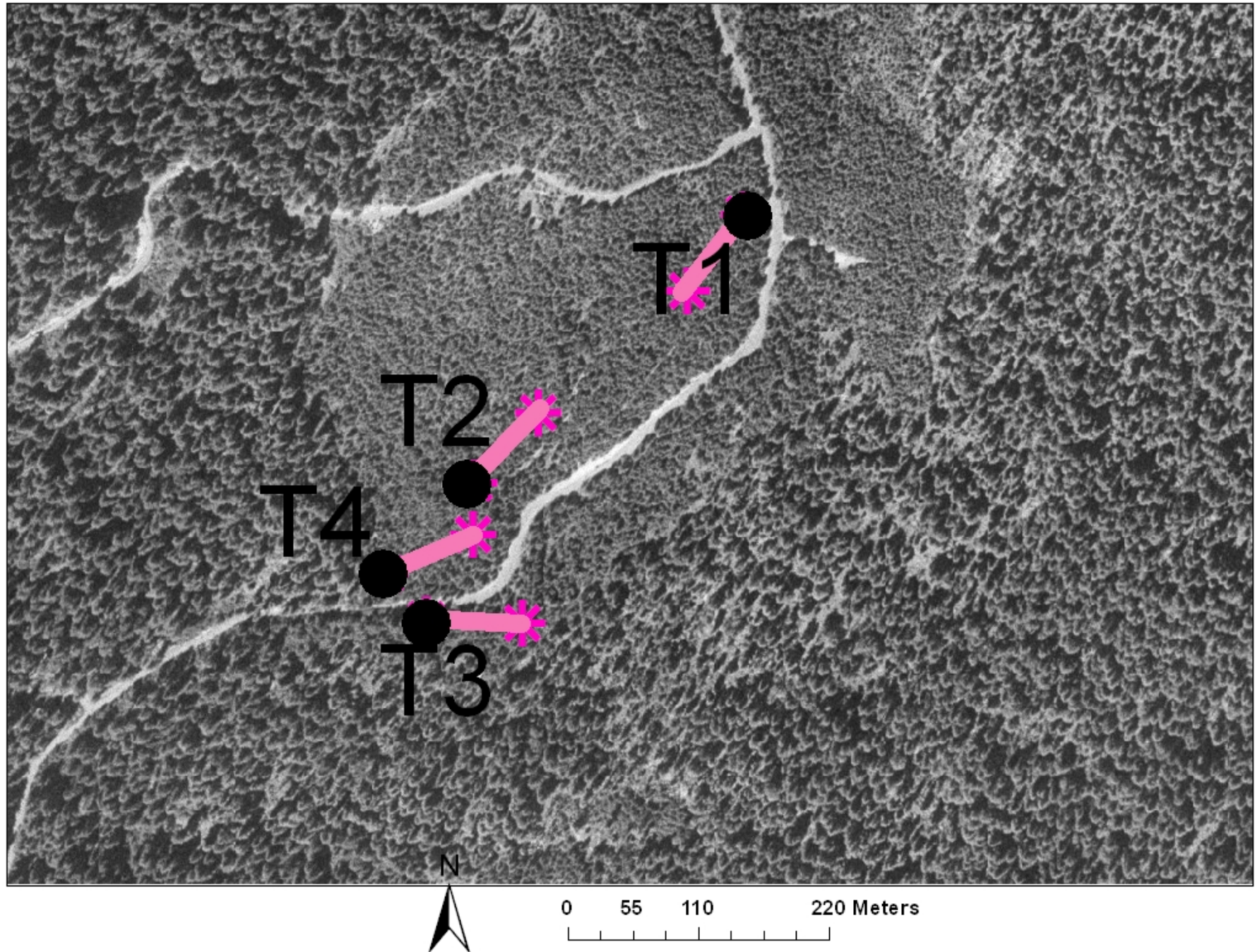


Plantation

Note: Road missing on map that is north of T1 and heads west



Plantation



Plantation

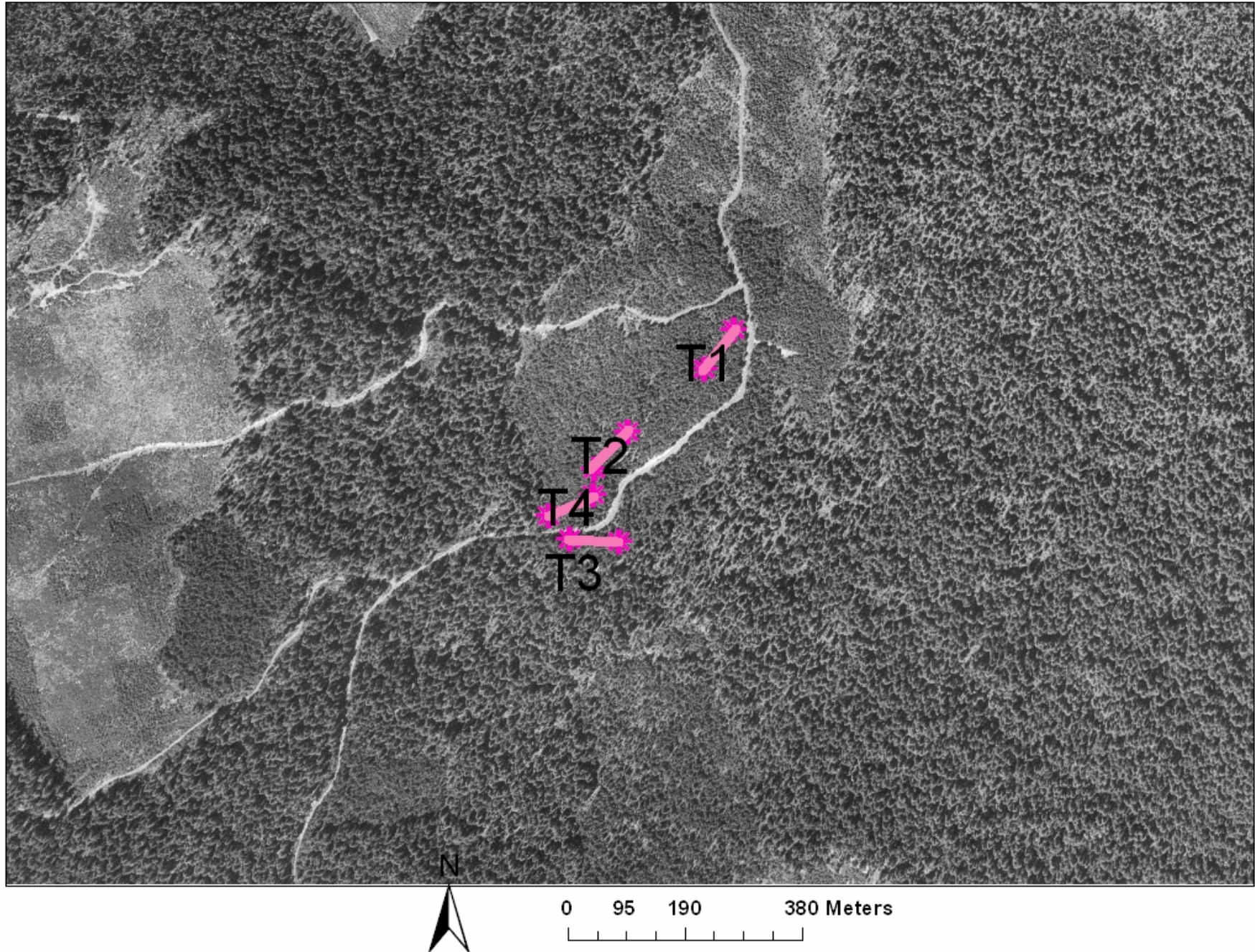


Table 1. Summary of site characteristics. The Carbon River stand is on an alluvial flat, and the Cedar Flats stand is on swampy ground, thus reducing a need for summer precipitation at both sites. Precipitation data does not include condensation from fog, which can add 10–30% at all of these sites.

Site	Elevation (m)	Age	Slope (% aspect)	Plant association*	Precipitation (cm)			Temp (°C) (annual Ave.)
					Ann.	July–Sep.	Snowfall	
PL Plantation	624	50	0–15% SE	<i>TSHE/BENE</i>	253	12	233	0–17.5 (8.0)
MC Martha Creek	582	100	5–20% S	<i>TSHE/BENE/GASH</i>	253	12	233	0.6–17.8 (8.5)
PC Panther Creek	732	157	0–15% W	<i>TSHE/BENE/GASH</i>	264	13	254	0–17.5 (7.8)
OH Ohanepecosh	622	~280	0–10% SW	<i>TSHE/ACTR</i>	197	14	385	2.2–14.2 (7.9)
TC Trout Creek	613	~500	0–10% S	<i>TSHE/VAAL/GASH</i>	253	12	233	0–17.5 (8.0)
CR Carbon River	607	~500	0%	<i>TSHE/POMU/OXOR</i>	346	18	137	3.1–11.8 (7.5)
CF Cedar Flats	411	~650	0%	<i>TSHE/TITR</i>	317	20	77	5.0–14.4 (9.7)
CH Chinook	841	~950	0%	<i>ABAM/VAAL</i>	210	17	462	–0.6 –13.8 (6.6)

* Based on Topik et al. 1986 and Franklin et al. 1988. *TSHE*, *Tsuga heterophylla*; *BENE*, *Berberis nervosa*; *GASH*, *Gaultheria shallon*; *ACTR*, *Achlys triphylla*; *VAAL*, *Vaccinium alaskaense*; *POMU*, *Polystichum munitum*; *OXOR*, *Oxalis oregana*; *TITR*, *Tiarella trifoliata*.

