

Alan J. Tepley, and Thomas T. Veblen. 2014. Spatiotemporal fire dynamics in mixed-conifer and aspen forests in the San Juan Mountains of southwestern Colorado, USA. *Ecological Monographs* VOL: pp–pp.

APPENDIX D. Fire reconstructions for the Williams Creek and Squaretop Mountain study areas

We provide a brief narrative of the predominant fire patterns across the Williams Creek and Squaretop Mountain study areas, followed by maps of each reconstructed event. The fire maps are presented along with the age-structure data for each stand included in the event. Stand numbers are labeled on each map, and the corresponding number is indicated in the upper left corner of the age-structure histogram for each stand. In each histogram, we represent the mapped fire year by a red vertical line, and the estimated fire severity ($\Delta S(n_i)$) is indicated below the transect number in the upper left corner. The color-coding of stands burned in each event uses the percentiles of severity values based on the full set of severity values over all fires across both study areas. Stands are sorted in order of decreasing fire severity going down each column of histograms. The histograms also include the background and threshold curves used to identify recruitment pulses by CharAnalysis, the recruitment pulses identified by aspen recruitment and CharAnalysis, and the local fire-scar data (including fire scars found on a partial cross-section within 300 m of the transect and on at least one additional cross-section in the study area, and healed-over fire scars found on increment cores within the transect that correspond to a fire year found on a partial cross-section).

PREDOMINANT FIRE PATTERNS

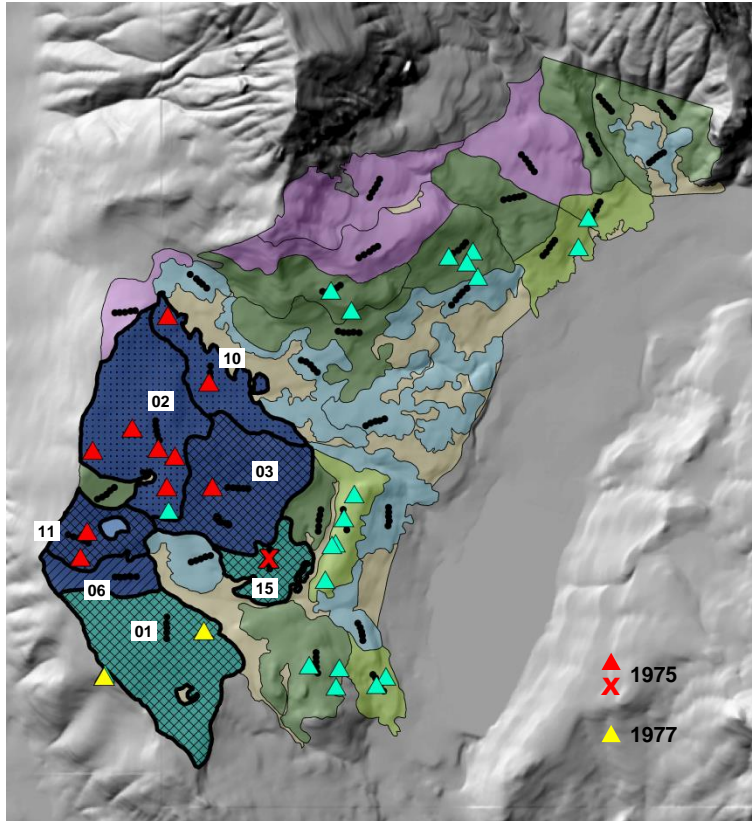
At Williams Creek, fires prior to the 20th century typically burned most aspen and DMC stands along the perimeter of the grassy meadows and spread farther into the forest interior to a limited extent (e.g., 1851, 1861, and 1879). In some years, however, almost the entire study area burned (e.g., 1748 and 1786). Aspen stands typically burned at higher severity than DMC stands, but fire severity was usually low enough that some aspen trees survived, producing multi-cohort stands. Among MMC stands, fire frequency generally decreased with increasing elevation and distance from the forest edge, and fire severity was usually relatively low in years when the fire spread less than ca. 1 km into the forest interior (e.g., 1851 and 1861). However, MMC and spruce-fir stands typically experienced relatively high fire severity in the more extensive fires (e.g., 1748 and 1786).

The few 20th-century fires at Williams Creek were typically smaller and of lower severity than earlier fires. They may have burned locally in the meadows and spread into one or two aspen stands along the forest edge before burning a cluster of MMC and spruce-fir stands (e.g., 1922). Thus, some MMC stands experienced two or three fires in the 20th century whereas no DMC stands had evidence of fire since 1902.

At Squaretop Mountain, several fires were limited primarily to low-elevation DMC stands and burned at relatively low severity (e.g., 1847 and 1860/61), but others burned almost the entire study area and included a substantial component of high-severity fire (e.g., 1878/79). Most DMC stands burned in each major event, but there were also local fires that burned only a cluster of 2–4 stands at low elevations (e.g., 1774, 1806, and 1834). Similar small fires were found at Williams Creek (e.g., 1778). Across the MMC forests at Squaretop Mountain, fire frequency generally decreased with elevation and the stands on the northeast-facing slope near

the northeastern boundary of the study area showed no evidence of fire in several years when fire was otherwise extensive (1819, 1847, and 1860/61).

Most (80%) aspen stands at Squaretop Mountain had >1 cohort, suggesting young aspen stands typically burned at severity low enough that some trees survived. Yet, there were some instances when young aspen stands appear to have acted as a fuel break. For example, the 1878/79 event led to the initiation of numerous aspen stands. Several of these stands showed no evidence of burning in the next fire (1899) even though they were partially or completely surrounded by stands with fire scar or recruitment pulse evidence of burning.

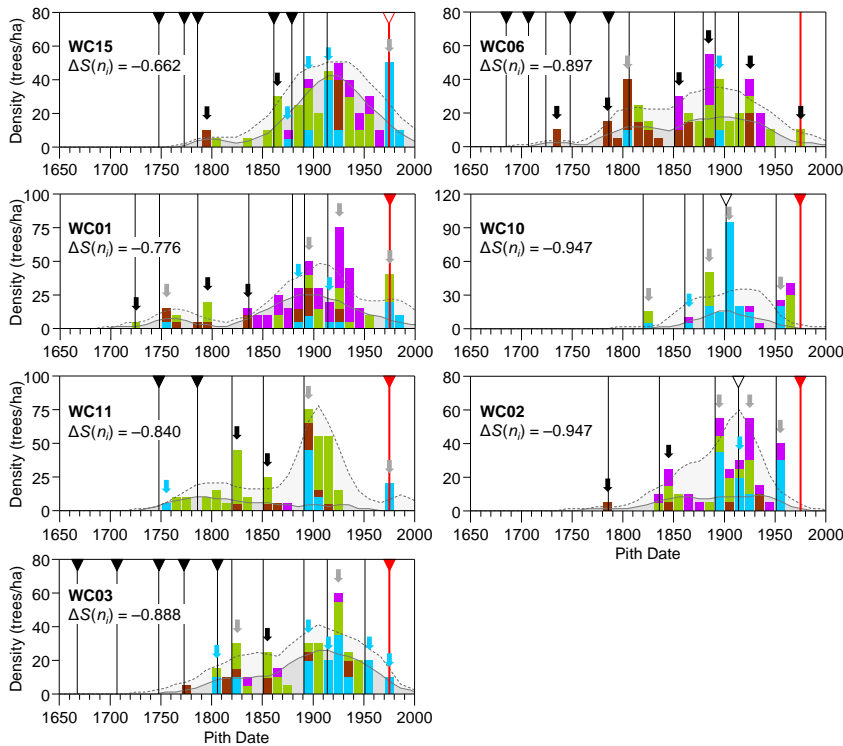


Williams Creek 1975/77 Fire

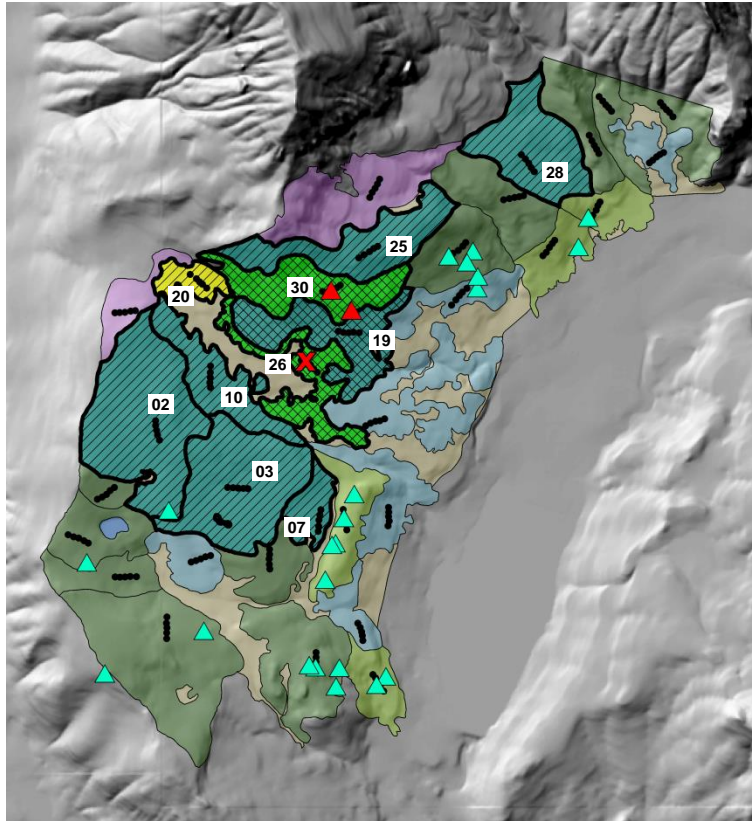
- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Fire Scars**
- Scarred tree
 - Unscarred recorder
 - Scar in increment core

- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| <-0.810 | (<10 th) |
- ▲ 1975
▲ 1977



- Species**
- Aspen
 - White fir
 - Douglas-fir
 - Ponderosa pine
 - Spruce
 - Subalpine fir
- Recruitment Pulses**
- CharAnalysis background
 - CharAnalysis threshold
 - CharAnalysis pulse
 - CharAnalysis & aspen pulse
 - Aspen pulse
- Fire Evidence**
- Fire scar within 300 m (cross-section)
 - Fire scar (increment core)
 - Inferred fire

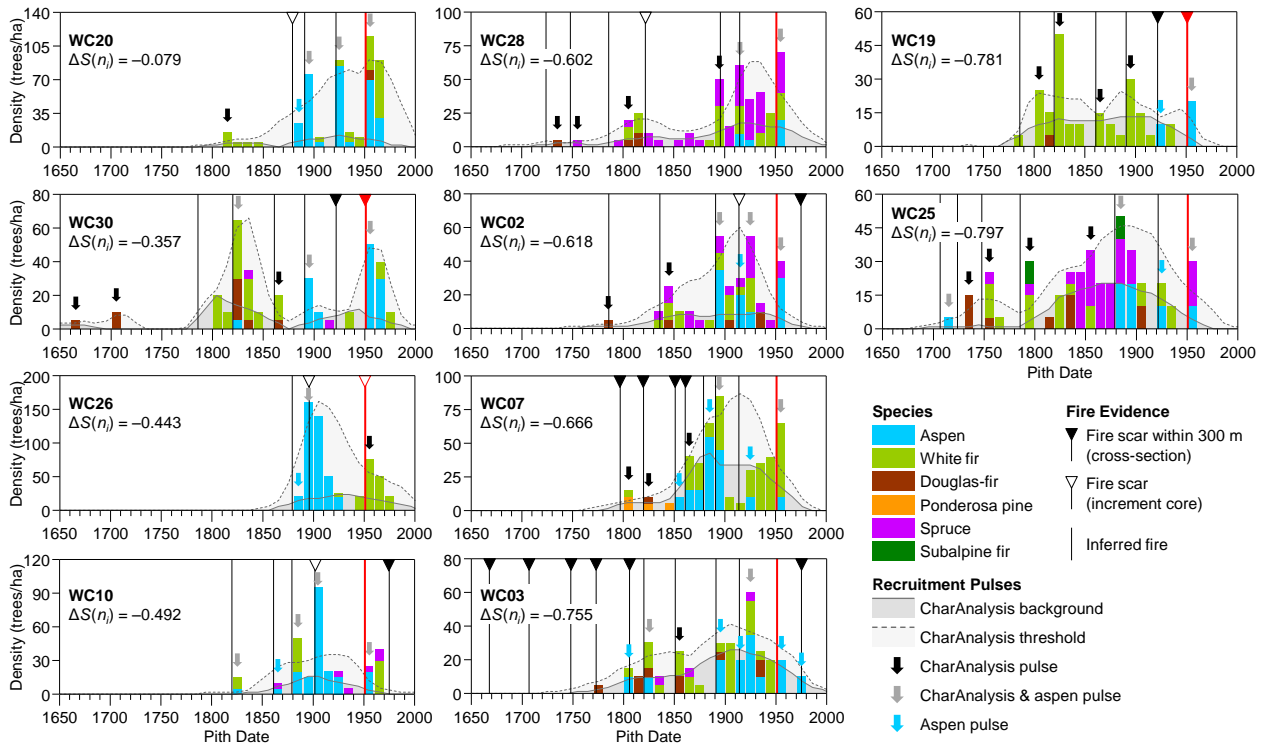


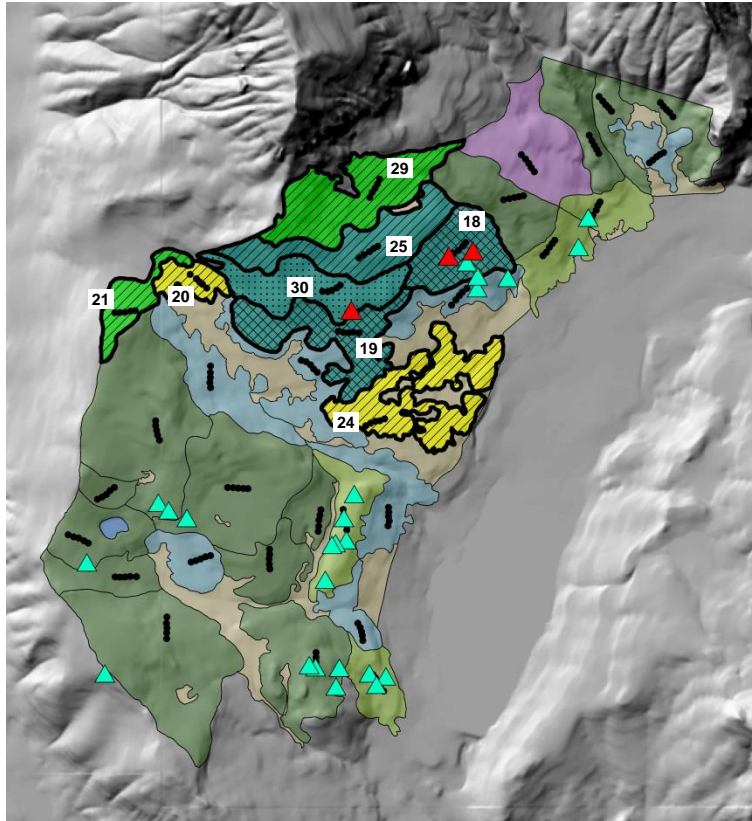
Williams Creek 1951 Fire

- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Transect** ●●●●
- Fire Scars**
- Scarred tree ▲
 - Unscarred recorder ▲
 - Scar in increment core X

- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |



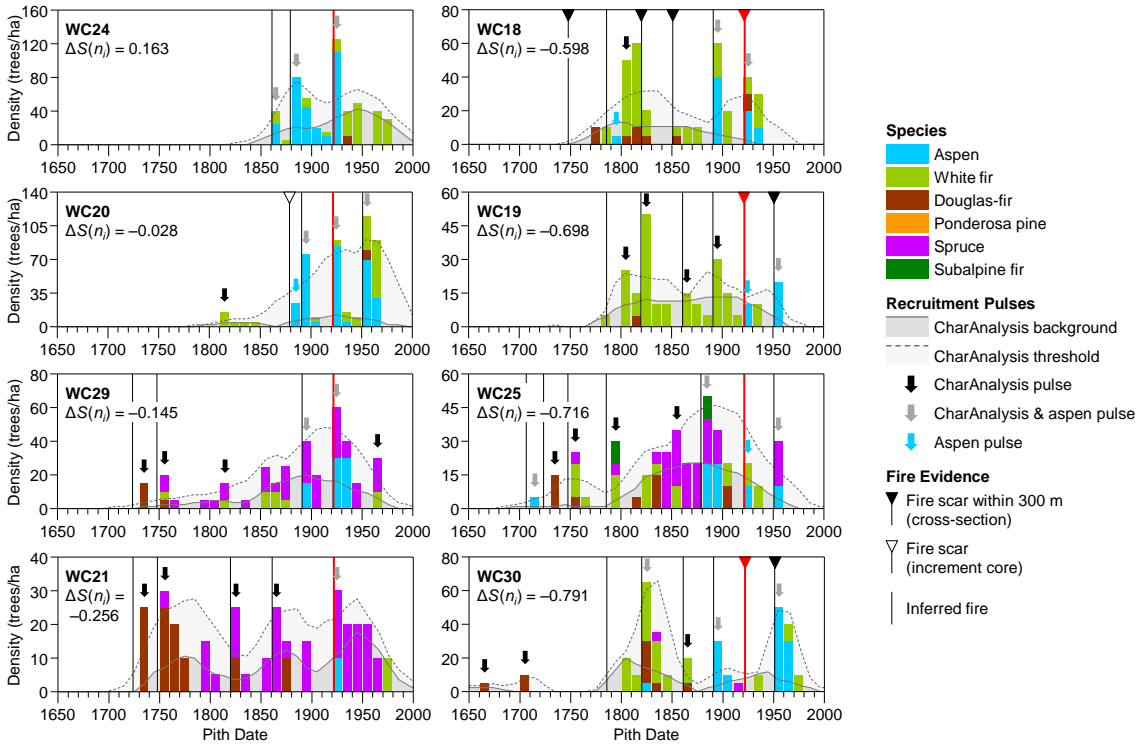


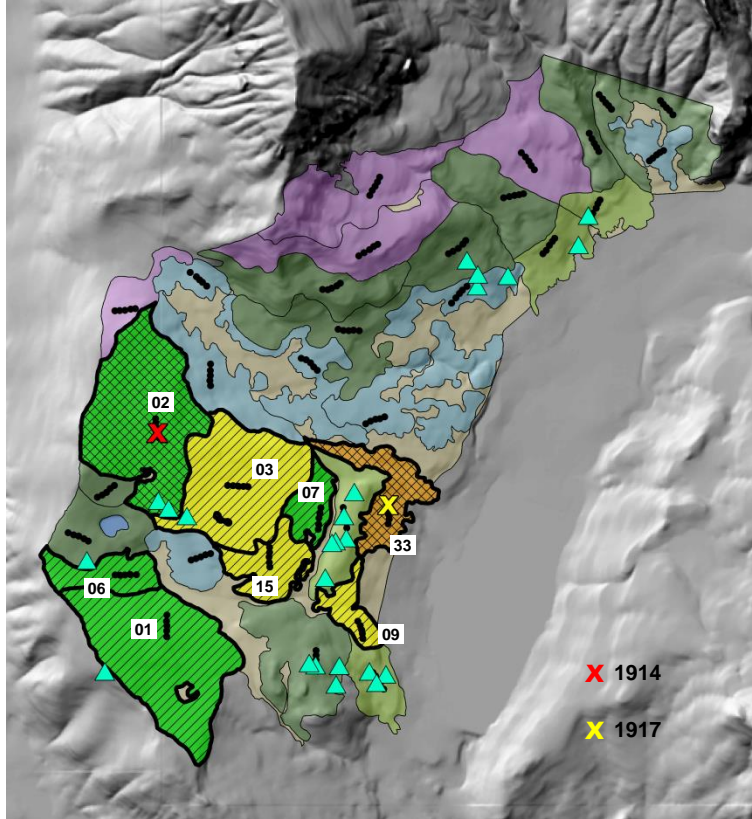
Williams Creek 1922 Fire

- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Transect
- Fire Scars**
- ▲ Scarred tree
 - ▲ Unscarred recorder
 - ✕ Scar in increment core

- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| <-0.810 | (<10 th) |



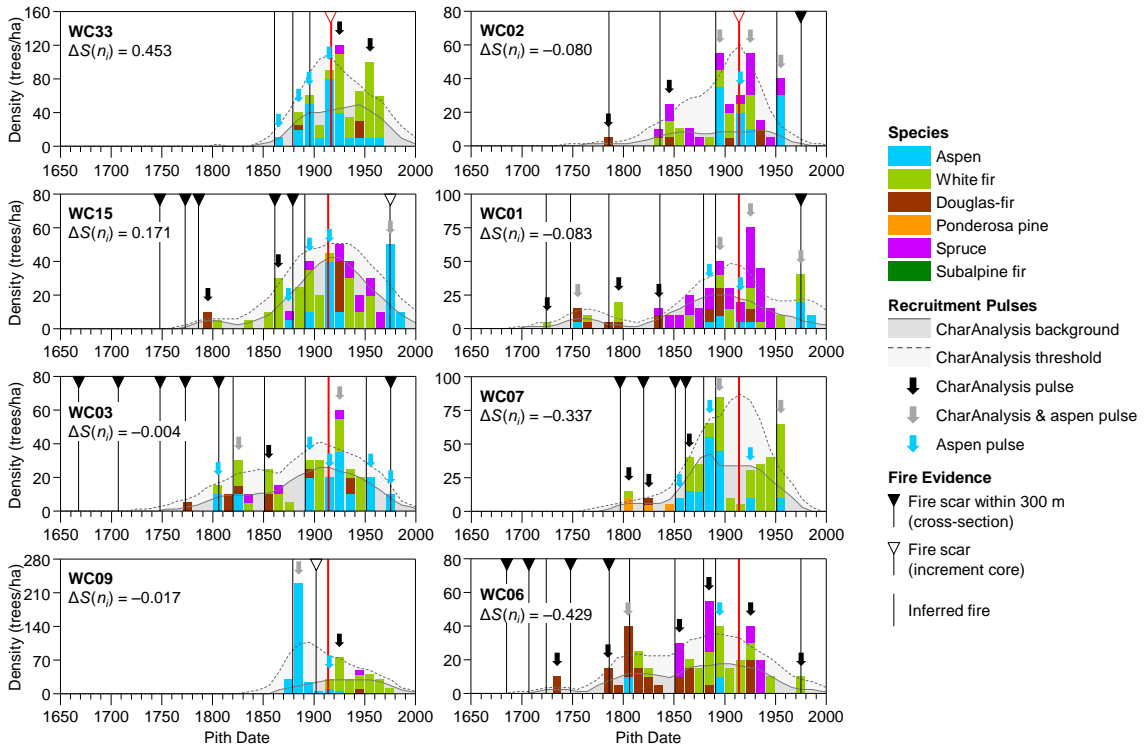


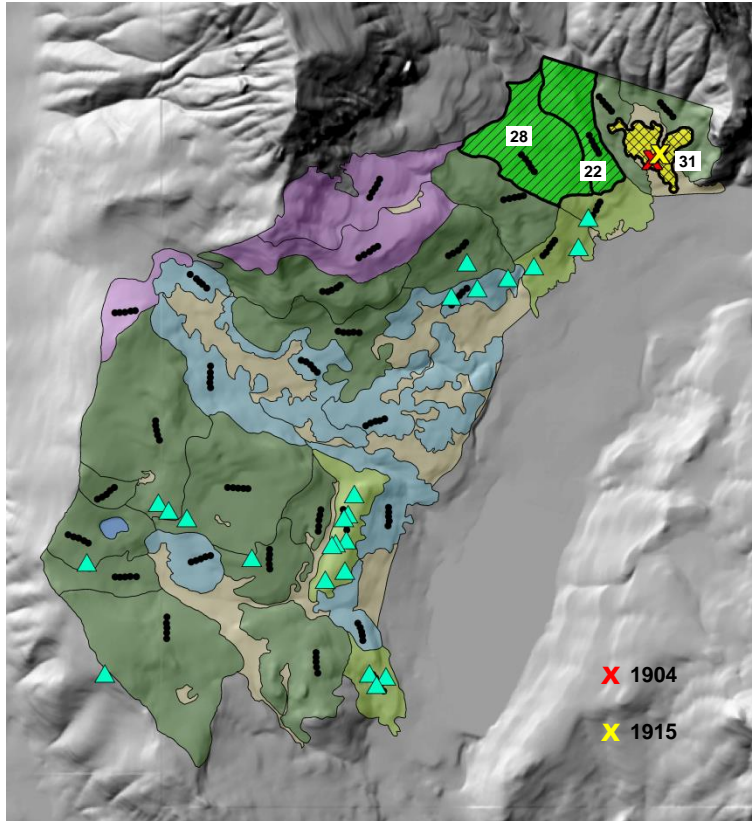
Williams Creek 1914/1917 Fire

- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Transect
- Fire Scars**
- ▲ Scarred tree
 - ▲ Unscarred recorder
 - ✗ Scar in increment core

- Stand Fire Evidence**
- ▨ Scar within 300 m
 - ▨ Recruitment pulse
 - ▨ Pulse & scar within 300 m
 - Loss of record

- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| <-0.810 | (<10 th) |



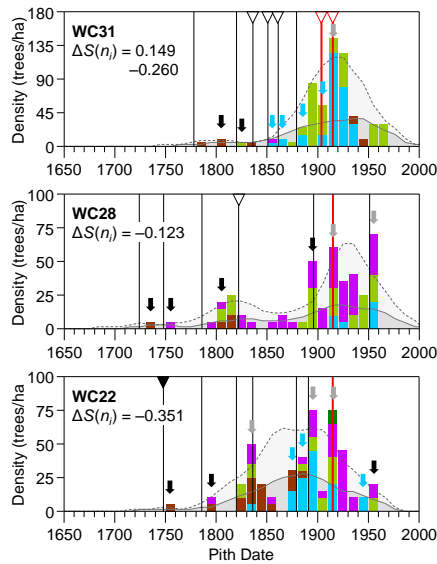


Williams Creek 1904/1915 Fire

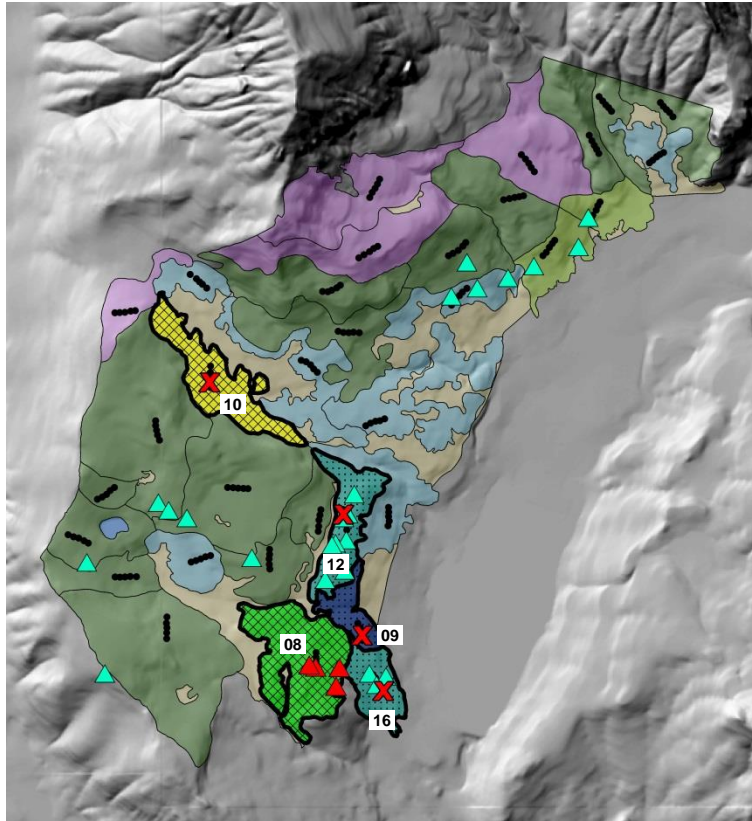
- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Transect
- Fire Scars**
- ▲ Scarred tree
 - ▲ Unscarred recorder
 - ✕ Scar in increment core

- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

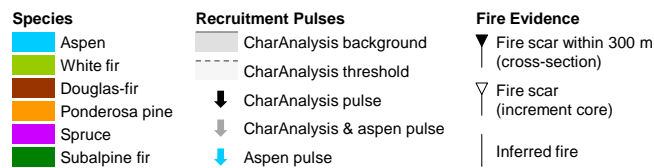
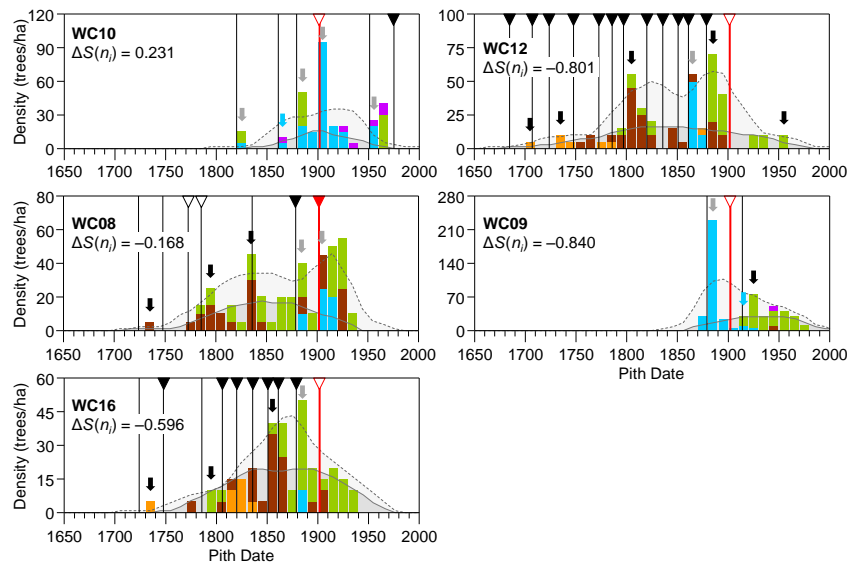
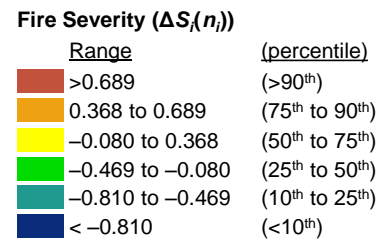
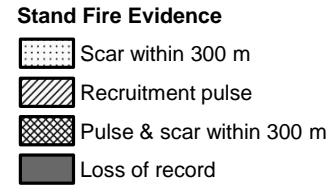
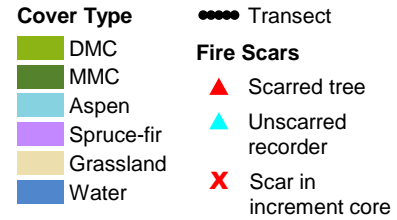
- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |

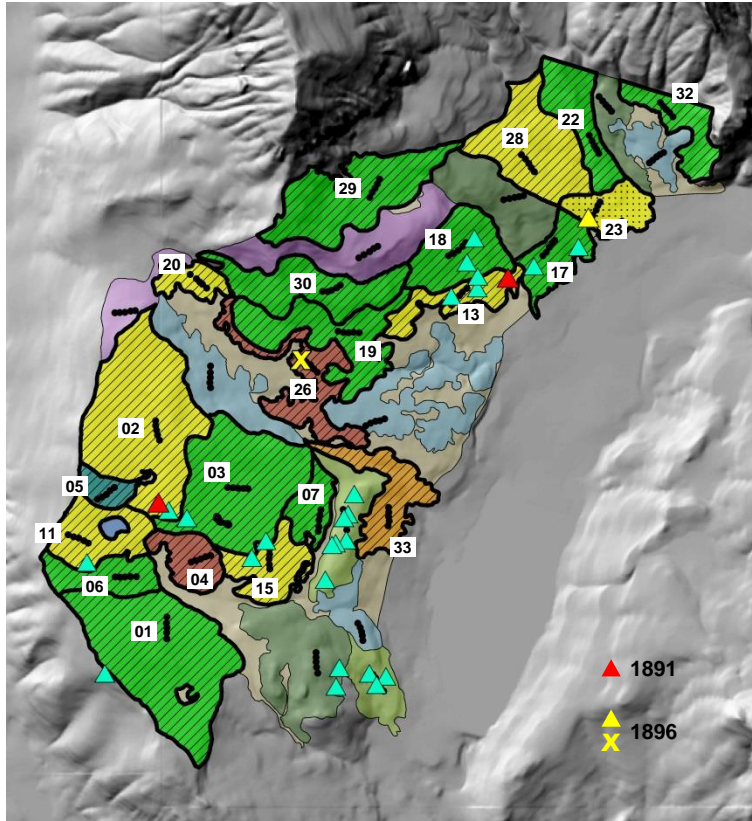


- Species**
- Aspen
 - White fir
 - Douglas-fir
 - Ponderosa pine
 - Spruce
 - Subalpine fir
- Recruitment Pulses**
- CharAnalysis background
 - CharAnalysis threshold
 - CharAnalysis pulse
 - CharAnalysis & aspen pulse
 - Aspen pulse
- Fire Evidence**
- Fire scar within 300 m (cross-section)
 - Fire scar (increment core)
 - Inferred fire

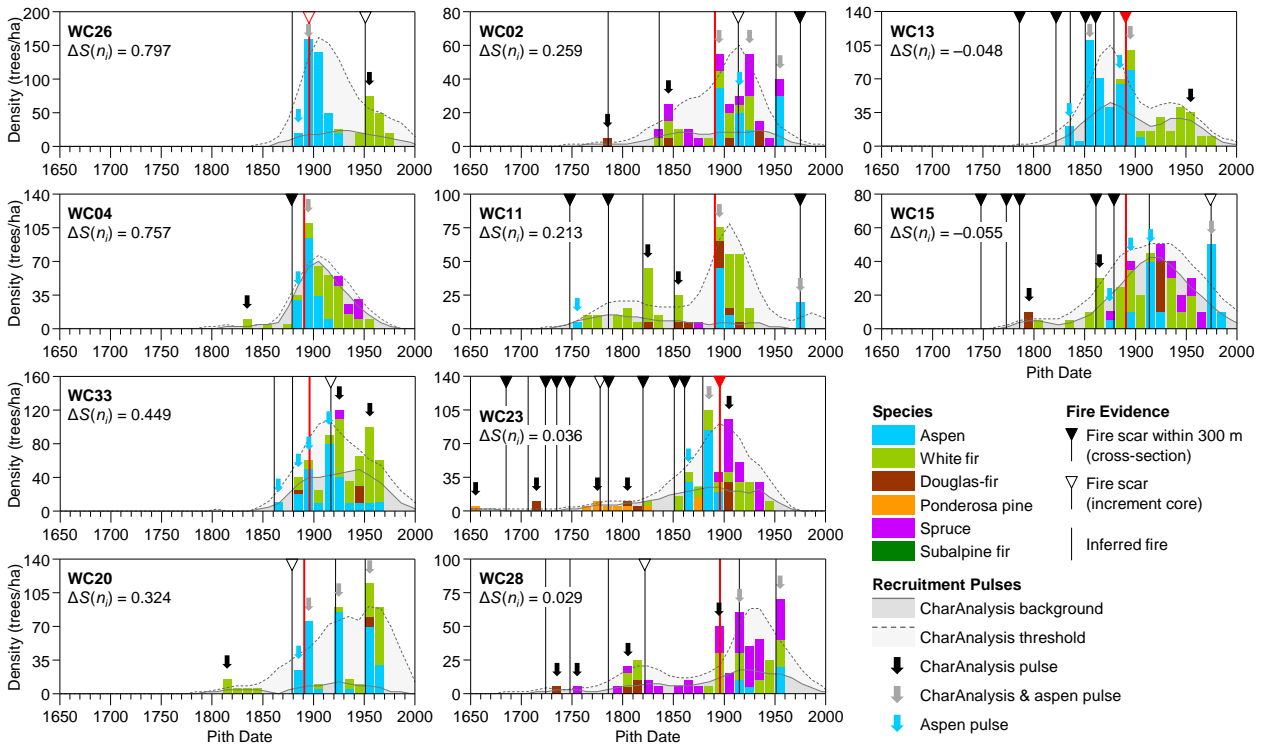
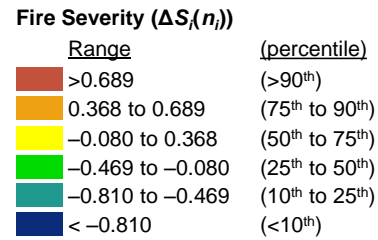
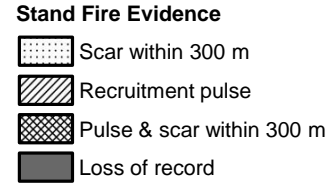
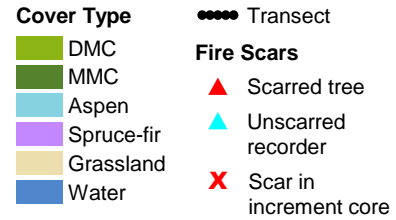


Williams Creek 1902 Fire

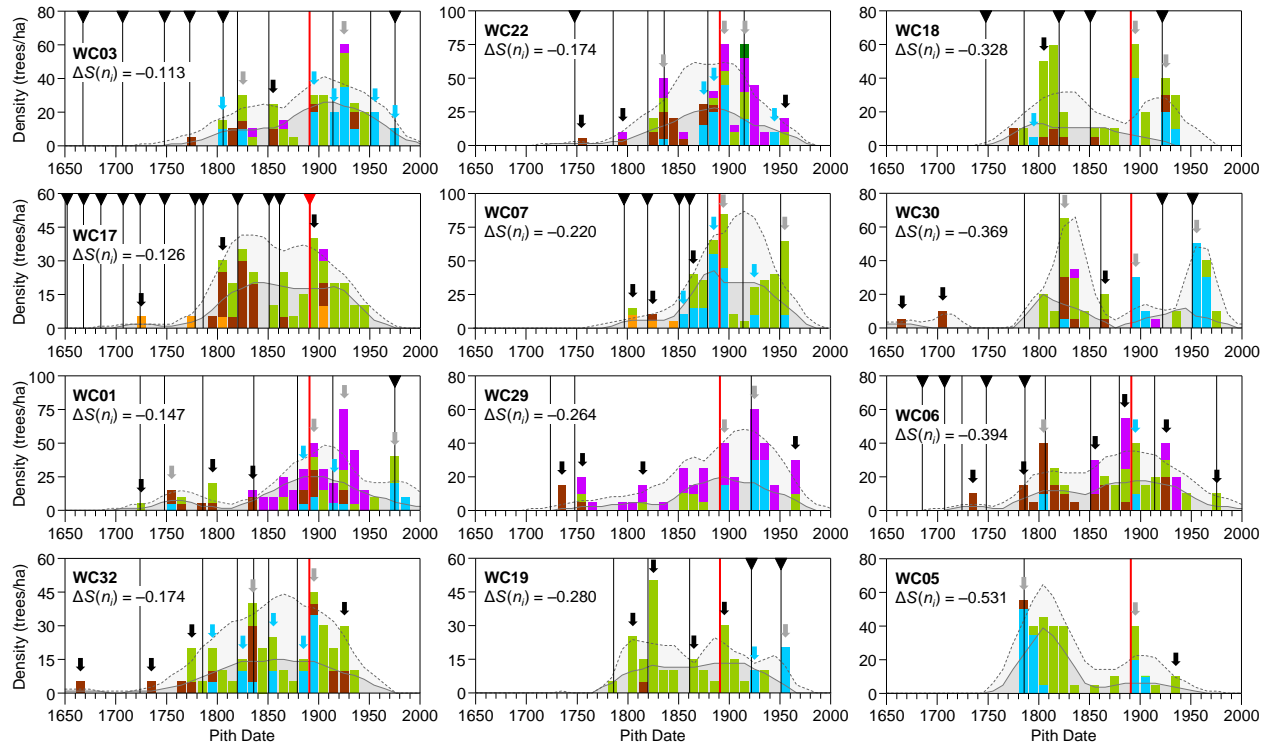


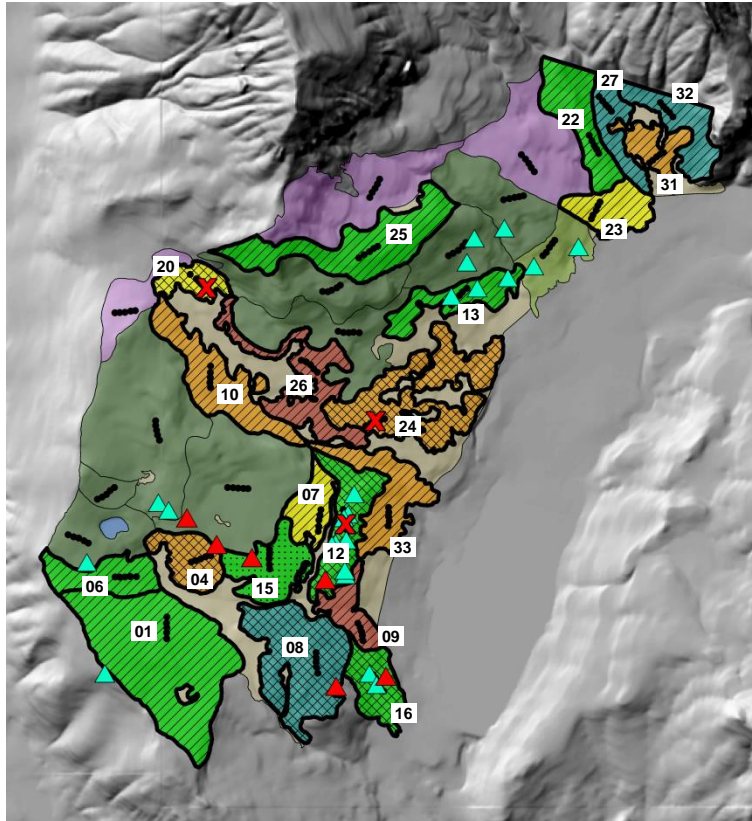


Williams Creek 1891/96 Fire

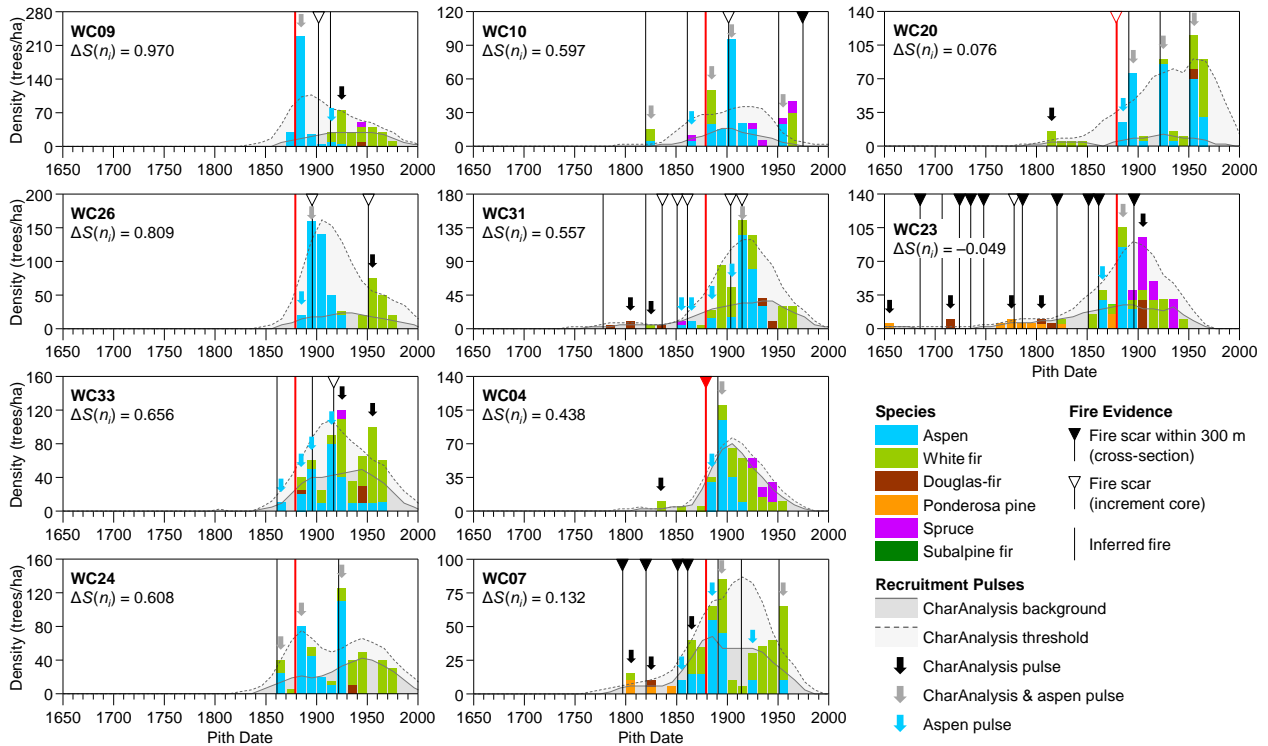
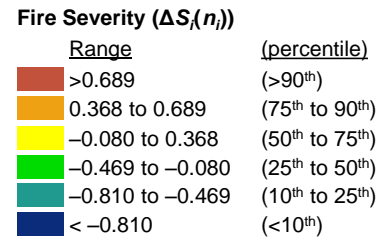
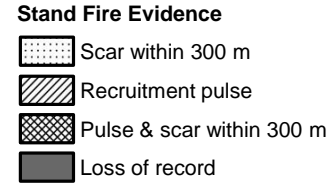
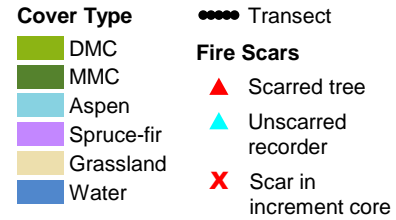


Williams Creek, 1891/96 Fire (continued)

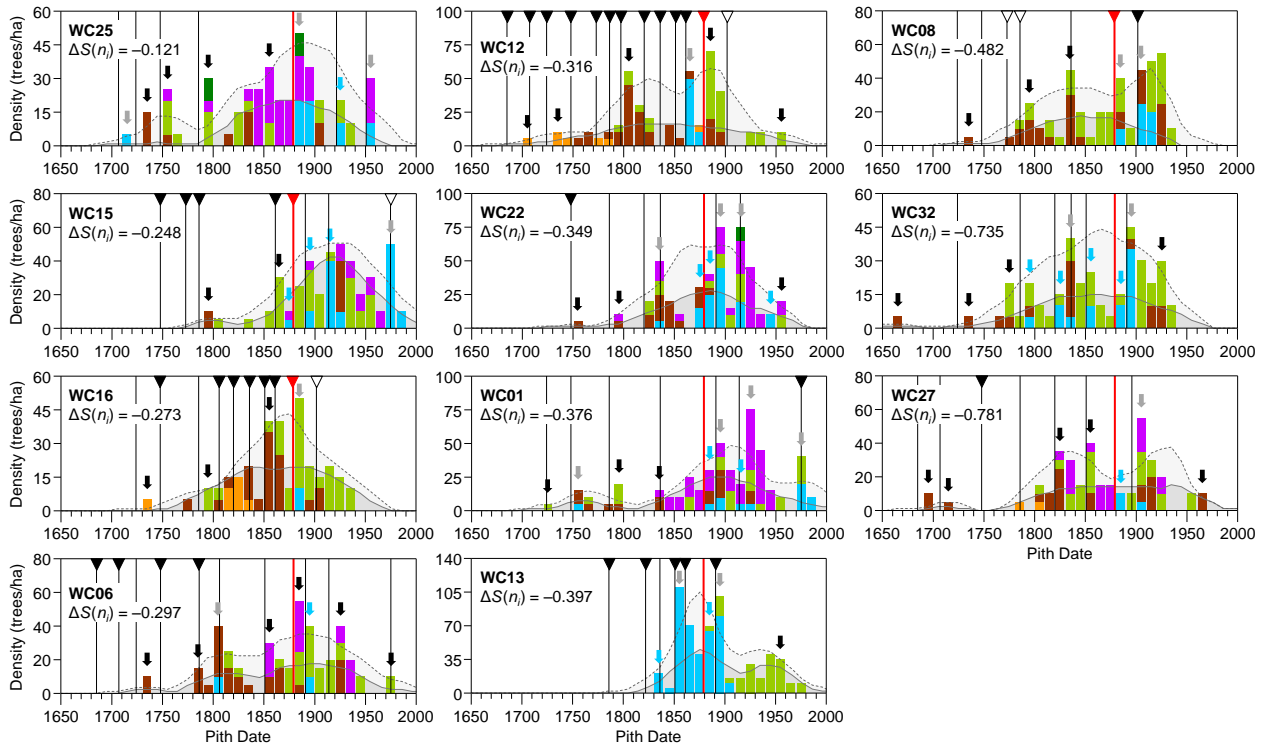




Williams Creek 1879 Fire



Williams Creek, 1879 Fire (continued)



Species

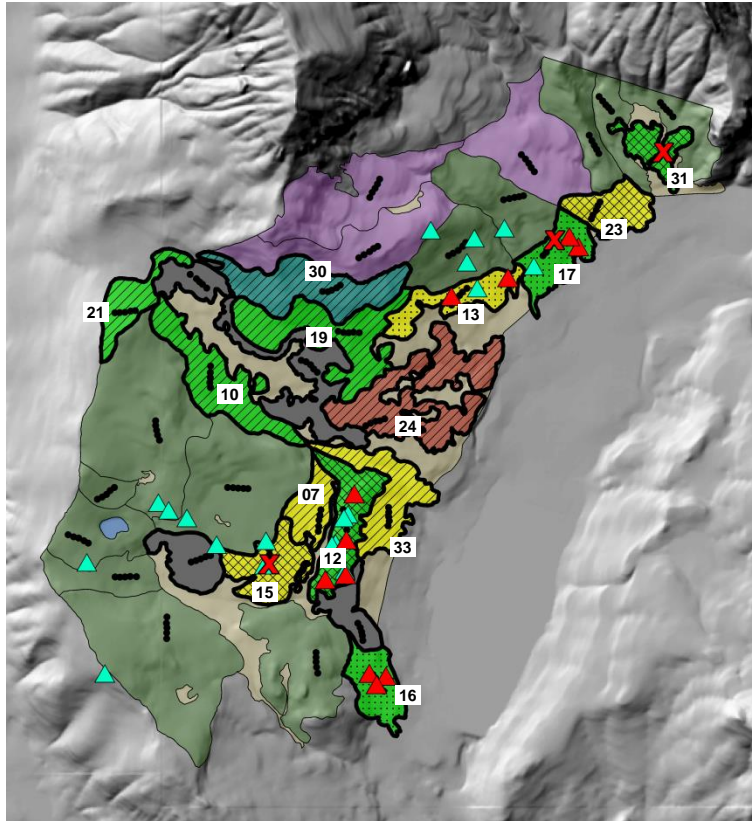
- Aspen
- White fir
- Douglas-fir
- Ponderosa pine
- Spruce
- Subalpine fir

Recruitment Pulses

- CharAnalysis background
- CharAnalysis threshold
- CharAnalysis pulse
- CharAnalysis & aspen pulse
- Aspen pulse

Fire Evidence

- Fire scar within 300 m (cross-section)
- Fire scar (increment core)
- Inferred fire

