

# PRAIRIE ARCHAEOLOGICAL SITES IN THURSTON AND LEWIS COUNTIES

## Empirical Data For Cultural Resource Management

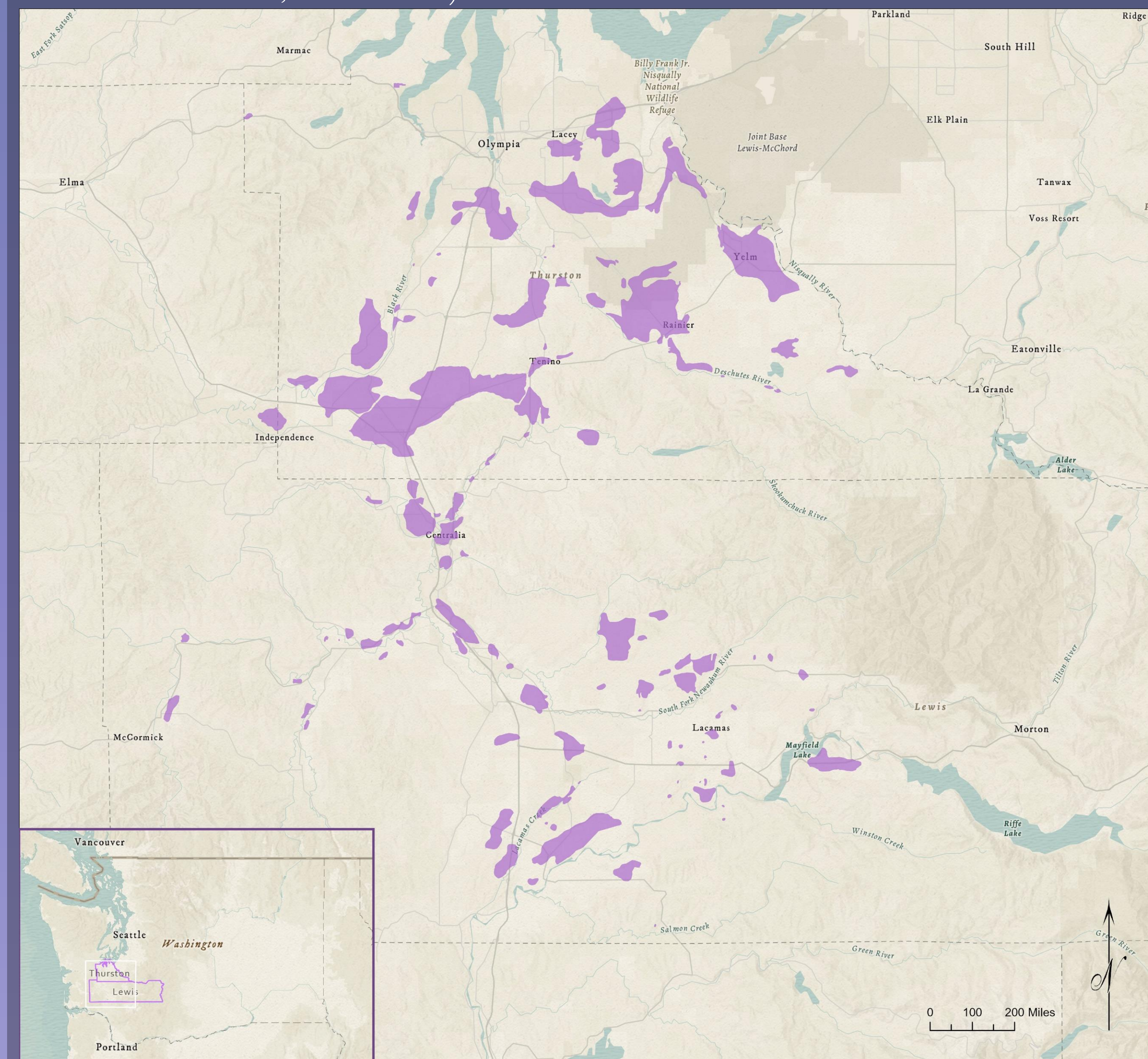
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### Abstract

