



Benefits of Indigenous-led collaborative stewardship practices on oblong spurge populations



Tanya Chapple – Mid Klamath Watershed Council (MKWC)

Heather Rickard – Karuk Tribe Department of Natural Resources (KDNR)

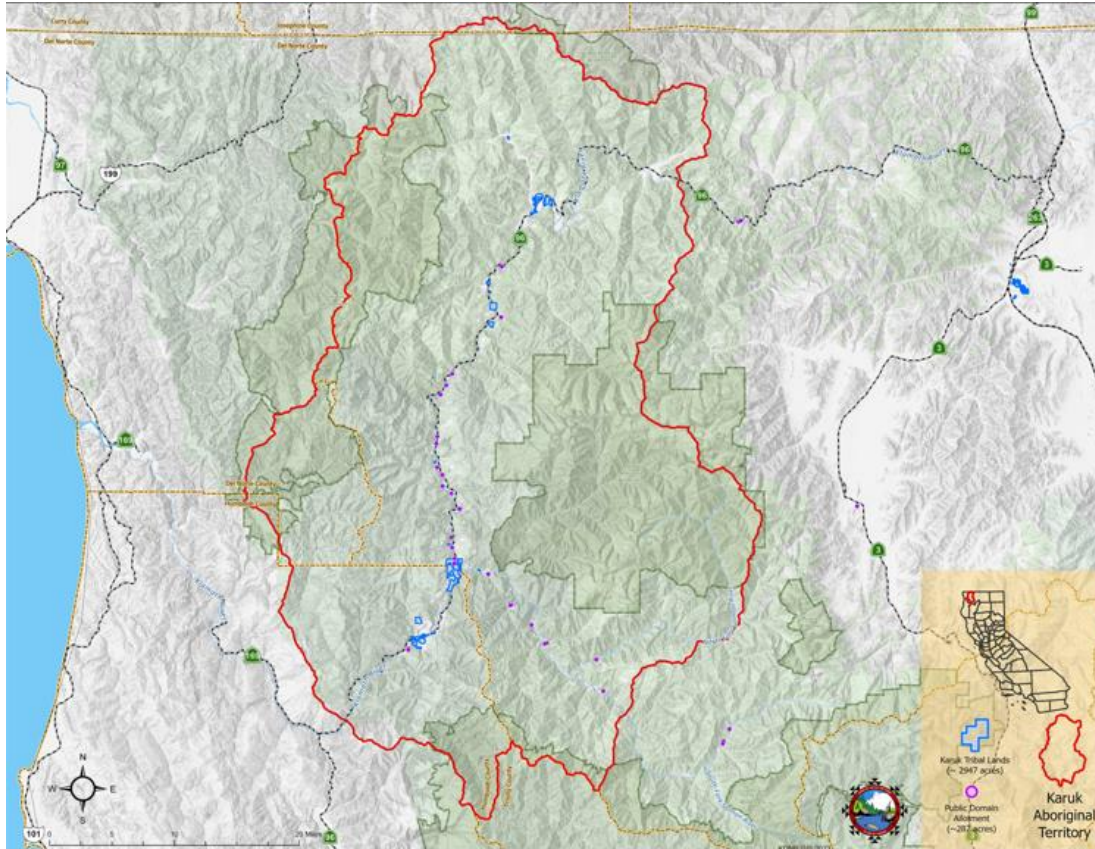
California Invasive Plant Council Symposium, Chico, CA – October 2023

Presentation Overview

- Introduction to the place: Karuk homelands
 - Collaborative stewardship initiatives
 - Karuk fire practice
- Introduction to an invasive species: *Euphorbia oblongata*, oblong spurge
- Compare & contrast management sites
 - Tishániik
 - Tûuyvuk
- Conclusions
- Next Steps



Collaborative stewardship on Karuk lands



- Western Klamath Restoration Partnership (WGRP)
- Klamath River TRES
- Klamath Alliance for Invasive Species management
 - MKWC Plants – since 2002
 - Karuk Pírish Plants – since 2022



Elben Andrews (MKWC), Nicknekich Hillman (Karuk DNR)

Pírish (plants) stewardship in Karuk Aboriginal Territory

Sets fire, that's the way they do. There all time fire and everything grow then like they used to eat here... that's only the way they used to grow plants.