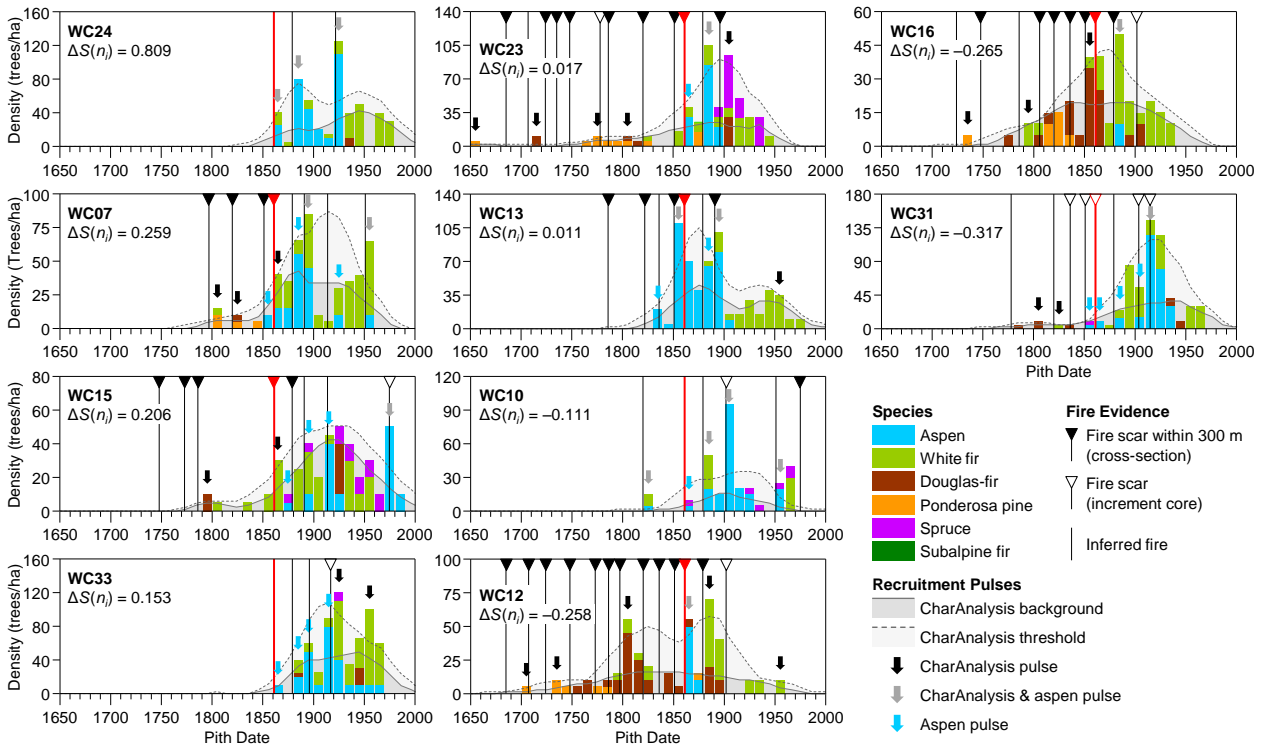


Williams Creek 1861 Fire

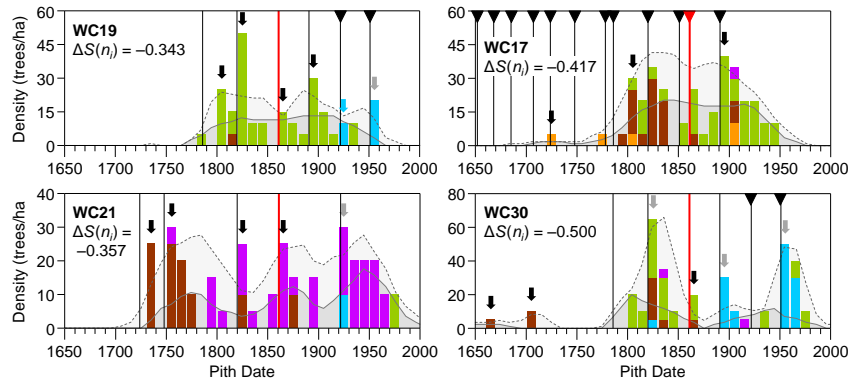
- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Fire Scars**
- Transect
 - Scarred tree
 - Unscarred recorder
 - Scar in increment core

- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |



Williams Creek, 1861 Fire (continued)



Species

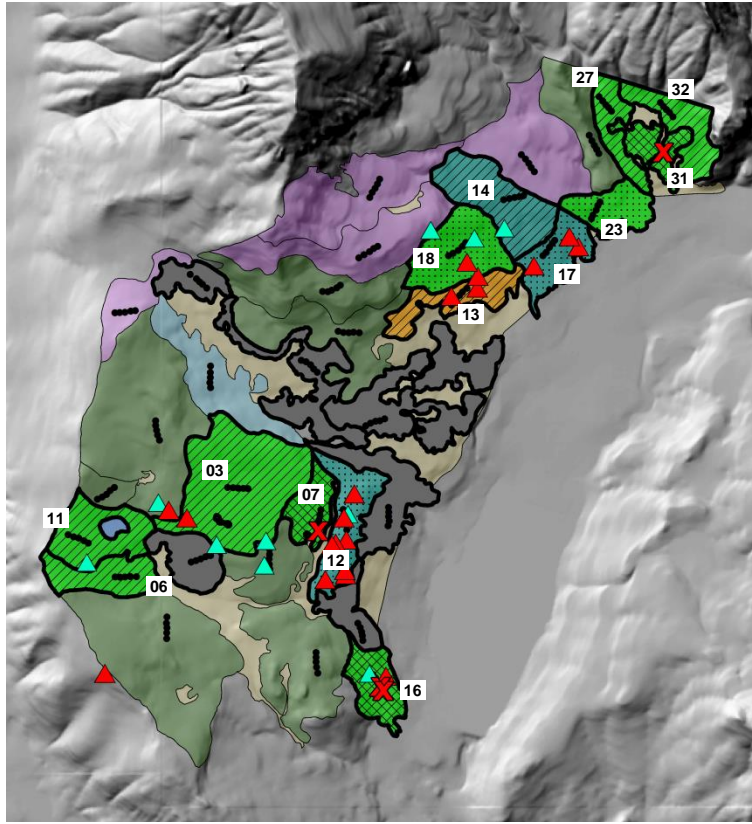
- Aspen
- White fir
- Douglas-fir
- Ponderosa pine
- Spruce
- Subalpine fir

Recruitment Pulses

- CharAnalysis background
- CharAnalysis threshold
- ▾ CharAnalysis pulse
- ▾ CharAnalysis & aspen pulse
- ▾ Aspen pulse

Fire Evidence

- ▾ Fire scar within 300 m (cross-section)
- ▽ Fire scar (increment core)
- Inferred fire

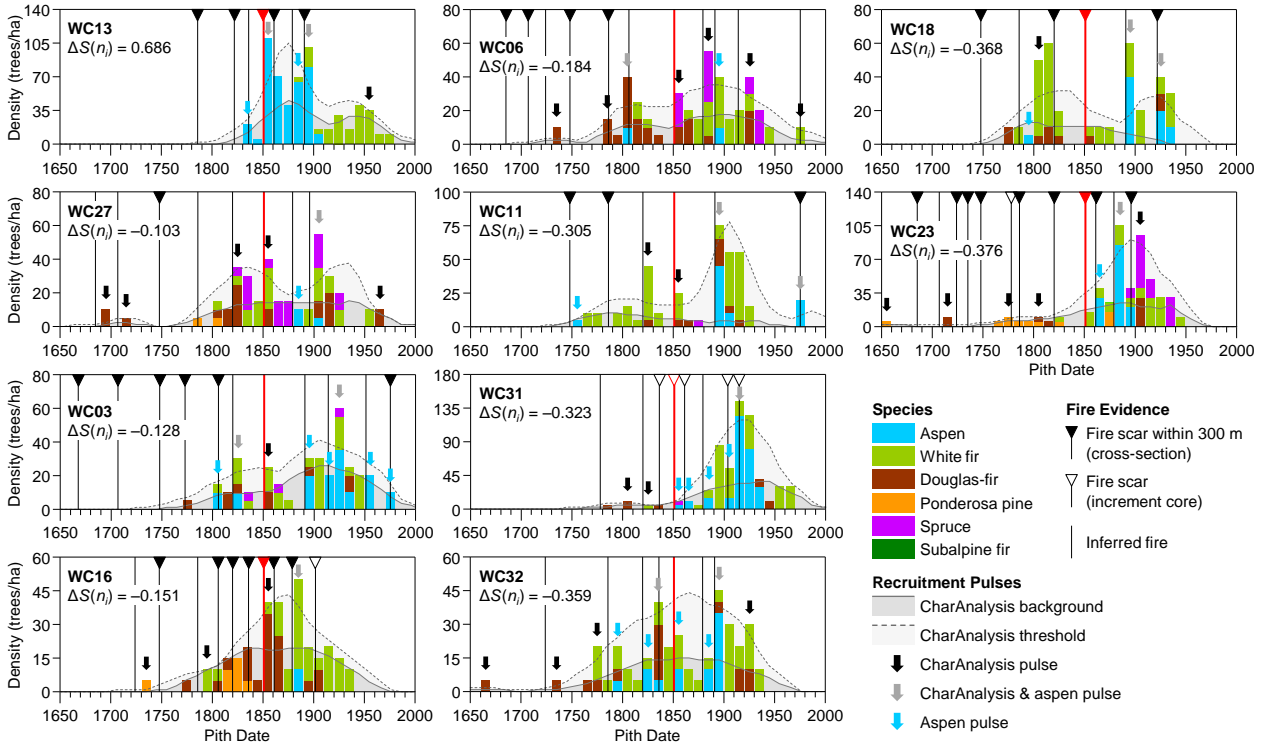


Williams Creek 1851 Fire

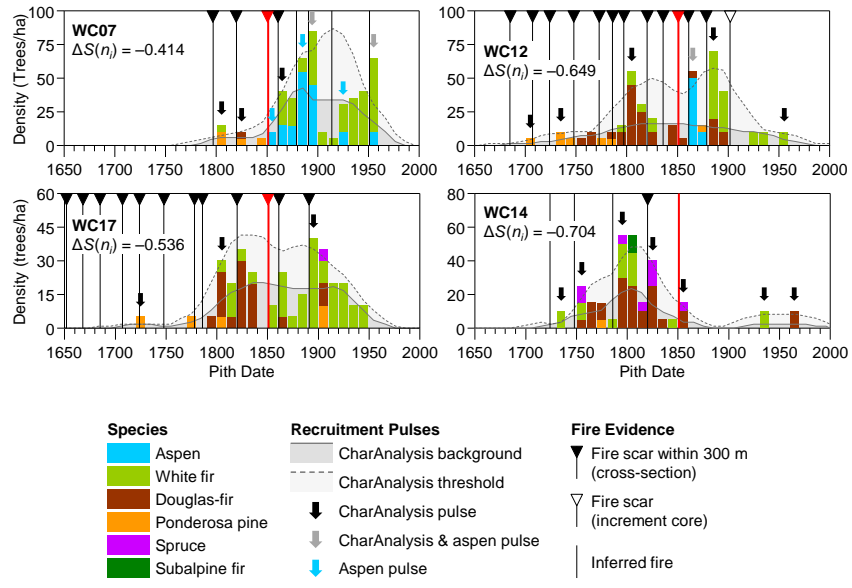
- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Fire Scars**
- Transect
 - Scarred tree
 - Unscarred recorder
 - Scar in increment core

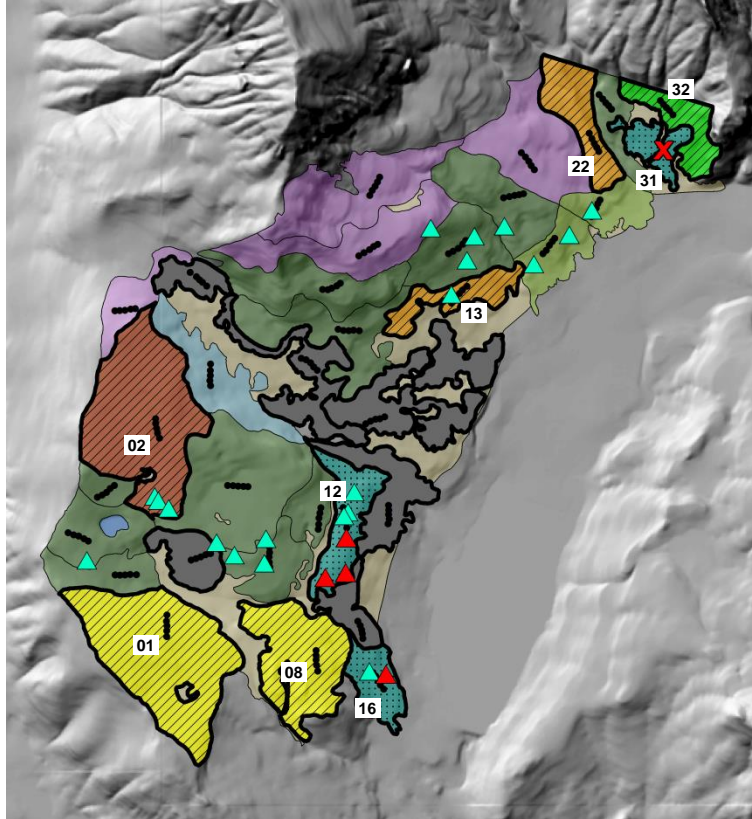
- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| <-0.810 | (<10 th) |



Williams Creek, 1851 Fire (continued)



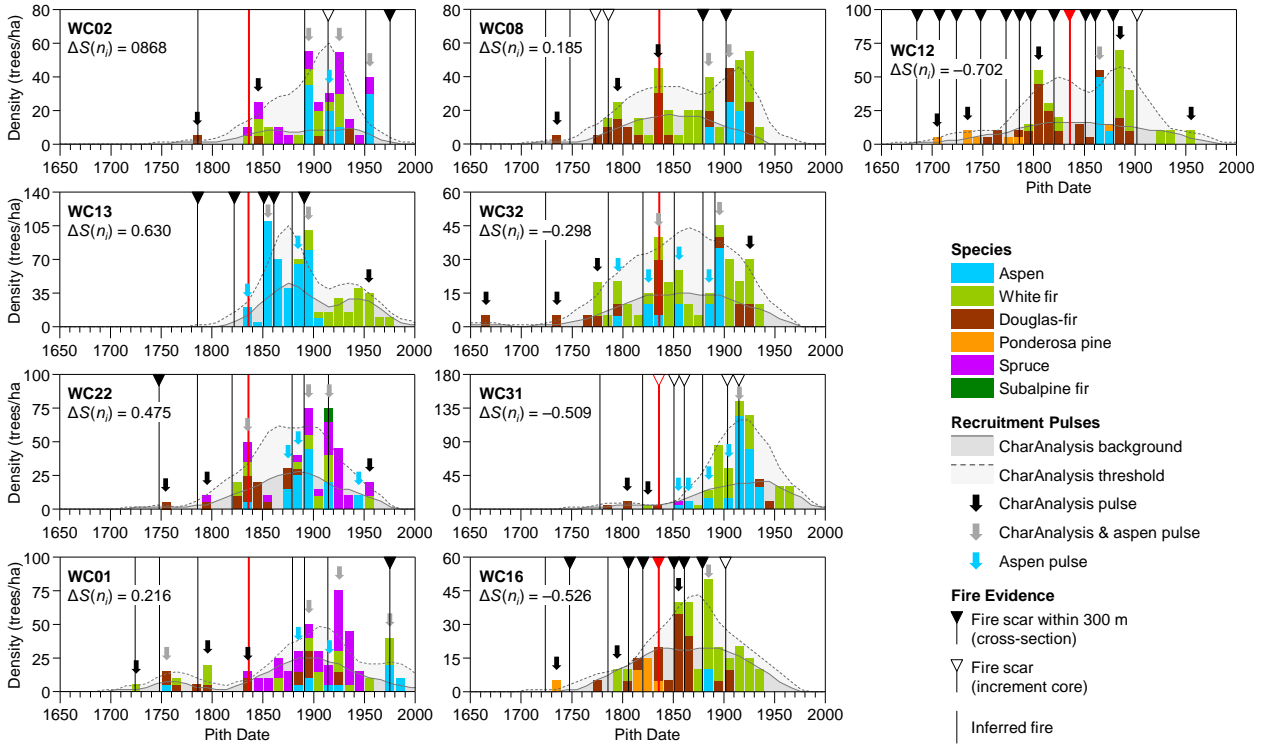


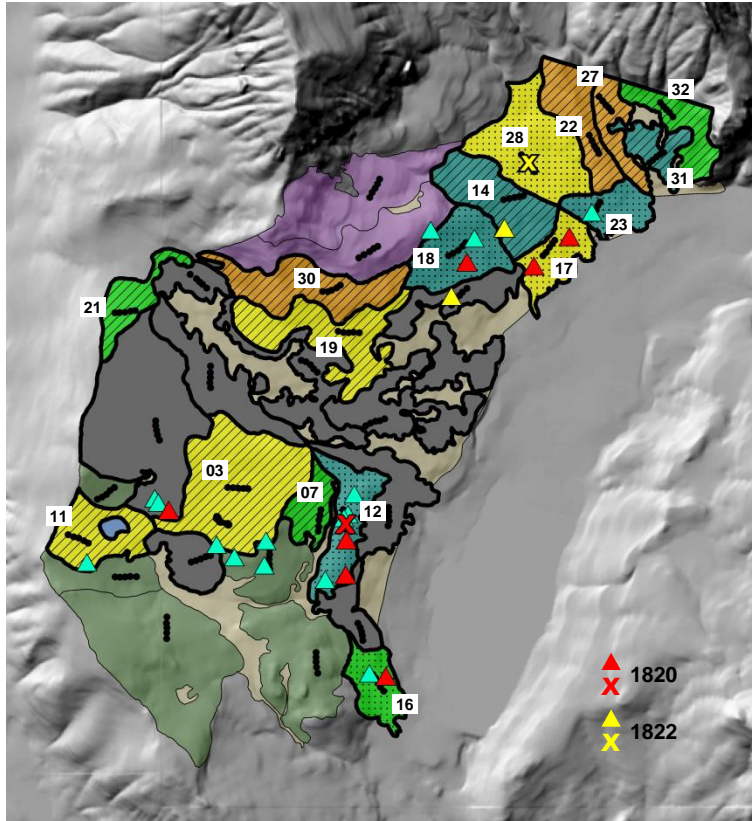
Williams Creek 1836 Fire

- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Transect** ●●●●
- Fire Scars**
- Scarred tree ▲
 - Unscarred recorder ▲
 - Scar in increment core X

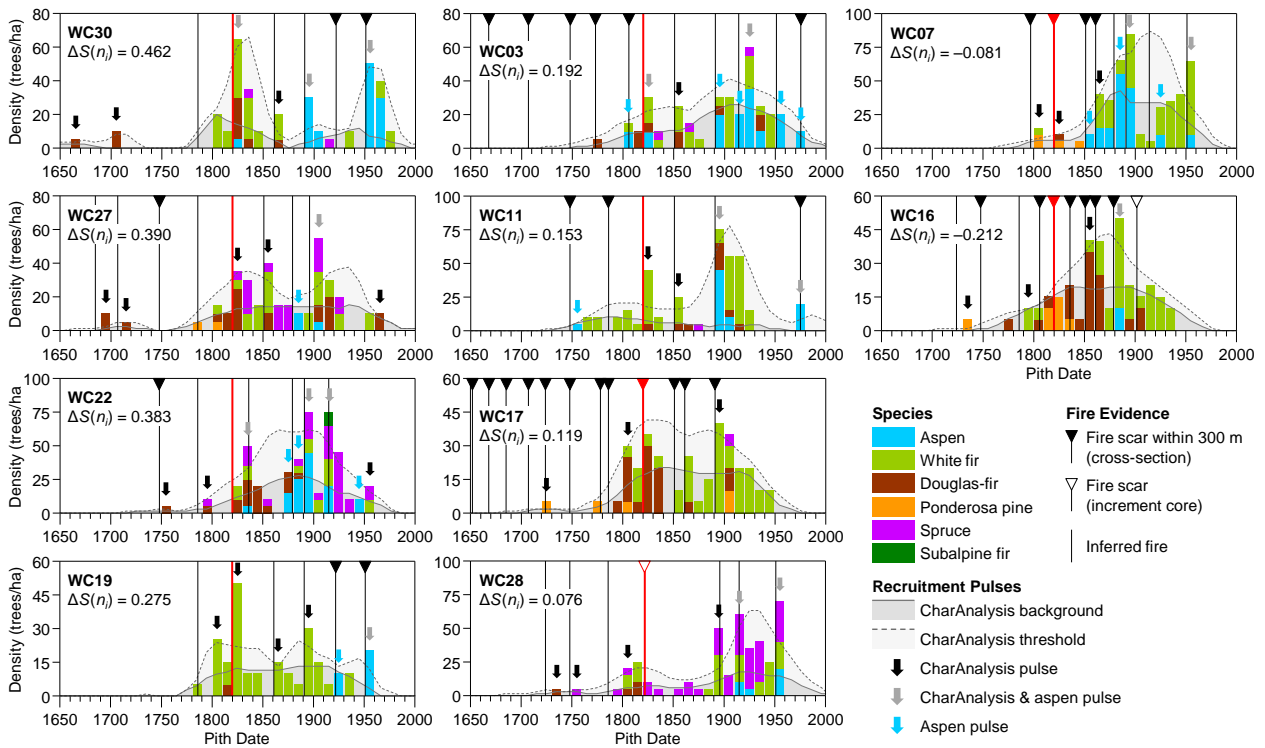
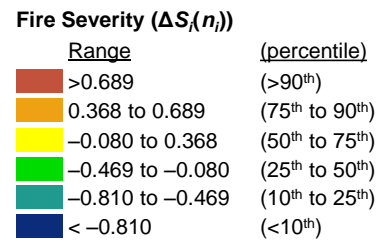
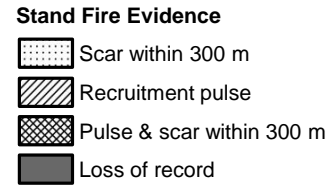
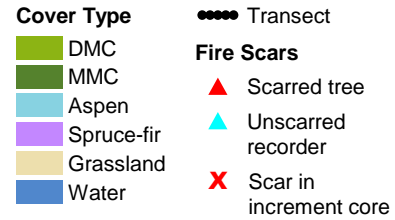
- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
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| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |

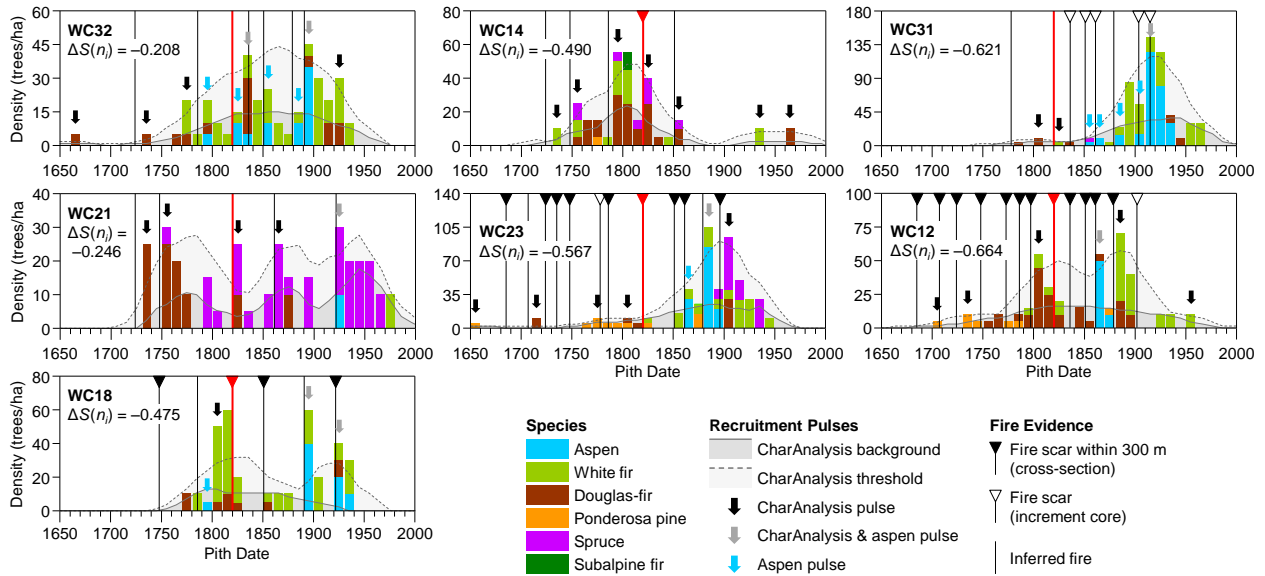


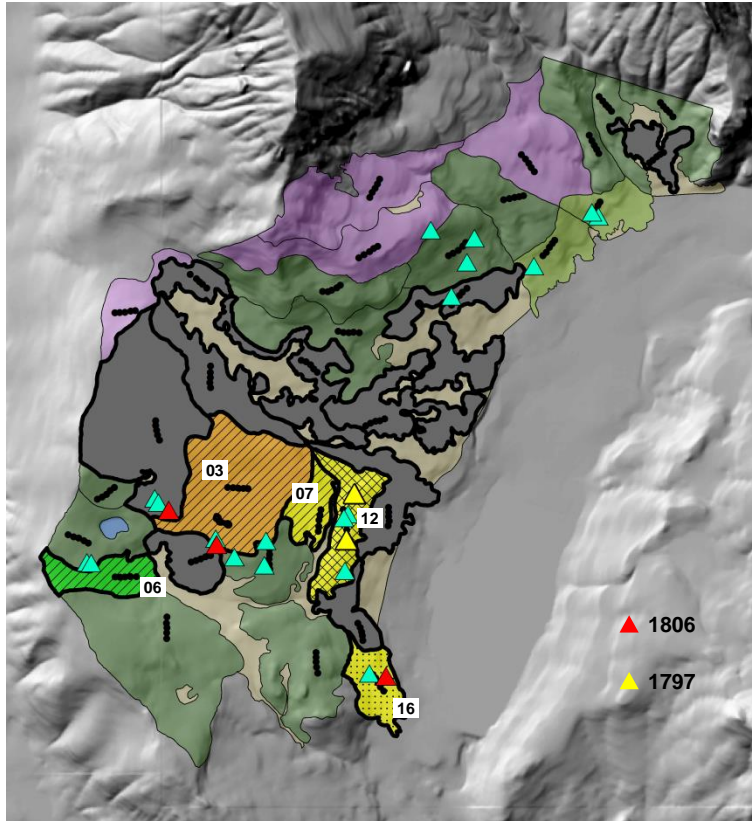


Williams Creek 1820/22 Fire



Williams Creek, 1820/22 Fire (continued)



