Sierra Nevada Tree Mortality Data Network Workshop

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Structure and composition of natural regeneration across a latitudinal and tree mortality gradient

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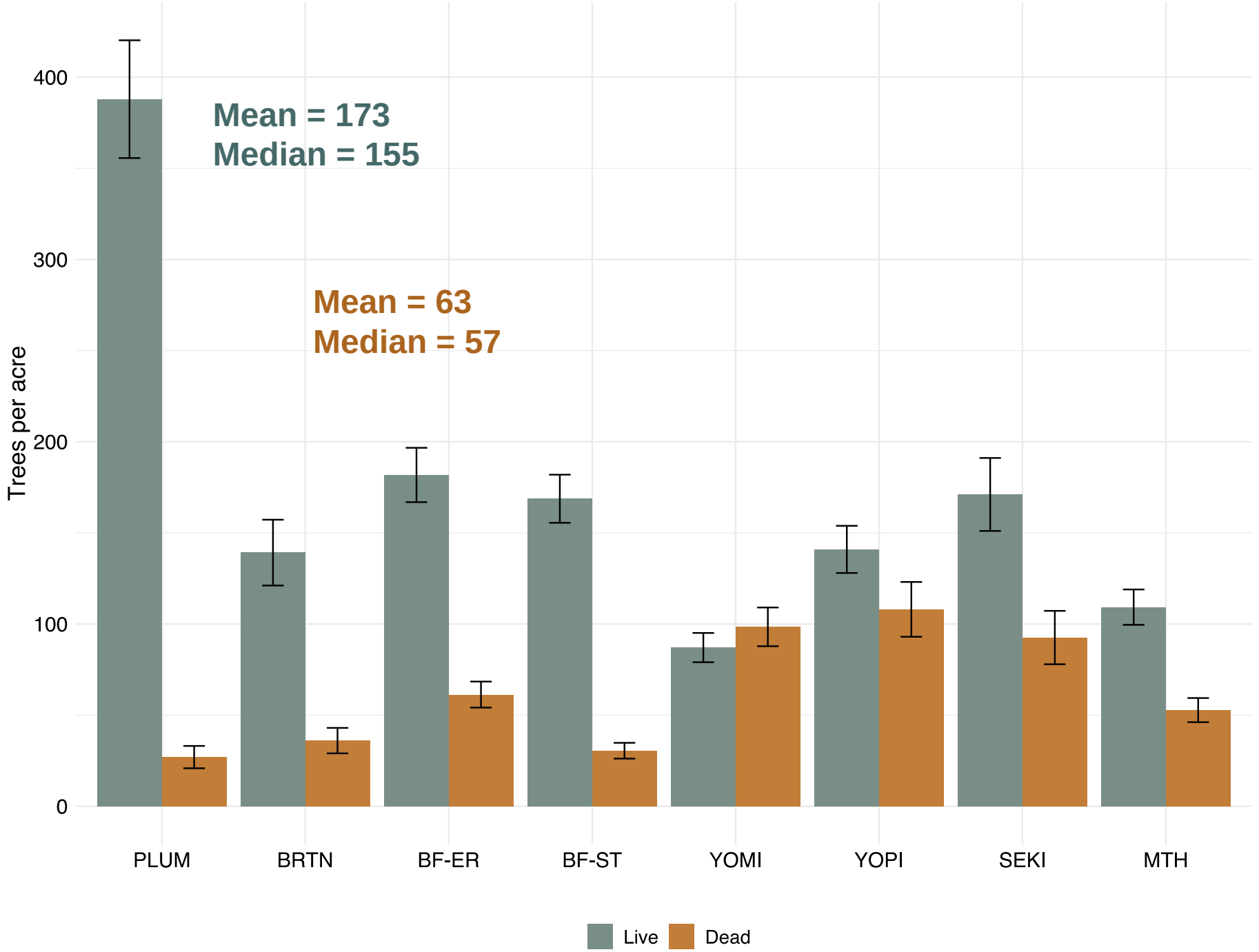
Drought Mortality Network

