Chehalis Basin Strategy Riparian-Associated Amphibian Studies

Riparian-Associated Amphibian Studies

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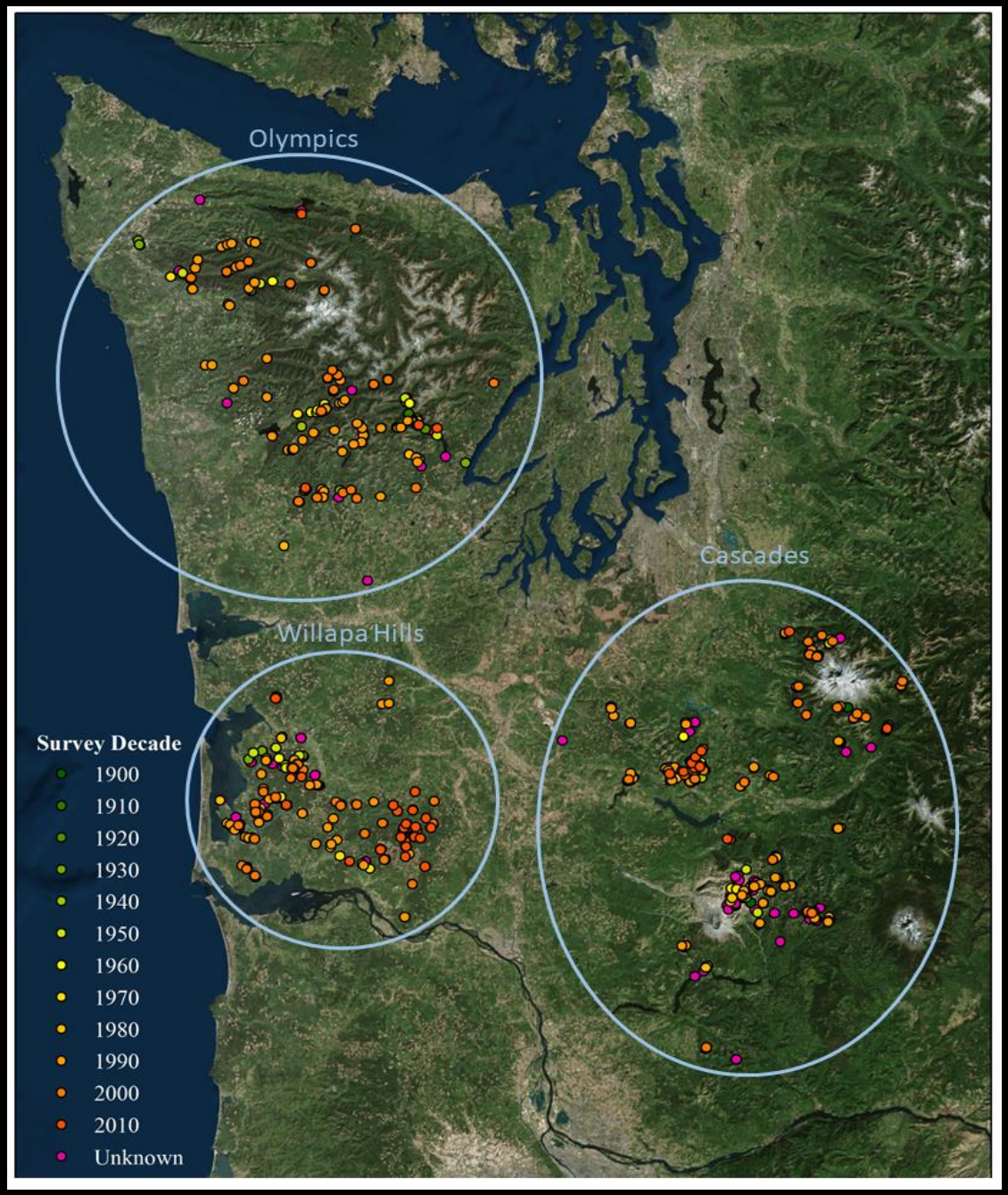