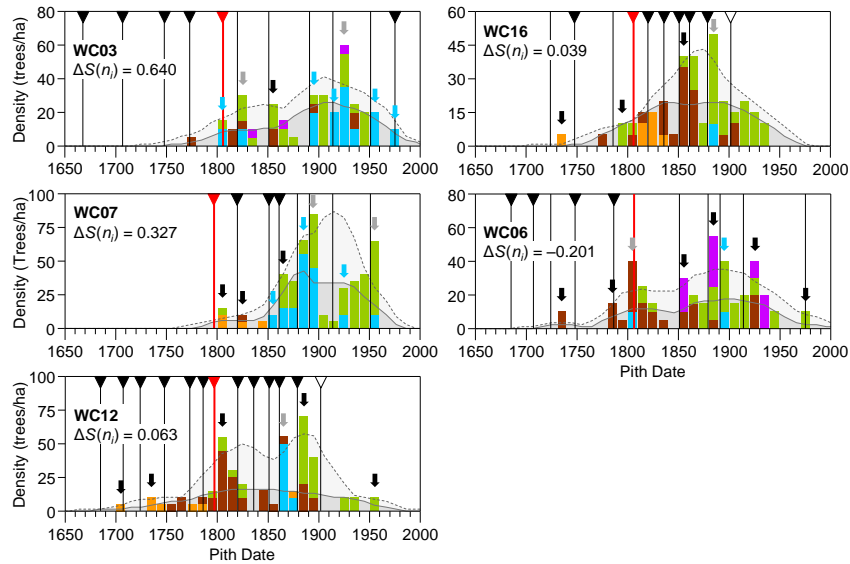


Williams Creek 1797/1806 Fire

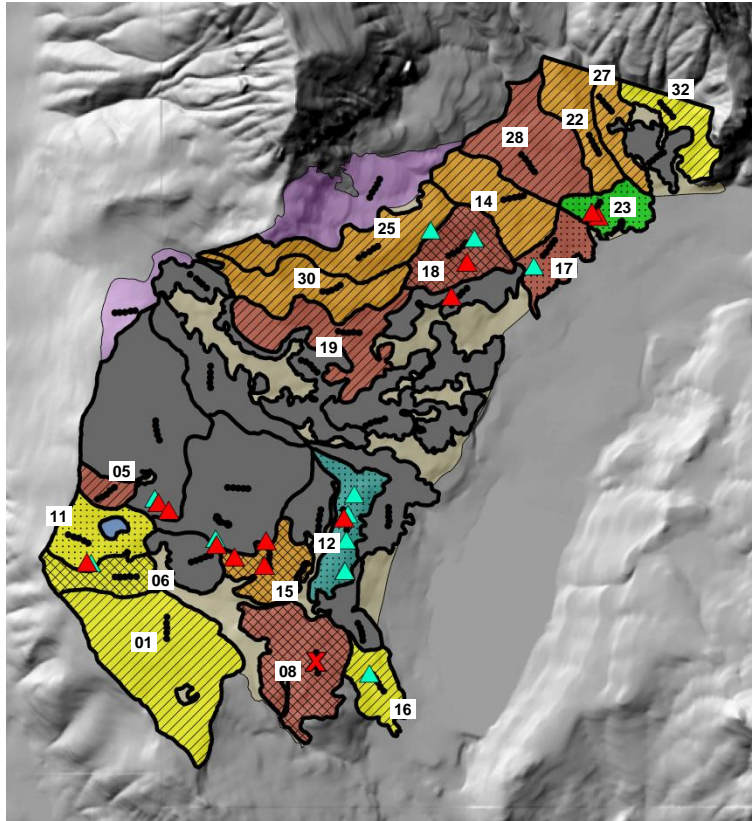
- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Transect
- Fire Scars**
- Scarred tree
 - Unscarred recorder
 - Scar in increment core

- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

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- | Range | (percentile) |
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| 0.368 to 0.689 | (75 th to 90 th) |
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| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |



- Species**
- Aspen
 - White fir
 - Douglas-fir
 - Ponderosa pine
 - Spruce
 - Subalpine fir
- Recruitment Pulses**
- CharAnalysis background
 - CharAnalysis threshold
 - CharAnalysis pulse
 - CharAnalysis & aspen pulse
 - Aspen pulse
- Fire Evidence**
- Fire scar within 300 m (cross-section)
 - Fire scar (increment core)
 - Inferred fire

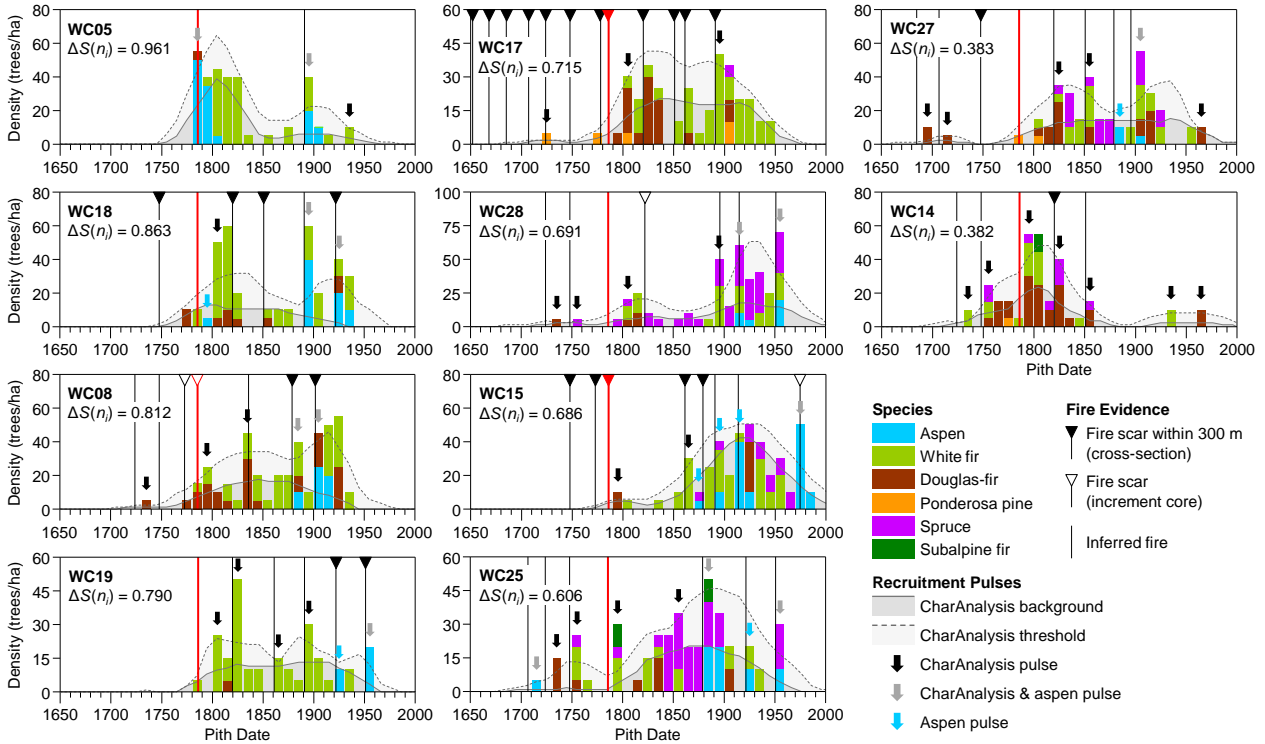


Williams Creek 1786 Fire

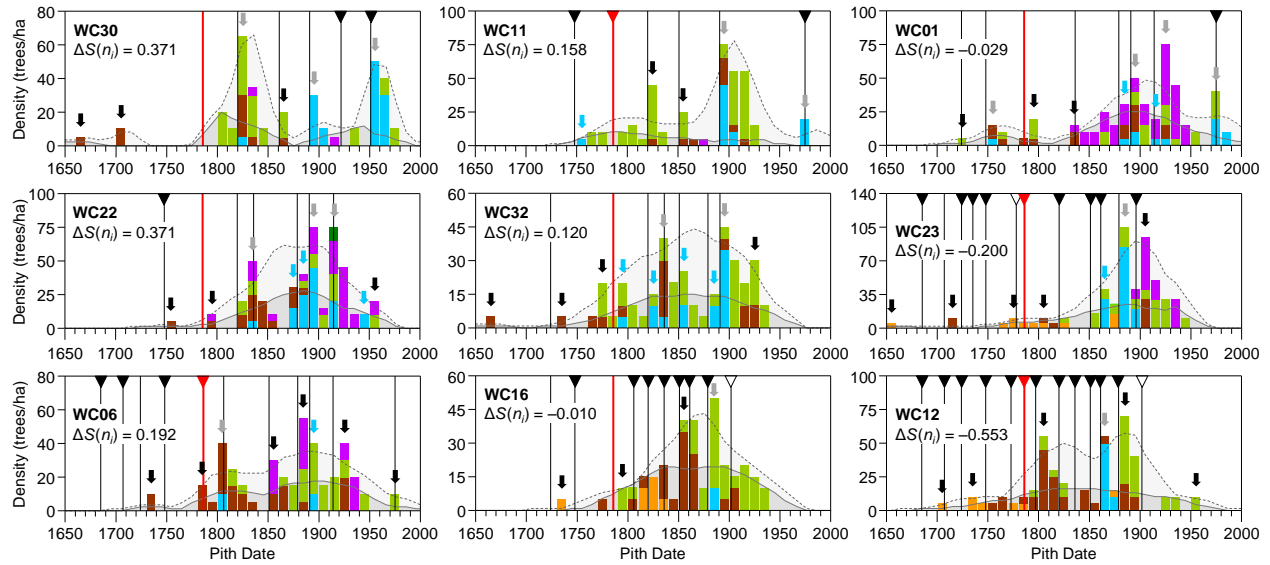
- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Fire Scars**
- Transect
 - Scarred tree
 - Unscarred recorder
 - Scar in increment core

- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

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- | Range | (percentile) |
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| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |



Williams Creek, 1786 Fire (continued)



Species

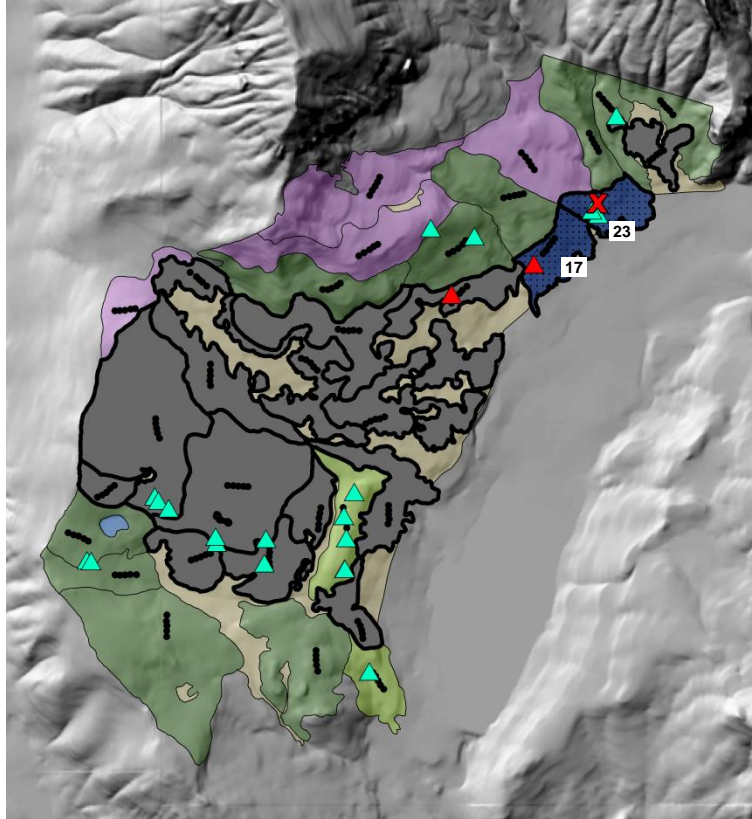
- Aspen
- White fir
- Douglas-fir
- Ponderosa pine
- Spruce
- Subalpine fir

Recruitment Pulses

- CharAnalysis background
- - - CharAnalysis threshold
- ↓ CharAnalysis pulse
- ↓ CharAnalysis & aspen pulse
- ↓ Aspen pulse

Fire Evidence

- ▼ Fire scar within 300 m (cross-section)
- ▽ Fire scar (increment core)
- | Inferred fire

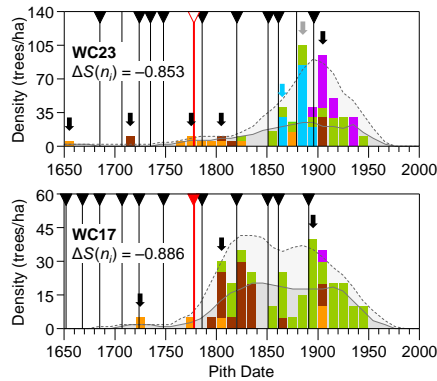


Williams Creek 1778 Fire

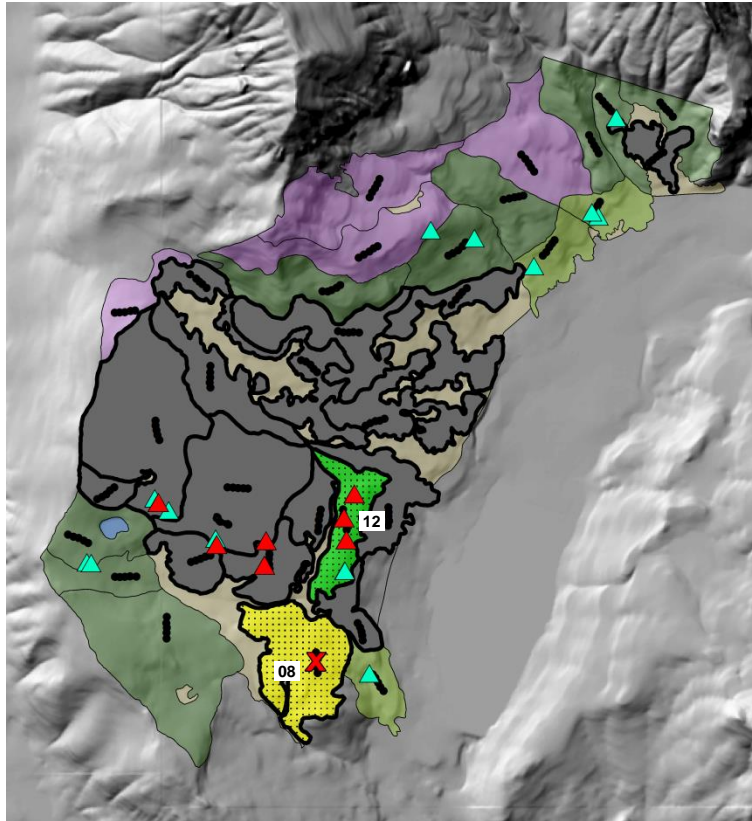
- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Transect
- Fire Scars**
- Scarred tree
 - Unscarred recorder
 - Scar in increment core

- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |



- Species**
- Aspen
 - White fir
 - Douglas-fir
 - Ponderosa pine
 - Spruce
 - Subalpine fir
- Recruitment Pulses**
- CharAnalysis background
 - CharAnalysis threshold
 - CharAnalysis pulse
 - CharAnalysis & aspen pulse
 - Aspen pulse
- Fire Evidence**
- Fire scar within 300 m (cross-section)
 - Fire scar (increment core)
 - Inferred fire

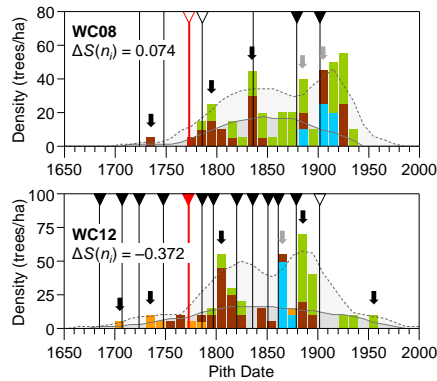


Williams Creek 1773 Fire

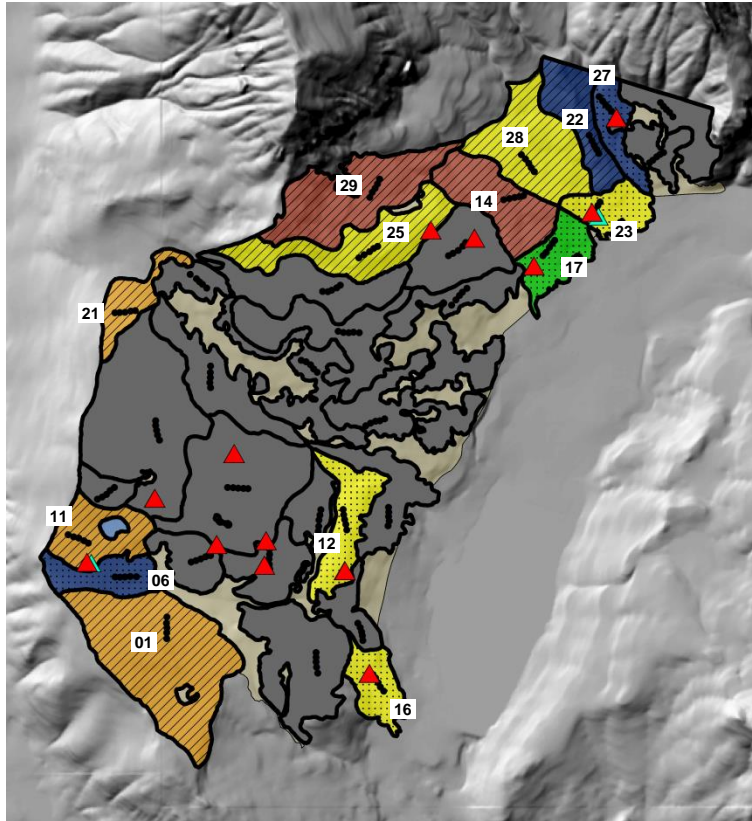
- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Transect
- Fire Scars**
- Scarred tree
 - Unscarred recorder
 - Scar in increment core

- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

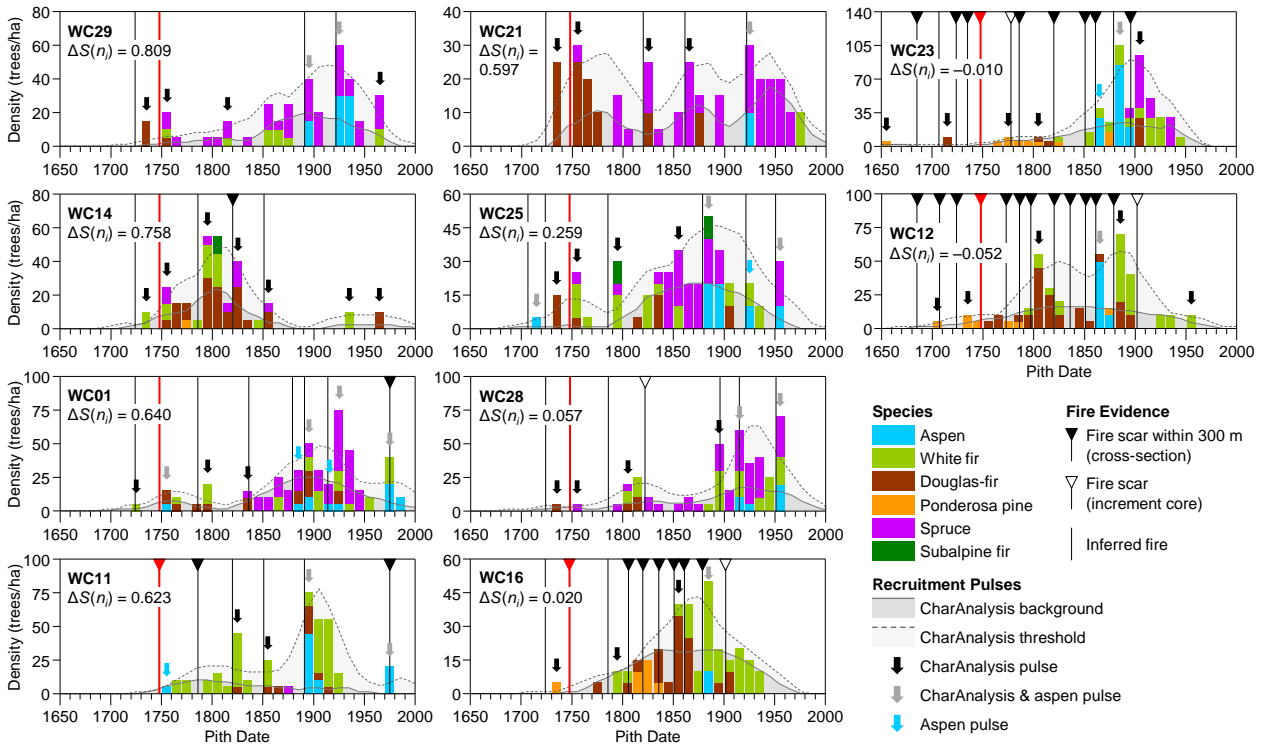
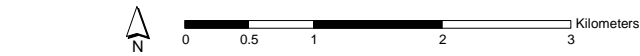
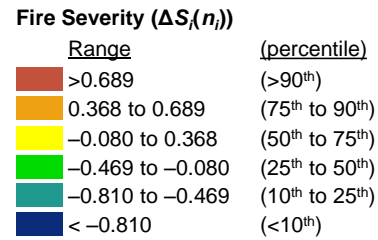
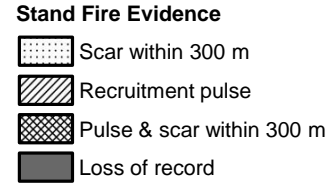
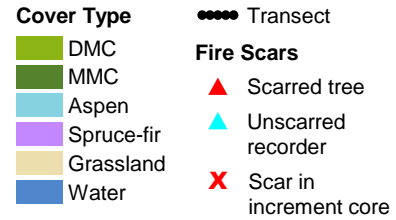
- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |



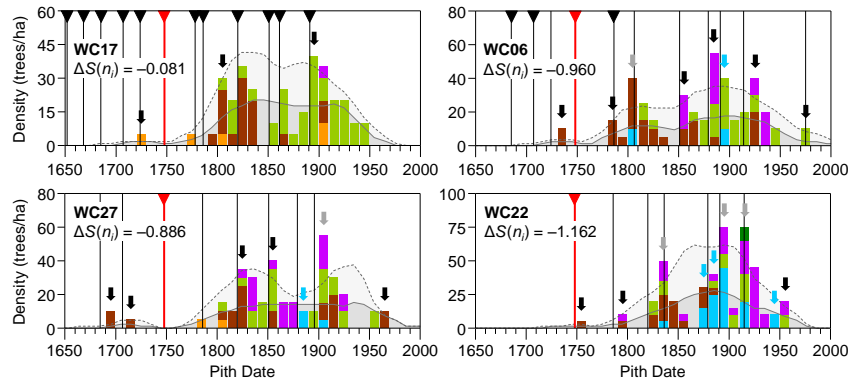
- Species**
- Aspen
 - White fir
 - Douglas-fir
 - Ponderosa pine
 - Spruce
 - Subalpine fir
- Recruitment Pulses**
- CharAnalysis background
 - CharAnalysis threshold
 - CharAnalysis pulse
 - CharAnalysis & aspen pulse
 - Aspen pulse
- Fire Evidence**
- Fire scar within 300 m (cross-section)
 - Fire scar (increment core)
 - Inferred fire



Williams Creek 1748 Fire



Williams Creek, 1748 Fire (continued)



Species

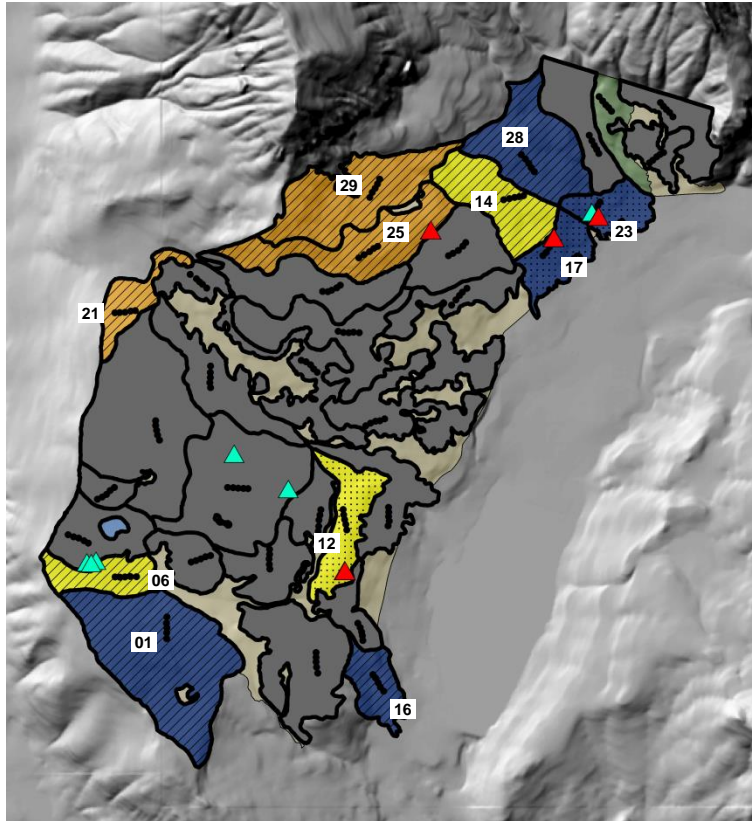
- Aspen
- White fir
- Douglas-fir
- Ponderosa pine
- Spruce
- Subalpine fir

Recruitment Pulses

- CharAnalysis background
- CharAnalysis threshold
- ↓ CharAnalysis pulse
- ↓ CharAnalysis & aspen pulse
- ↓ Aspen pulse