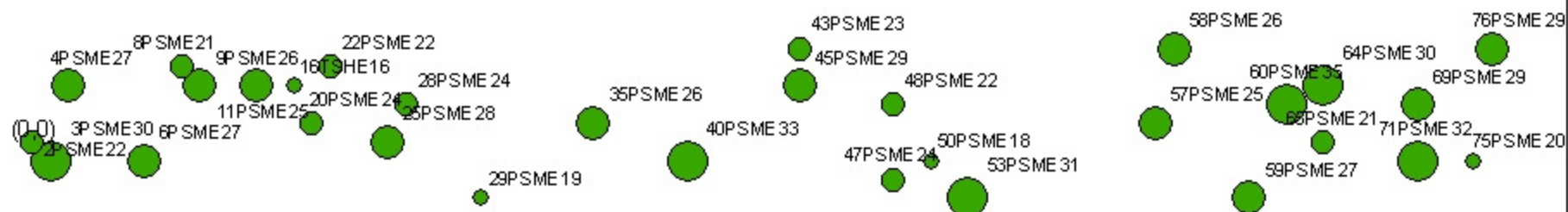
Plantation UTM's

Note: may be inaccurate – unknown datum

		Easting	Northing	Angle	Length (m)
PL	T1	578984	5076210	217	80
		578936	5076146		
PL	T2	578757	5075984	42	80
		578811	5076043		
PL	T3	578797	5075866	272	80
		578717	5075869		
PL	T4	578683	5075907	65	80
		578756	5075941		

Plantation Transect 1

Live tagged trees $\geq 15\text{cm}$ dbh in green



1 centimeter equals 3.481468 meters

0 4 8 16 Meters

80 m long x 8 m wide
angle = 217 degrees

Legend

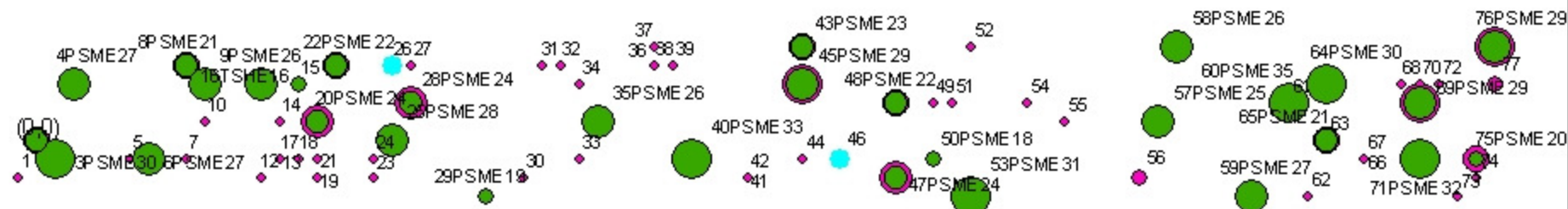
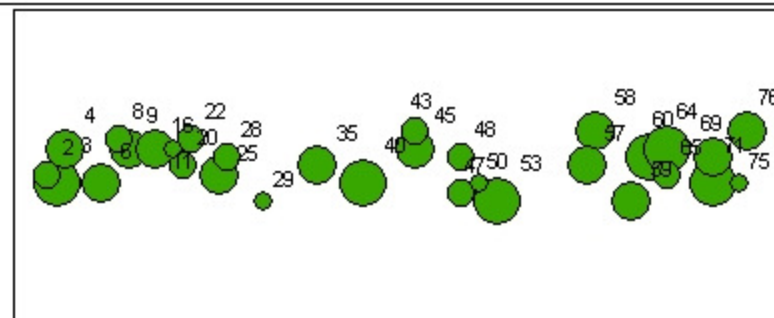
PL_T1_tagged Events

DBH

- 16 - 20
- 21 - 24
- 25 - 29
- 30 - 35

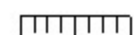
Plantation Transect 1

Live tagged trees $\geq 15\text{cm}$ dbh in green
Dead trees highlighted with blue spot



80 m long x 8 m wide
angle = 217 degrees

1 centimeter equals 3.440739 meters



0 2.5 5 Meters

Legend

PL_T1_tagged Events PL_T1_all Events

DBH

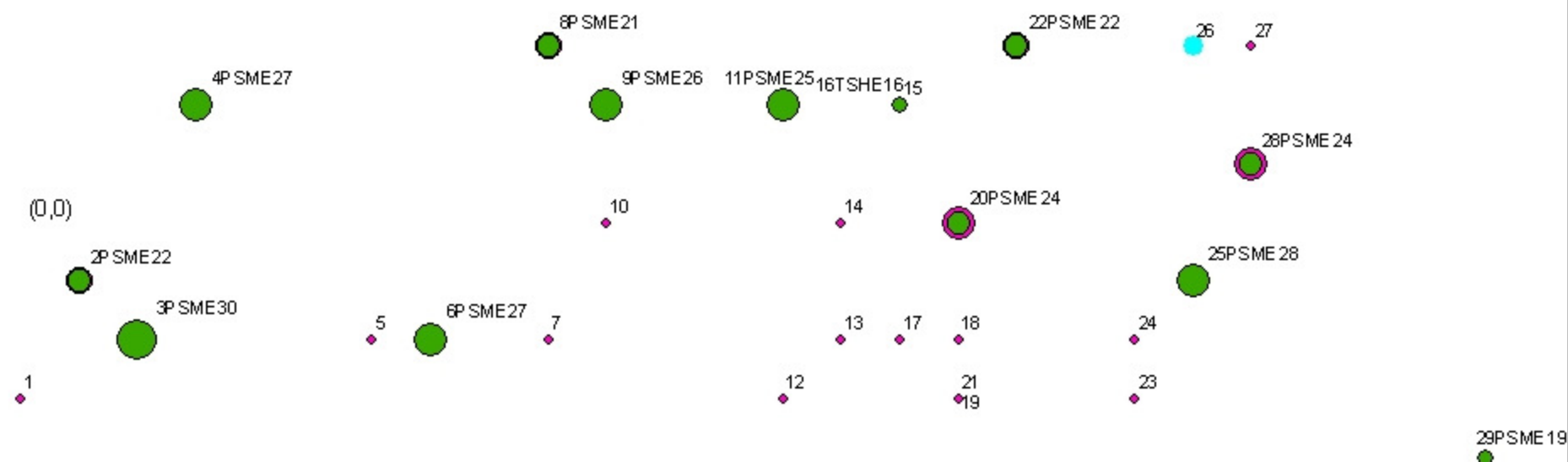
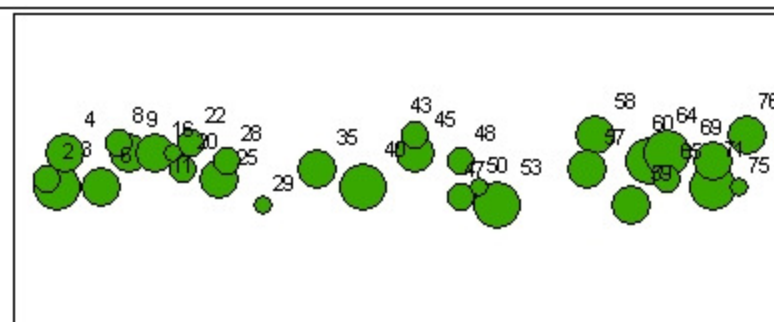
- 16 - 20
- 21 - 24
- 25 - 29
- 30 - 35

DBH

- ◆ 5 - 15
- ◆ 16 - 20
- ◆ 21 - 24
- ◆ 25 - 29
- ◆ 30 - 35

Plantation Transect 1

Live tagged trees $\geq 15\text{cm}$ dbh in green
Dead trees highlighted with blue spot



Legend

PL_T1_tagged Events PL_T1_all Events

DBH

- 16 - 20
- 21 - 24
- 25 - 29
- 30 - 35

DBH

- 5 - 15
- 16 - 20
- 21 - 24
- 25 - 29
- 30 - 35

80 m long x 8 m wide
angle = 217 degrees

1 centimeter equals 1.088671 meters

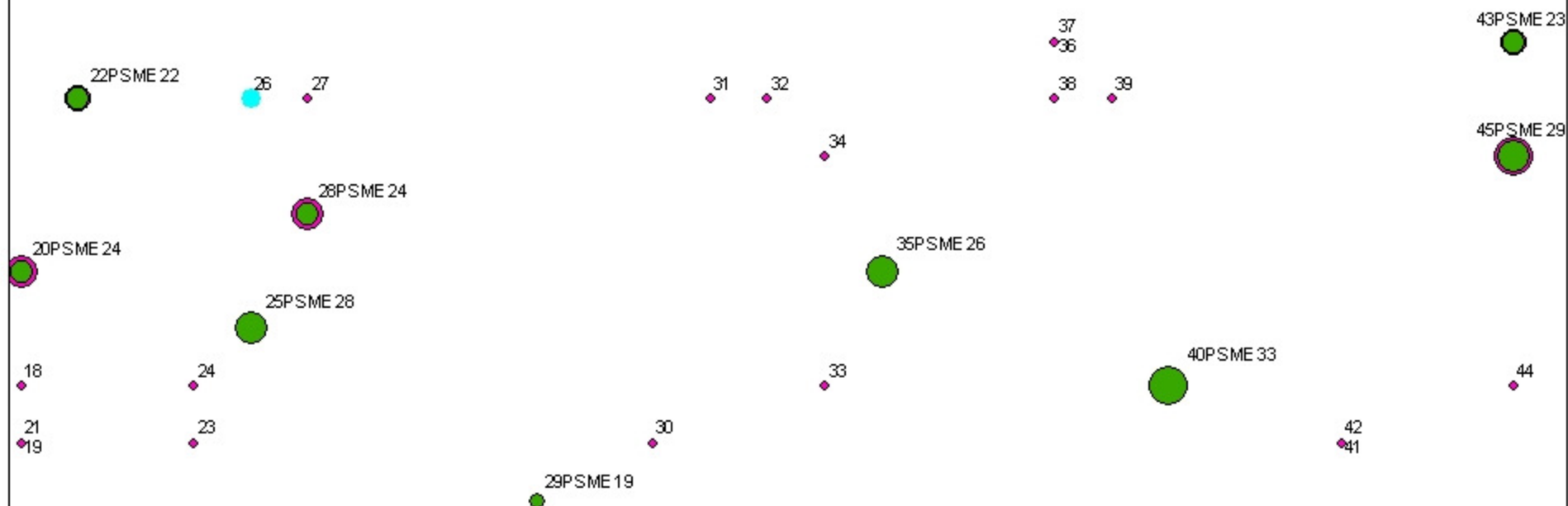
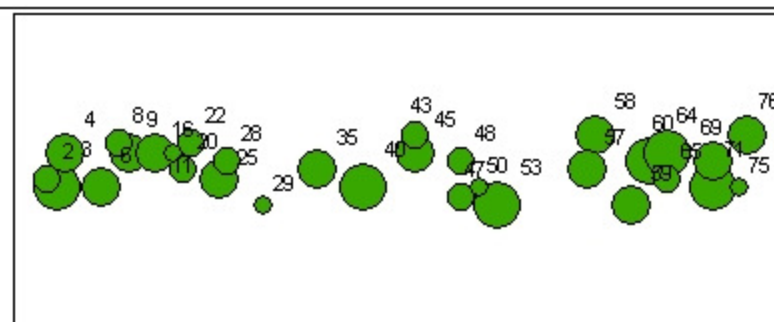
0 37.5 51.5 Meters