- Bessie Tripp, Karuk Eco-cultural Resource Management Plan



Left photo – Karuk Master basketweaver, Verna Reece

Right photo – Karuk basketweaver, Chelsey Preston

vaa uum yav papírish kunvítriptihaak, áfeer takunvítrip. *It was good to pull the weeds, they pulled them up root and all.*

Phoebe Maddux, Karuk elder, 1957

Karuk fire resistance & revitalization

- Traditional burning criminalized (Weeks Act, 1911)
- Continued tradition of burning and retention of TEK
- Increased Karuk capacity & leadership for prescribed and cultural burning



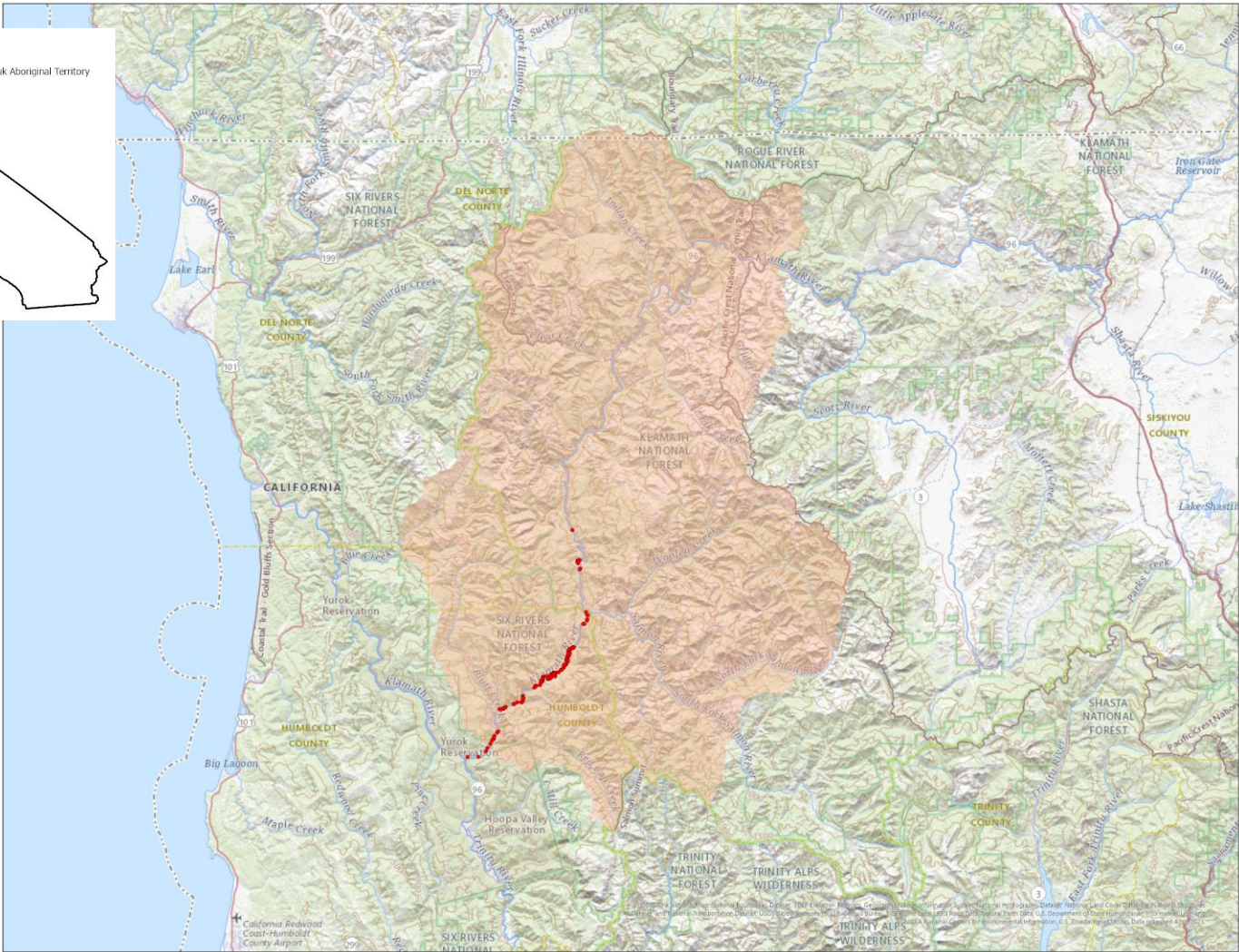
Karuk fire practitioners Aja Conrad, Marshall Super, Bill Tripp, Rony Reed, Rodney Grant. Photos by Stormy Staats, courtesy of Karuk Tribe & MKWC