Fire Evidence

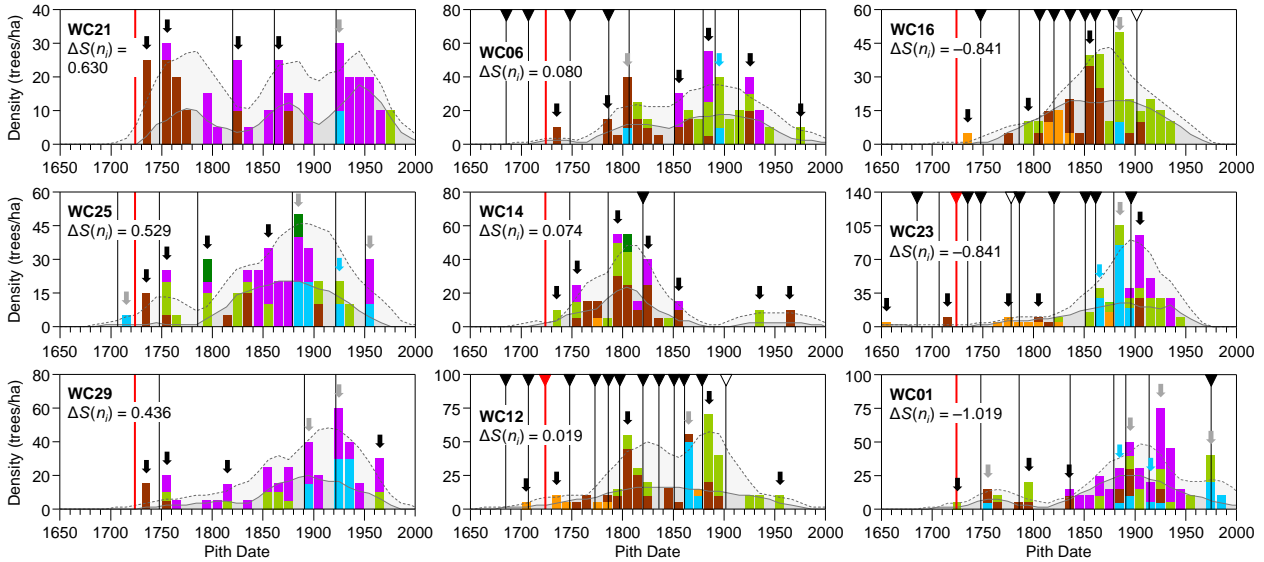
- ▼ Fire scar within 300 m (cross-section)
- ▽ Fire scar (increment core)
- | Inferred fire



- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Fire Scars**
- Scarred tree
 - Unscarred recorder
 - Scar in increment core

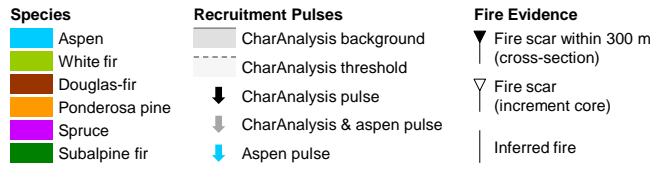
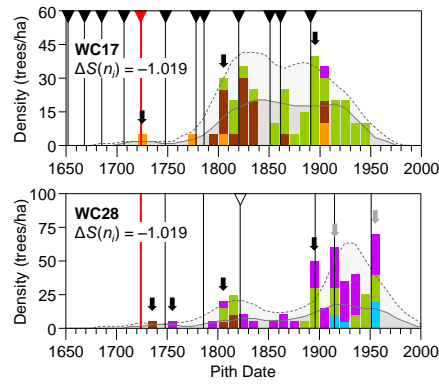
- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

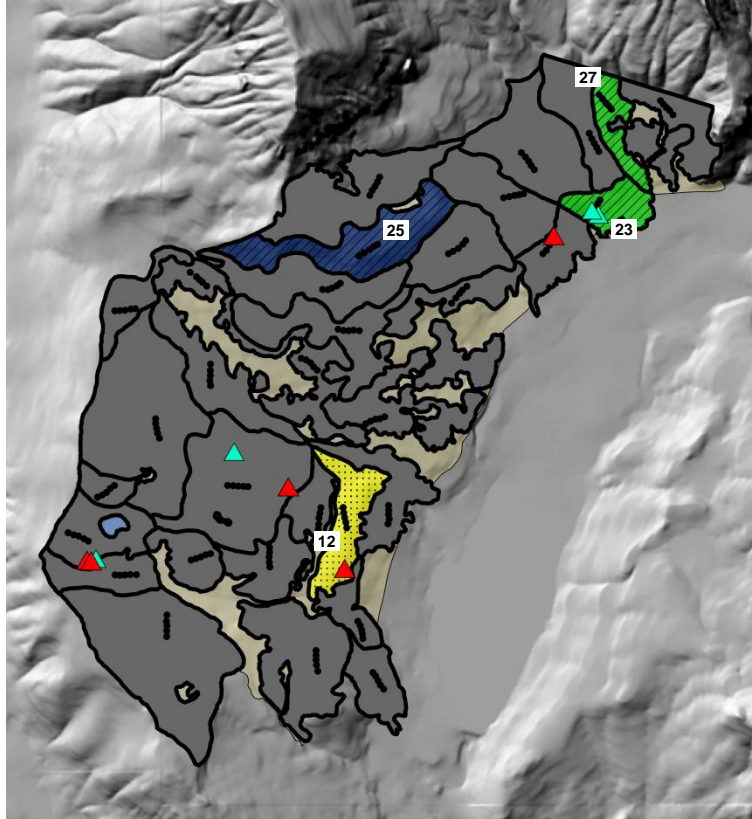
- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |



- Species**
- Aspen
 - White fir
 - Douglas-fir
 - Ponderosa pine
 - Spruce
 - Subalpine fir
- Recruitment Pulses**
- CharAnalysis background
 - CharAnalysis threshold
 - CharAnalysis pulse
 - CharAnalysis & aspen pulse
 - Aspen pulse
- Fire Evidence**
- Fire scar within 300 m (cross-section)
 - Fire scar (increment core)
 - Inferred fire

Williams Creek, 1724 Fire (continued)



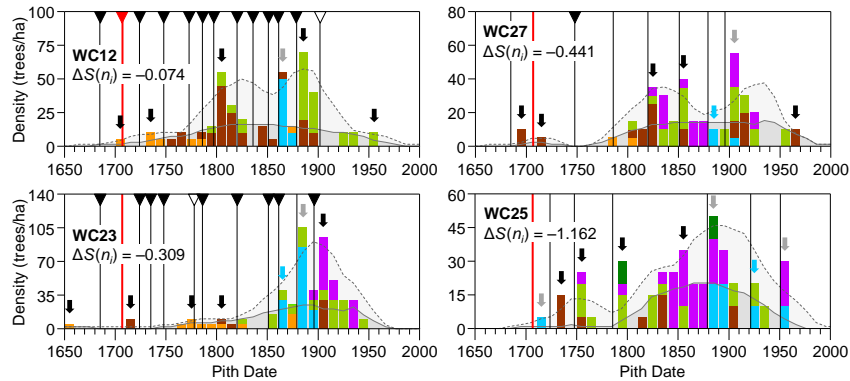


Williams Creek 1707 Fire

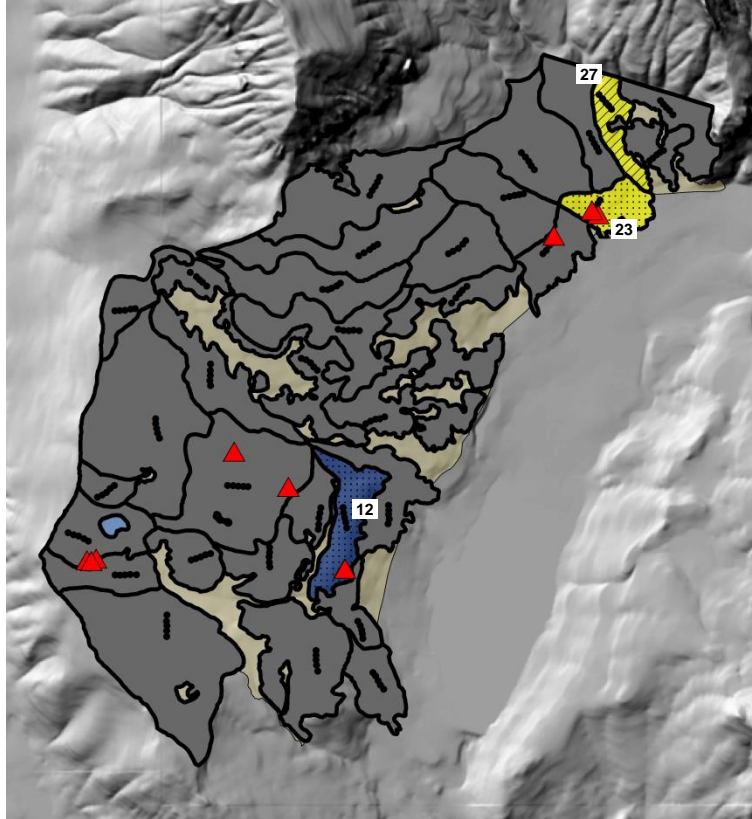
- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Transect
- Fire Scars**
- Scarred tree
 - Unscarred recorder
 - Scar in increment core

- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |



- Species**
- Aspen
 - White fir
 - Douglas-fir
 - Ponderosa pine
 - Spruce
 - Subalpine fir
- Recruitment Pulses**
- CharAnalysis background
 - CharAnalysis threshold
 - CharAnalysis pulse
 - CharAnalysis & aspen pulse
 - Aspen pulse
- Fire Evidence**
- Fire scar within 300 m (cross-section)
 - Fire scar (increment core)
 - Inferred fire

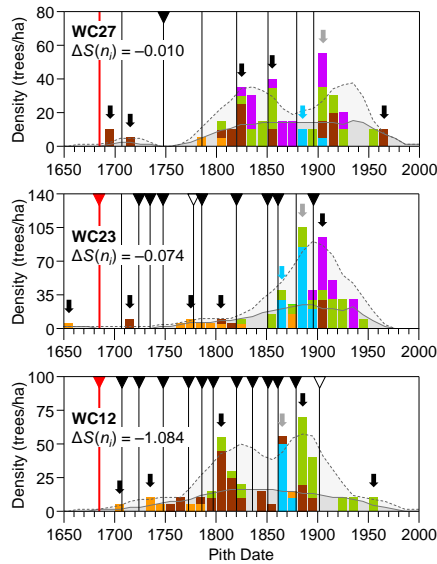


Williams Creek 1685 Fire

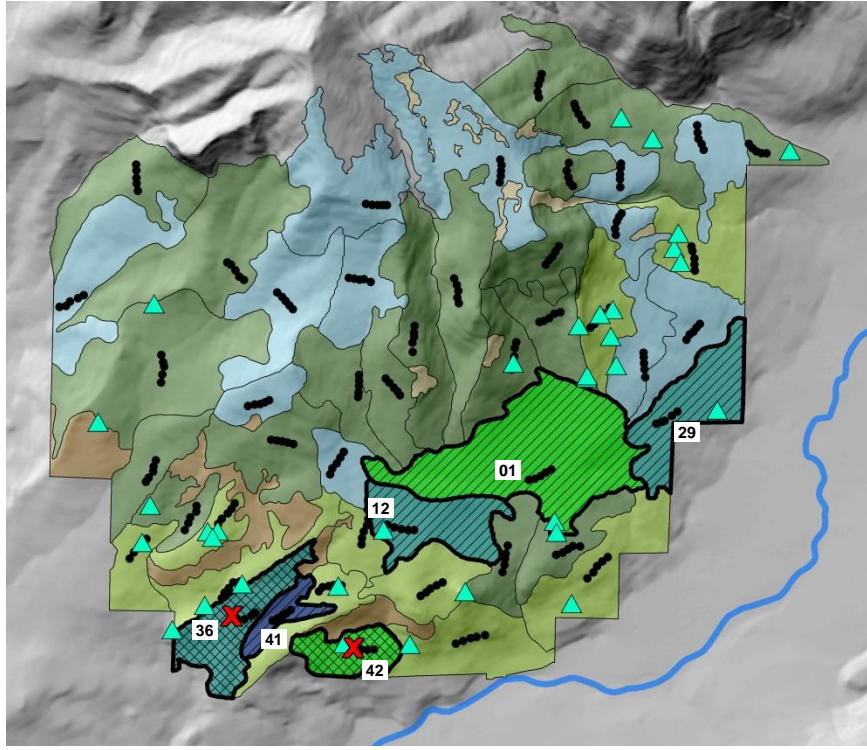
- Cover Type**
- DMC
 - MMC
 - Aspen
 - Spruce-fir
 - Grassland
 - Water
- Transect
- Fire Scars**
- Scarred tree
 - Unscarred recorder
 - Scar in increment core

- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record

- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |



- Species**
- Aspen
 - White fir
 - Douglas-fir
 - Ponderosa pine
 - Spruce
 - Subalpine fir
- Recruitment Pulses**
- CharAnalysis background
 - CharAnalysis threshold
 - CharAnalysis pulse
 - CharAnalysis & aspen pulse
 - Aspen pulse
- Fire Evidence**
- Fire scar within 300 m (cross-section)
 - Fire scar (increment core)
 - Inferred fire



Squaretop Mountain 1952 Fire

Cover Type

- DMC
- MMC
- Aspen
- Grassland
- Shrubland

Fire Scars

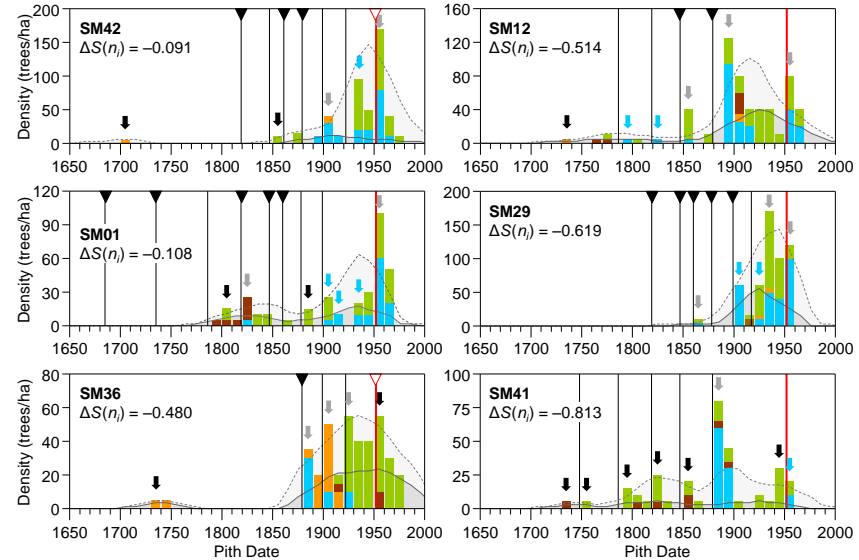
- Scarred tree
- Unscarred recorder
- Scar in increment core

Stand Fire Evidence

- Scar within 300 m
- Recruitment pulse
- Pulse & scar within 300 m
- Loss of record

Fire Severity ($\Delta S_i(n_j)$)

Range	(percentile)
>0.689	(>90 th)
0.368 to 0.689	(75 th to 90 th)
-0.080 to 0.368	(50 th to 75 th)
-0.469 to -0.080	(25 th to 50 th)
-0.810 to -0.469	(10 th to 25 th)
< -0.810	(<10 th)



Species

- Aspen
- White fir
- Douglas-fir
- Ponderosa pine
- Spruce
- Subalpine fir
- Limber pine
- Gambel oak

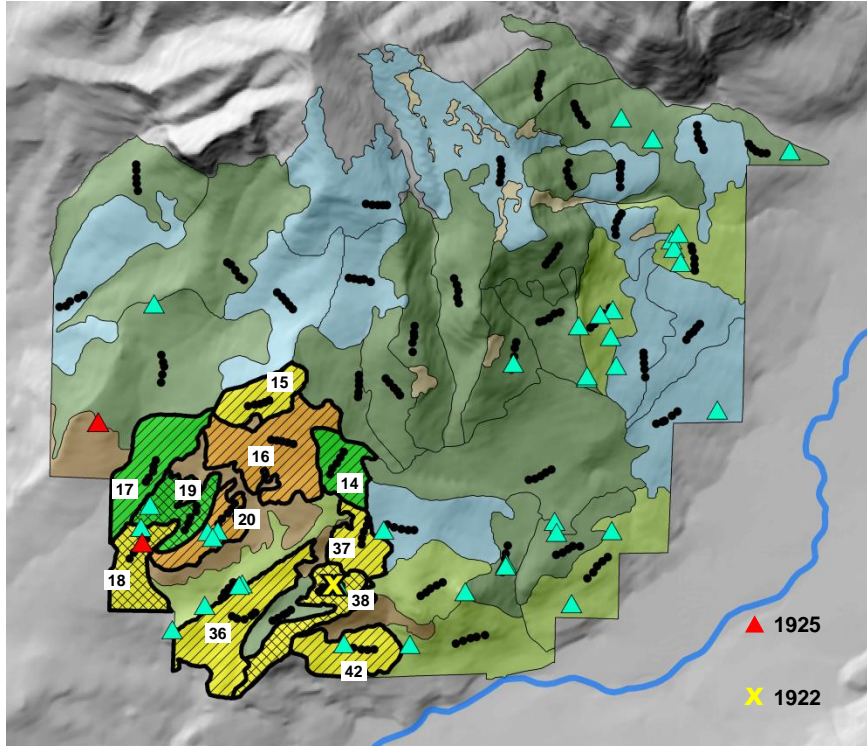
Recruitment Pulses

- CharAnalysis background
- CharAnalysis threshold
- CharAnalysis pulse
- CharAnalysis & aspen pulse
- Aspen pulse

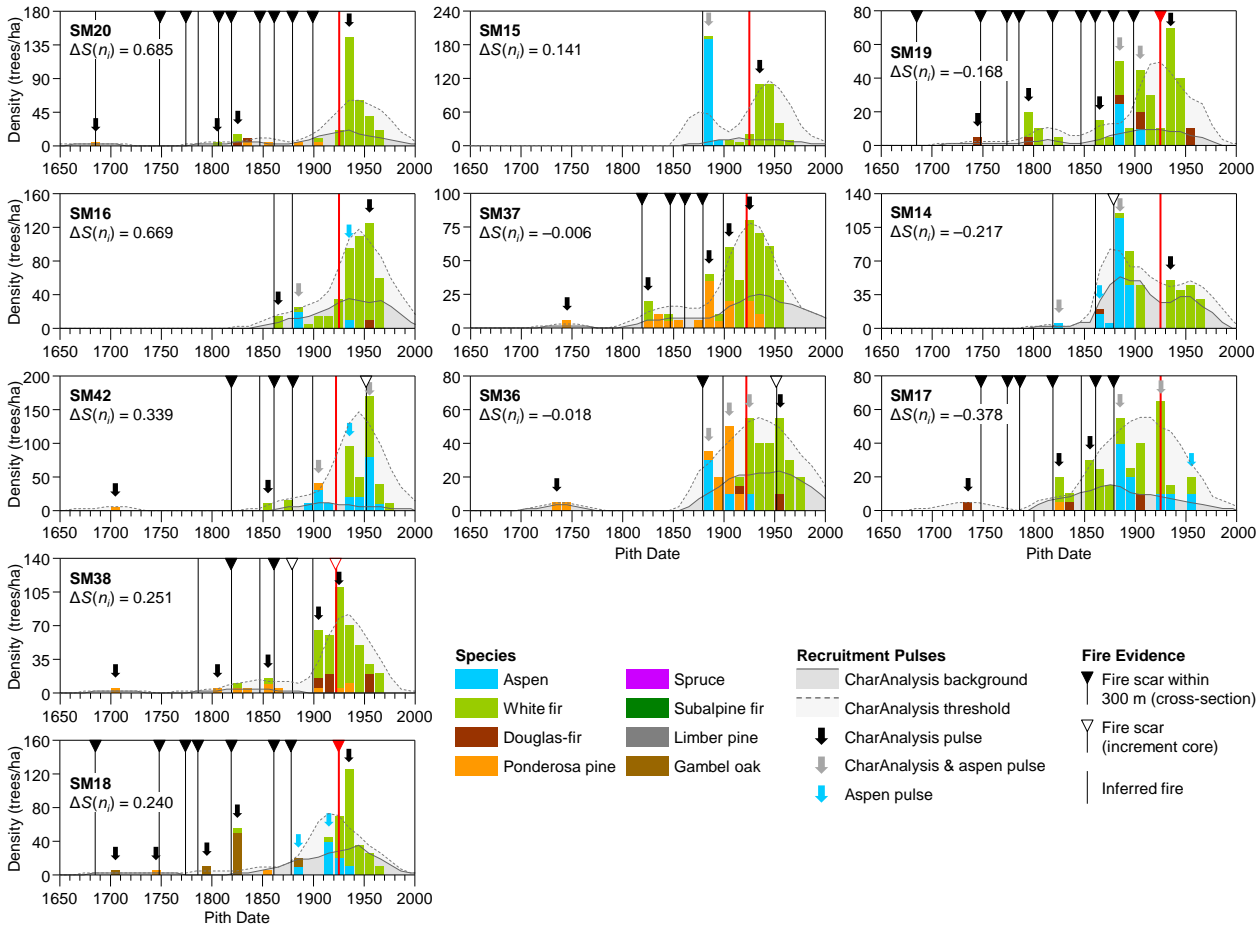
Fire Evidence

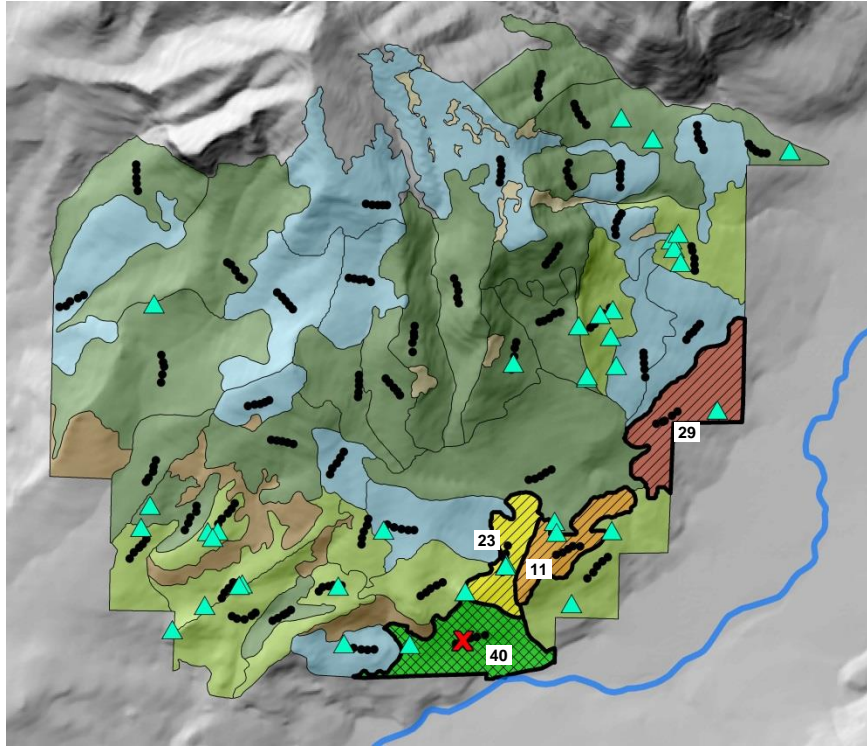
- Fire scar within 300 m (cross-section)
- Fire scar (increment core)
- Inferred fire

Squaretop Mountain 1922/25 Fire



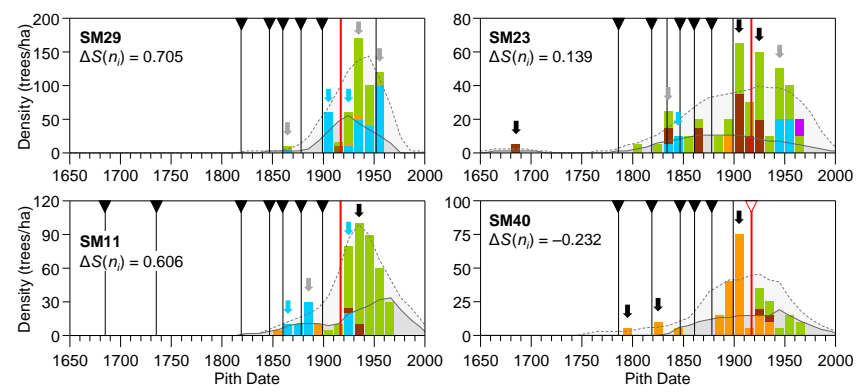
- Cover Type**
- DMC
 - MMC
 - Aspen
 - Grassland
 - Shrubland
- Transect**
- Transect
- Fire Scars**
- Scarred tree
 - Unscarred recorder
 - Scar in increment core
- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record
- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |





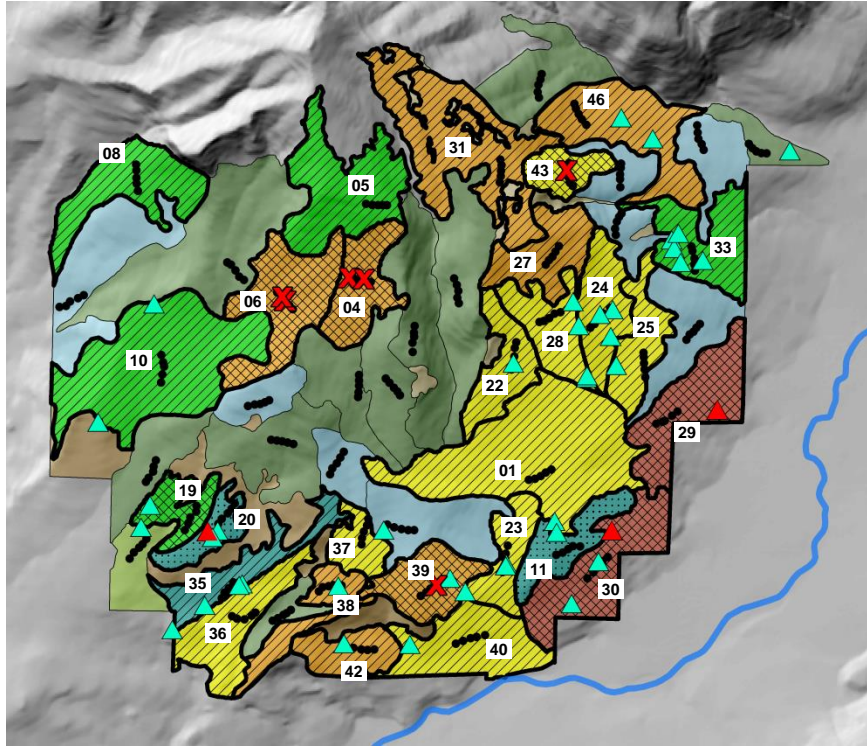
Squaretop Mountain 1917 Fire

- Cover Type**
- DMC
 - MMC
 - Aspen
 - Grassland
 - Shrubland
- Fire Scars**
- Scarred tree
 - Unscarred recorder
 - Scar in increment core
- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record
- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| <-0.810 | (<10 th) |