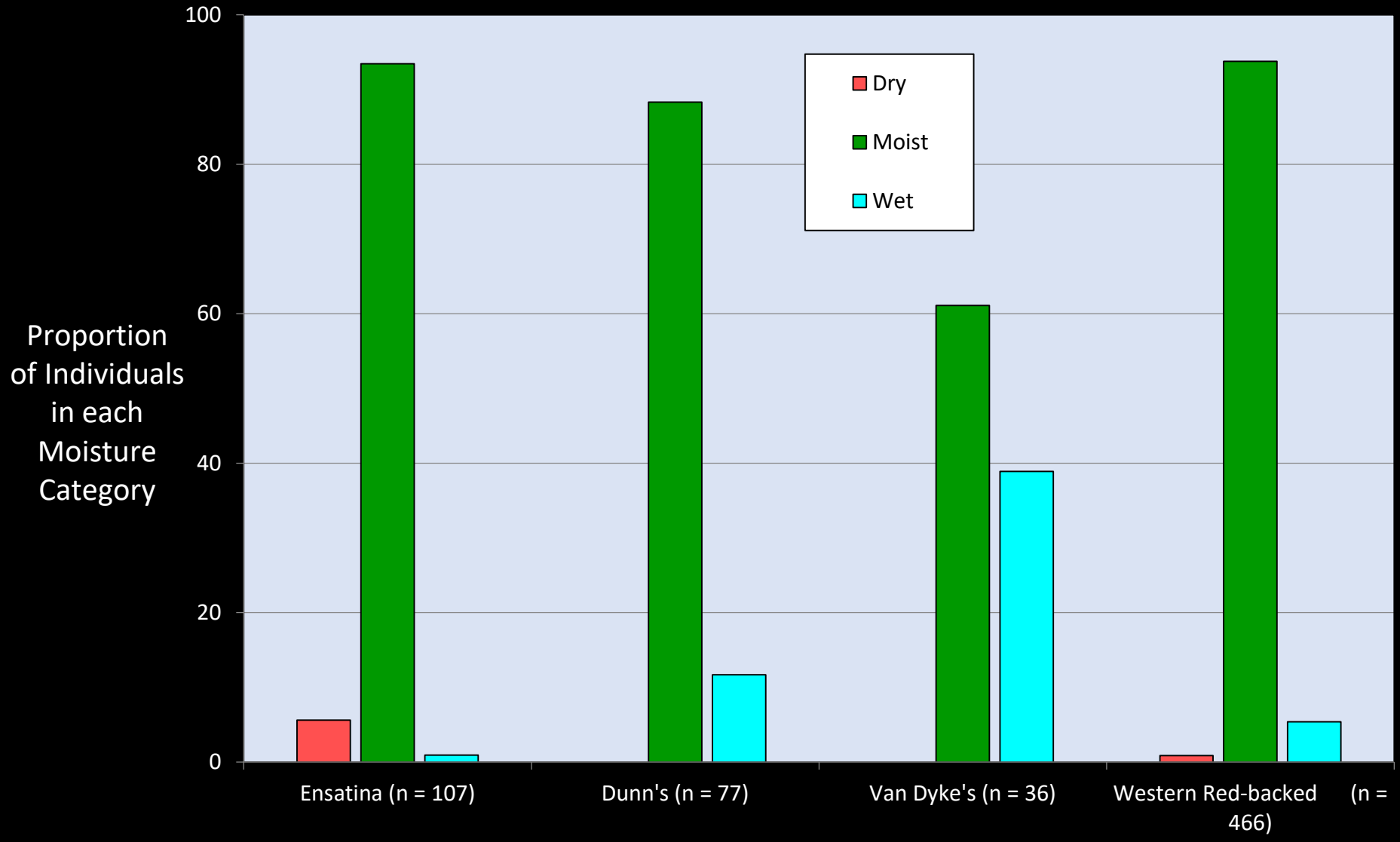
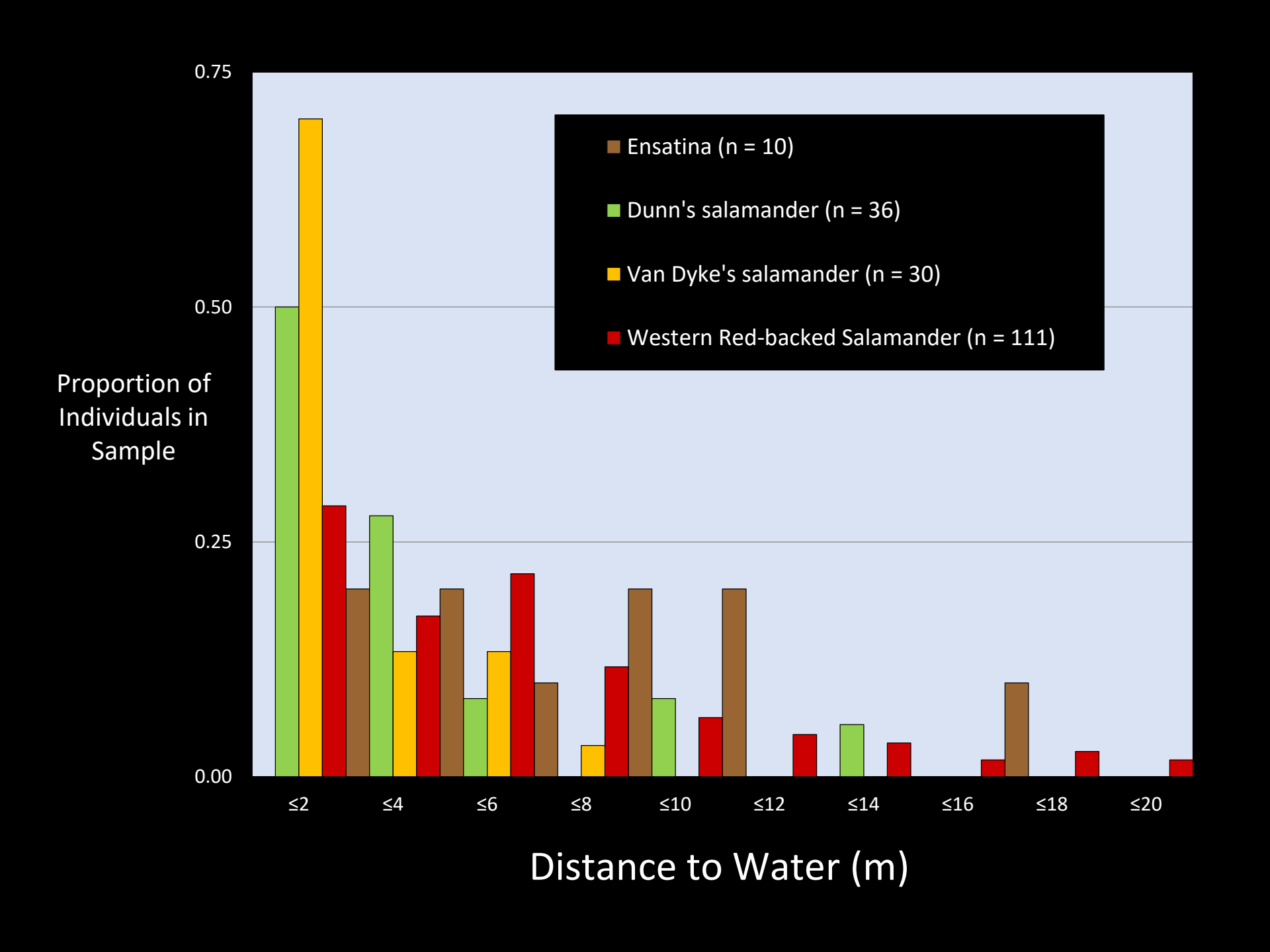
