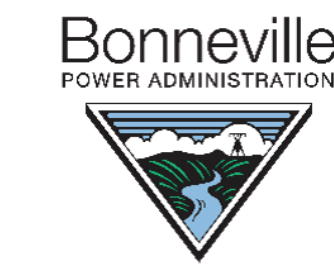




# Beyond the Naked Eye

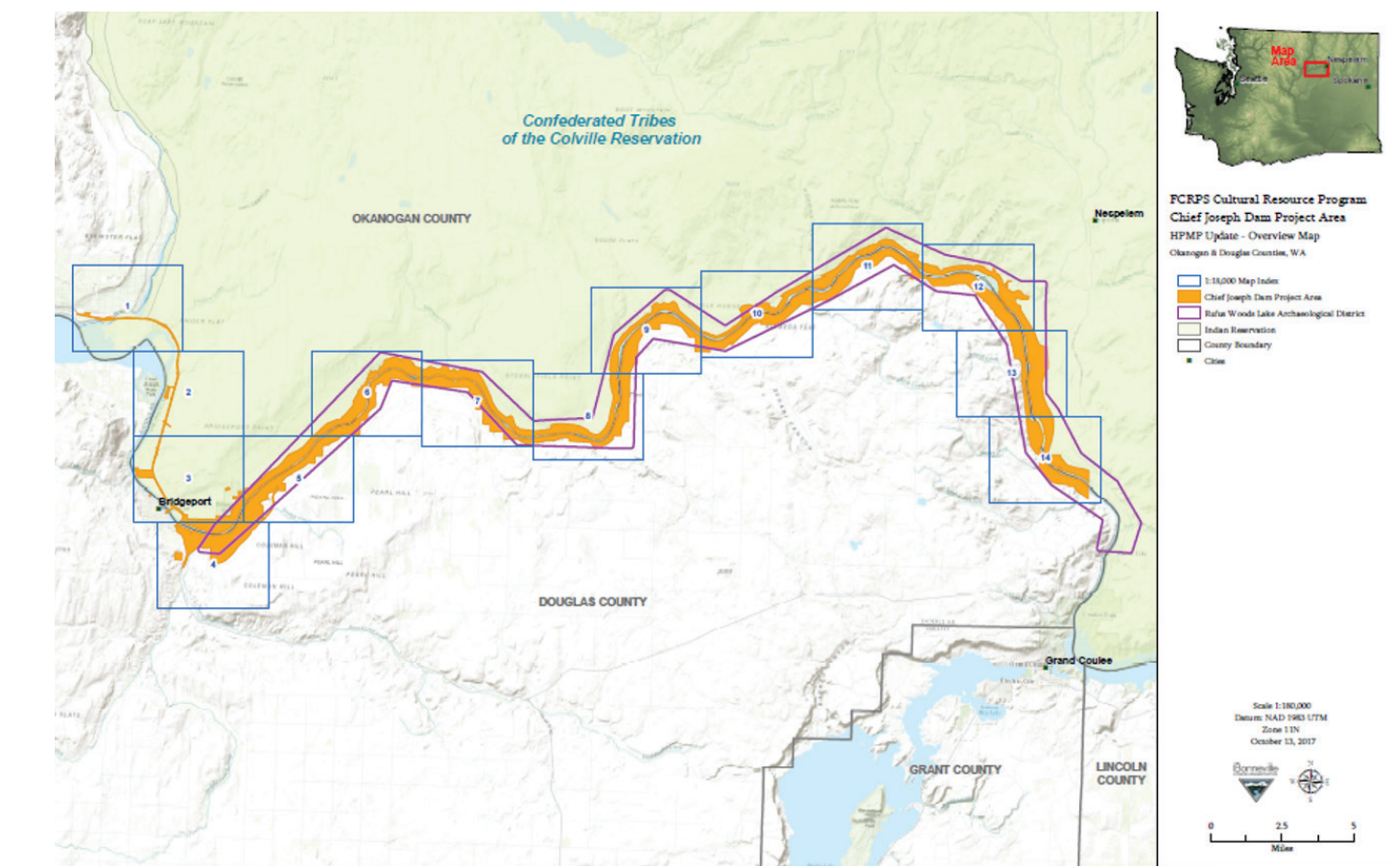
## Benefits of using Historic Human Remains Detection Dogs

### A Case Study from within the FCRPS Chief Joseph Dam Project



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In cooperation with the Chief Joseph Dam Cooperating Group



Chief Joseph Dam Project Area of Potential Effects

### Challenges and Needs for Identification of Human Remains

Within the Chief Joseph Dam Project, there are 475 sites (mostly precontact) and 99 identified traditional cultural properties (TCPs). Of these properties, 97% contain rock features, **many of which likely contain burials.**

For the Confederated Tribes of the Colville Reservation (CCT), preservation of burial sites is of high priority.