- CalFire
- National Park Service
- US Forest Service - Pacific Southwest Research Station
- US Forest Service - Region 5
- United States Geological Survey
- University of California ANR
- University of California Berkeley
- University of California Davis
- University of Washington

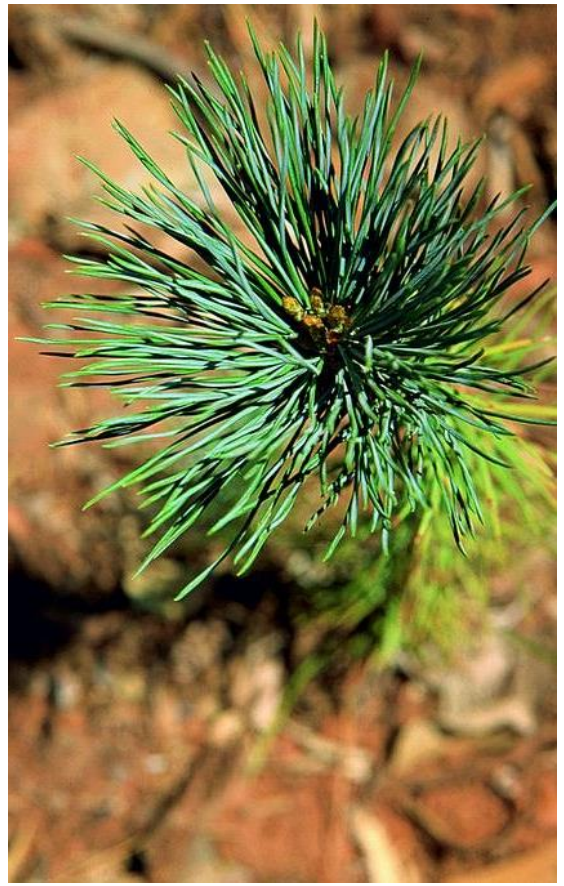

Mean = 173
Median = 155
Mean = 63
Median = 57
Trees per acre
400
300
200
100
0
PLUM
BRTN
BF-ER
BF-ST
YOMI
YOPI
SEKI
MTH
Live
Dead