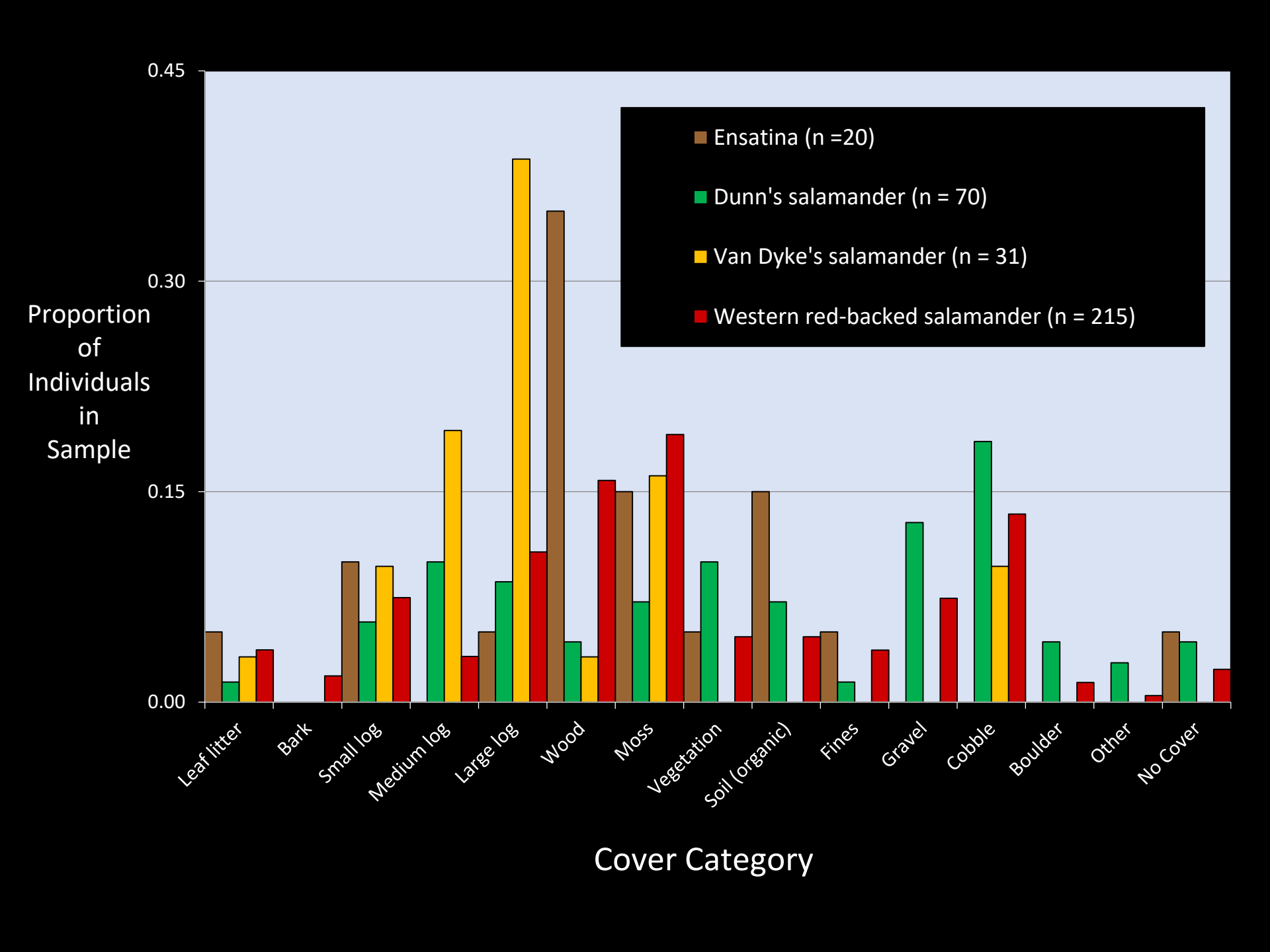
Van Dyke's Salamander Distribution in Washington State