Plantation Transect 1

Live tagged trees $\geq 15\text{cm}$ dbh in green

Dead trees highlighted with blue spot



Legend

PL_T1_tagged Events PL_T1_all Events

DBH

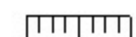
- 16 - 20
- 21 - 24
- 25 - 29
- 30 - 35

DBH

- ◆ 5 - 15
- ◆ 16 - 20
- ◆ 21 - 24
- ◆ 25 - 29
- ◆ 30 - 35

80 m long x 8 m wide
angle = 217 degrees

1 centimeter equals 1.088671 meters



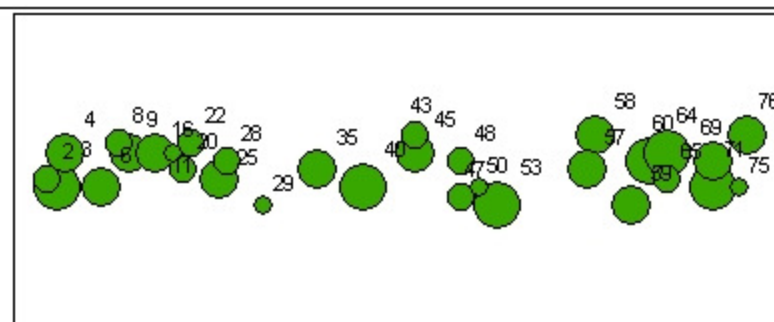
0 30 51.5 Meters



Plantation Transect 1

Live tagged trees $\geq 15\text{cm}$ dbh in green

Dead trees highlighted with blue spot



Legend

PL_T1_tagged Events PL_T1_all Events

DBH

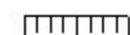
- 16 - 20
- 21 - 24
- 25 - 29
- 30 - 35

DBH

- 5 - 15
- 16 - 20
- 21 - 24
- 25 - 29
- 30 - 35

80 m long x 8 m wide
angle = 217 degrees

1 centimeter equals 1.088671 meters

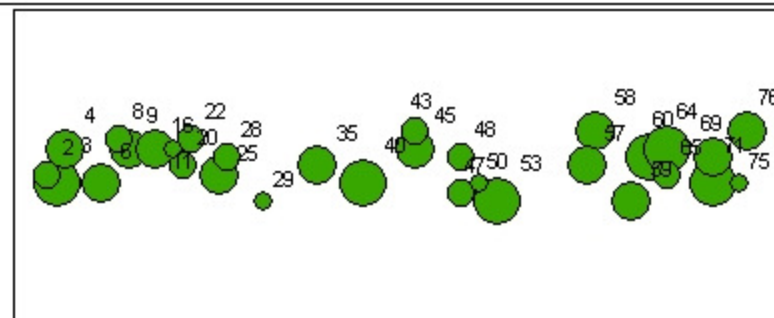


37.51.5 Meters



Plantation Transect 1

Live tagged trees $\geq 15\text{cm}$ dbh in green
Dead trees highlighted with blue spot



Legend

PL_T1_tagged Events **PL_T1_all Events**

DBH

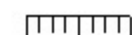
- 16 - 20
- 21 - 24
- 25 - 29
- 30 - 35

DBH

- 5 - 15
- 16 - 20
- 21 - 24
- 25 - 29
- 30 - 35

80 m long x 8 m wide
angle = 217 degrees

1 centimeter equals 1.088671 meters



0 30 51.5 Meters

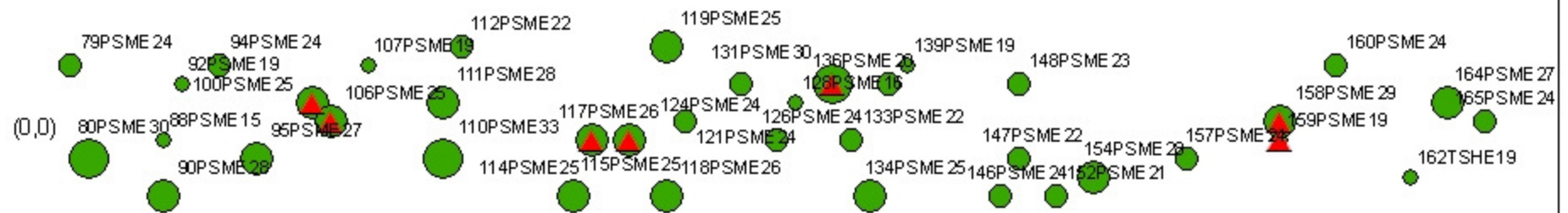


Plantation Transect 2

Live tagged trees $\geq 15\text{cm}$ dbh in green

Dead trees highlighted with blue spot

Red triangles highlight rigged trees



Legend

▲ PL_T2_tagged Events selection

PL_T2_tagged Events

DBH

● 15 - 20

● 21 - 25

● 26 - 30

● 31 - 33

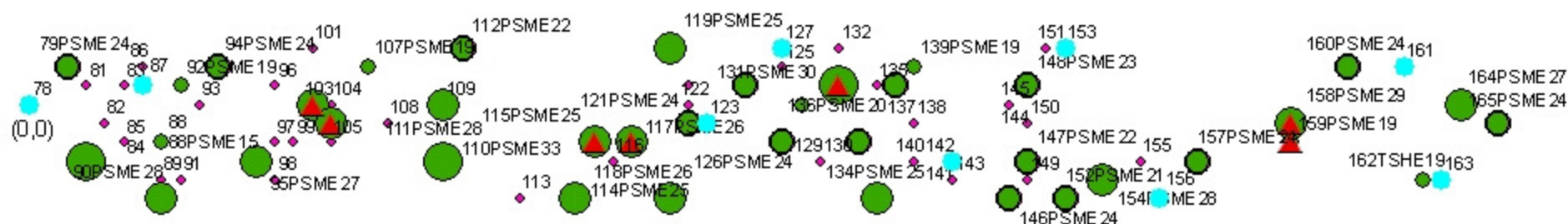
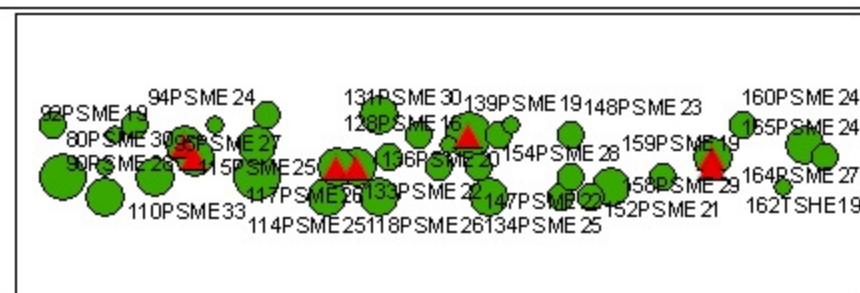
80 m long x 8 m wide
angle = 42 degrees

1 centimeter equals 3.437399 meters



01.53 6 Meters

Plantation Transect 2 (all trees)
 Live tagged trees $\geq 15\text{cm}$ dbh in green
 Dead trees highlighted in blue
 Red triangles highlight rigged trees