- Species**
- Aspen
 - White fir
 - Douglas-fir
 - Ponderosa pine
 - Spruce
 - Subalpine fir
 - Limber pine
 - Gambel oak
- Recruitment Pulses**
- CharAnalysis background
 - CharAnalysis threshold
 - CharAnalysis pulse
 - CharAnalysis & aspen pulse
 - Aspen pulse
- Fire Evidence**
- Fire scar within 300 m (cross-section)
 - Fire scar (increment core)
 - Inferred fire

Squaretop Mountain 1899 Fire



Cover Type

- DMC (Dark Green)
- MMC (Medium Green)
- Aspen (Light Blue)
- Grassland (Yellow)
- Shrubland (Brown)

Fire Scars

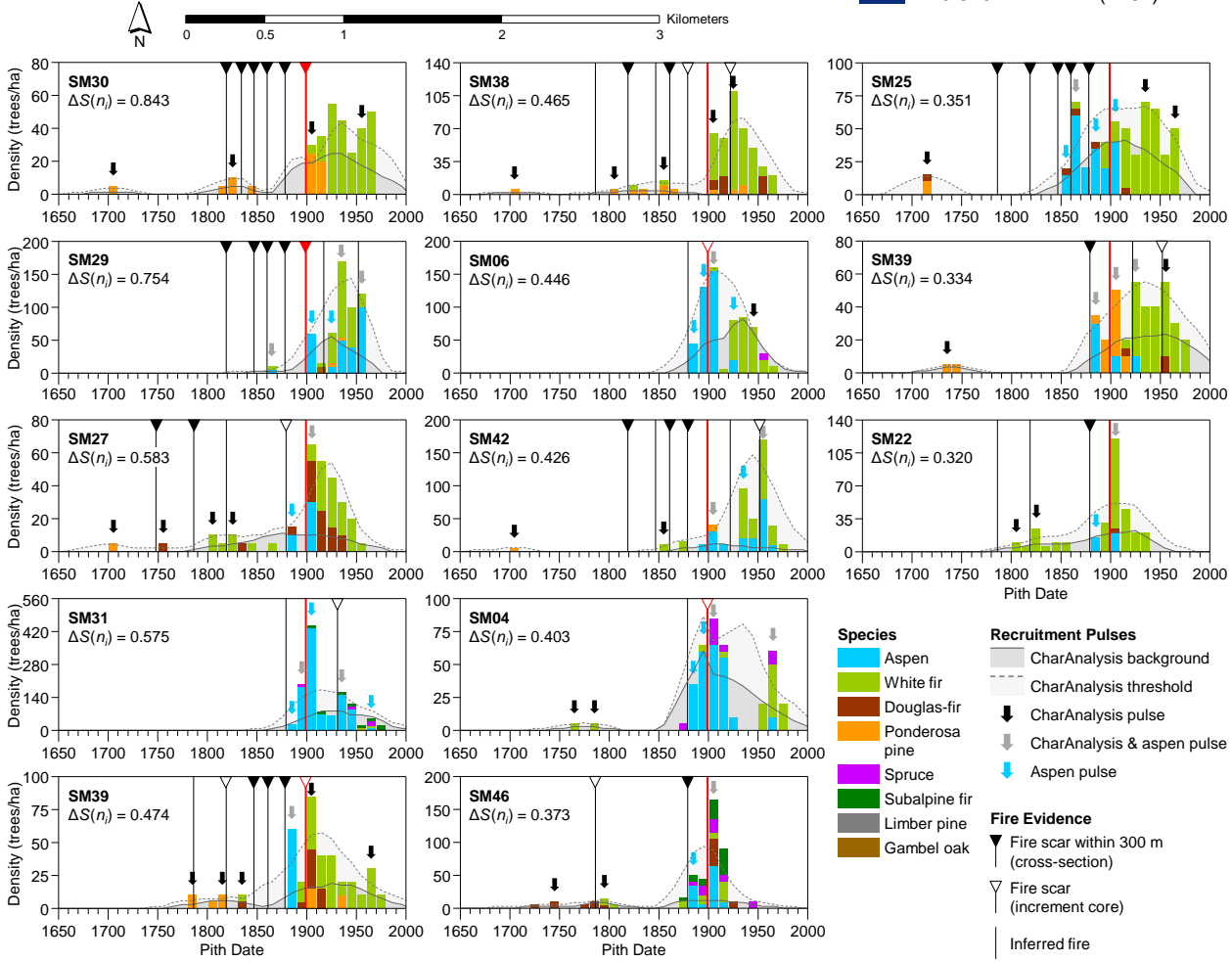
- Scarred tree (Red triangle)
- Unscarred recorder (Blue triangle)
- Scar in increment core (Red X)

Stand Fire Evidence

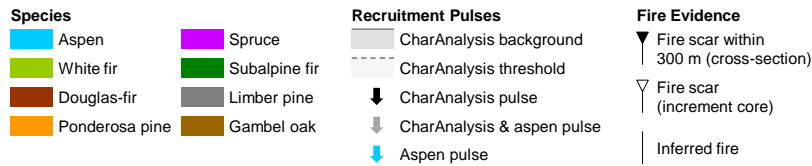
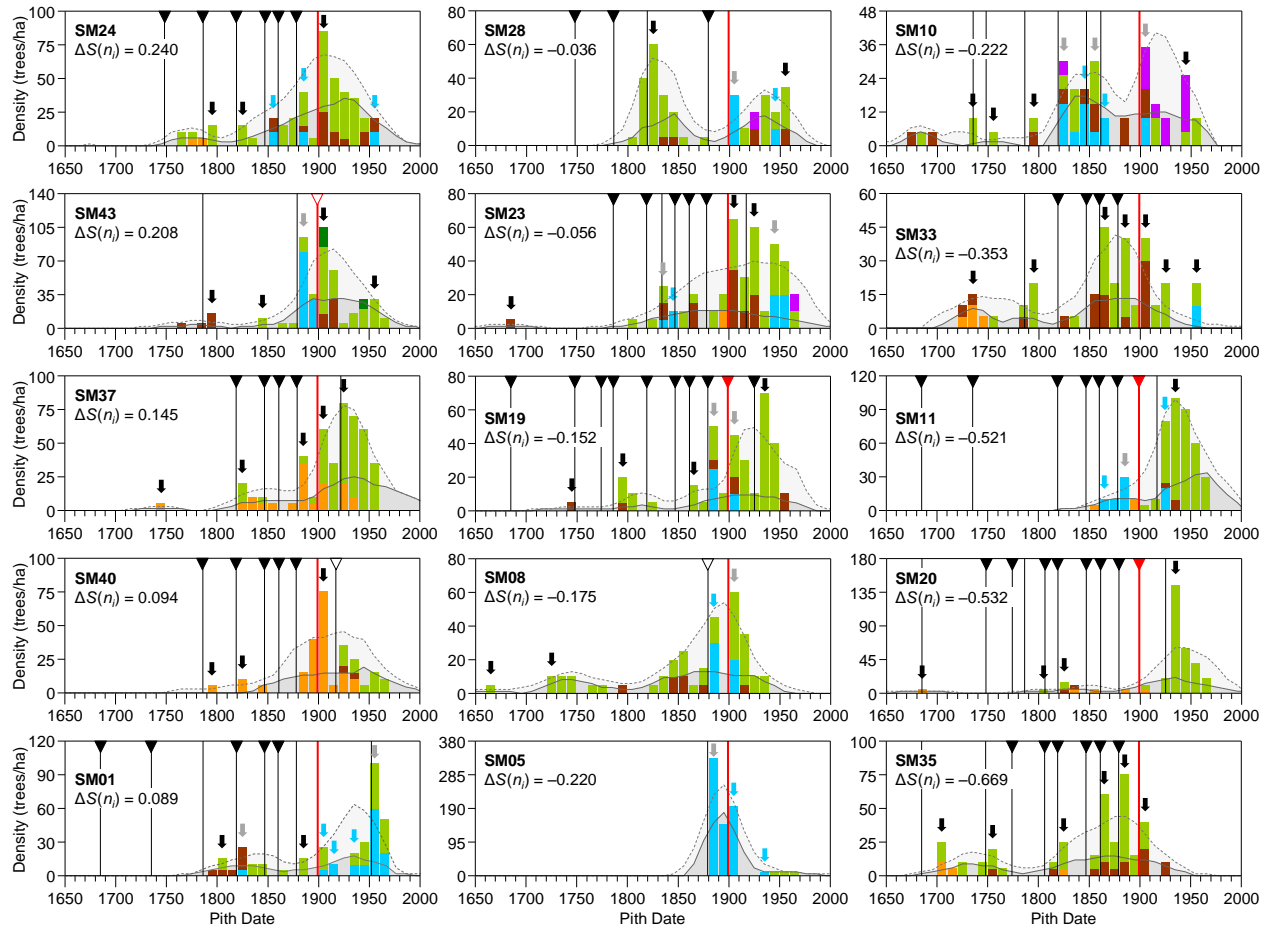
- Scar within 300 m (Dotted pattern)
- Recruitment pulse (Diagonal lines)
- Pulse & scar within 300 m (Cross-hatched pattern)
- Loss of record (Solid black)

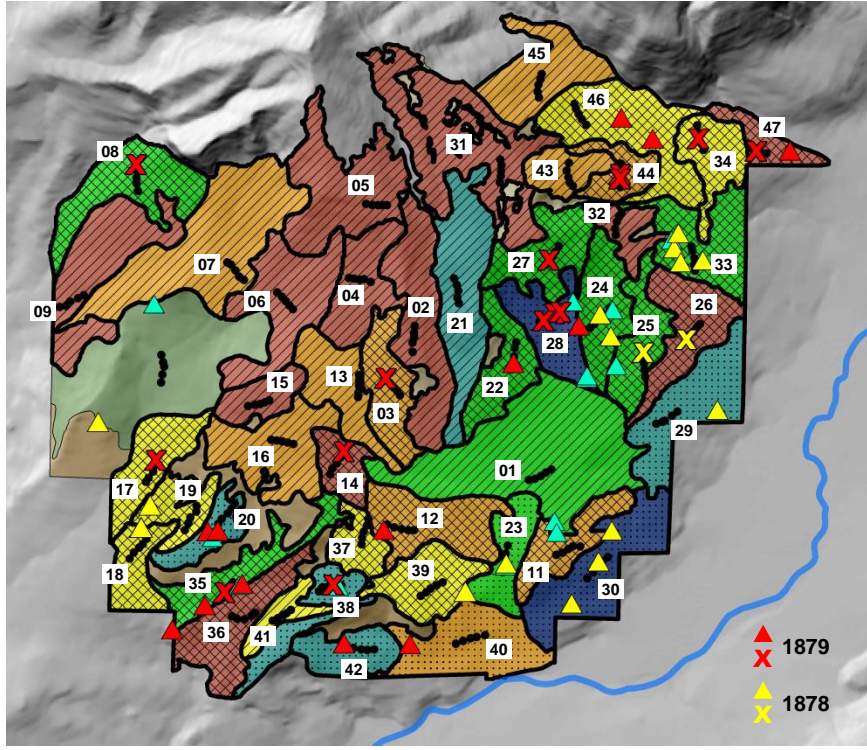
Fire Severity ($\Delta S_i(n_i)$)

Range	(percentile)
>0.689	(>90 th)
0.368 to 0.689	(75 th to 90 th)
-0.080 to 0.368	(50 th to 75 th)
-0.469 to -0.080	(25 th to 50 th)
-0.810 to -0.469	(10 th to 25 th)
< -0.810	(<10 th)



Squaretop Mountain, 1899 Fire (continued)





Sqauretop Mountain 1878/79 Fire

Cover Type

- DMC
- MMC
- Aspen
- Grassland
- Shrubland

Transect ●●●●

Fire Scars

- Scarred tree ▲
- Unscarred recorder ▲
- Scar in increment core X

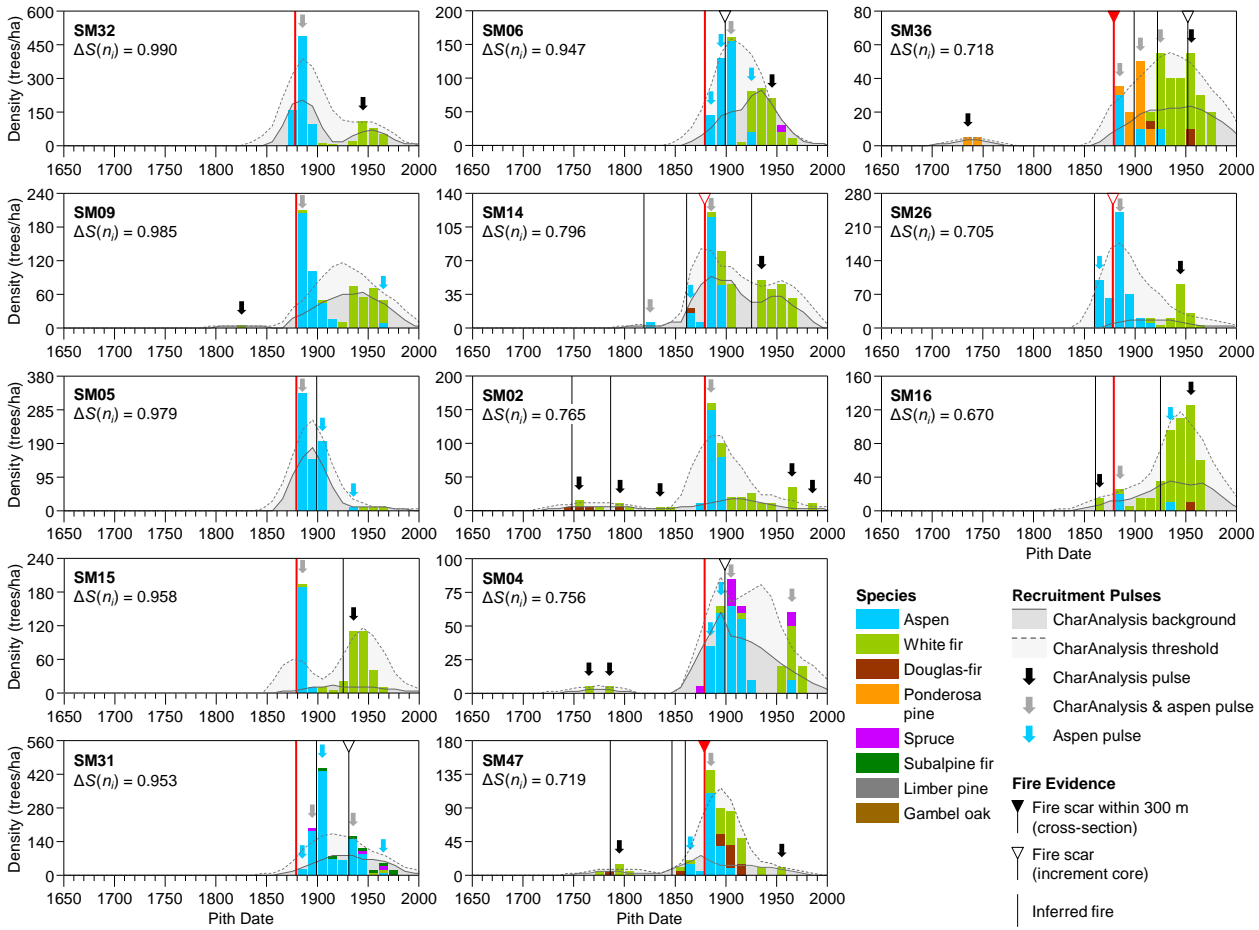
Stand Fire Evidence

- Scar within 300 m
- Recruitment pulse
- Pulse & scar within 300 m
- Loss of record

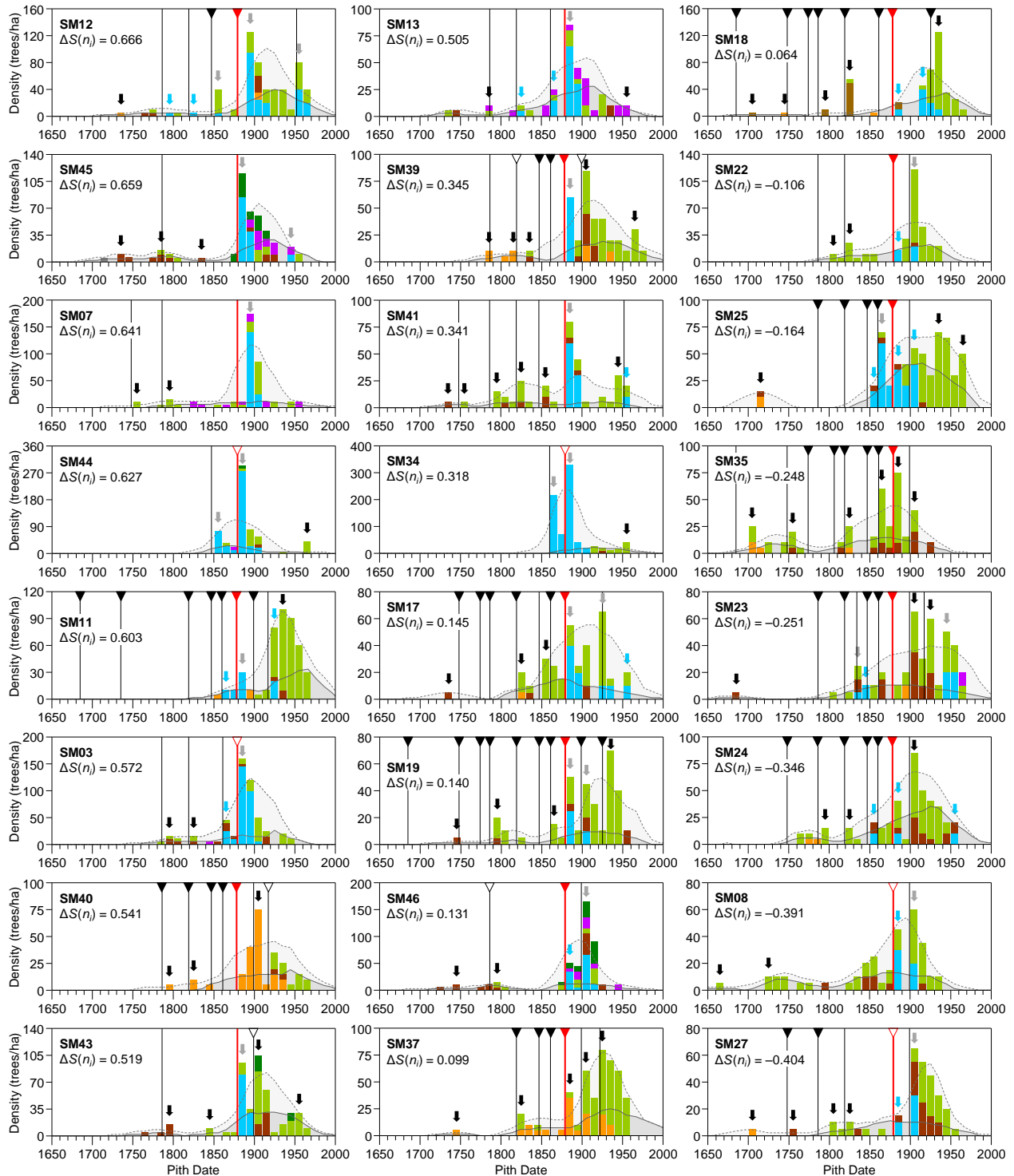
Fire Severity ($\Delta S_i(n_i)$)

Range	(percentile)
>0.689	(>90 th)
0.368 to 0.689	(75 th to 90 th)
-0.080 to 0.368	(50 th to 75 th)
-0.469 to -0.080	(25 th to 50 th)
-0.810 to -0.469	(10 th to 25 th)
< -0.810	(<10 th)

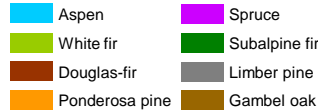
▲ 1879
▲ 1878



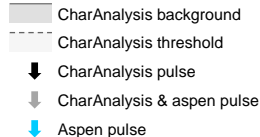
Squaretop Mountain, 1878/79 Fire (continued)



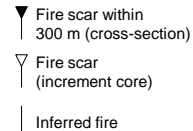
Species



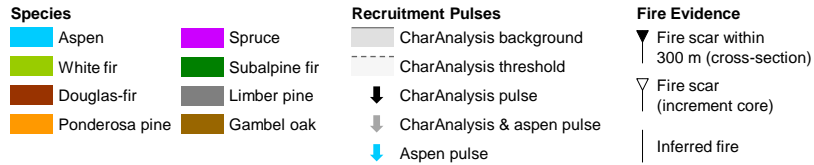
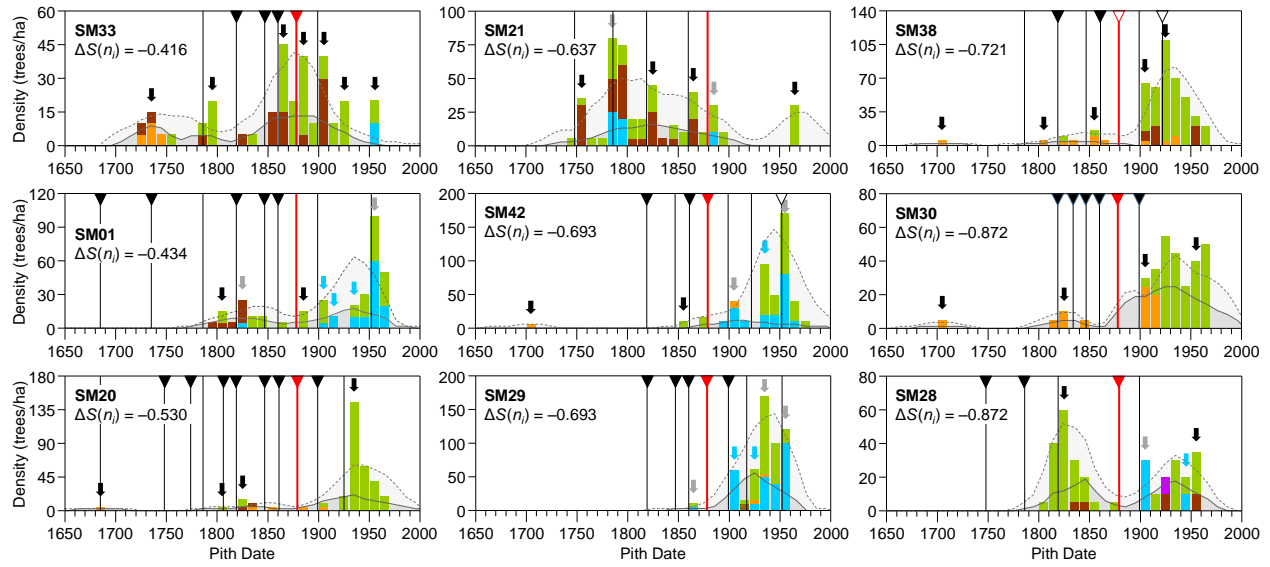
Recruitment Pulses



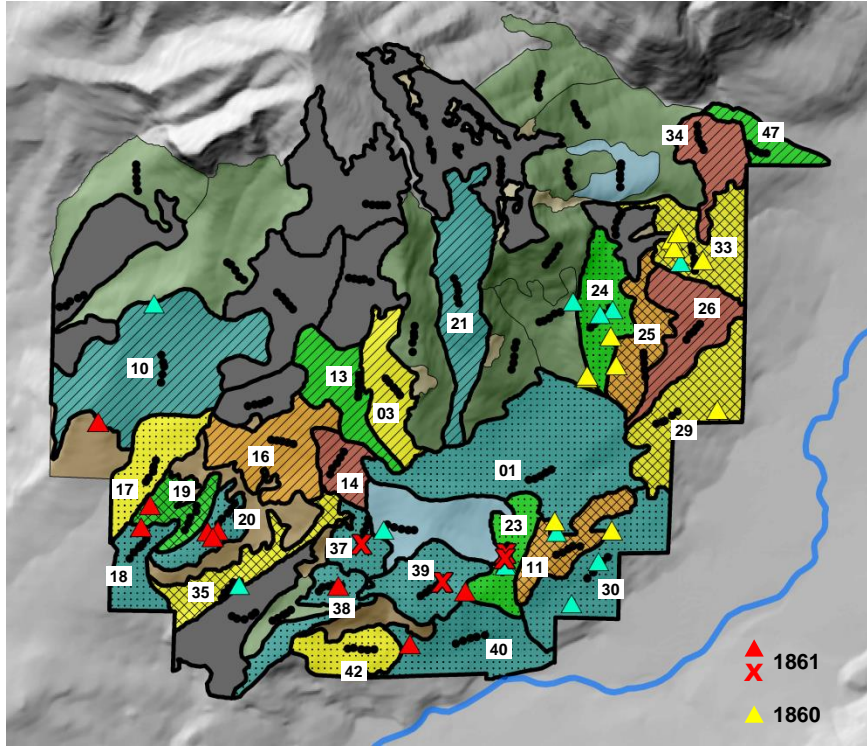
Fire Evidence



Squaretop Mountain, 1878/79 Fire (continued)