Oblong spurge - *Euphorbia oblongata*



- Introduced to homestead gardens
- Spread downriver in high flows of 1997
- Prolific seed production
- Germinates after fire or other ground disturbance
- Priority for eradication
- Current capacity: removal in Orleans and upriver

Oblong spurge on the Klamath River



Tishániik

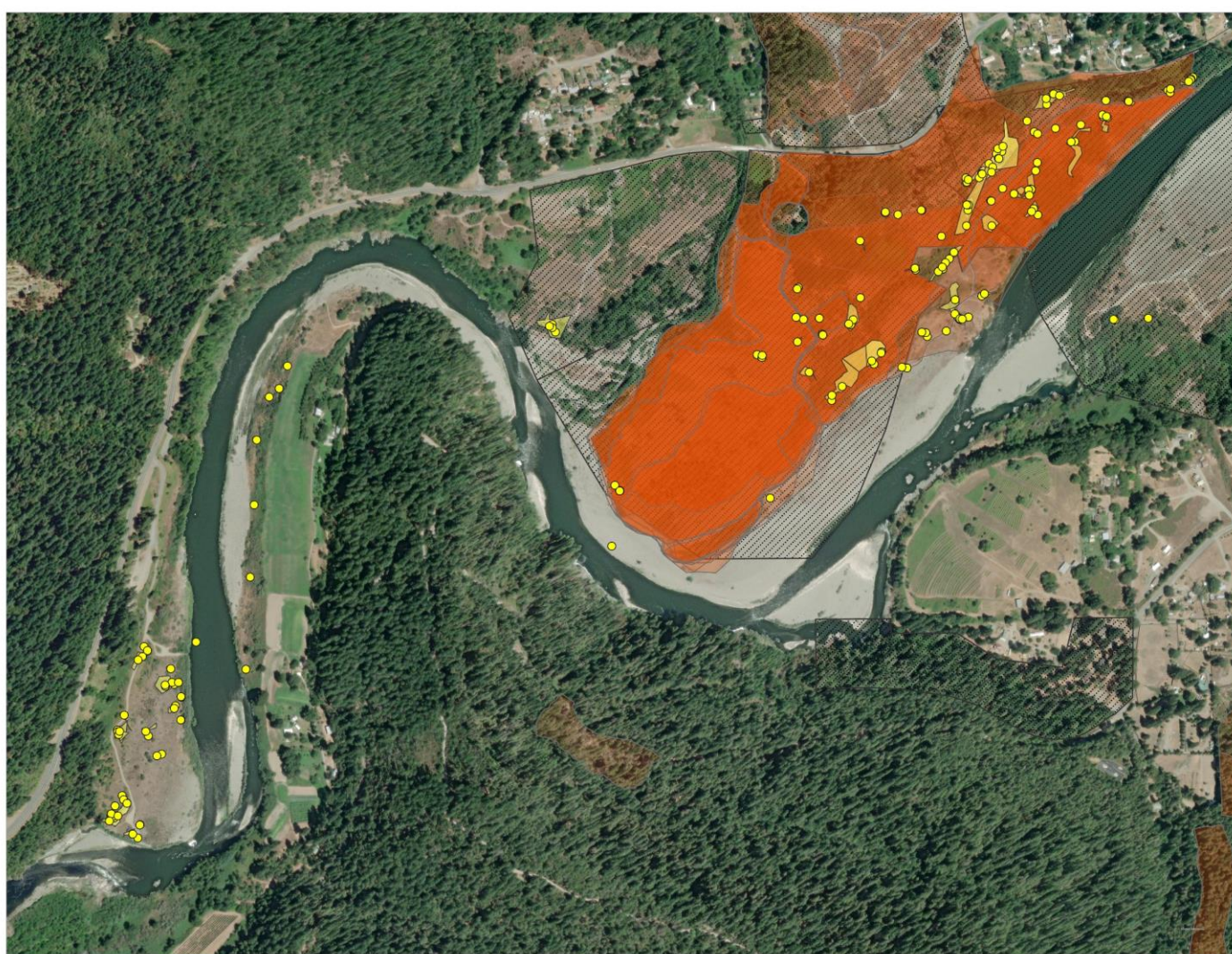
- 99 acres
- Dredge and Placer mining, pushed the Klamath River into current channel
- Karuk Tribe owned and managed with fire
- First oblong spurge treatment in 2013