Legend

PL_T2_tagged Events PL_T2_all Events

DBH

DBH

15 - 20

5 - 15

21 - 25

16 - 20

26 - 30

21 - 25

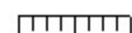
31 - 33

26 - 30

31 - 33

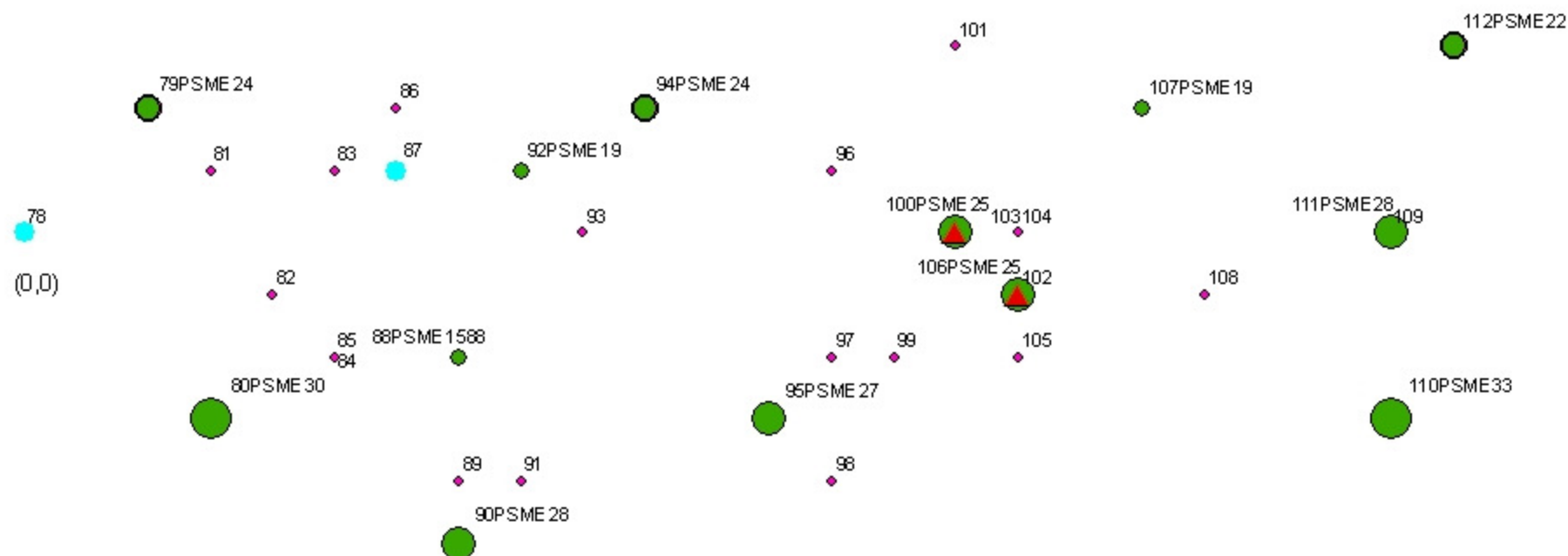
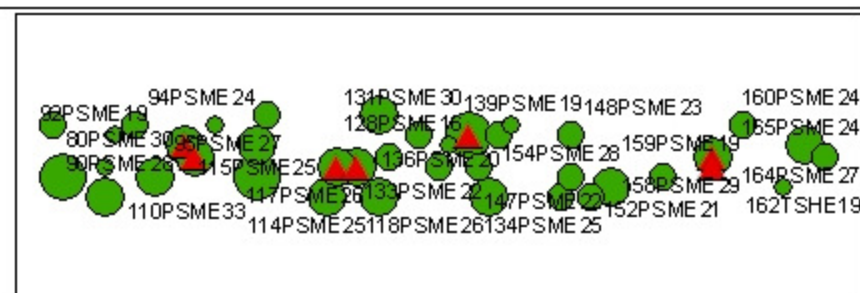
80 m long x 8 m wide
 angle = 42 degrees

1 centimeter equals 3.352515 meters



0 2.5 5 Meters

Plantation Transect 2 (all trees)
 Live tagged trees $\geq 15\text{cm}$ dbh in green
 Dead trees highlighted in blue
 Red triangles highlight rigged trees



Legend

PL_T2_tagged Events PL_T2_all Events

DBH

DBH

15 - 20

5 - 15

21 - 25

16 - 20

26 - 30

21 - 25

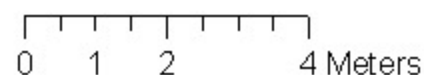
31 - 33

26 - 30

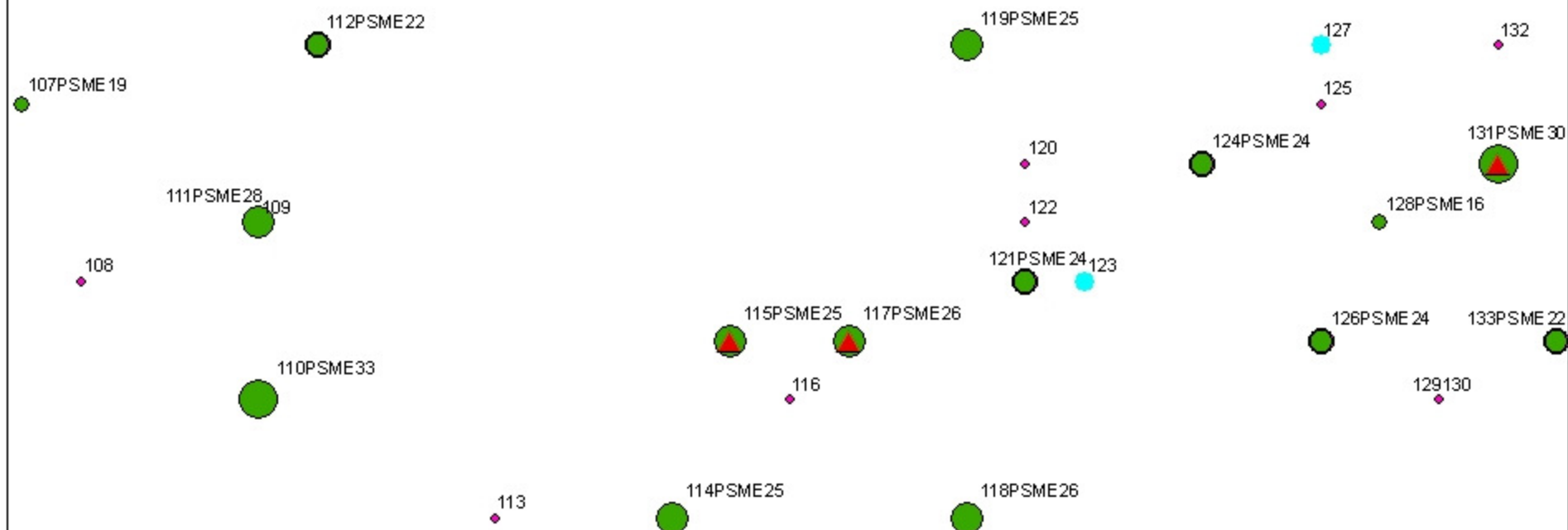
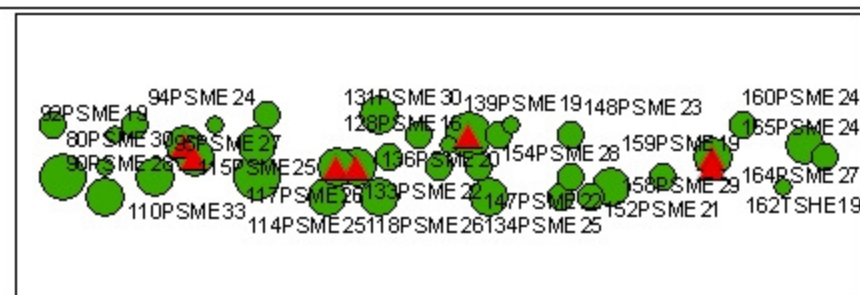
31 - 33

80 m long x 8 m wide
 angle = 42 degrees

1 centimeter equals 1.060757 meters

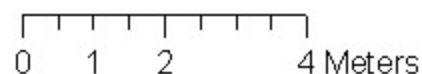


Plantation Transect 2 (all trees)
 Live tagged trees ≥ 15 cm dbh in green
 Dead trees highlighted in blue
 Red triangles highlight rigged trees



80 m long x 8 m wide
 angle = 42 degrees

1 centimeter equals 1.060757 meters



Legend

PL_T2_tagged Events PL_T2_all Events

DBH

DBH

15 - 20

5 - 15

21 - 25

16 - 20

26 - 30

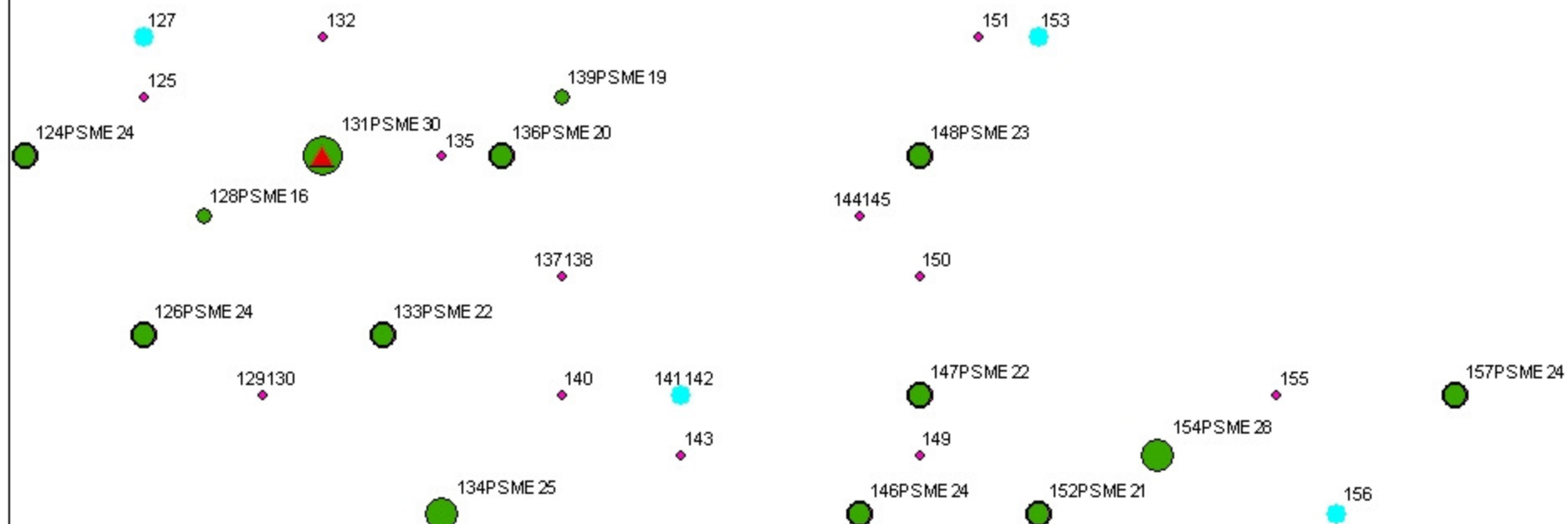
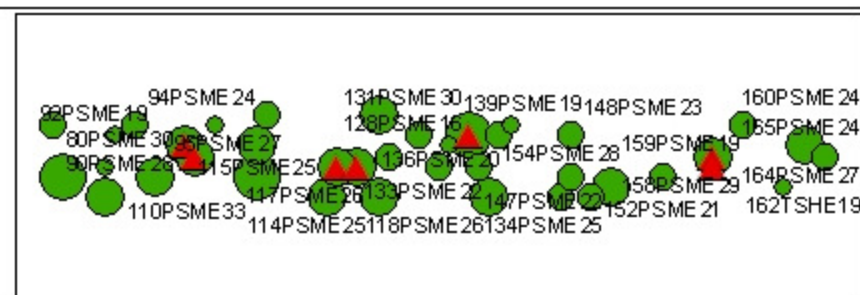
21 - 25