The use of Historic Human Remains Detection (HHRD) Dogs was sought in order to understand which sites to **prioritize for treatment**, and which areas of those sites to **focus on protecting.**

### A Case Study

In 2023 and 2024, the USACE contracted with two companies for the use of Historic Human Remains Detection (HHRD) Dogs at 15 precontact archaeological sites and TCPs with known or suspected burials, many of which are considered high-priority for upcoming treatments/mitigations. **Examples of these sites include the following:**

**450K1**  
Precontact habitation, cairn, and burial site with housepit, four cairns, two previously recovered individuals, lithic tools, faunal, freshwater mussel, and fire-modified rock (FMR) (2,000–250 BP). HHRD Dogs were used to inform location of future stabilization (Treatment Planned Form (TPF) signed 2022).

**450K250**  
Precontact habitation and burial site with three housepits, lithic tools, groundstone, shell midden, and FMR (4,500–240 BP). In 1981, recovered an eroding burial from cutbank. HHRD Dogs was first phase of treatment (TPF signed 2022) to inform next steps and potential location for future stabilization.

**450K903**  
Low (mostly submerged) terrace with two-meter high cutbank with human remains of single individual recovered in 2000 in slumped deposits below cutbank. HHRD Dogs were used to identify whether any other burials are present and next steps for potential subsequent treatment.

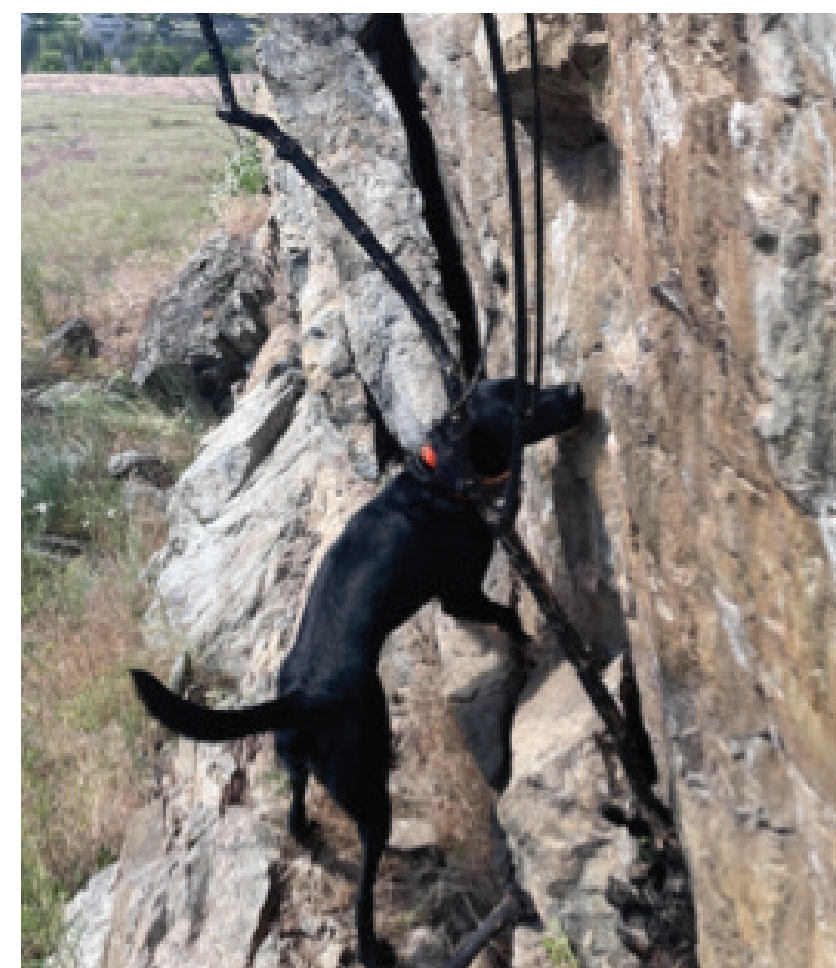
**45DO278**  
Precontact rock feature complex of natural basaltic ring structure augmented through stacking of cobbles to form concentric enclosures, punctuated by a series of cairns. Considered to be a TCP to the CCT of spiritual/ritual/ceremonial property type. A TPF for scientific illustration and 3D imagery was signed in 2023. HHRD Dogs were used to identify whether any human remains are present.