Tûuyvuk

- 25 acres
- Little mining history
- Public river access
- First oblong spurge treatment in 2009

What's in Common

- Valued Karuk place
- Riverine shrubland/grassland
- High proportion of invasive plants
- Consistent manual treatment of oblong spurge



2012

Yellow Dots shows oblong spurge treatment sites

In 2012 MKWC completed an inventory of weeds present on river bars



2013

2012 inventory leads to more oblong spurge treatment in 2013

July 2013 – Wildfire



2014

June 11, 2014 transferred
to Karuk ownership

October 2014 - Prescribed
Fire @ Klamath TREX

No increase in oblong
spurge sites



Enjoying fire-following moss at Tishániik



2015

Prescribed Fire in October

Large increase in oblong
spurge at both locations

Tishániik - germination
flush following 2013
wildfire.



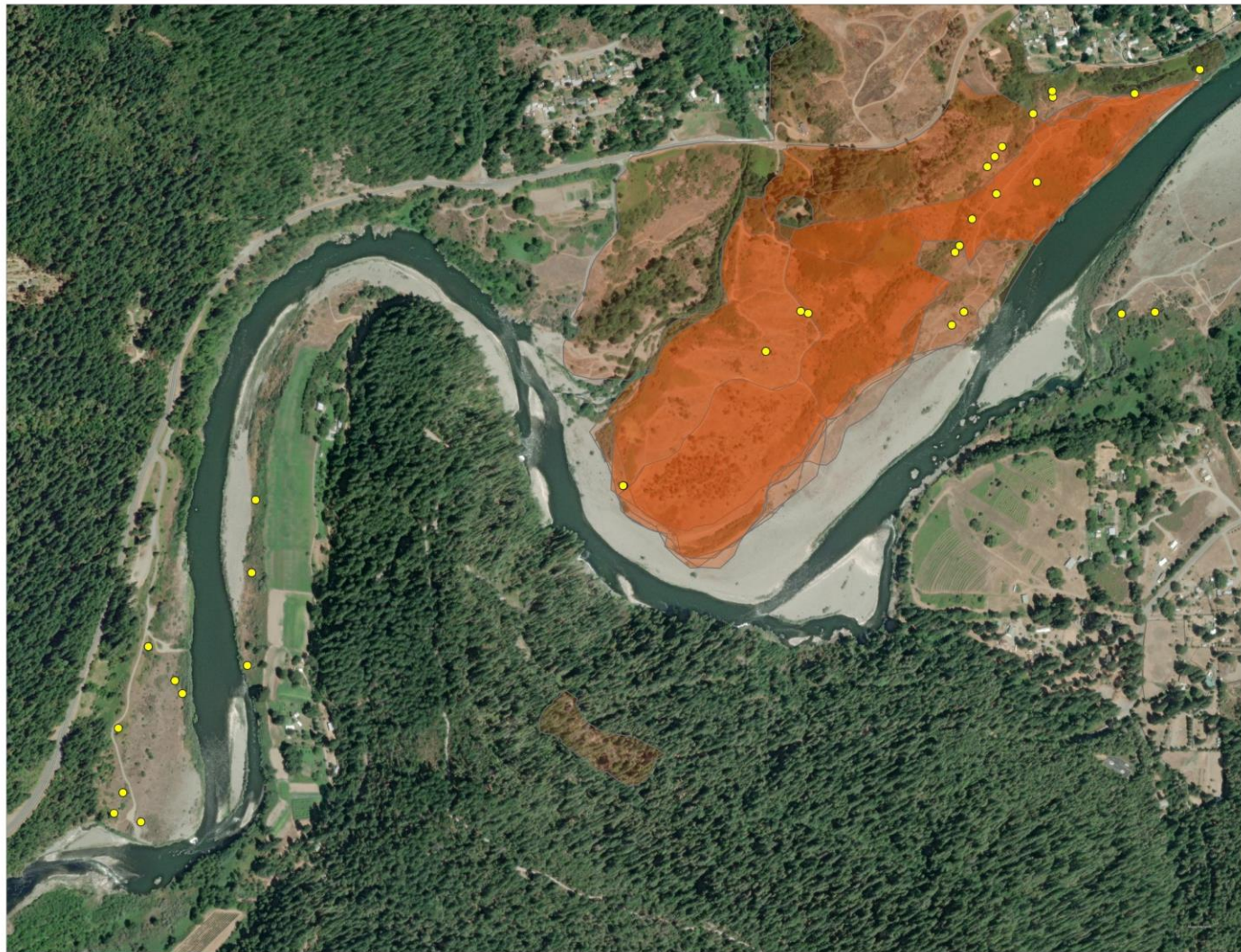
Karuk fire practitioner and
basketweaver, Vikki Preston