31 - 33

26 - 30

31 - 33

Plantation Transect 2 (all trees)
 Live tagged trees $\geq 15\text{cm}$ dbh in green
 Dead trees highlighted in blue
 Red triangles highlight rigged trees



Legend

PL_T2_tagged Events PL_T2_all Events

DBH

DBH

15 - 20

5 - 15

21 - 25

16 - 20

26 - 30

21 - 25

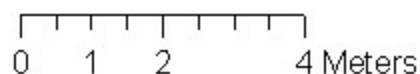
31 - 33

26 - 30

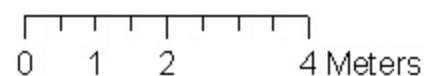
31 - 33

80 m long x 8 m wide
 angle = 42 degrees

1 centimeter equals 1.060757 meters



Red triangles highlight rigged trees



80 m long x 8 m wide
angle = 42 degrees

Live tagged trees $\geq 15\text{cm}$ dbh in green



80 m long x 8 m wide
angle = 92 degrees

1 centimeter equals 3.481468 meters





01.53 6 Meters

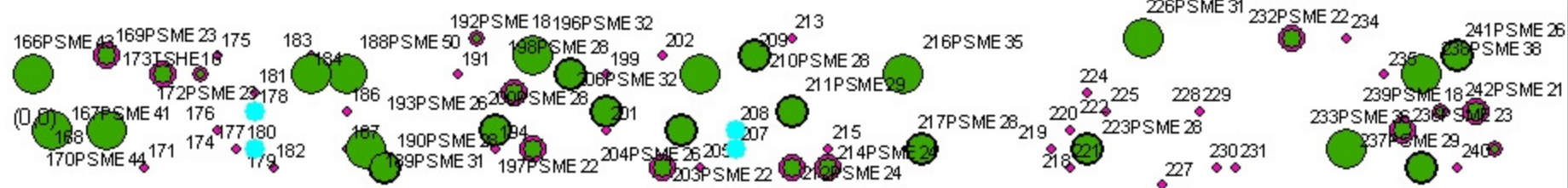
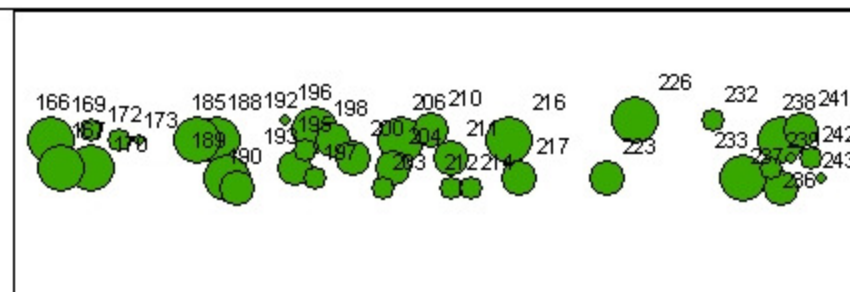
Legend

PL_T3_tagged Events

DBH

-  16 - 20
 21 - 25
 26 - 30
 31 - 50

Plantation Transect 3 (all trees)
 Live tagged trees $\geq 15\text{cm}$ dbh in green
 Dead trees highlighted in blue



Legend

PL_T3_tagged Events PL_T3_all Events

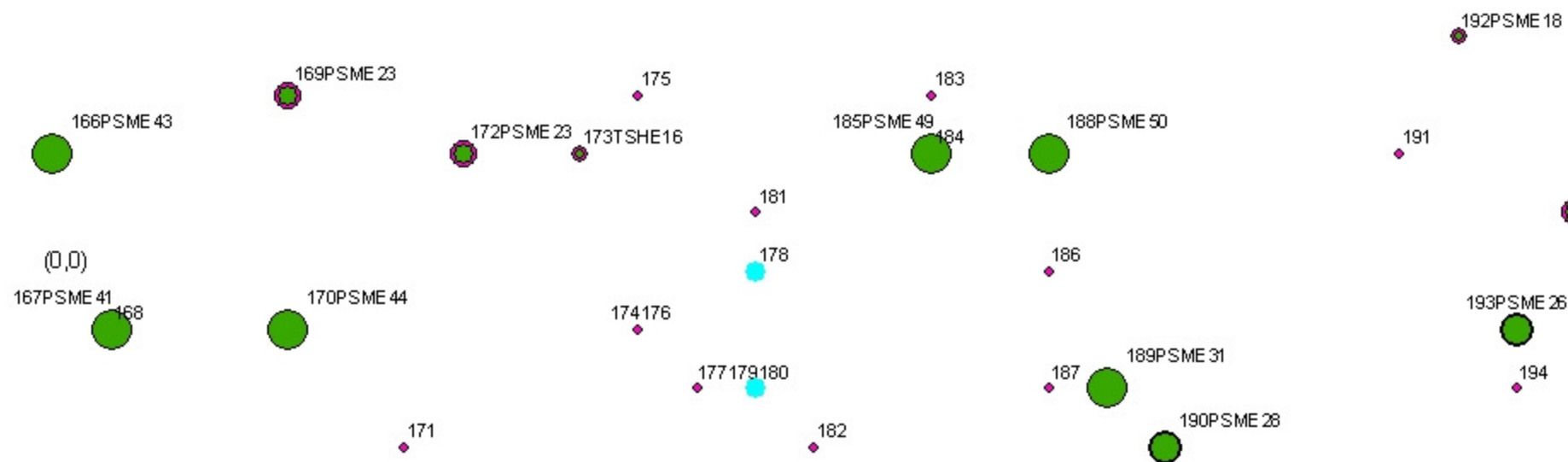
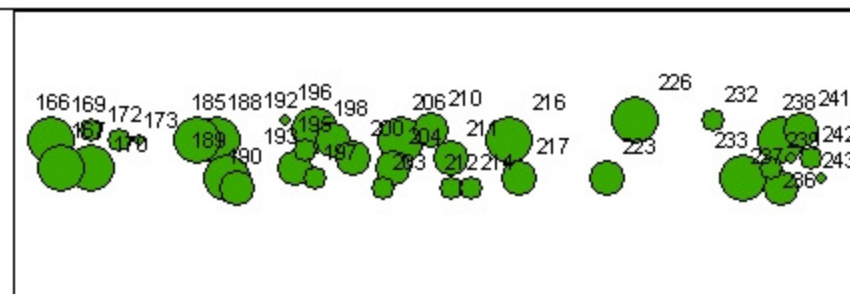
DBH

- 16 - 20
- 21 - 25
- 26 - 30
- 31 - 50

DBH

- 5 - 15
- 16 - 20
- 21 - 25
- 26 - 30
- 31 - 50

Plantation Transect 3 (all trees)
 Live tagged trees $\geq 15\text{cm}$ dbh in green
 Dead trees highlighted in blue



Legend

PL_T3_tagged Events PL_T3_all Events

DBH

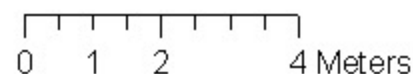
- 16 - 20
- 21 - 25
- 26 - 30
- 31 - 50

DBH

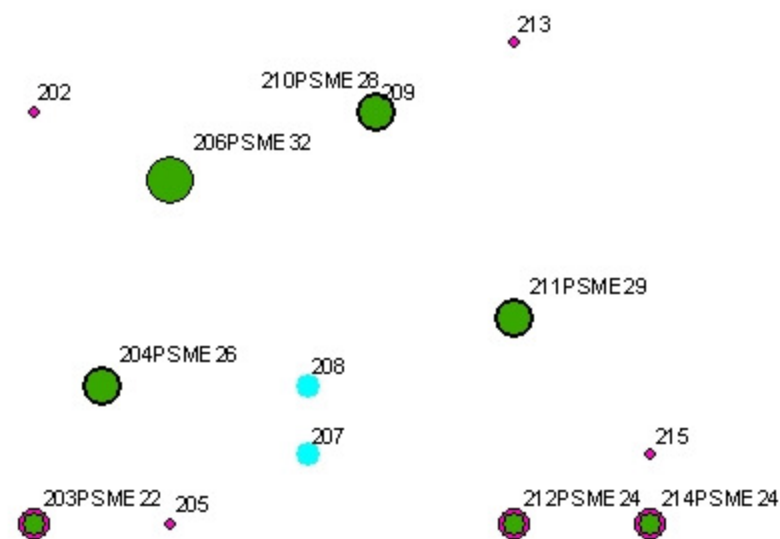
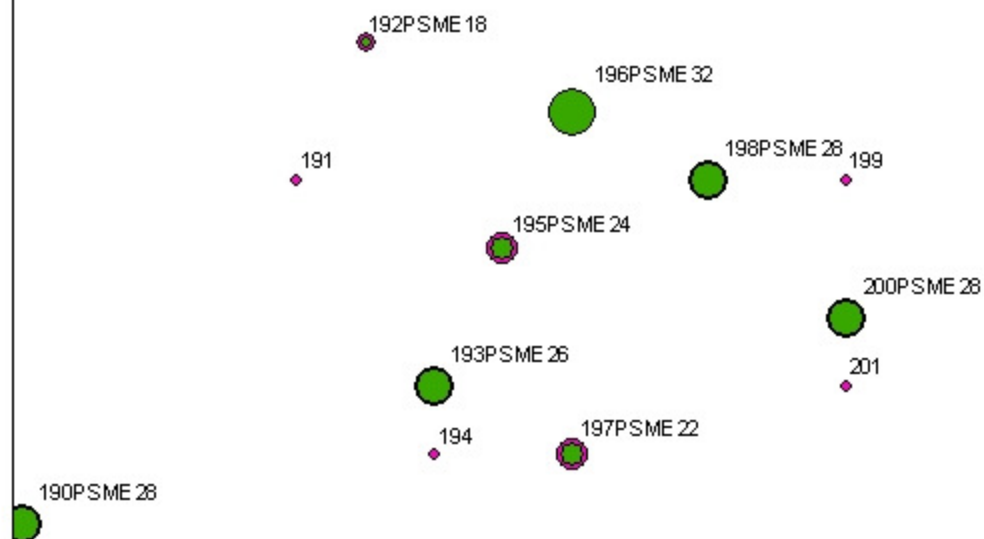
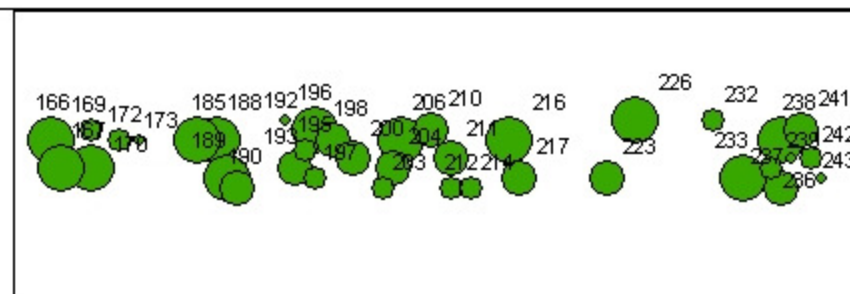
- 5 - 15
- 16 - 20
- 21 - 25
- 26 - 30
- 31 - 50