Archaeological sites associated with prairies in western Washington provide invaluable information on the history of indigenous landscape stewardship and resource use practices. Less than 3% of precolonial prairie remains in western Washington due to settler incursion, and prairie sites remain susceptible to impacts from development and agriculture. Despite the importance of prairie archaeology, a standard archaeological survey method has not been developed to target potential prairie sites. This pilot study researched 66 recorded prairie archaeological sites in Thurston and Lewis counties by summarizing site metrics like the size of sites and the distance from these sites to prairie edges, creeks, rivers, and confluences. This poster presents initial summary statistics that should inform predictive modeling and cultural resource management research design in this region. This analysis also provides important insights into whether local standard survey methodologies can result in archaeological site identification.

### Historic Prairies In Western Washington

Prior to settler incursion abundant prairies were present throughout western Washington. These prairies were extremely important to indigenous communities as vital hunting and plant gathering grounds. Oral histories and cultural traditions emphasize the stewardship of prairies by tribal communities throughout western Washington, indicating that prairies have been maintained by Indigenous people for thousands of years (Hamman 2021; Krohn and Harvey 2020). Early settlers in the mid-1800s saw the “park-like” areas that were actually stewarded prairie areas and were drawn to prairies as prime agricultural areas due to the terrain being less densely forested and the close proximity to rivers (Stevenson 2019). Subsequent decades saw the displacement of indigenous people from these prairies and their resources as well as the conversion of the prairies to farmland and developing townships. Today, less than 10% of prairies in the South Sound Region remain and less than 3% of prairie land remains that still includes native plants (U.S. Fish & Wildlife Service; Lombardi n.d.).



Thurston and Lewis County historic prairies as mapped in General Land Office plats.

### Western Washington Prairie Site Pilot Project

The objective of this research is to summarize and analyze attributes of precolonial sites associated with historic prairies in western Washington to support management of prairie cultural resources. Archaeological sites associated with 111 historic prairies in Thurston and Lewis counties were targeted in the pilot study to explore data structure and project limitations (Figure 1). We expect that future phases of our research will extend to other counties in the region.

Predictive modeling and archaeological surveys are critical tools for identifying archaeological sites, and many cultural resource management decisions are based on landscape features. The Washington Statewide Archaeology Predictive Model maintained by the Department of Archaeology and Historic Preservation, which influences cultural resource management and survey methodology across the state, indicates that 31.5% of prairies in Thurston and Lewis Counties are placed, at least in part, in low to moderate risk areas for encountering archaeological resources. Only 72.1% of the prairies are modeled as having a high to very high probability for encountering archaeological resources, signifying the model needs to be improved in regard to the representation of prairie history. In this study we are investigating 1) all precolonial sites within a 30-meter buffer surrounding historic prairies; 2) prairie site dimensions; 3) distance between sites and water sources and confluences; 4) distance between sites and prairie margins; and 5) whether current standard methods are adequate for identifying these important sites.

### Methods

General Land Office plats were used to map 111 historic prairie boundaries within the study area (Figure 1). Although attempts have been made to map prairies using soil units and historical data, additional research needs to be conducted to map the full extent of precolonial prairies. Information on 66 archaeological sites was accessed via the Washington Information System for Architectural and Archeological Records Data (WISAARD). If a site intersected with or was within 30 meters of a mapped historic prairie data on the site size and location was collected.

