

Upper Columbia Basin Network Inventory and Monitoring

National Park Service
U.S. Department of Interior

Pacific West Region



Camas lily monitoring

Big Hole National Battlefield



Camas lily plants with encampment in the background

Why is camas lily important?

Camas lily (*Camassia quamash*) is a perennial bulb-producing plant that was and remains one of the most widely utilized traditional plant foods of the Nez Perce people. Camas lily was a focal resource at many of the significant historical events memorialized today by Nez Perce National Historical Park and Big Hole National Battlefield (BIHO). Large expanses of camas in bloom were noted by numerous explorers and botanists that entered the Pacific Northwest in the 19th century, including the Lewis and Clark expedition, and were frequently described as “blue lakes” when viewed from a distance. The extent of the wet prairie ecosystem type has been drastically reduced in the Columbia Basin and northern Rocky Mountains as a result of agricultural conversion, irrigation and flood control development, and other land use practices. Camas populations today are well below historic levels in many locations, including those at Weippe Prairie and along the Big Hole River.

Why do we monitor camas lily?

- To provide status and trends of established plants and flowering plants in camas populations
- To determine trends in the frequency of occurrence of targeted invasive plants
- To determine the magnitude and direction of camas density response to measurable explanatory variables (i.e., winter precipitation, specific management activities)

How do we use the monitoring data?

- To assess park ecological condition
- To provide feedback on the timing and success of park management and restoration activities
- To support park management in their efforts to preserve the historic landscapes of which camas is a central component

What have we found?

Estimated mean density of camas plants were the lowest seen at BIHO since monitoring began in 2006, with an estimated 3.4 established camas plants/m². This was a 45% reduction from camas density estimates in 2013 (6.14 plants/m²). Flowering camas density was also lower than recent years with 0.8 flowering stems/m². Canada thistle (*Cirsium arvense*) is an emerging invader along the floodplain where the BIHO camas population is now being monitored, and it impacts camas population through competition. Observations of the aforementioned invasive weed outside monitoring plots has increased in recent years. Further research after 10 years of monitoring will provide information on potential causes for the decline in camas density, including an analysis of the relationship between weather patterns and camas trends.



Field technicians collecting data on camas



Searching for and counting camas plants, flowering plants and invasive species within a quadrat (or monitoring plot)



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<http://science.nature.nps.gov/im/units/ucbn/monitor/camas.cfm>