80 m long x 8 m wide
 angle = 92 degrees

1 centimeter equals 1.102629 meters



Plantation Transect 3 (all trees)
 Live tagged trees $\geq 15\text{cm}$ dbh in green
 Dead trees highlighted in blue



Legend

PL_T3_tagged Events PL_T3_all Events

DBH

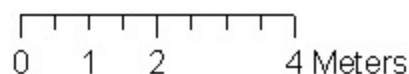
- 16 - 20
- 21 - 25
- 26 - 30
- 31 - 50

DBH

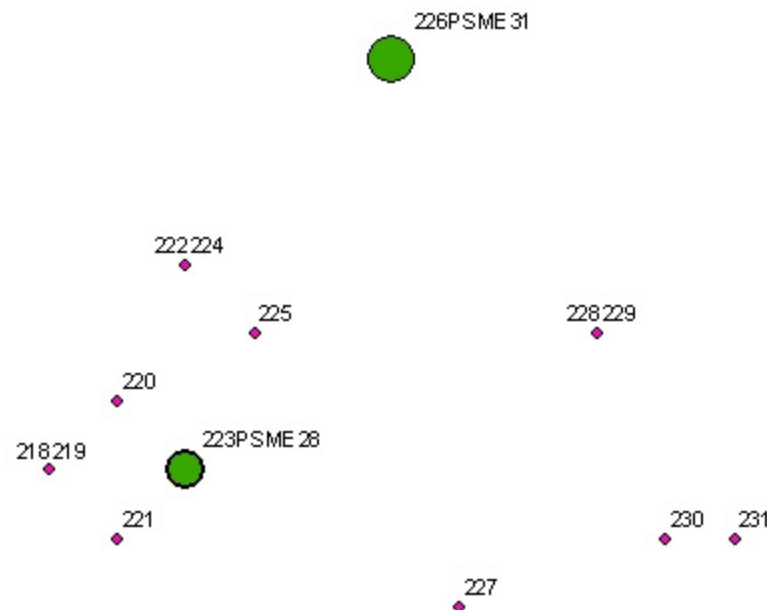
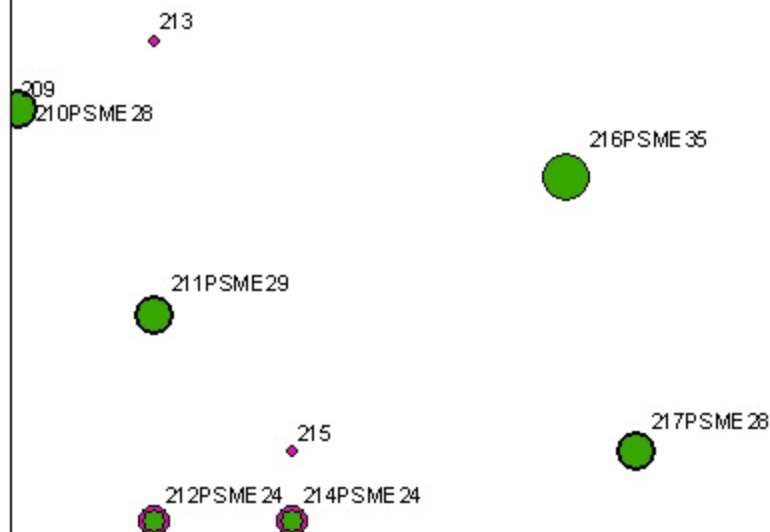
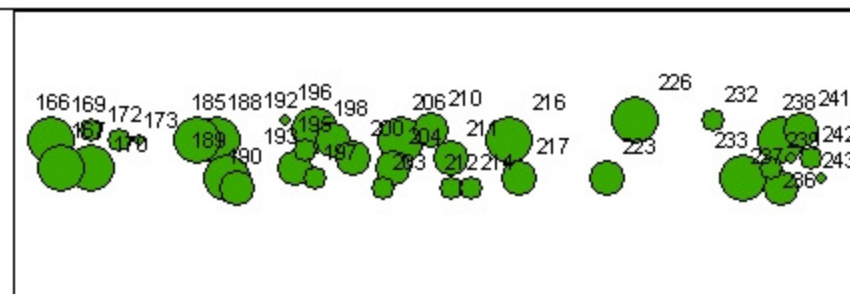
- 5 - 15
- 16 - 20
- 21 - 25
- 26 - 30
- 31 - 50

80 m long x 8 m wide
 angle = 92 degrees

1 centimeter equals 1.102629 meters



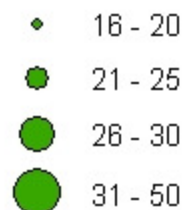
Plantation Transect 3 (all trees) Live tagged trees $\geq 15\text{cm}$ dbh in green Dead trees highlighted in blue



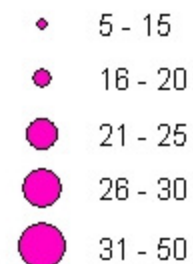
Legend

PL_T3_tagged Events PL_T3_all Events

DBH

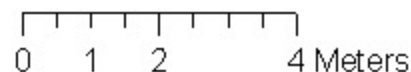


DBH

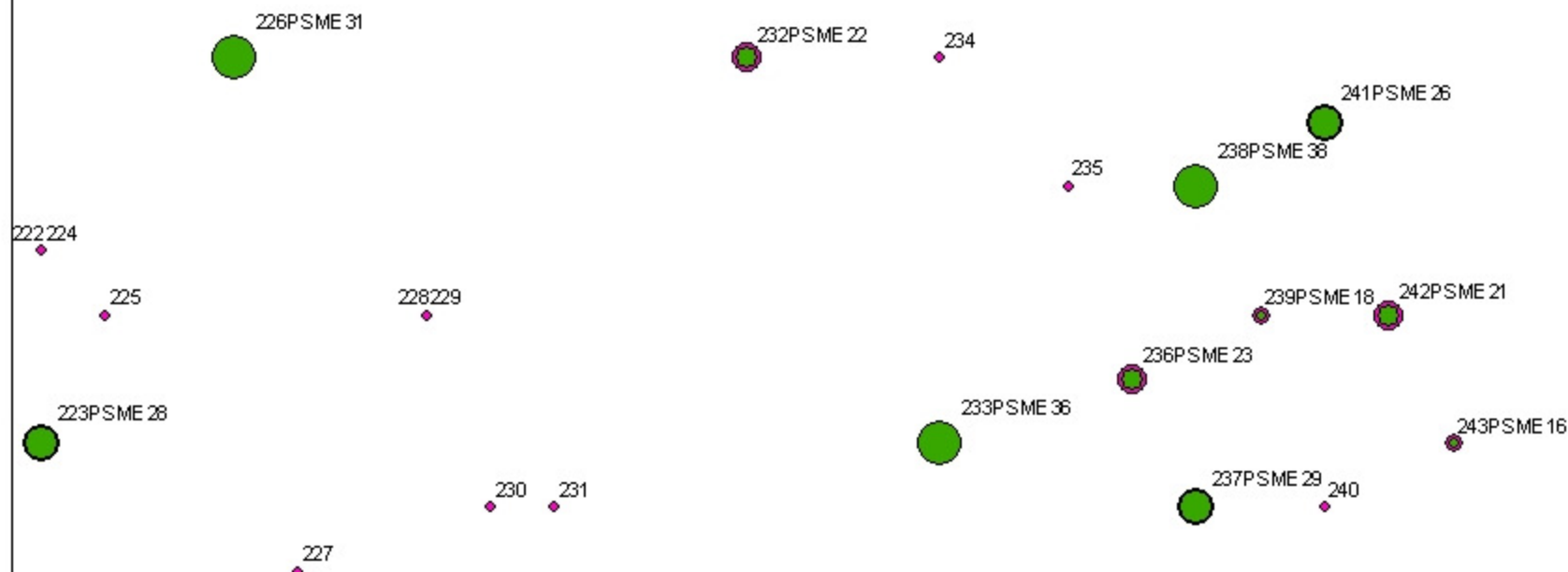
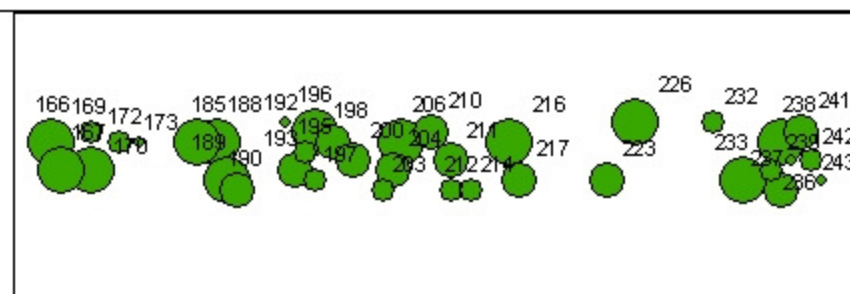