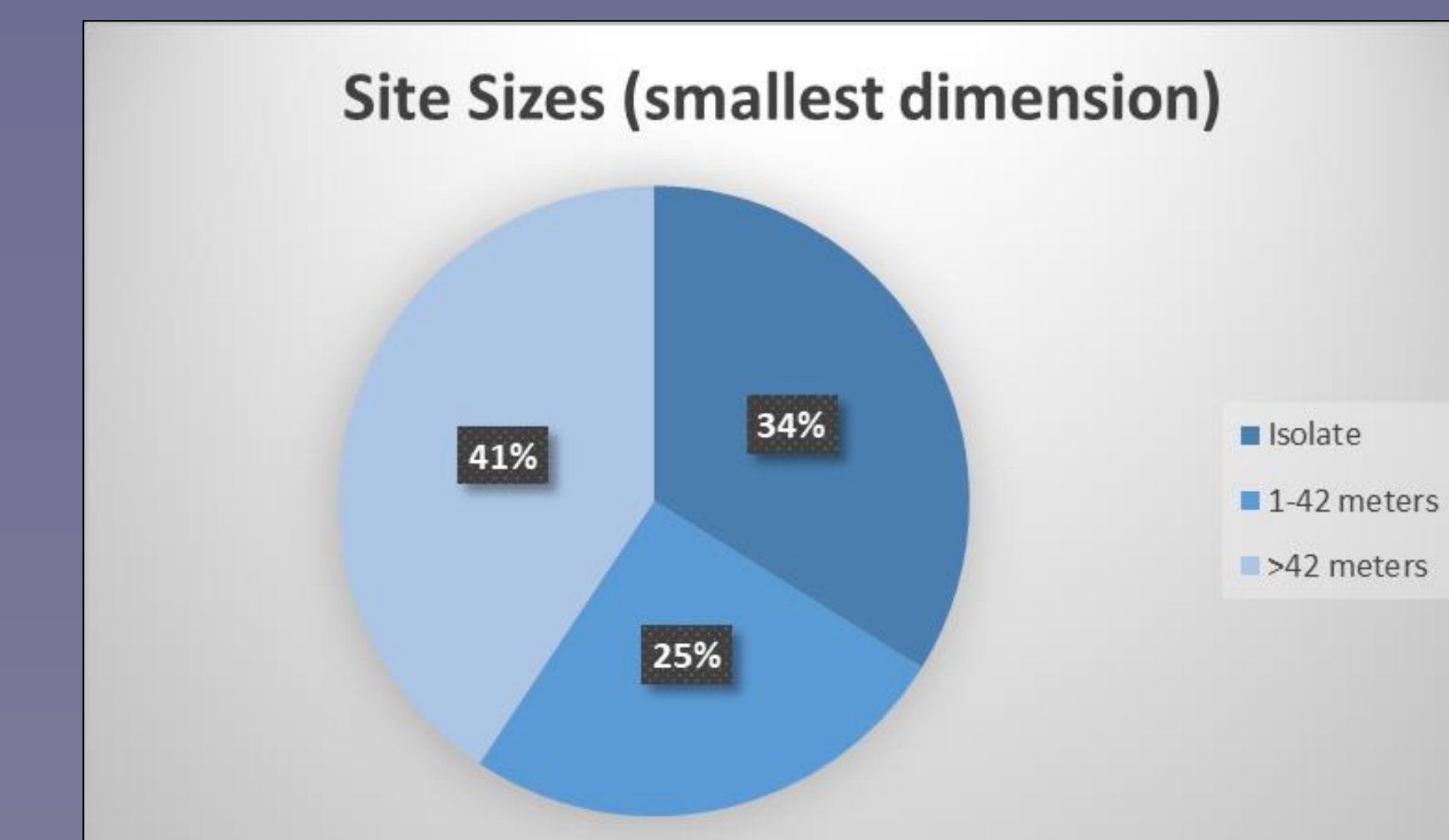
### Prairie Site Dimensions for Archaeological Survey Methodology Analysis

What survey intervals are likely to identify prairie archaeological lithic sites in the southern Puget Lowland? Most prairie sites in Thurston and Lewis counties are recorded during cultural resource management surveys, which tend to utilize 30-meter survey intervals. We collected data on reported site dimensions for 59 sites, and sites were classified into seven categories according to common site survey methods and site classes (Table 1). The smallest site dimension (width) was used to assess whether a systematic survey could reasonably identify an archaeological resource. These dimensions are influenced by survey methodology, including transect spacing, inventory phasing, and the size of assessment areas; however, these findings suggest that traditional survey methods may not be adequate for identifying prairie archaeological sites.