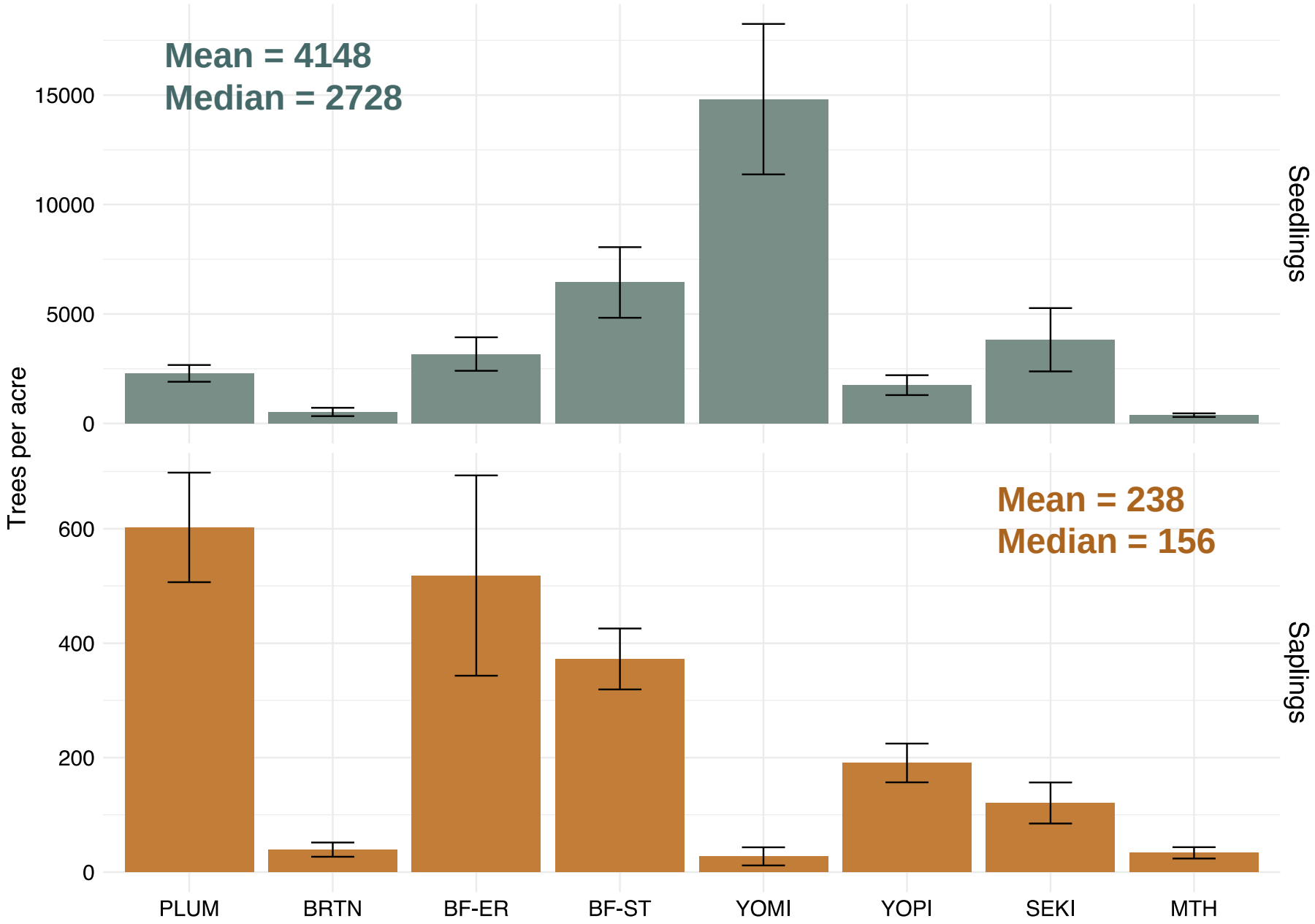
Sampling

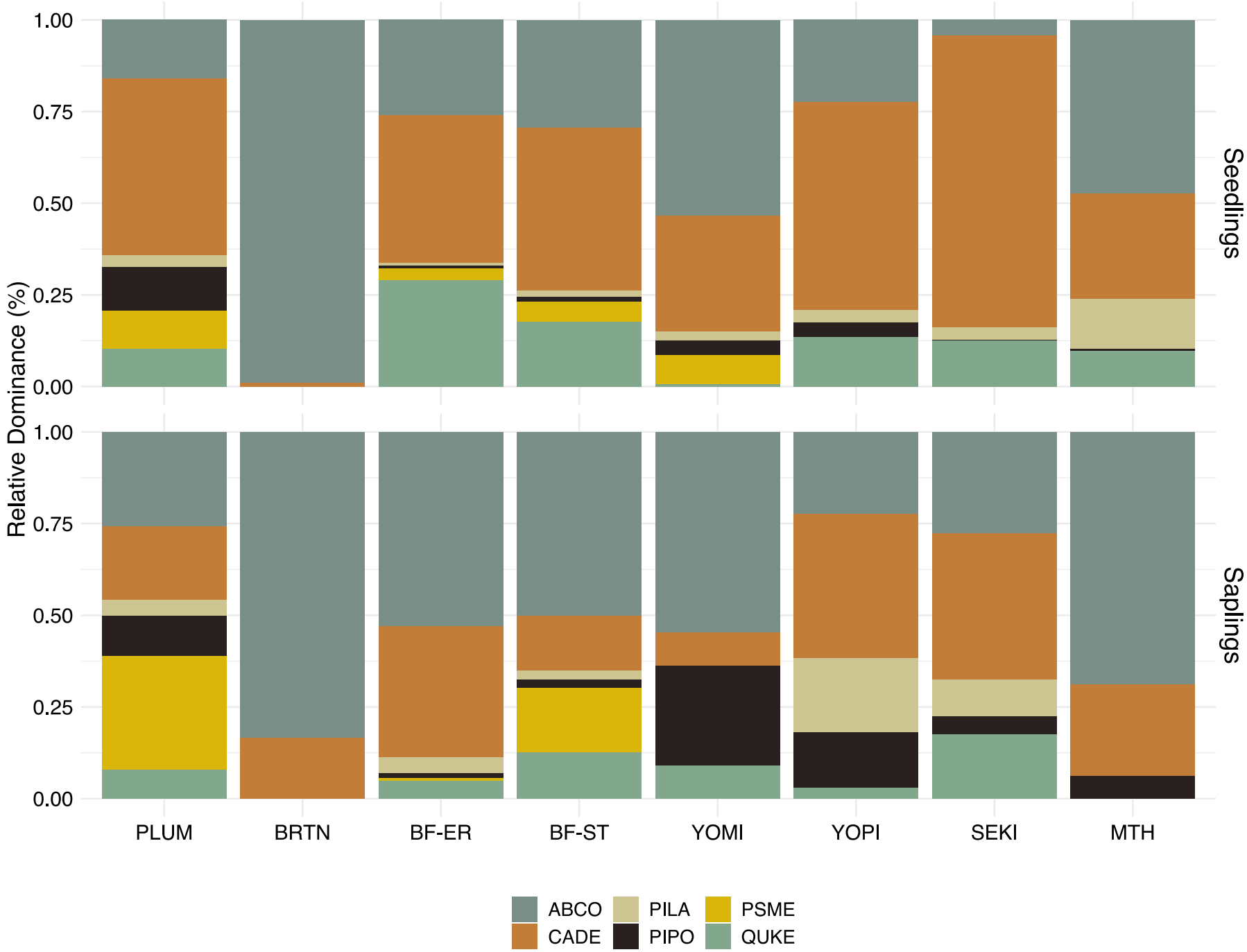
- Sampled three transects per plot with total area of 645.8 square feet
- Seedlings < 4.5 ft tall
  - Small (germinant to 1-year old)
  - Medium (< 1.6 ft)
  - Large (>1.6 ft < 4.5 ft)
- Saplings ≥ 4.5 ft tall and < 4 inches diameter
  - Free growing • Intermediate • Suppressed