80 m long x 8 m wide
angle = 92 degrees

1 centimeter equals 1.102629 meters



Plantation Transect 3 (all trees)
 Live tagged trees $\geq 15\text{cm}$ dbh in green
 Dead trees highlighted in blue



Legend

PL_T3_tagged Events PL_T3_all Events

DBH

- 16 - 20
- 21 - 25
- 26 - 30
- 31 - 50

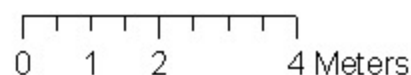
DBH

- 5 - 15
- 16 - 20
- 21 - 25
- 26 - 30
- 31 - 50



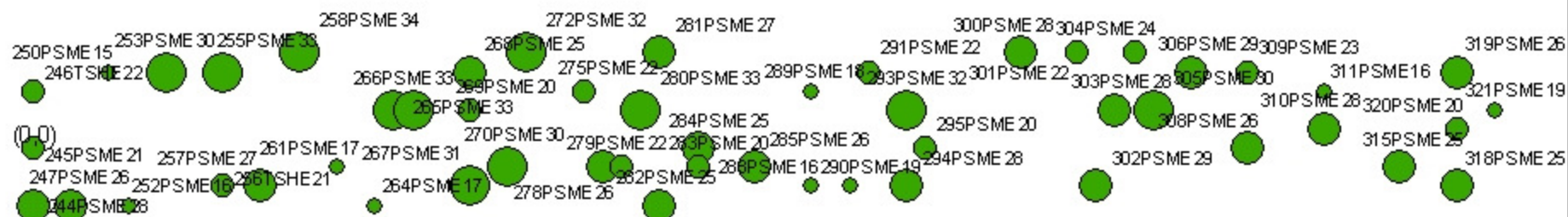
80 m long x 8 m wide
 angle = 92 degrees

1 centimeter equals 1.102629 meters



Plantation Transect 4

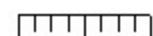
Live tagged trees $\geq 15\text{cm dbh}$ in green



80 m long x 8 m wide
angle = 65 degrees



1 centimeter equals 3.393330 meters



01.53 6 Meters

Legend

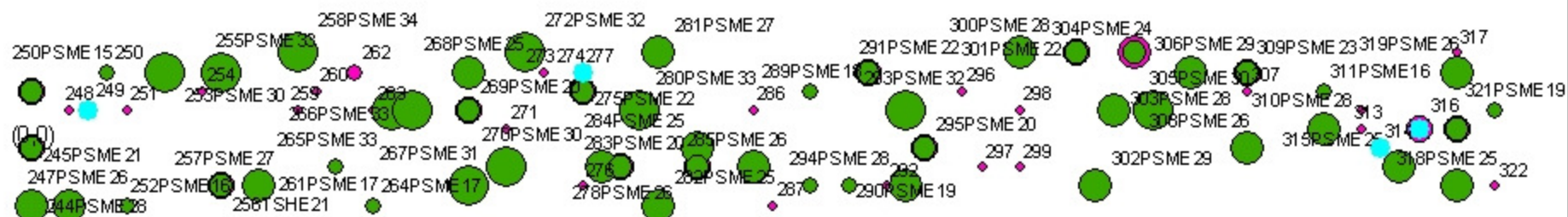
PL_T4_tagged Events

DBH

- 15 - 20
- 21 - 24
- 25 - 30
- 31 - 34

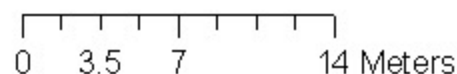
Plantation Transect 4

Live tagged trees $\geq 15\text{cm}$ dbh in green
Dead trees highlighted with blue spot



80 m long x 8 m wide
angle = 65 degrees

1 centimeter equals 3.396627 meters



Legend

PL_T4_tagged Events PL_T4_all Events

DBH

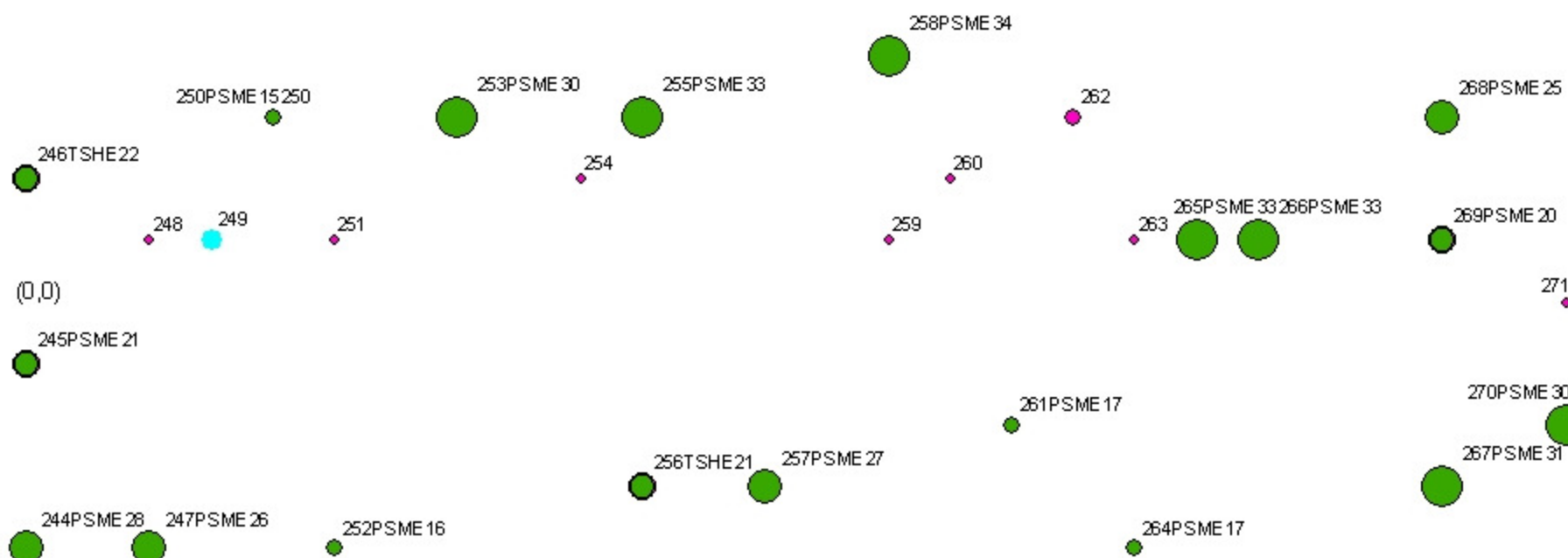
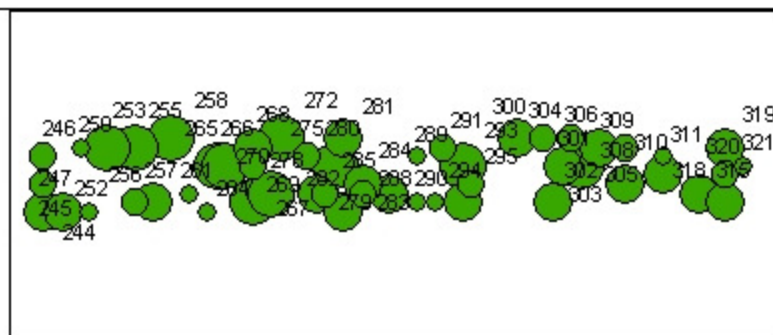


DBH



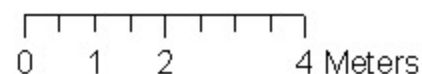
Plantation Transect 4

Live tagged trees $\geq 15\text{cm}$ dbh in green
Dead trees highlighted with blue spot