Sites with widths of less than 43 meters could easily be missed on a 30-meter transect survey, as the hypotenuse of a 30-meter triangle 42.43 meters. Over half (59.3%) of the studied sites had a width of less than 43 meters, suggesting a standard 30-meter interval survey in this region is likely to miss a prairie archaeological site (Figure 2). In fact, nearly half of the sites (45.8%) had a width of less than 30 meters, indicating systematic survey transects of 20 meters (hypotenuse 28 meters) may be more effective at identifying prairie archaeological sites. One third (33.9%) of the studied sites were isolates, and the average site width is 85.5 meters suggesting that a more holistic model of prairie cultural landscapes may need to be developed for better cultural resource management.

#### Prairie Site Size Intervals

Site Size (Smallest Dimension)	# Sites	% Sites
Isolates	20	33.9%
Sites 1-20 meters	6	10.2%
Sites 21-29 meters	1	1.7%
Sites 30-42 meters	8	13.6%
Sites 43-99 meters	12	20.3%
Sites 100-200	8	13.6%
Sites >200 meters	4	6.8%
Total	59	-



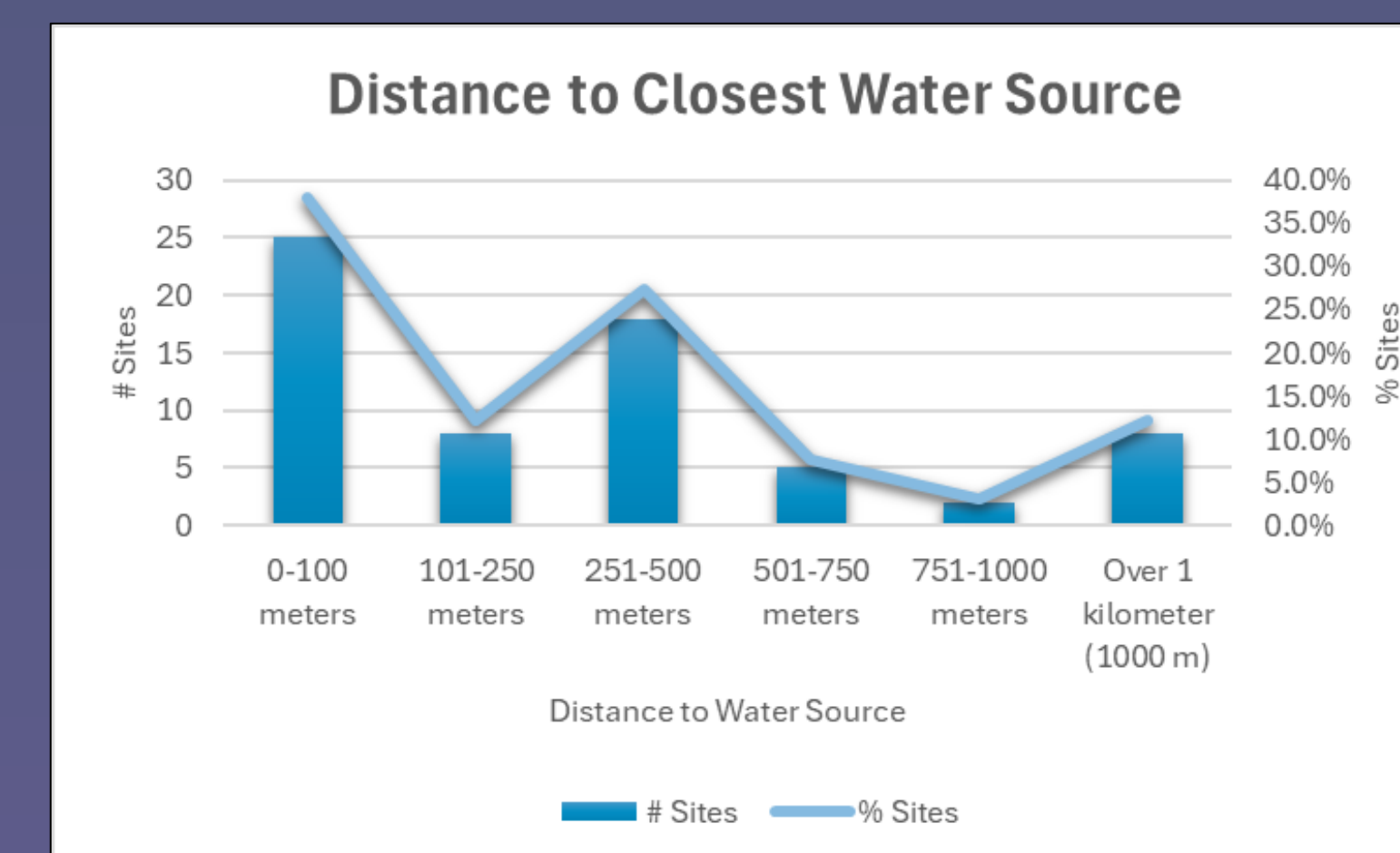
### Site Distance to Water Sources

The distance to the closest creek and closest river was measured for 66 precolonial sites in Thurston and Lewis counties and the closer of these two measurements was used to assess distance to closest water source (Table 2). Cultural resource surveys in this region tend to focus intensive survey within a 30-meter buffer of water sources, but is this adequate for identifying prairie sites? Only 24.2% of prairie sites are located within 30 meters of a water source (Table 3), and in fact the average distance of prairie sites to the closest water sources is 393 meters.

Archaeologists consider water confluences in this region to have very high archaeological probability, but are confluences associated with traditional uses of prairies? Only 9.1% of sites are located within 500 meters of a confluence of two bodies of water, and on average prairie sites were 2,571 meters (2.57 kilometers) from confluences (Table 4). While water confluences may be excellent indicators of site probability for other site types, it appears that water bodies and creeks in particular are more relevant to modeling the locations of prairie sites.