2016

Prescribed Fire in
October.

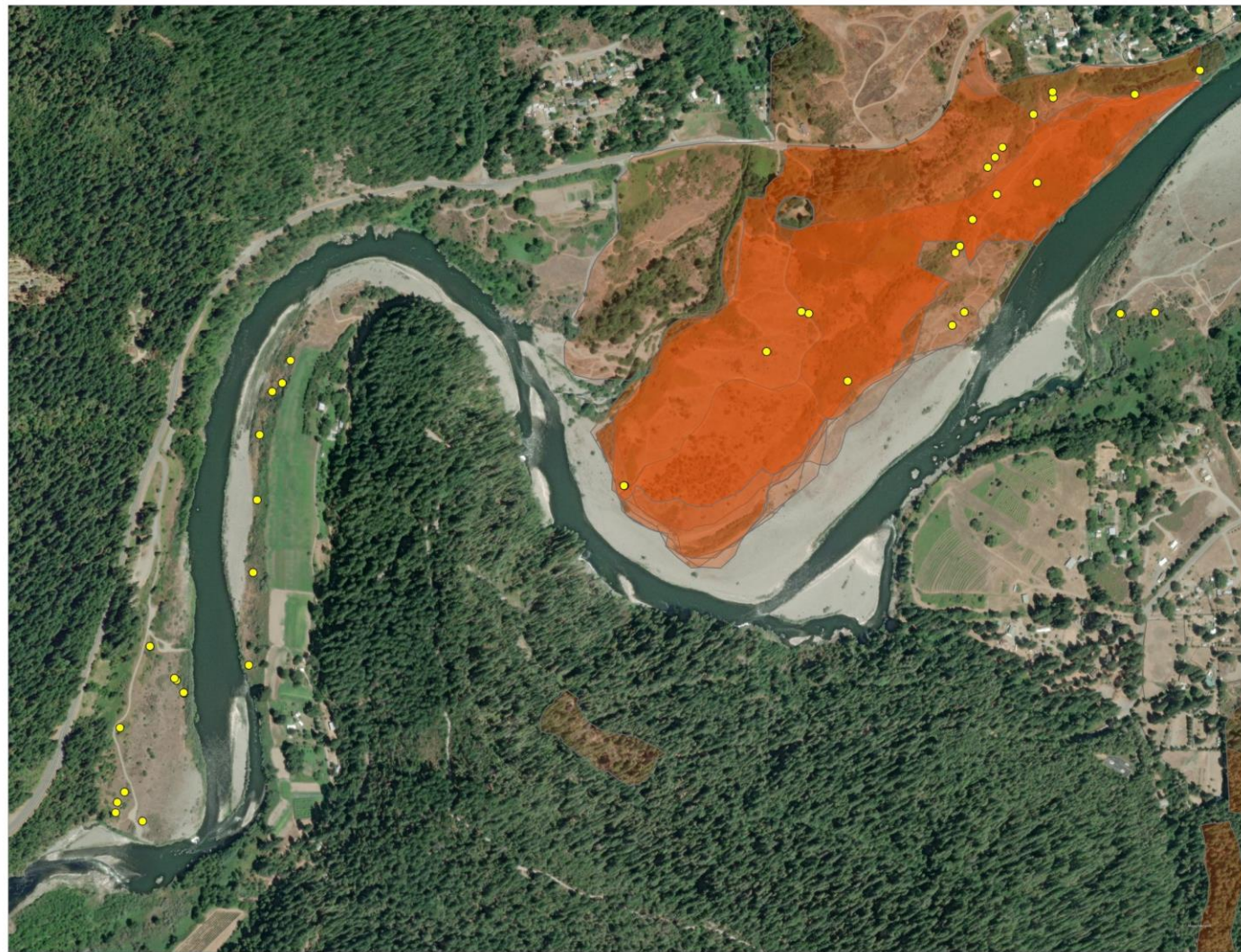
- More oblong spurge sites
- better at finding them
 - grant funding, NFWF