80 m long x 8 m wide
angle = 65 degrees

1 centimeter equals 1.074714 meters



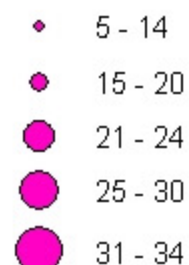
Legend

PL_T4_tagged Events PL_T4_all Events

DBH

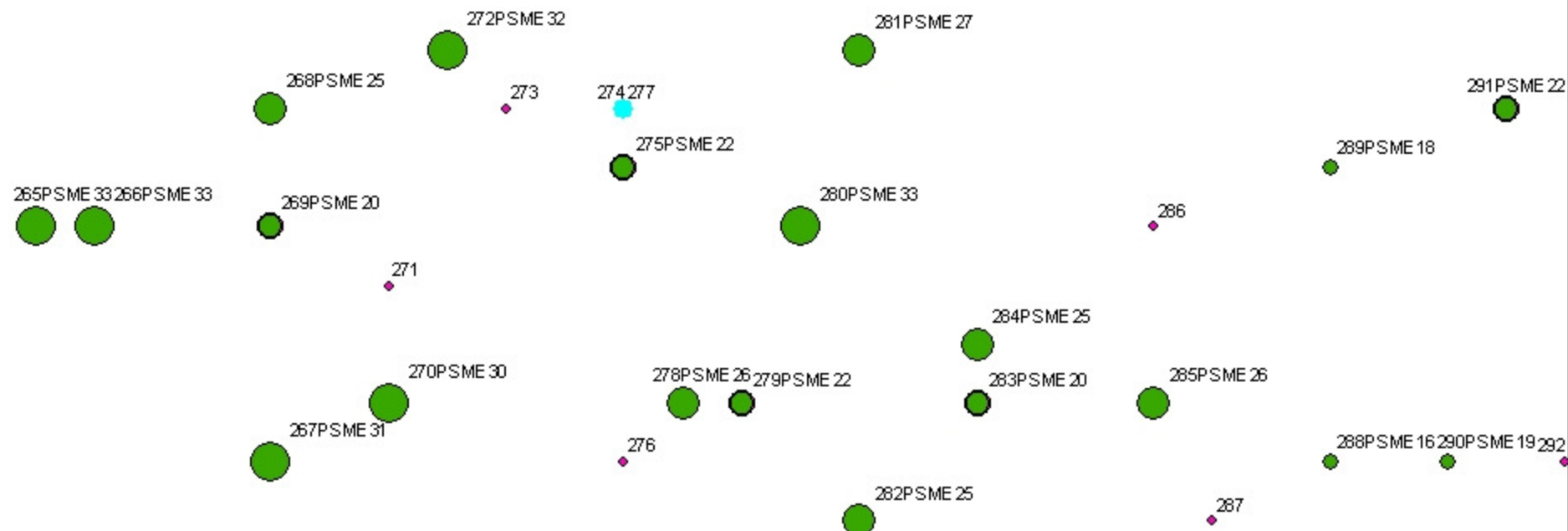


DBH



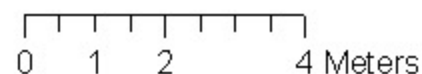
Plantation Transect 4

Live tagged trees $\geq 15\text{cm}$ dbh in green
Dead trees highlighted with blue spot



80 m long x 8 m wide
angle = 65 degrees

1 centimeter equals 1.074714 meters



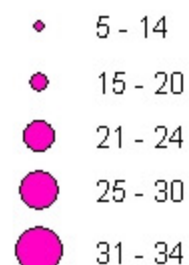
Legend

PL_T4_tagged Events PL_T4_all Events

DBH

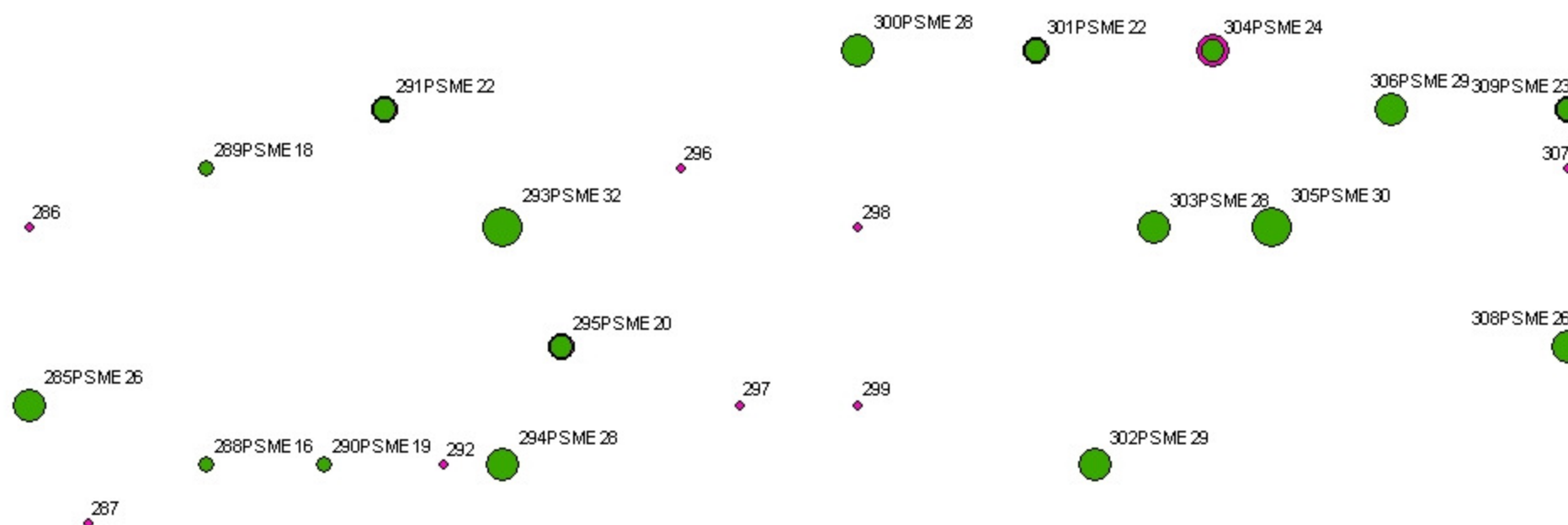
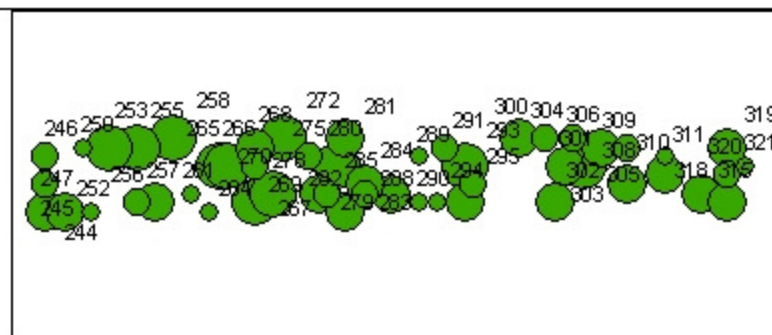


DBH



Plantation Transect 4

Live tagged trees $\geq 15\text{cm}$ dbh in green
Dead trees highlighted with blue spot



80 m long x 8 m wide
angle = 65 degrees

1 centimeter equals 1.074714 meters



Legend

PL_T4_tagged Events PL_T4_all Events

DBH

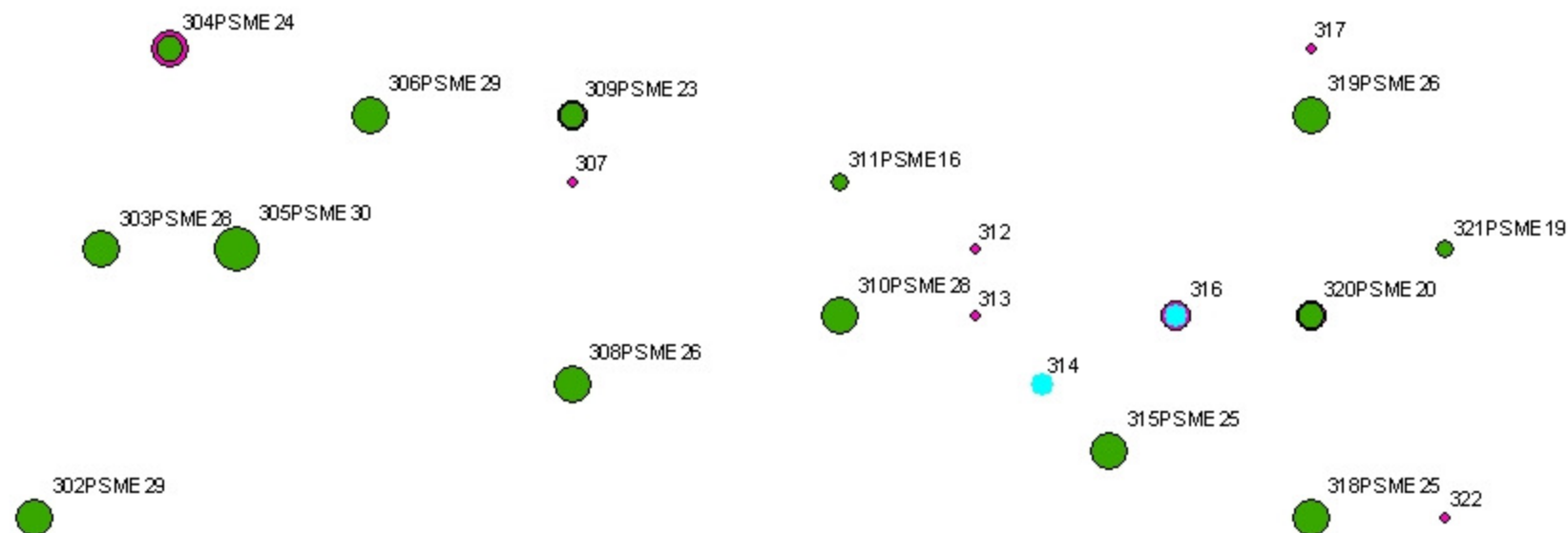
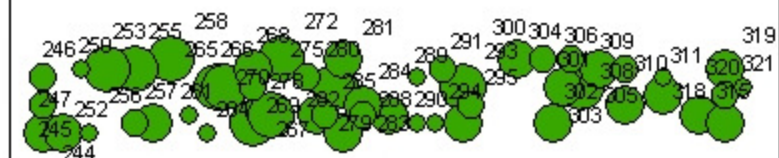
- 15 - 20
- 21 - 24
- 25 - 30
- 31 - 34

DBH

- 5 - 14
- 15 - 20
- 21 - 24
- 25 - 30
- 31 - 34

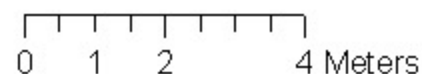
Plantation Transect 4

Live tagged trees $\geq 15\text{cm}$ dbh in green
Dead trees highlighted with blue spot



80 m long x 8 m wide
angle = 65 degrees

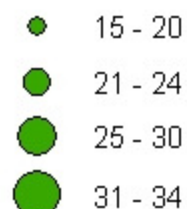
1 centimeter equals 1.074714 meters



Legend

PL_T4_tagged Events PL_T4_all Events

DBH



DBH