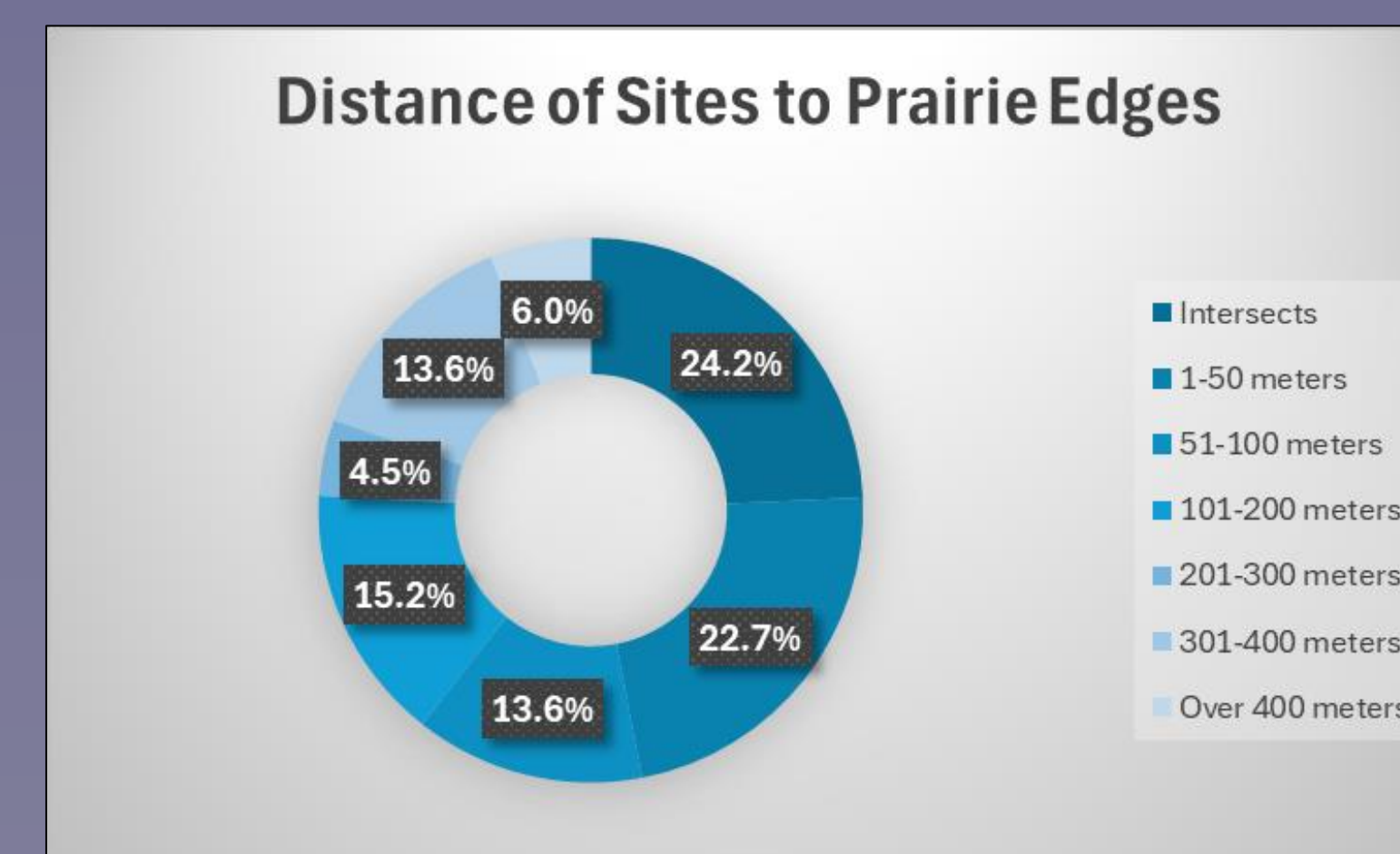
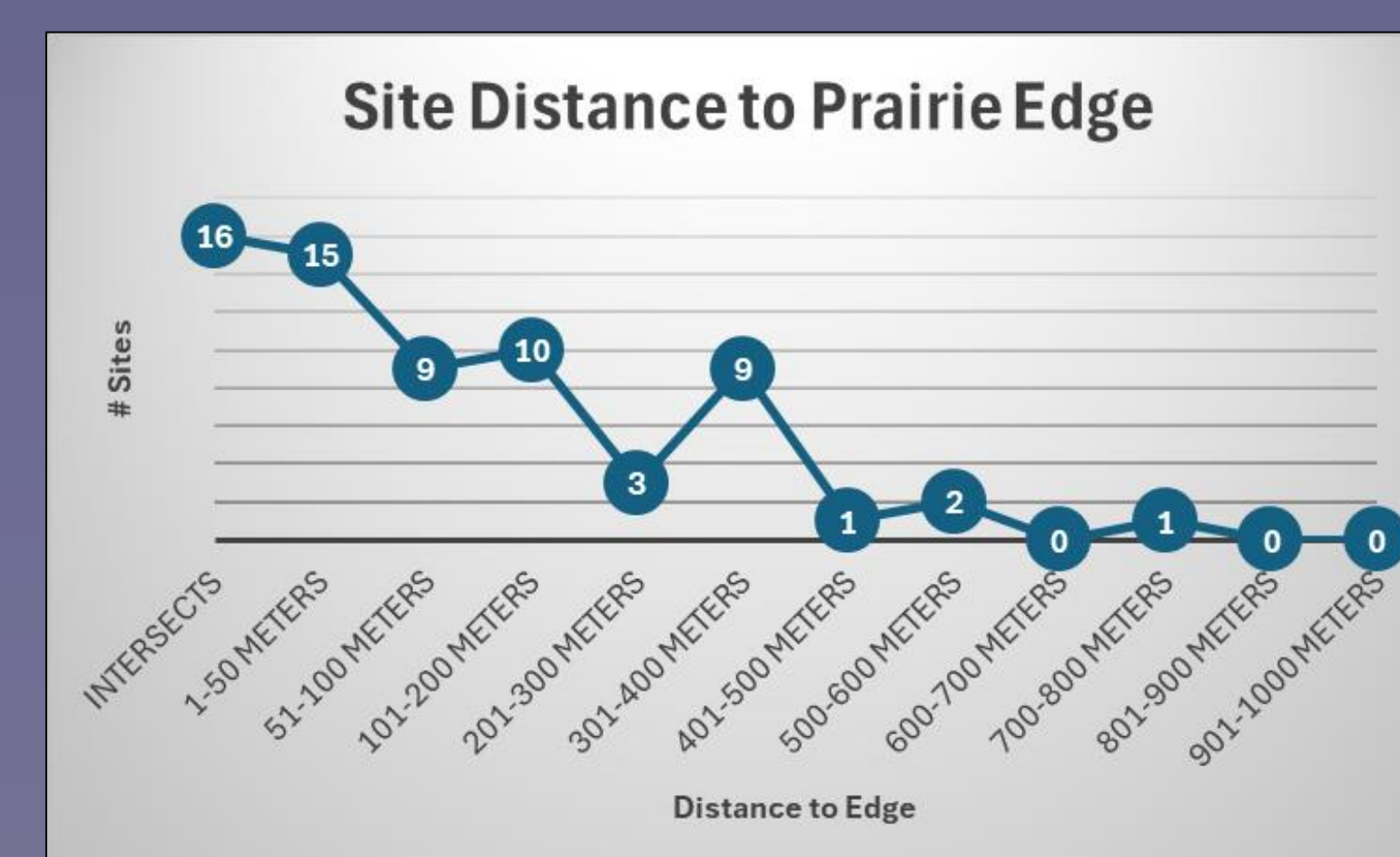
#### Prairie Site Average Distances to Water Sources by County