Abbreviations

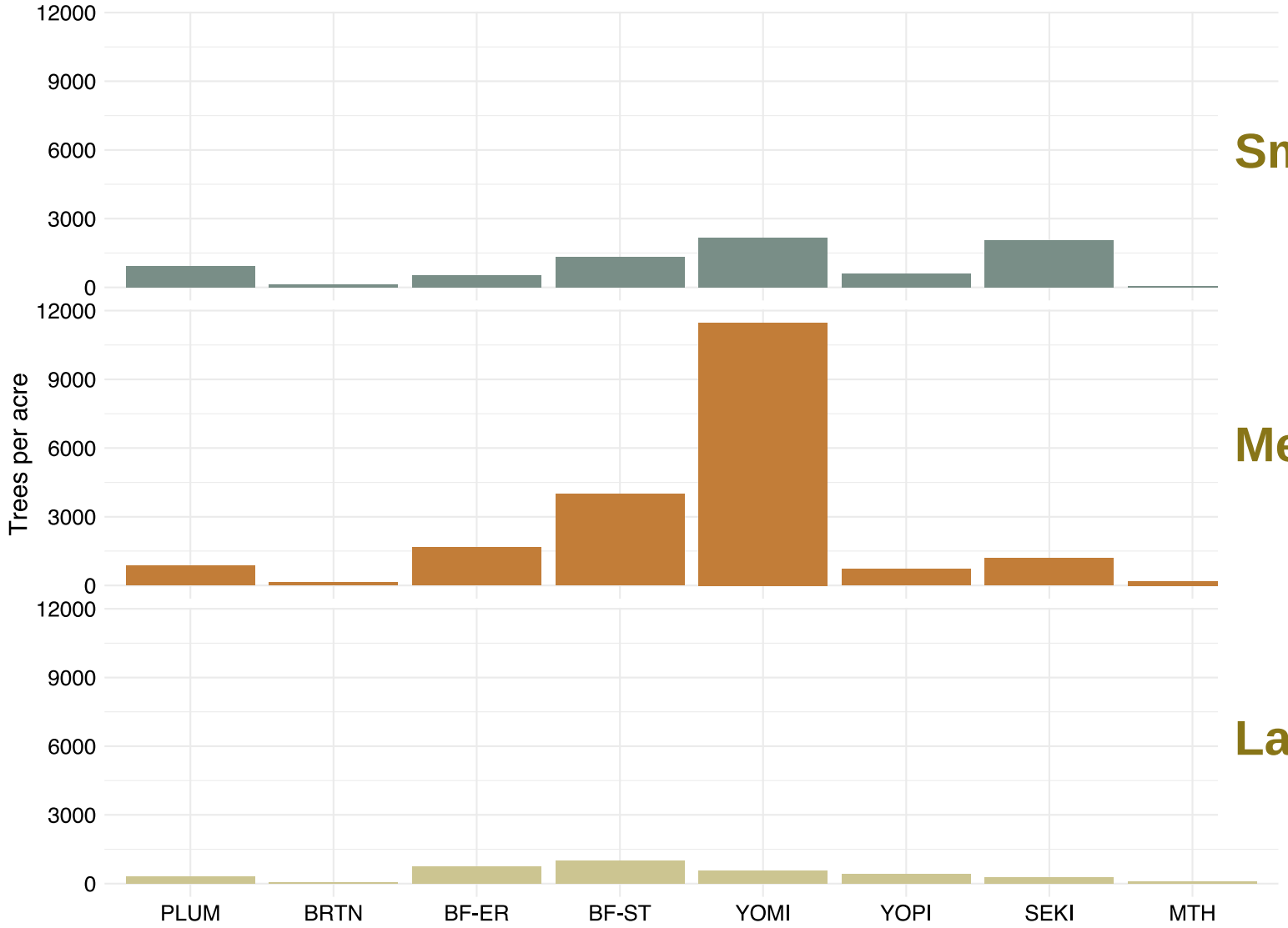
ABCO	White fir	*Abies concolor*
CADE	Incense cedar	*Calocedrus decurrens*
PILA	Sugar pine	*Pinus lambertiana*
PIPO	Ponderosa pine	*Pinus ponderosa*
PSME	Douglas-fir	*Psuedotsuga menziesii*
QUKE	Black oak	*Quercus kelloggi*




Mean = 4148
Median = 2728
15000
10000
5000
0
Seedlings
Trees per acre
Mean = 238
Median = 156
600
400
200
0
Saplings
PLUM
BRTN
BF-ER
BF-ST
YOMI
YOPI
SEKI
MTH


Relative Dominance (%)
1.00
0.75
0.50
0.25
0.00
Seedlings
Saplings
PLUM
BRTN
BF-ER
BF-ST
YOMI
YOPI
SEKI
MTH
ABCO
CADE
PILA
PIPO
PSME
QUKE