### About HHRD Dogs

A dog has up to 300 million olfactory receptors compared to a human's six million. The part of a dog's brain that analyzes smell is 40 times larger than a human's. HHRD Dogs are specially trained to locate the **scent specific to human decomposition at any stage**, no matter if it is buried, covered, or masked by other scents.

Unique and **specialized training** to locate historic and precontact human remains.

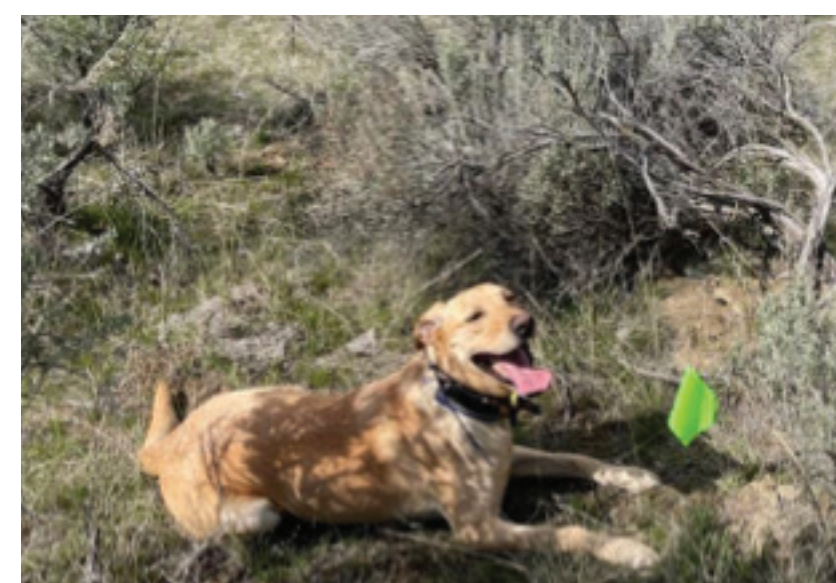
Considered a **remote sensing tool** like metal detectors and GPR.



Companies work closely with archaeologists and anthropologists to ensure training and methods are **consistent with current standards** and practice.

Each handler owns their own dog and is responsible for their dog's training, health, and wellbeing.

Typical breeds include Labradors, German Shepherds, Australian Shepherds, Border Collies, Golden Retrievers, as well as some mixed breeds.



Dogs are **trained to perform an alert** with they detect the scent of human remains (generally a sit or down at the strongest source). If head is up, or sampling air, there may be a scent but an exact location cannot be pinpointed.

Utilize **various search techniques** (e.g. free, grid, detail).



### Process and Technique

Each area is searched by at least two dogs in order to get best coverage. Different colored flags for each dog are marked with team's ID, GPS point number, etc. to track alerts. Each handler chooses the best search strategy based on the weather, terrain, and their dog. **The quality of alert** is rated based on their dog's behavior.

#### Area of Interest

Dog detects scent somewhere in the area but is unable to determine or access its source. Generally, this is a much larger area than an alert quality 1 scent pool designation.

#### Scent Pool

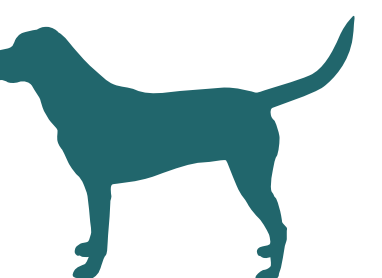
Dog is getting scent but is unable to locate the exact source. Scent pools may be the result of disturbed, scattered or fragmentary remains; or they may be created by wind and/or moving water. It could be scent remaining in the soil where a burial was located but where physical remains are no longer identifiable.

#### Committed

Dog took time to locate and alert at the strongest source of scent.

#### Strongly Committed

Dog immediately identifies and alerts at a specific location. When brought back to this specific spot from different locations, they again alert.



### Benefits and Key Takeaways

HHRD Dogs work effectively, even in areas that are challenging. HHRD Dogs are a useful tool for:

- Identification of human remains and assessing **presence/absence of human remains** especially when working in areas where subsurface testing may not be feasible or desired
- Identification of **archaeological features** that are **not readily apparent to the naked eye**
- Identification of **additional 'areas of concern'** or expanded site boundary
- Creating **probability models** of encountering human remains
- Homing in on areas for regular monitoring and prioritizing treatment/mitigation efforts
- Informing **design of proposed treatments** (i.e., stabilizations, signage, plantings)