County	Avg. Distance to Closest Water Source	Avg. Distance to Creek	Avg. Distance to River	Avg. Distance to Confluence
Thurston	824 meters	901 meters	2,451 meters	3,244 meters
Lewis	307 meters	510 meters	1,449 meters	2,437 meters
Combined	393 meters	575 meters	1,616 meters	2,571 meters



### Site Distance to Prairie Margins

The distance from precolonial prairie sites to prairie margins was also measured (Figures 4-5). About a quarter (24.2%) of the 66 archaeological sites in this study were located on a historic prairie margin. This is on par with site distance to water, suggesting that prairie margins are equally good indicators of prairie site probability. The average distance between sites and prairie margins is 127.2 meters, and 60.5% of sites are within 100 meters of prairie margins.



### Discussion

This pilot study on prairie sites in Thurston and Lewis counties emphasizes the need to reevaluate standard cultural resource management survey methodology and predictive models. Our initial findings indicate that standard systematic survey intervals of 30 meters may not be adequate for cultural resource surveys in prairie areas. Our study shows that 45.8% of prairie sites have a dimension smaller than 30 meters, and 59.3% of prairie sites had a dimension of less than 43 meters. This indicates that a typical 30-meter systematic survey could miss the majority of precolonial sites in prairie settings.

Additionally, many cultural resource management decisions are made based on the proximity of an assessment area to water sources and prairies are not defined as high probability landforms in the state predictive model. Of the prairie sites studied, distance to prairie margin was a better predictor of prairie archaeological sites than distance to water sources. And while confluences are excellent predictors of riverine sites, confluences do not appear to predict the location of prairie archaeological sites. This data set was not large enough to complete a principal component analysis, and future analyses may further illuminate the relationship between these important landscape features. Our initial findings suggest that a buffer of 100 meters from historic prairie margins and a buffer of 400 meters of water sources should be considered high probability places on the prairie landscape.

### Next Steps

- Add to modeling precolonial prairies in collaboration with prairie ecologists, Tribes, and other CRM professionals.
- Add prairie soils to refine and expand prairie areas.
- Investigate additional counties: Pierce and Cowlitz counties.
- Conduct statistical analyses after more data is collected and refined.
- Create a regional predictive model of archaeological prairie sites.