2017

Prescribed Fire in
October.

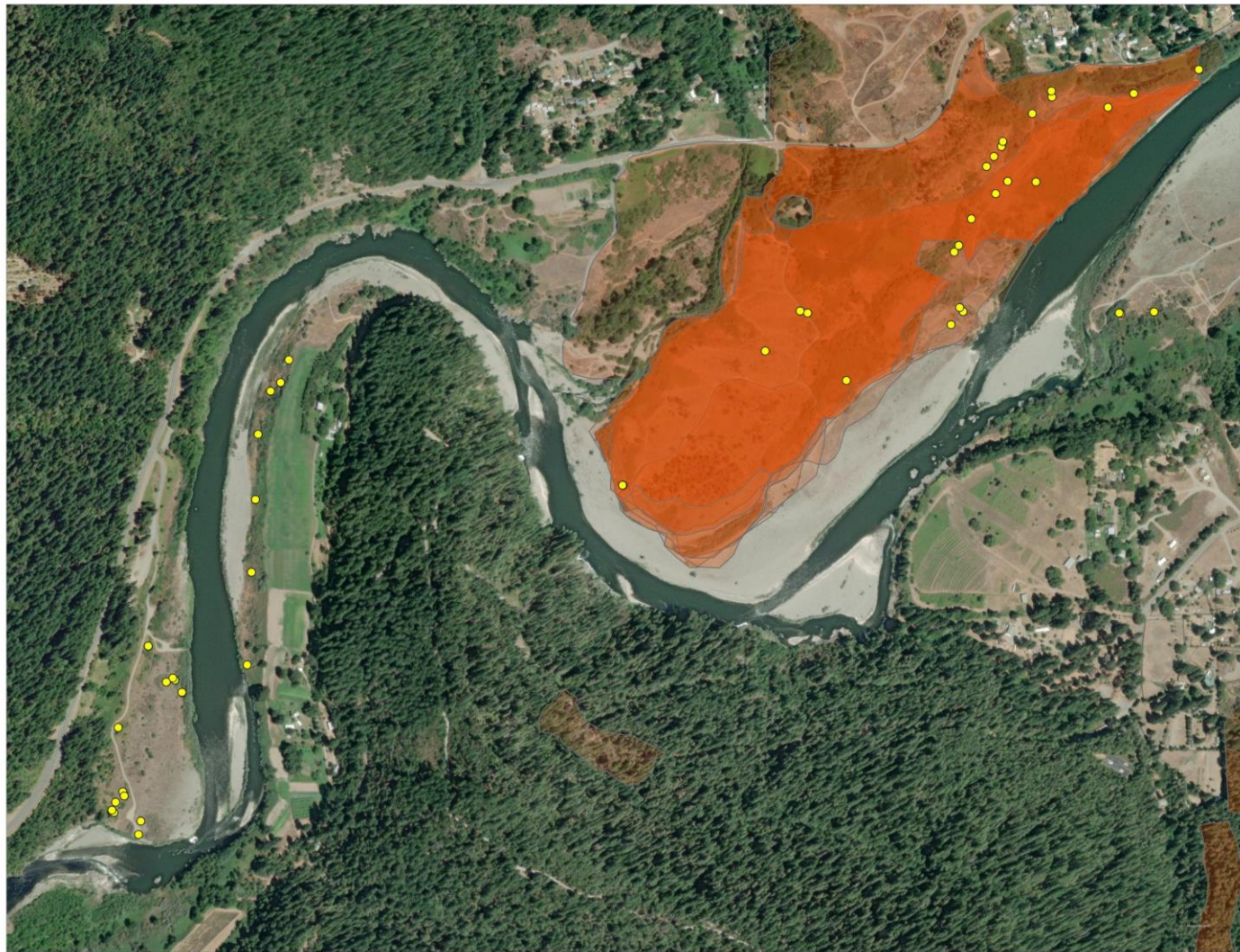
Small increase in oblong
spurge sites at
Tishániik and Tûuyvuk.