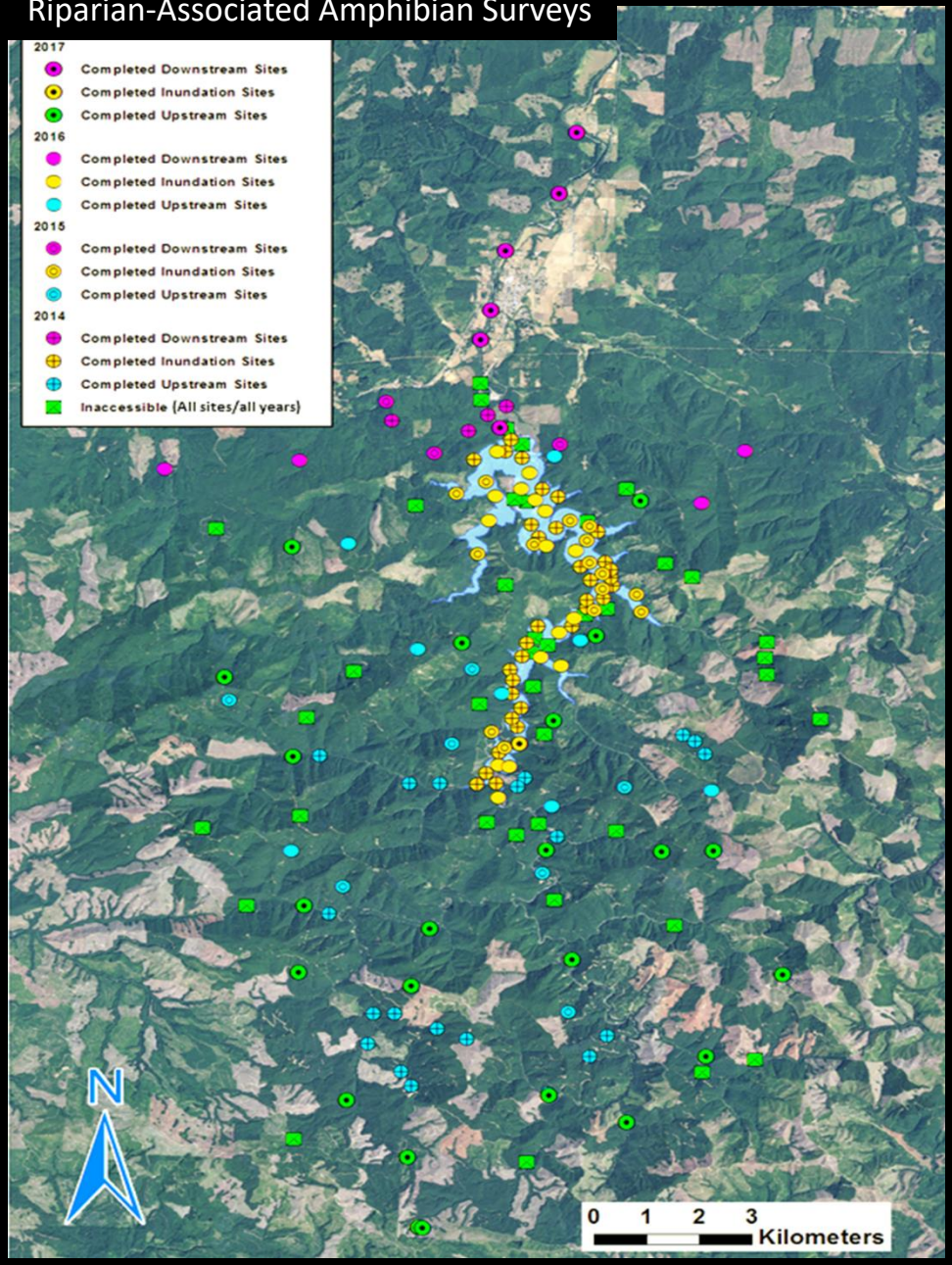


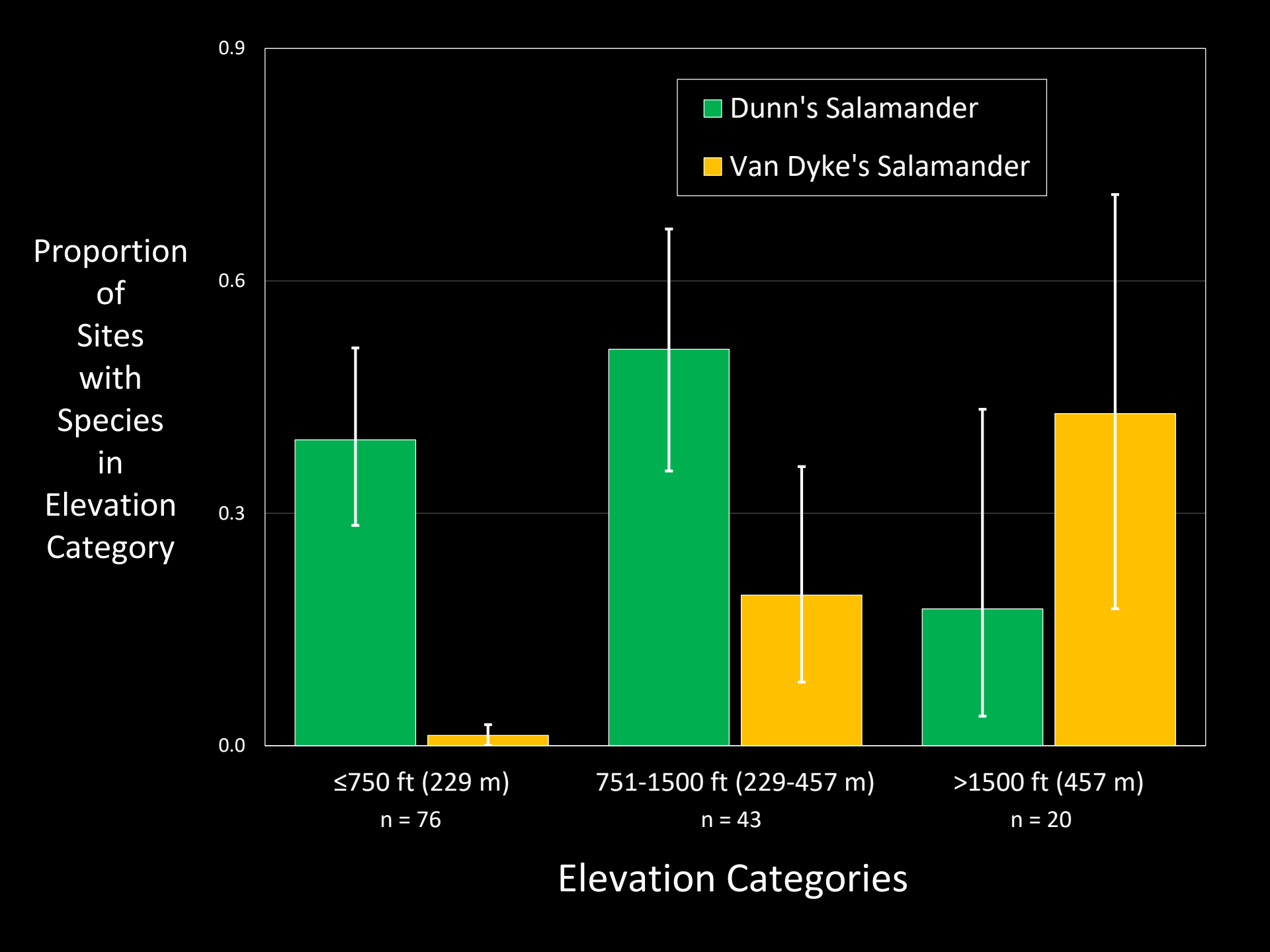

Proportion of Individuals in each Moisture Category
100
80
60
40
20
0
Dry
Moist
Wet
Ensatina (n = 107)
Dunn's (n = 77)
Van Dyke's (n = 36)
Western Red-backed (n = 466)


0.75
0.50
0.25
0.00
Proportion of Individuals in Sample
Ensatina (n = 10)
Dunn's salamander (n = 36)
Van Dyke's salamander (n = 30)
Western Red-backed Salamander (n = 111)
≤2
≤4
≤6
≤8
≤10
≤12
≤14
≤16
≤18
≤20
Distance to Water (m)


0.45
0.30
0.15
0.00
Proportion of Individuals in Sample
Ensatina (n =20)
Dunn's salamander (n = 70)
Van Dyke's salamander (n = 31)
Western red-backed salamander (n = 215)
Leaf litter
Bark
Small log
Medium log
Large log
Wood
Moss
Vegetation
Soil (organic)
Fines
Gravel
Cobble
Boulder
Other
No Cover
Cover Category

Riparian-Associated Amphibian Surveys




Proportion of Sites with Species in Elevation Category
0.9
0.6
0.3
0.0
Dunn's Salamander
Van Dyke's Salamander
≤750 ft (229 m)
n = 76
751-1500 ft (229-457 m)
n = 43
>1500 ft (457 m)
n = 20
Elevation Categories

Highlights

- Van Dyke's salamander is:
  - more frequent at higher elevations ,
  - has greater moisture and lower temperature requirement than close relatives,
  - and a potential link to large wood.
- This combination of features make Van Dyke's particular vulnerable to the current climate change trajectory, that is, warmer seasonal temperature profiles resulting in general lower moisture and higher temperature conditions.
- The expectation is the loss of species from lower elevations, making higher elevations, which have a smaller areal footprint, crucial for the species long-term survival.
- In the Willapa Hills, essentially the entire area of its distribution is within the managed landscapes. Fortunately, Van Dyke's close tie to water puts its local distribution almost entirely with the width of current Forest Practices riparian buffers. However, roughly half of non-fish-bearing streams remain unbuffered under current rules.
- Hence, perhaps the best strategy to retain the species is to acquire higher elevation timberlands to enable removing them from production.