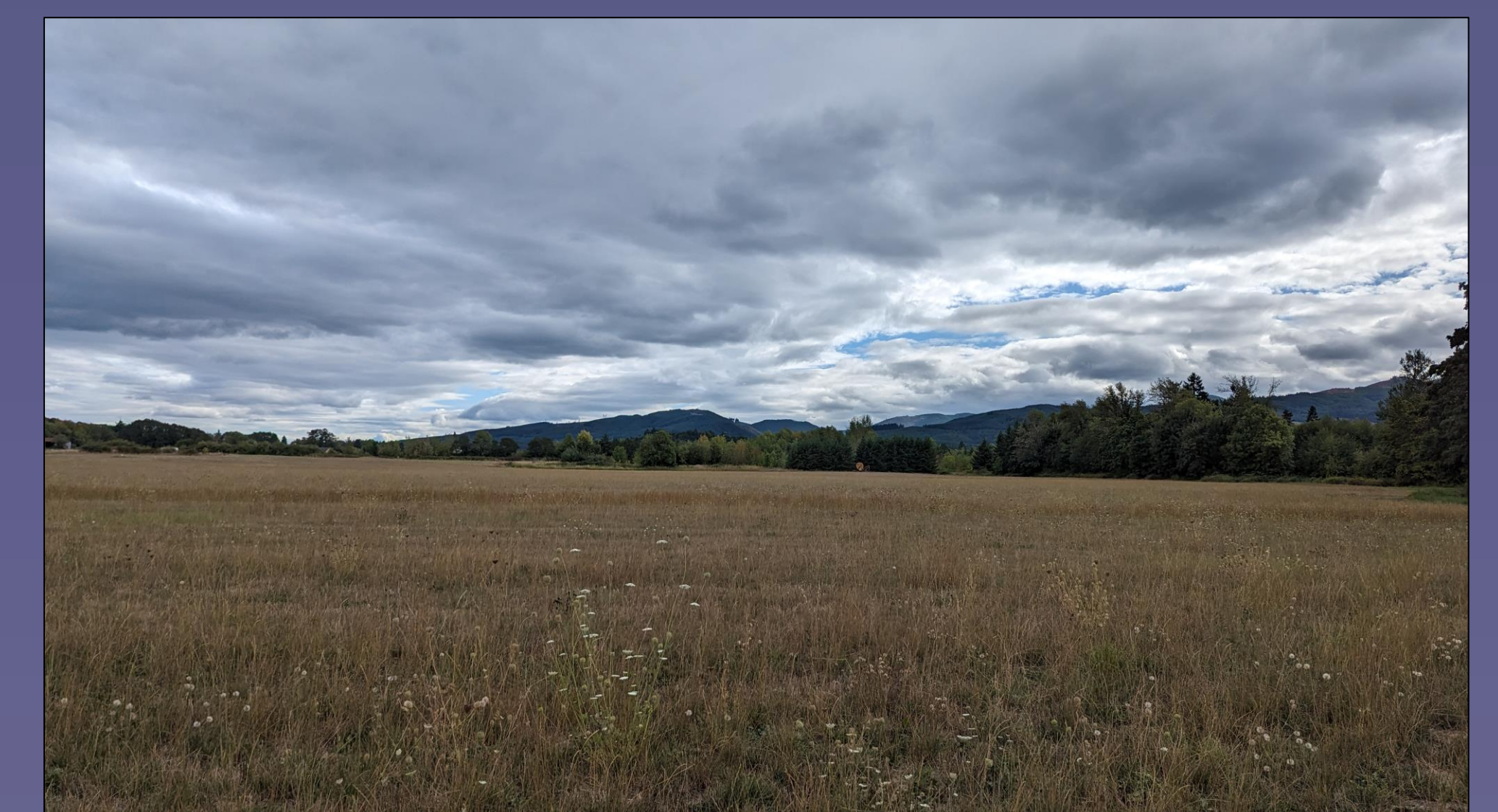


Photo of Boistfort Prairie, Lewis County. Photo taken by Katy Leonard-Doll.

### Conclusion

This pilot study provides many insights into the study and preservation of precolonial prairie archaeological sites in Thurston and Lewis counties. Initial findings emphasize that empirical archaeological site data and spatial analyses focused on prairie history should be used to inform survey methodology in the region so that these important landscapes are included in cultural resource management decisions. Additionally, we suggest that systematic survey methodology in prairie settings should be tailored to the prairie landscape rather than based on the archaeology of other places.

PDF copy and references available:  
AntiquityConsulting.com