2018

Prescribed Fire in
October.

No increase in oblong
spurge sites



Karuk fire practitioner, Ray Marquez

2019

No prescribed Fire in 2019

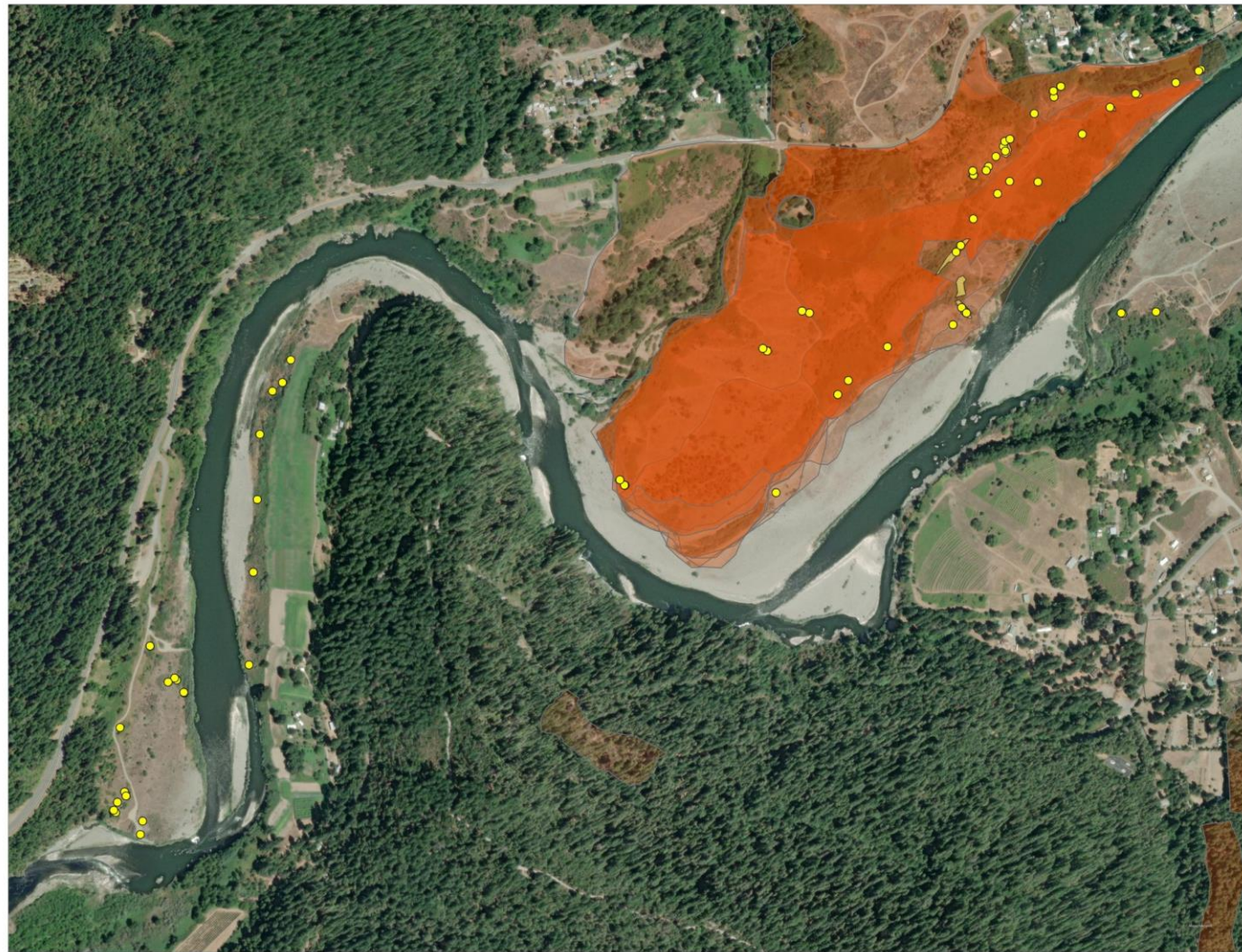
Oblong spurge site increase
at Tishániik

