

restoring camas along the columbia



The Oxbow at the confluence of the Columbia and Kootenay rivers.

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Kootenay Camas Project, a proud program of the **Kootenay Native Plant Society**

Kootenay Native Plant Society is a non-profit community organization whose mission is to promote knowledge, appreciation, conservation, and restoration of West Kootenay native plants and natural habitats through education, research, and on-the-ground activities. We work to connect people, plants, and place.

Over the last three successful years the Kootenay Camas Project has worked regionally to bring camas to the forefront of the public's consciousness, through on-going ecological research, inventory and mapping, public outreach, citizen science initiatives, and school programs.

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project overview

Restoring Camas along the Columbia is a three-year integrated propagation, restoration, and research project using the camas lily as a focal species for ecocultural restoration in riparian meadows along the Columbia and Kootenay rivers in the West Kootenay.

Camas (*Camassia quamash*) is a key floral component of local meadow complexes. Regional camas meadows, once ecologically rich and highly productive ecosystems, have been severely degraded by habitat conversion (e.g., agricultural and urban development), changes to flood regimes, the introduction of non-native species, and the loss of traditional indigenous management practices. For First Nations, camas bulbs were an essential dietary component and commodity in their economies over countless generations. In Canada, the largest camas populations east of the Cascade Range are found in the West Kootenay region.

The Selkirk Point, Bar and Chute (the "Oxbow"), located adjacent to Selkirk College, is a riparian floodplain and has been identified as an important remnant camas meadow with high potential for restoration because it is community supported, geographically well placed, and historically relevant. This work will elevate our applied knowledge of camas ecology in riparian meadow communities, advance restoration applications of camas on local floodplains, and inform management decisions for the Oxbow, as well as other riparian communities located along the lower Kootenay and Columbia rivers. Restored riparian areas will provide connectivity for native plants, native pollinators, and birds, as well as serve to promote biological resilience to climate change.

The project has three interlinked components:

1. Propagation

We will produce camas bulbs for this project from locally grown, collected, and salvaged propagules (bulbs and seeds). Propagation will be conducted at Selkirk College in raised "holding" beds. These propagation plots can produce a steady supply of camas plants for outplanting well into the future.

2. Oxbow Ecocultural Restoration Trials

The ecocultural approach to these field trials will incorporate controlled experimental treatments - weeding and burning - that were traditional disturbance patterns within camas meadows. We will sow camas seeds and transplant bulbs directly into all plots.

3. Citizen Science Camas Restoration

We will work with community members, trained as "citizen scientists," to plant and monitor camas bulbs on appropriate public (e.g., school gardens, parks, wild spaces) and private lands.



Emerging camas in propagation bed in March.

project methods

The three components of this project are inherently linked; each informing the other. After three years, we will have an enhanced integrated body of knowledge, engaged citizen scientists, and sufficient camas plants to support larger scale restoration projects and a growing number of community camas stewards.

1. Propagation

In partnership with Selkirk College and located at the Mir Centre, we have established nursery space for propagating camas, and potentially other plants, in raised beds and other plant containers. Within this research and work area we will grow and propagate camas seeds and bulbs, monitor plant development and phenology, and study camas responses to transplanting and related experimental nursery trials. Camas grown in this nursery will be planted out as part of the Oxbow Ecocultural Restoration Trials and given to interested community members, including schools, who will become “citizen scientists” and help us to monitor camas plants.



Camas bulbs salvaged from Millennium Park.

2. Oxbow Ecocultural Restoration Trials

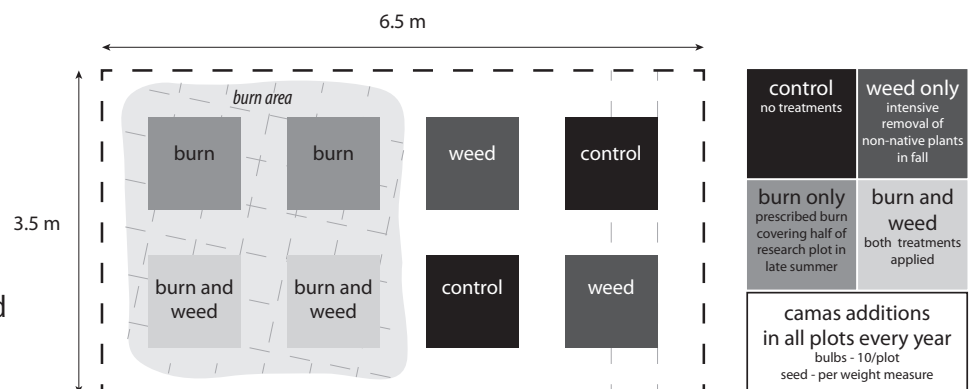
The main research objectives for the Restoration Trials include:

1. Investigation of Oxbow plant species response to experimental treatments, including weeding and burning applications.
2. Documentation of camas responses (e.g., abundance, demography, phenology) based on above treatments and the resulting effects of changing abundance and biomass of perennial agronomic (“pasture”) grasses.
3. Generation of information based on multiyear ecological restoration trials to provide valuable scientific information for restoration and to inform the development of a management plan for the Oxbow.

Total of 12 research plots (6.5 m x 3.5 m) will be established. Each large research plot incorporates 8 nested 1-meter square sampling plots (see diagram). The treatments, including control (no treatment), weed-only, burn-only, and weed and burn (combined treatments), will occur within the sampling plots. The addition of camas propagules (bulbs and seeds) into all plots will occur each year. Data sampling includes presence/absence and abundance (percent cover) of all plant species, demography and phenology of camas, soil hydrology and other variables, and biomass of aboveground plant material (last year of study only).

3. Citizen Science Camas Restoration

Citizen scientists will follow a standardized planting and monitoring protocol (adapted from the US National Parks Service ‘Camas Citizen Science Monitoring Program’). These camas stewards will monitor the success of outplanted camas over three seasons, collecting data on survival, flowering time and seed set, as well as collecting standard environmental data about the receptor site (new habitat).



project acknowledgements

Restoring Camas along the Columbia builds on the success of three years of camas research and public outreach within the Columbia Basin. We are grateful to all the people, including school kids, local residents, Selkirk staff and students, and many others, who have supported this valuable work during this time. The City of Castlegar has allowed Kootenay Camas Project to map and salvage camas bulbs in Millennium Park for relocation and propagation.

The Kootenay Native Plant Society is the proud recipient of support from Columbia Basin Trust and Selkirk College, currently, and the University of Victoria, Columbia Basin Environmental Educators Network, Teck, Pacific Conservation Assistance Fund, Kootenay Conservation Program, Fair Realty, Columbia Power Corporation, and BC Hydro.

We gratefully acknowledge First Nations traditional territory within which this culturally significant root food grows and was harvested and where the riparian meadows were cultivated traditionally for millennia.



Camas in bloom on the Oxbow.