Squaretop Mountain 1860/61 Fire



Cover Type

- DMC
- MMC
- Aspen
- Grassland
- Shrubland

Fire Scars

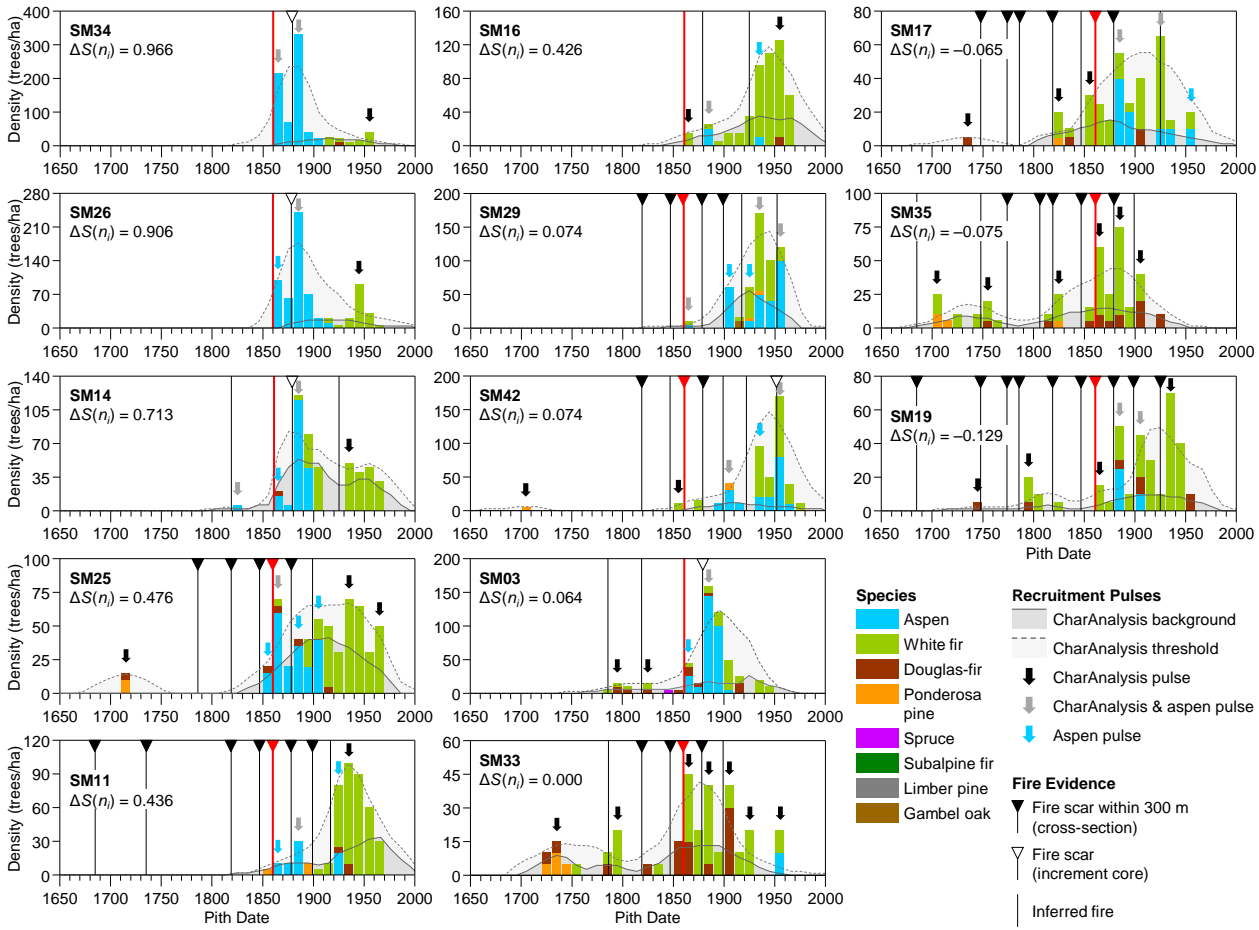
- Scarred tree
- Unscarred recorder
- Scar in increment core

Stand Fire Evidence

- Scar within 300 m
- Recruitment pulse
- Pulse & scar within 300 m
- Loss of record

Fire Severity ($\Delta S_i(n_i)$)

Range	(percentile)
>0.689	(>90 th)
0.368 to 0.689	(75 th to 90 th)
-0.080 to 0.368	(50 th to 75 th)
-0.469 to -0.080	(25 th to 50 th)
-0.810 to -0.469	(10 th to 25 th)
< -0.810	(<10 th)



Species

- Aspen
- White fir
- Douglas-fir
- Ponderosa pine
- Spruce
- Subalpine fir
- Limber pine
- Gambel oak

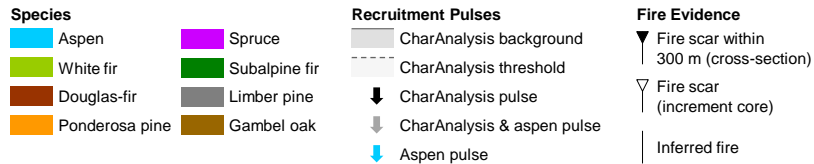
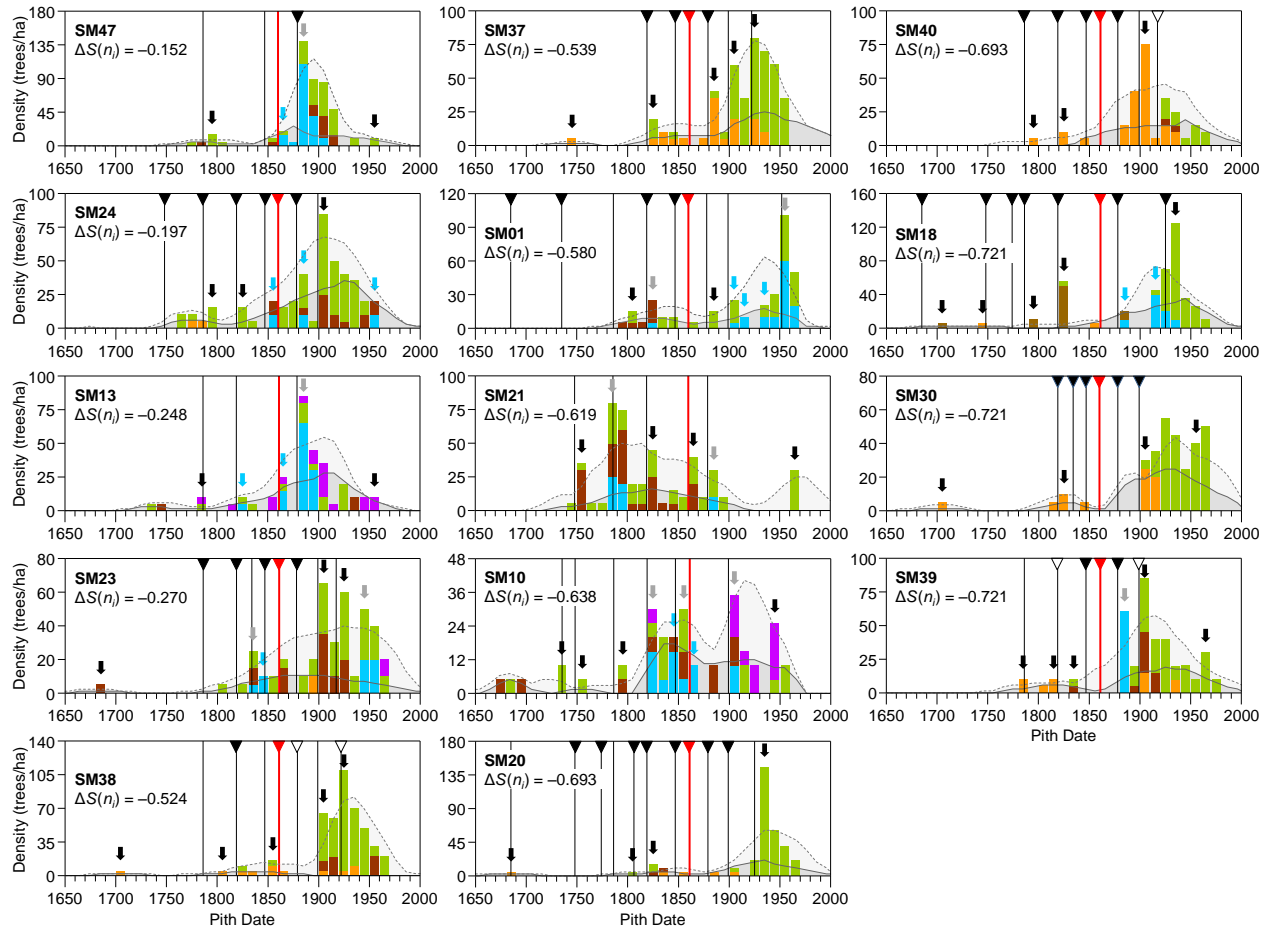
Recruitment Pulses

- CharAnalysis background
- CharAnalysis threshold
- CharAnalysis pulse
- CharAnalysis & aspen pulse
- Aspen pulse

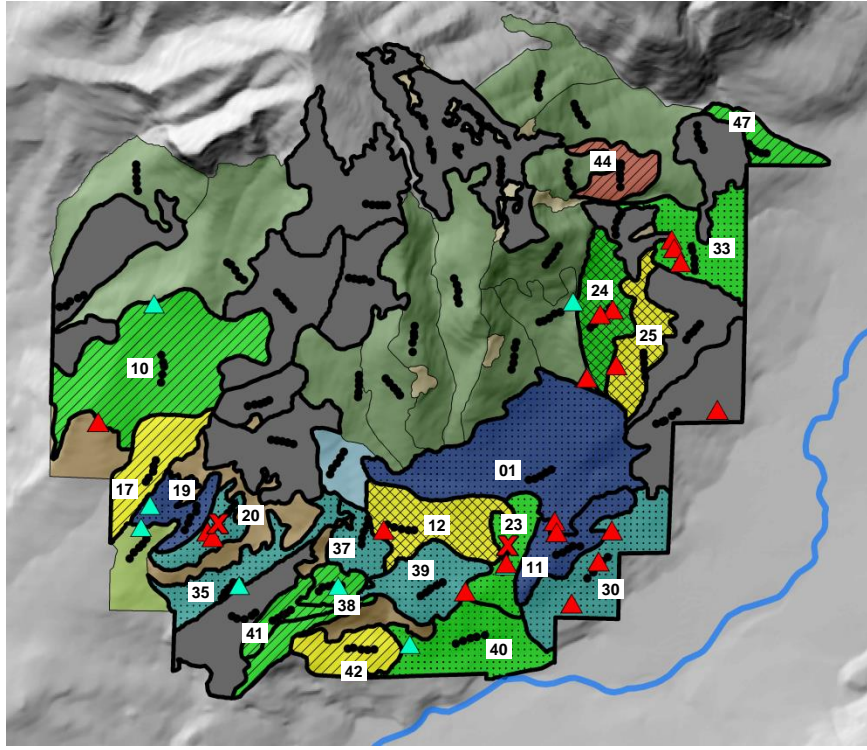
Fire Evidence

- Fire scar within 300 m (cross-section)
- Fire scar (increment core)
- Inferred fire

Squaretop Mountain, 1860/61 Fire (continued)



Squaretop Mountain 1847 Fire



Cover Type

- DMC
- MMC
- Aspen
- Grassland
- Shrubland

Transect ●●●●

Fire Scars

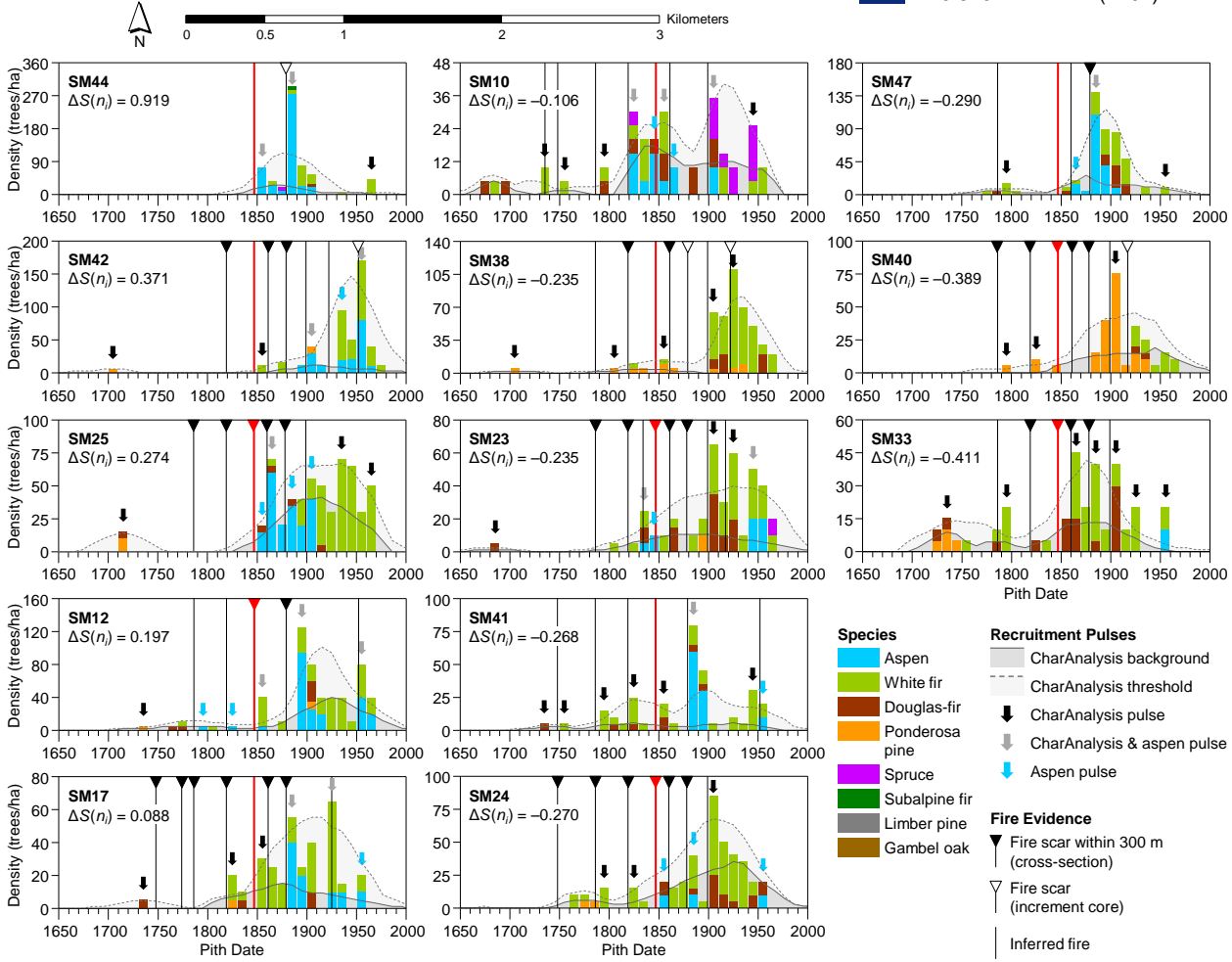
- Scarred tree ▲
- Unscarred recorder ▲
- Scar in increment core ✕

Stand Fire Evidence

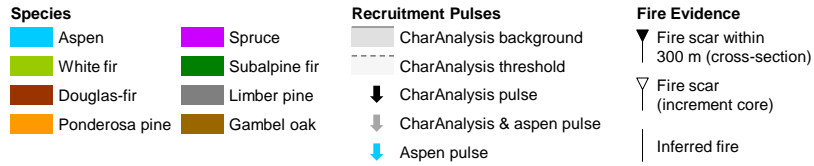
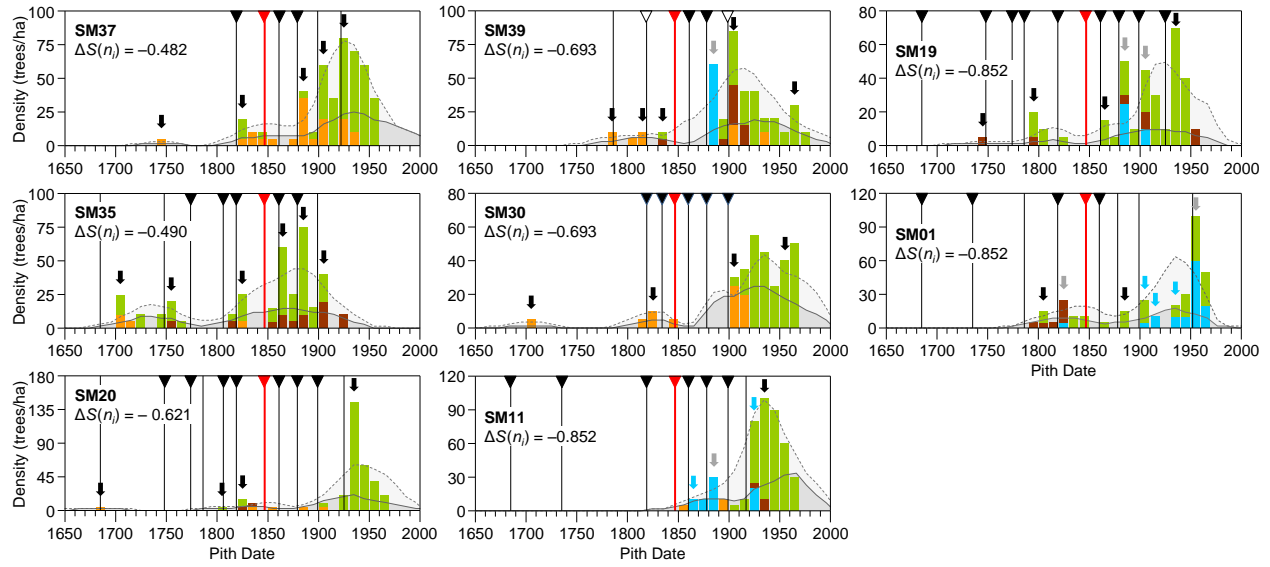
- Scar within 300 m
- Recruitment pulse
- Pulse & scar within 300 m
- Loss of record

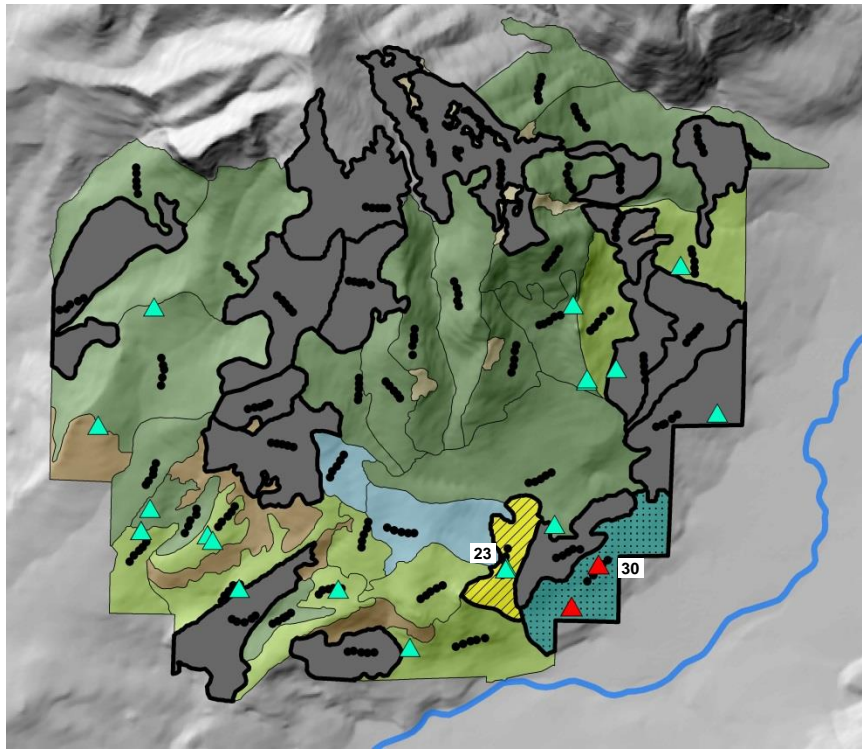
Fire Severity ($\Delta S_i(n_i)$)

Range	(percentile)
>0.689	(>90 th)
0.368 to 0.689	(75 th to 90 th)
-0.080 to 0.368	(50 th to 75 th)
-0.469 to -0.080	(25 th to 50 th)
-0.810 to -0.469	(10 th to 25 th)
< -0.810	(<10 th)

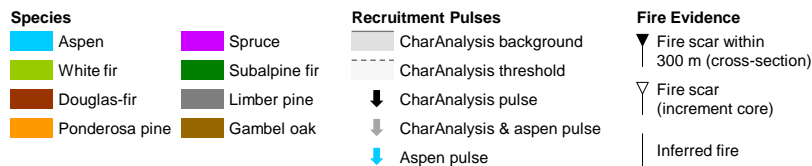
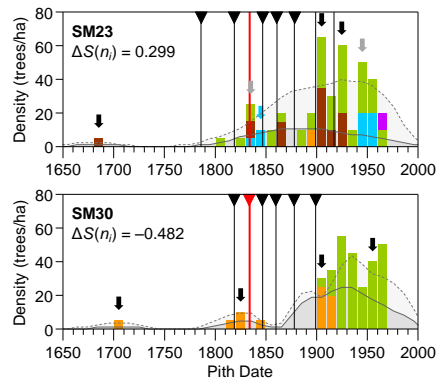
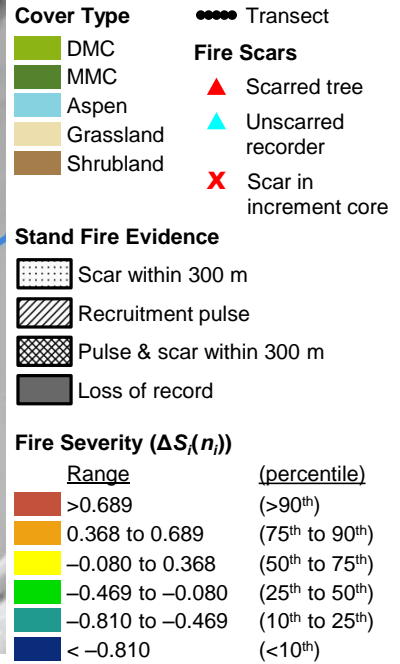


Squaretop Mountain, 1847 Fire (continued)

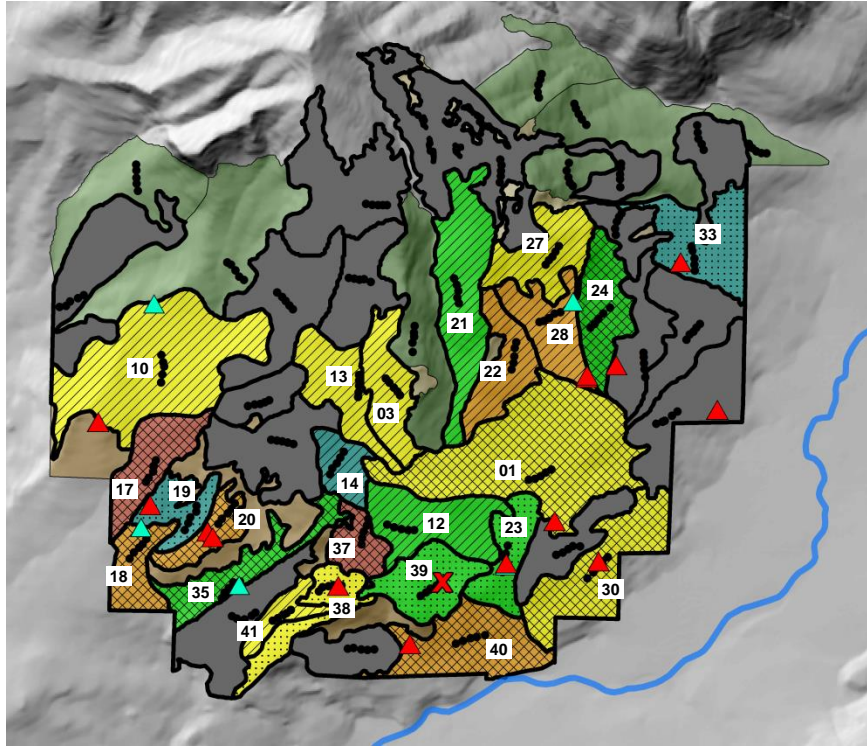




Squaretop Mountain 1834 Fire



Squaretop Mountain 1819 Fire



Cover Type

- DMC
- MMC
- Aspen
- Grassland
- Shrubland

Transect

●●●●●

Fire Scars

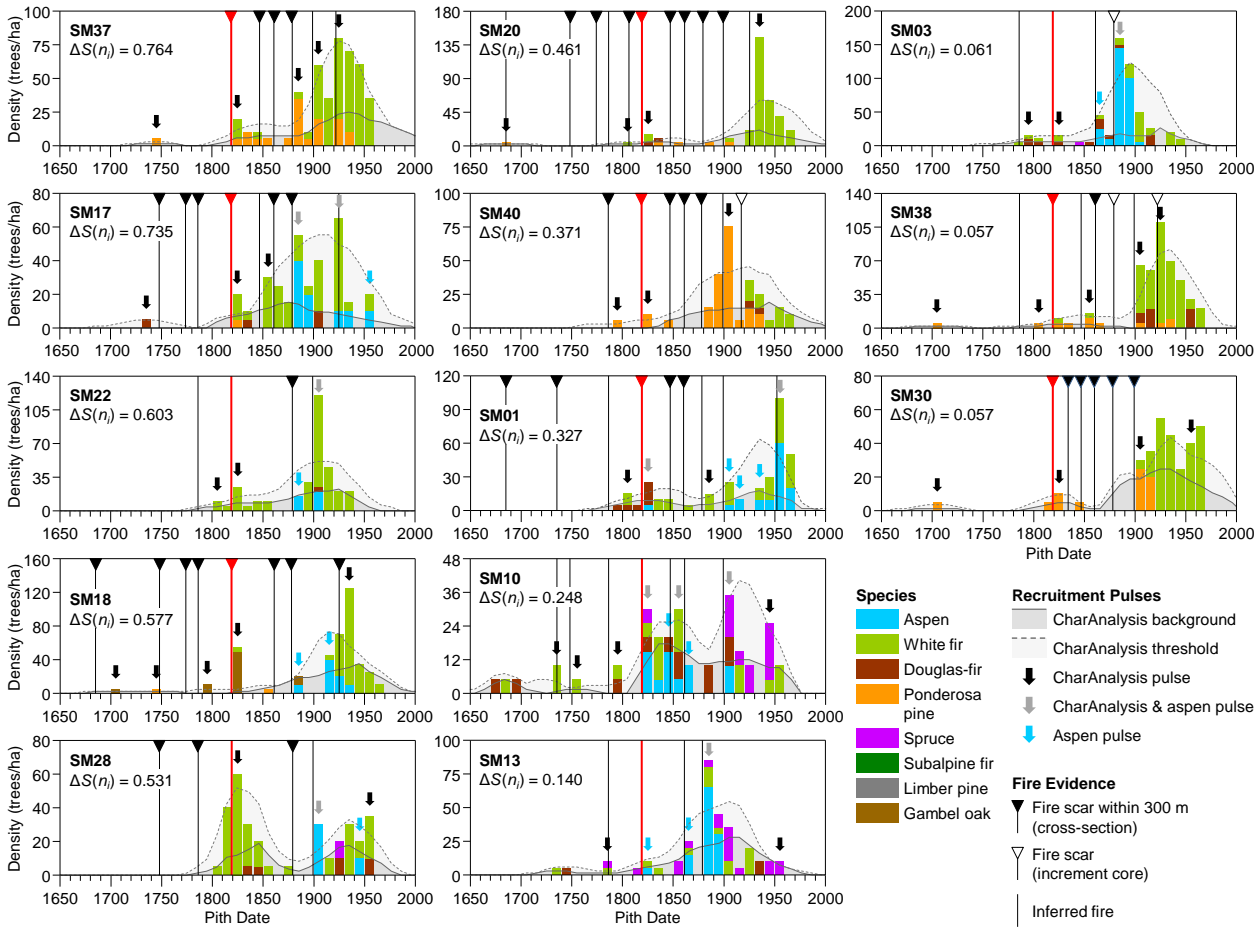
- ▲ Scarred tree
- ▲ Unscarred recorder
- ✗ Scar in increment core

