



Traditional Harvesting is Land Tending: Traditional Indigenous Land Management Practices & Biocultural Restoration

Lindsey Crofoot (M.N.R., University of Idaho)

Northwest Indian College

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TEK Approach to Restoration & Land Management

- Traditional Indigenous land management in the Pacific Northwest is a model of bio-cultural agriculture
- Ancient practices and values of reciprocity recognize that people are an ingrained part of the biodiversity and structure of the native ecosystems
- Fulfilled traditional roles in the landscape positively impact the functioning and resilience of the ecosystem
 - The health of the PNW ecosystems documented upon arrival of settlers affirms this ancient knowledge
- TEK approach includes peoples' culture as critical component of ecological restoration and land management

Traditional Indigenous Land Stewardship

- Indigenous peoples are inherent land and resource managers, habitat specialists, and ecosystem modifiers
- Harvesters of traditional natural resources responsible for stewarding landscapes access by the people
- Land tending to maintain and produce a diversity of habitat types and their related products
- Management centered around *Cultural Keystone Species (CKS)* and their associated ecosystems/habitats

Traditional Habitat Management & CKS

Agro-foresters
Silviculturists
Wetland ecologists
Aqua-culturists
Prairie and shrub-step specialists
Wildlife biologists
Fire ecologists
Habitat managers
and more...



Cedar
Gerry Oak
Swamp/Indian Tea
Wapato Potato
Camas
Huckleberry
Salmon
Clams
Deer/Elk



Traditional Stewardship & Land Tending

Harvesters

- Promote site conditions that meet the needs of the people
- Responsible for application of land tending techniques
- Shape species composition on a site
- Regulate species diversity and abundance on a site
- Manage landscape of diverse successional stages
- Protect areas from degradation through rotational harvesting

Hunters & Fishermen

- Regulate predator and prey species presence and abundance
- Provide control of nuisance wildlife
- Fulfil many of the same roles as gatherers
- Work with gatherers to create site conditions that promote healthy wildlife populations

With this knowledge modern land management practices can be supported and enhanced with integration of traditional Native land management practices and TEK.

Community Driven Small-scale Bio-Cultural Agroforestry

- Cohousing community surrounded by dense urban development
- Location: Bothell, WA
- Abandoned 0.5acre pastureland
 - Degraded water receiving upland site
 - Dominated primarily by non-native grasses & Himalayan blackberry
 - Mix of native and non-native trees within and surrounding site
- NRCS Grant Funded Project



Project Partners & Leads

- Songaia Residents (Landowners)
 - Patricia Newkirk – Community resident & project co-manager
 - Anita Higgins – Songaia garden steward & project co-manager
- NRCS – Lake Stevens Service Center (Grantor)
 - Joshua Hall – local NRCS representative & project advisor
- University of Washington Bothell (Institutional Partner)
 - Amy Lambert (Ph.D. Conservation Biology) student advisor
- Northwest Indian College (Institutional Partner)
 - Lindsey Crofoot (M.N.R) project advisor/consultant & student advisor
- Local community volunteers

Bio-Cultural Restoration Project Criteria

NRCS Cultural Planting

- Conservation Stewardship Program
- Tree/Shrub Enhancement of Forest, Associated Ag Land, or Farmstead
- Enhancement lifespan: 15 years
- Select plants that are culturally significant, adaptable to site conditions, and resilient to future climate conditions
- Planting should enhance site relative composition and structural diversity
- Adhere to NRCS CPS Tree/Shrub Site Preparation guidelines

Landowners (Community)

- Engage local Indigenous community in all stages of project
- Select plants of high cultural value (CKS)
- Select plants with high value as food source or as other natural resource
- Avoid large trees
- Preserve some existing and non-native plants within site
- Include non-native plants of high value to the community
- No chemical management

Ecological Project Goals & Expected Outcomes



- Short Term Goals

- Decrease invasive species on site
- Increase shrub cover
- Increase native plant diversity to limit competitive coexistence and increasing facilitation
- Become source for locally adapted seeds and cuttings (living nursery for future projects)

- Expected Long Term Outcomes:

- Restored natural function of the ecosystem
- Increased resilience and resistance to climate change.
- Increased soil health
- Increased water quality coming from the site
- Increased produce production on site

People in the Picture: Bio-Cultural Goals

- Increase community connection to and use of the site
- Engage local community in meaningful and lasting role in restoration and land stewardship
- Create outdoor educational space for students and community members
- Provide produce and forest products intergenerationally for members of the co-housing community that live surrounding the restoration site.
- Provide opportunities for members of Native communities to harvest from and tend the cultural planting

Planting Designs/Methods

Restoration managers and students designed planting area as a test site for planting methods

- Stratified planting – minimum required spacing by NRCS, native plantings on 10-foot centers (control)
- Miyawaki planting method – high diversity/high density planting (test plot)

Goal: Allow the NRCS and students to evaluate the different planting designs and determine the relative merits of each



Plant Selections: Cultural Keystone Species

- Variety of over 20 native plants
 - Primarily early and mid-successional species
- Small selection of non-native species retained and planted
- Over 500 plants installed during planting





Site Preparation:
Weed control & soil amendment

Chicken flock
Onsite biochar
Community compost



Installation: Community planting day

Maintenance & Monitoring:
Protection from bunny grazing



Maintenance & Management Goals Rooted in TEK

- Harvesting and traditional land tending as a means of controlling aggressive or invasive species
- Maintaining diverse vegetation structure through thoughtful pruning and use of forest products
- Dispersing seeds produced on site within site to maintain diverse species composition
- Positively impact soil structure through edible root gathering and planting
- Community centered project provides opportunity for ongoing monitoring and maintenance
 - Hyper local site provides easy access for ongoing monitoring
 - Stakeholders are personally invested in project outcomes and likely to visit the site often, report findings, and be a part of the solution

Sustainability & Scalability

- Project provides small scale model of bio-cultural agroforestry that could be built upon across of diversity of landscapes
- Increasing social awareness and acceptance of issues surrounding stream health and water quality may increase community engagement in restoration
- Due to high investment of landowners, community members, and other stakeholders' sustainability is high
 - Acknowledge high investments from community may be challenge to replicate with larger community models

Challenge to Restoration & Natural Resource Managers

- Engage local tribal and non-tribal community members in restoration projects and land management planning through all phases
- Make meaningful efforts to incorporate TEK into management plans and mitigation strategies
 - Partner with tribal natural resource departments and/or Native scientists on projects
 - Center CKS within designs and management plans



Thank you!

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lmcrofoot@nwic.edu
linziacrofoot@gmail.com