Seedlings by Size

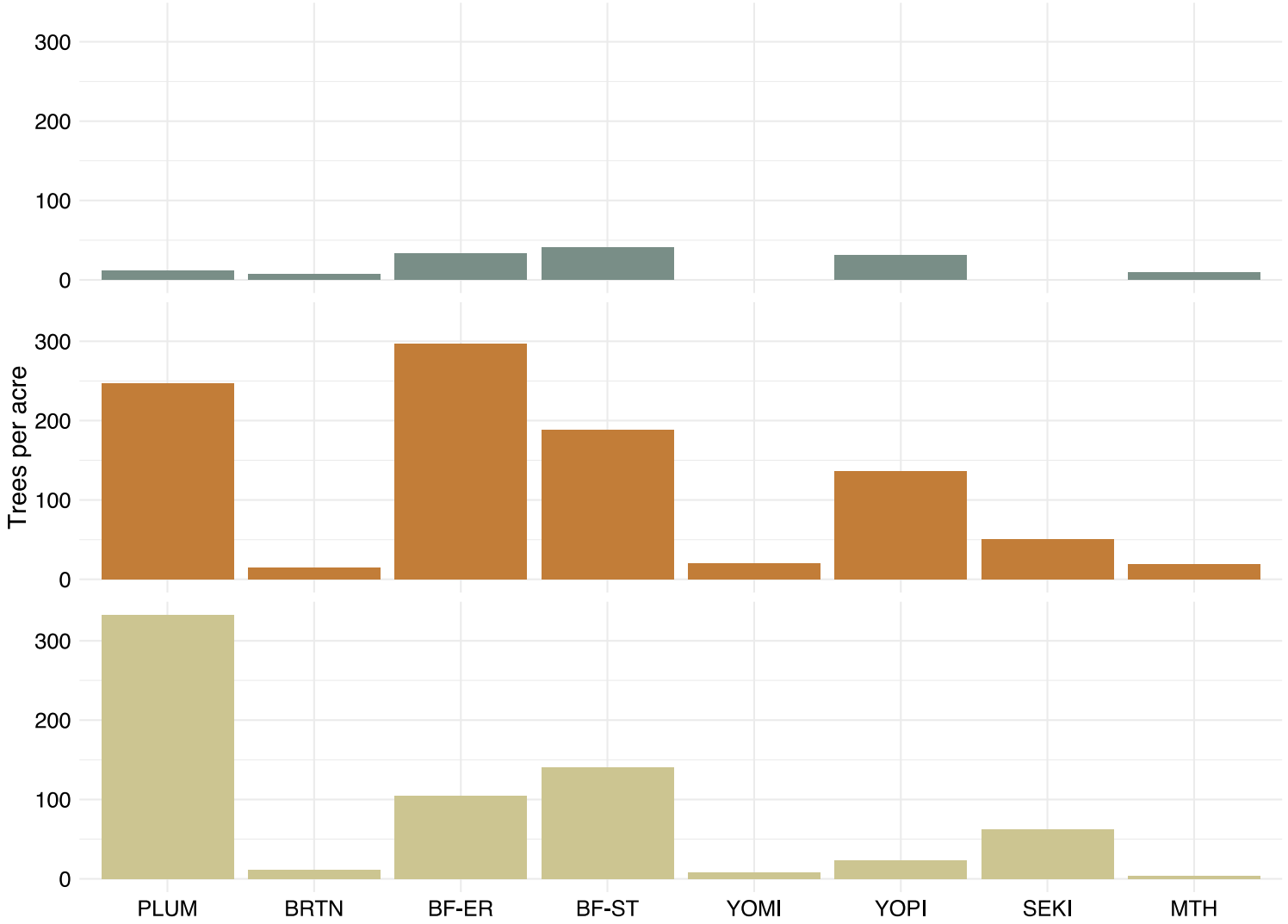


Small (germinant – 1 yr)

Medium (< 1.6 ft tall)

Large (>1.6 ft < 4.5 ft)

Saplings by Growth Condition



Free Growing

Intermediate

Suppressed

Key Points

- Clearly a strong north to south gradient in tree mortality
- Cleary not a strong north to south gradient in density of seedlings and saplings >> management history!
- In both seedling and sapling categories shade tolerant species have greater abundance
- Due to high canopy closure majority of saplings classified as suppressed or intermediate >> what happens as canopy opens due to tree fall?


YOMI
41 - 90