Stand Fire Evidence

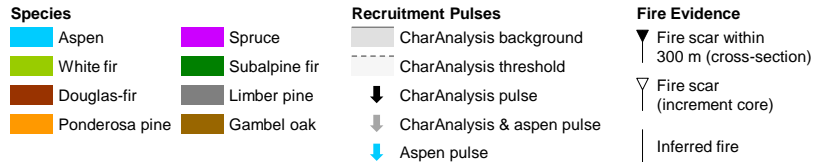
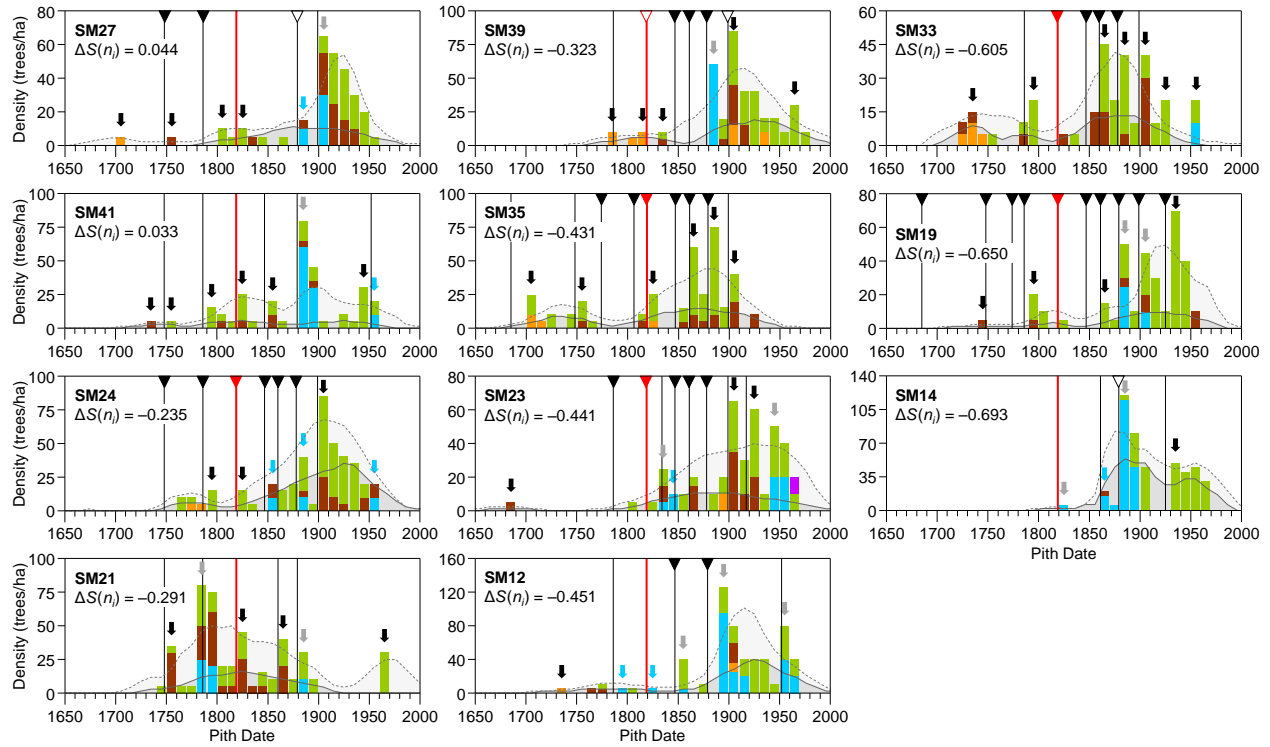
- Scar within 300 m
- Recruitment pulse
- Pulse & scar within 300 m
- Loss of record

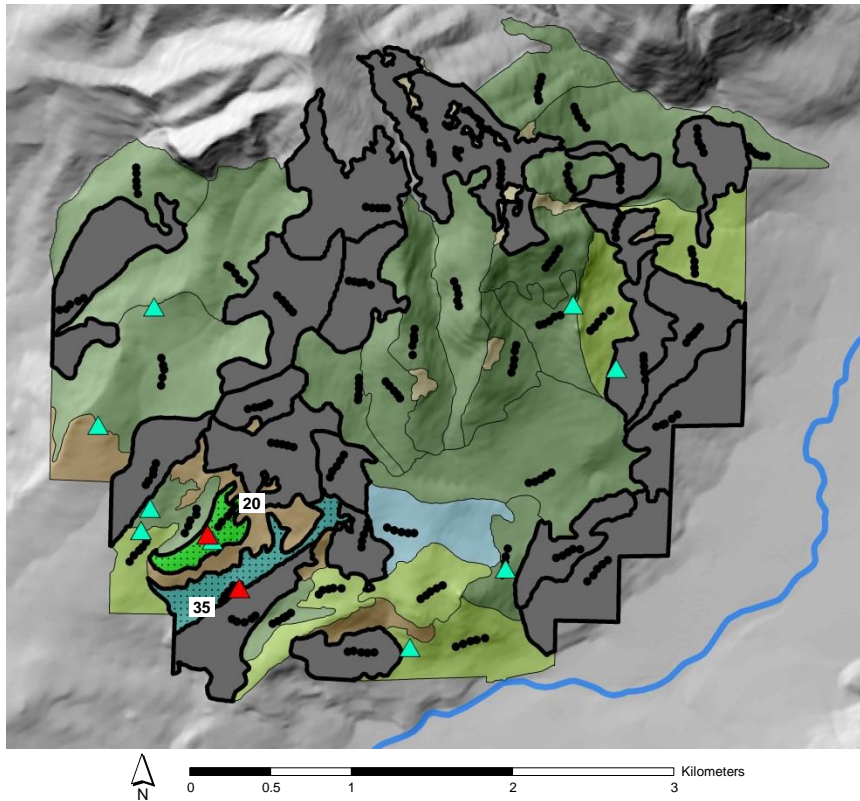
Fire Severity ($\Delta S_i(n_i)$)

Range	(percentile)
>0.689	(>90 th)
0.368 to 0.689	(75 th to 90 th)
-0.080 to 0.368	(50 th to 75 th)
-0.469 to -0.080	(25 th to 50 th)
-0.810 to -0.469	(10 th to 25 th)
<-0.810	(<10 th)

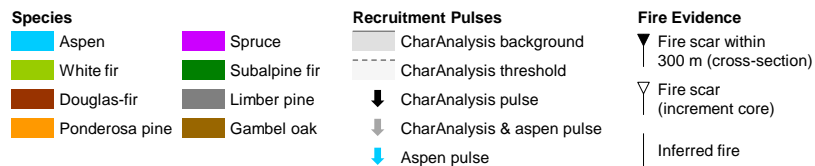
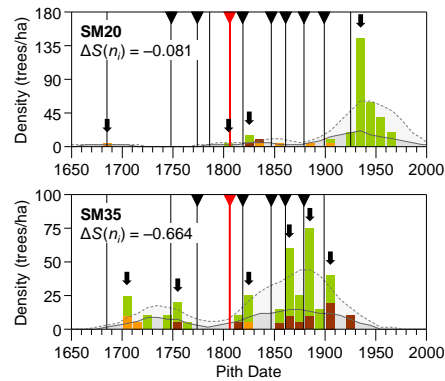
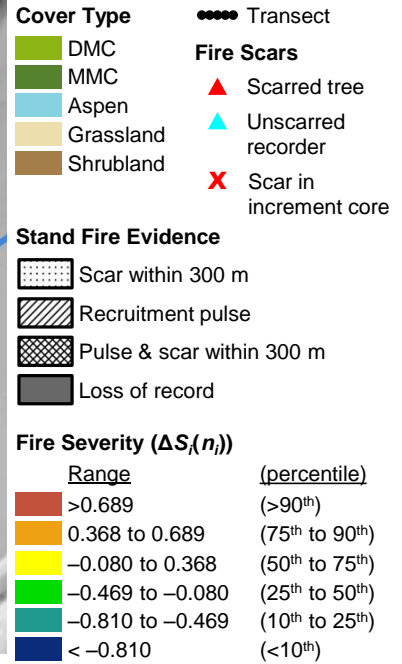


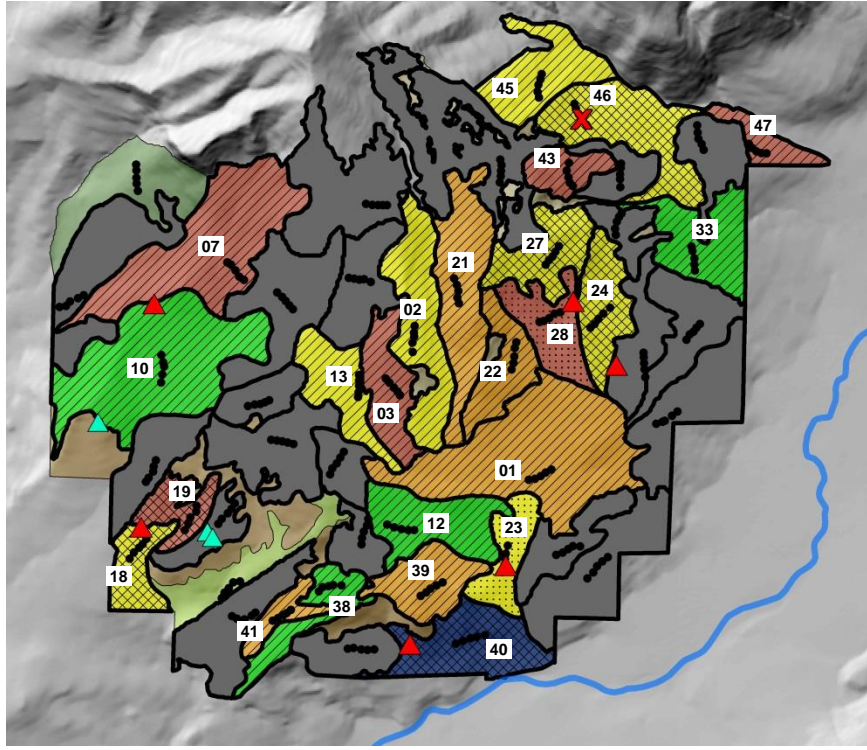
Squaretop Mountain, 1819 Fire (continued)





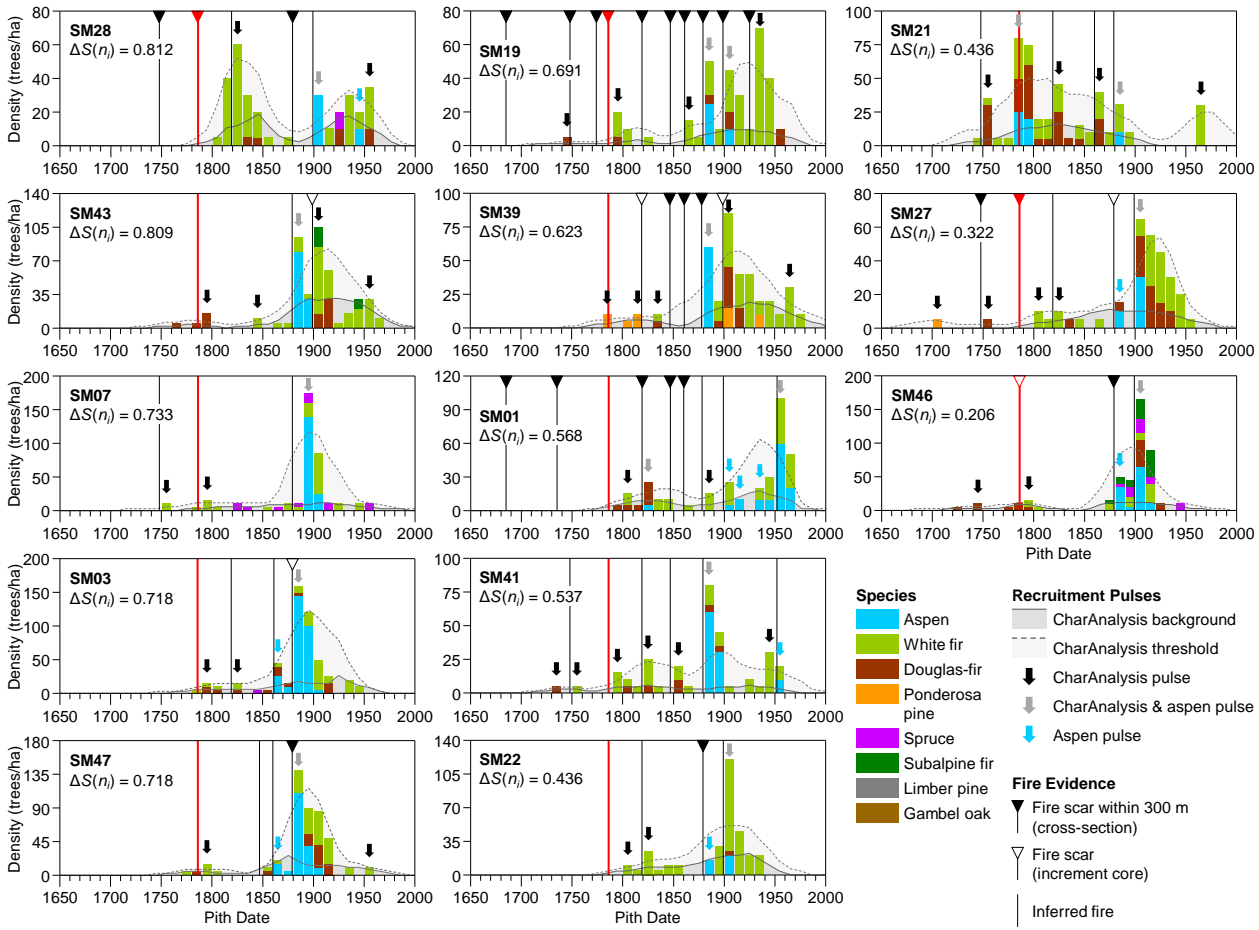
Squaretop Mountain 1806 Fire



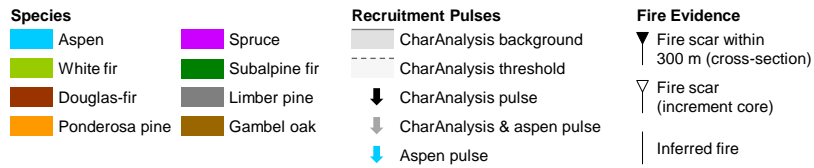
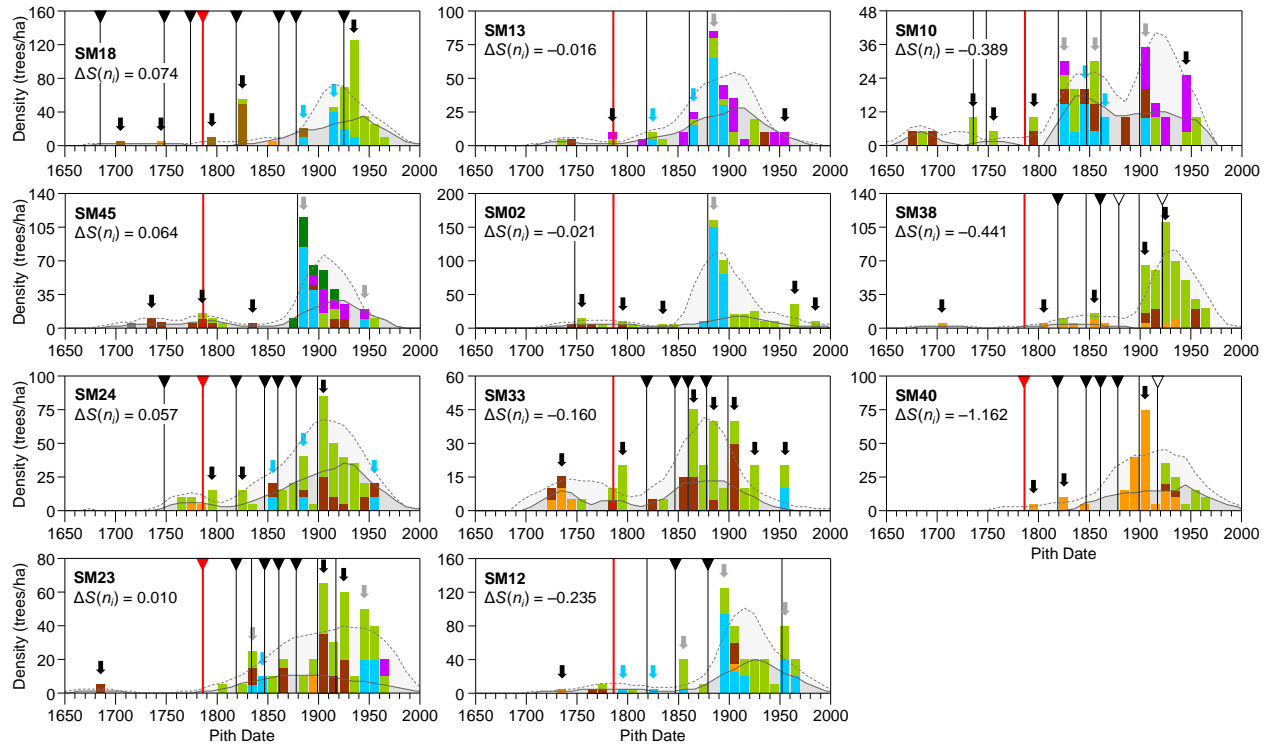


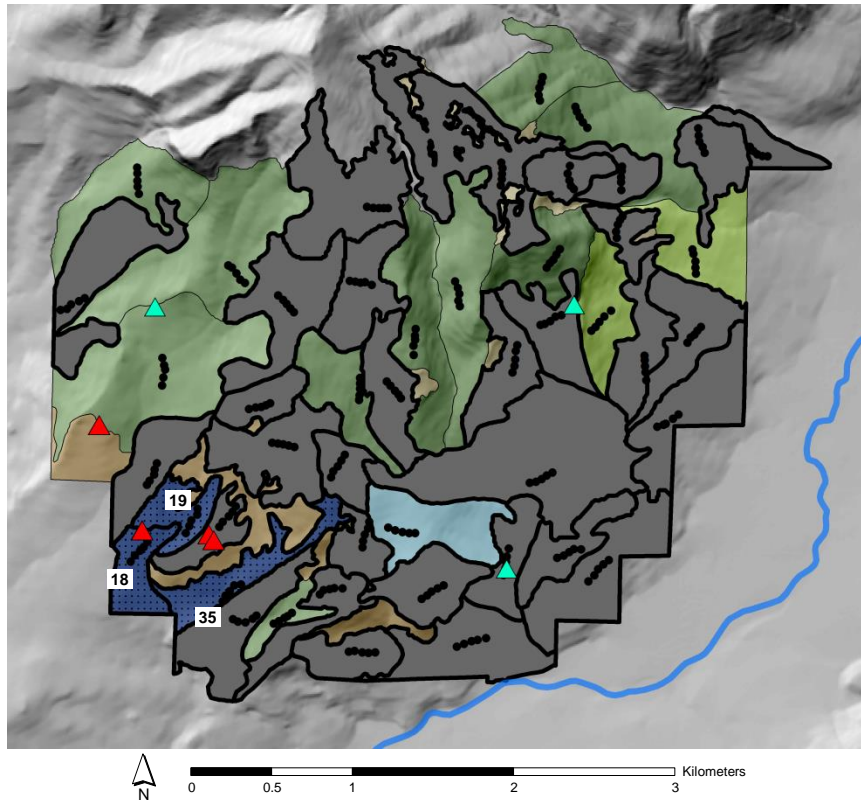
Squaretop Mountain 1786 Fire

- Cover Type**
- DMC
 - MMC
 - Aspen
 - Grassland
 - Shrubland
- Transect**
- Transect
- Fire Scars**
- Scarred tree
 - Unscarred recorder
 - Scar in increment core
- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record
- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |

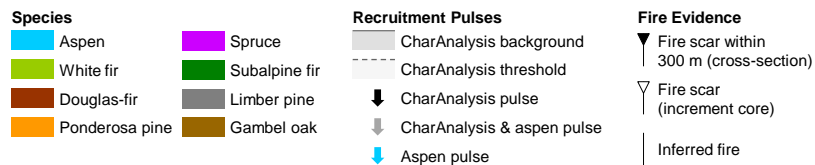
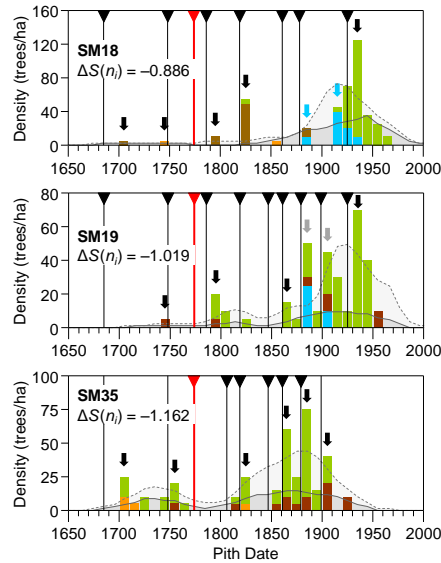
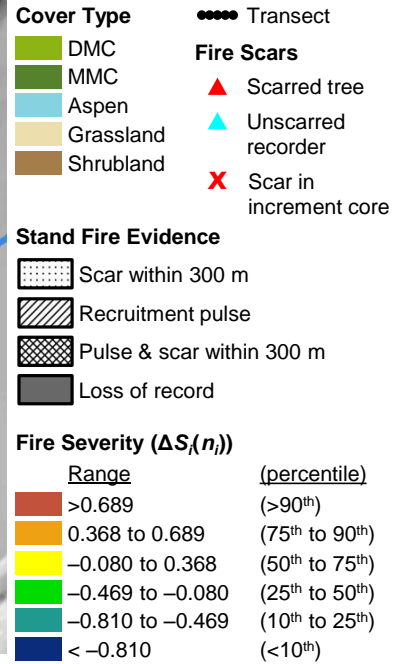


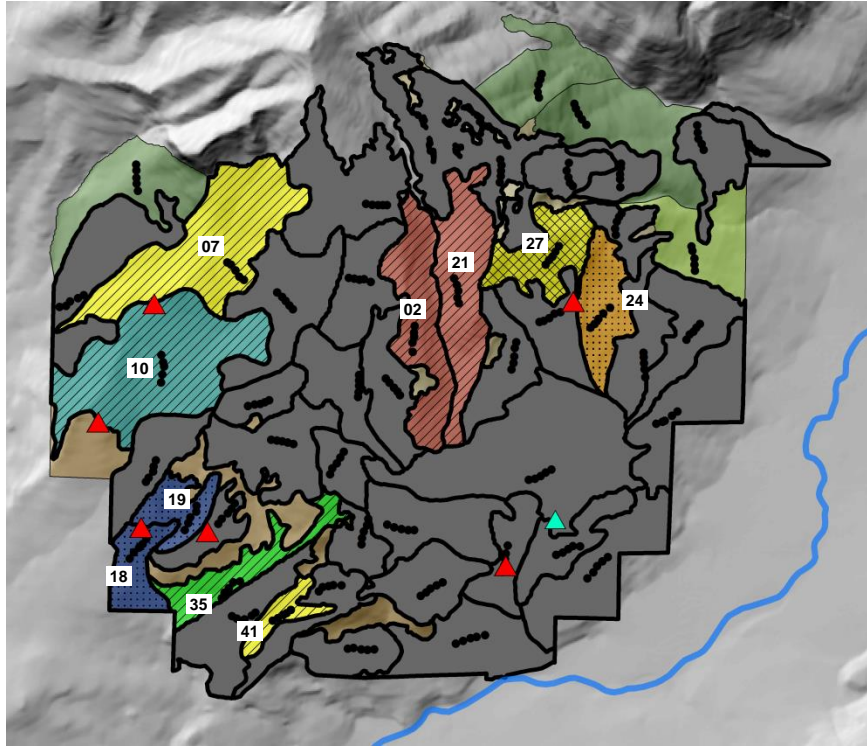
Squaretop Mountain, 1786 Fire (continued)





Squaretop Mountain 1774 Fire





Squaretop Mountain 1748 Fire

- Cover Type**
- DMC
 - MMC
 - Aspen
 - Grassland
 - Shrubland
- Transect** ●●●●
- Fire Scars**
- Scarred tree ▲
 - Unscarred recorder ▲
 - Scar in increment core ✕
- Stand Fire Evidence**
- Scar within 300 m
 - Recruitment pulse
 - Pulse & scar within 300 m
 - Loss of record
- Fire Severity ($\Delta S_i(n_i)$)**
- | Range | (percentile) |
|------------------|---|
| >0.689 | (>90 th) |
| 0.368 to 0.689 | (75 th to 90 th) |
| -0.080 to 0.368 | (50 th to 75 th) |
| -0.469 to -0.080 | (25 th to 50 th) |
| -0.810 to -0.469 | (10 th to 25 th) |
| < -0.810 | (<10 th) |