Fire is opening Tishaniik

- we can find the sites
- increased site density
- Weeds funding tied to fire use
with CAL FIRE



Karuk youth monitor birds at Tishániik



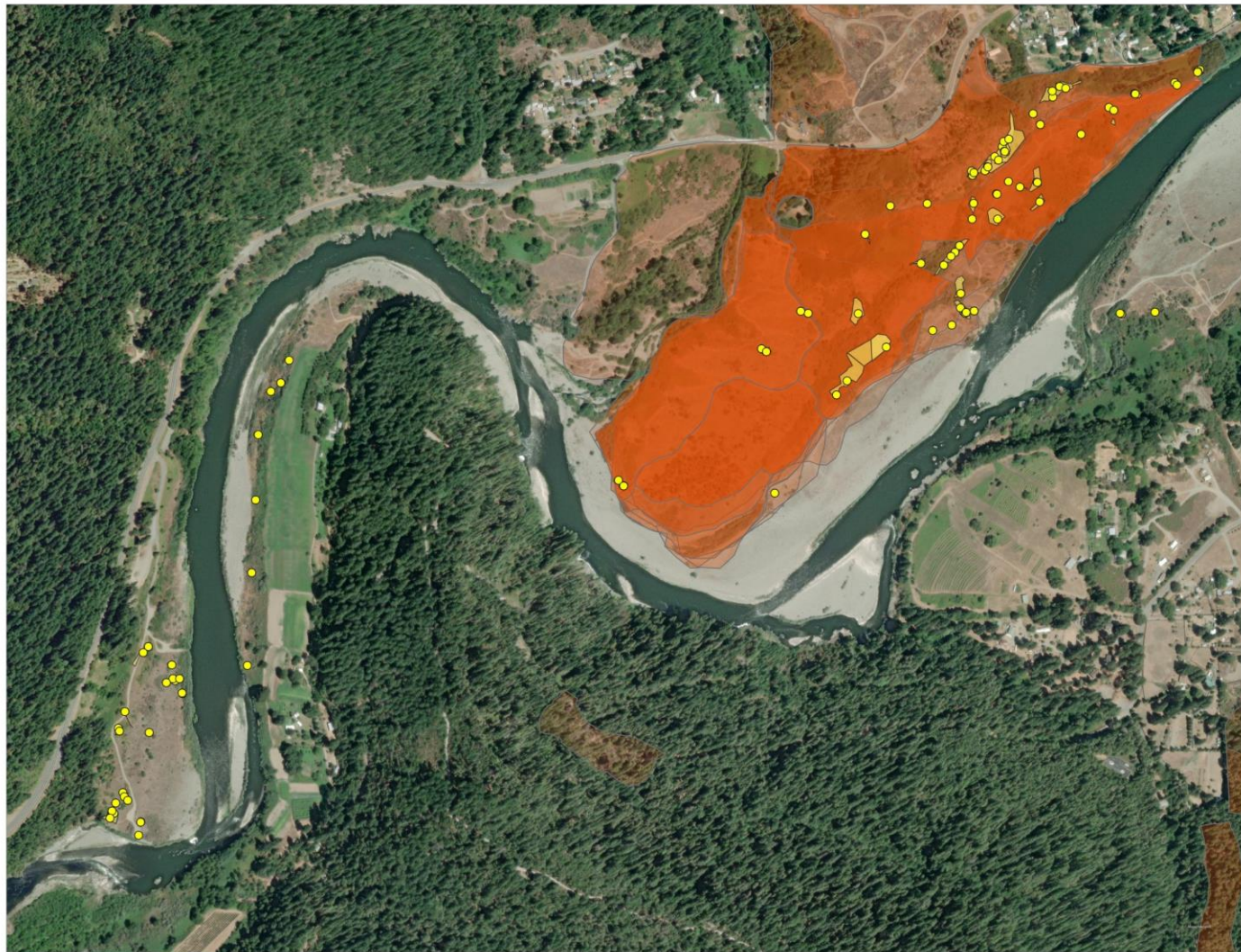
2020

Prescribed Fire in July
(Not in an area that has
oblong spurge)

More oblong spurge sites
found at Tishániik



Karuk ceremonial leader, Beau Donahue



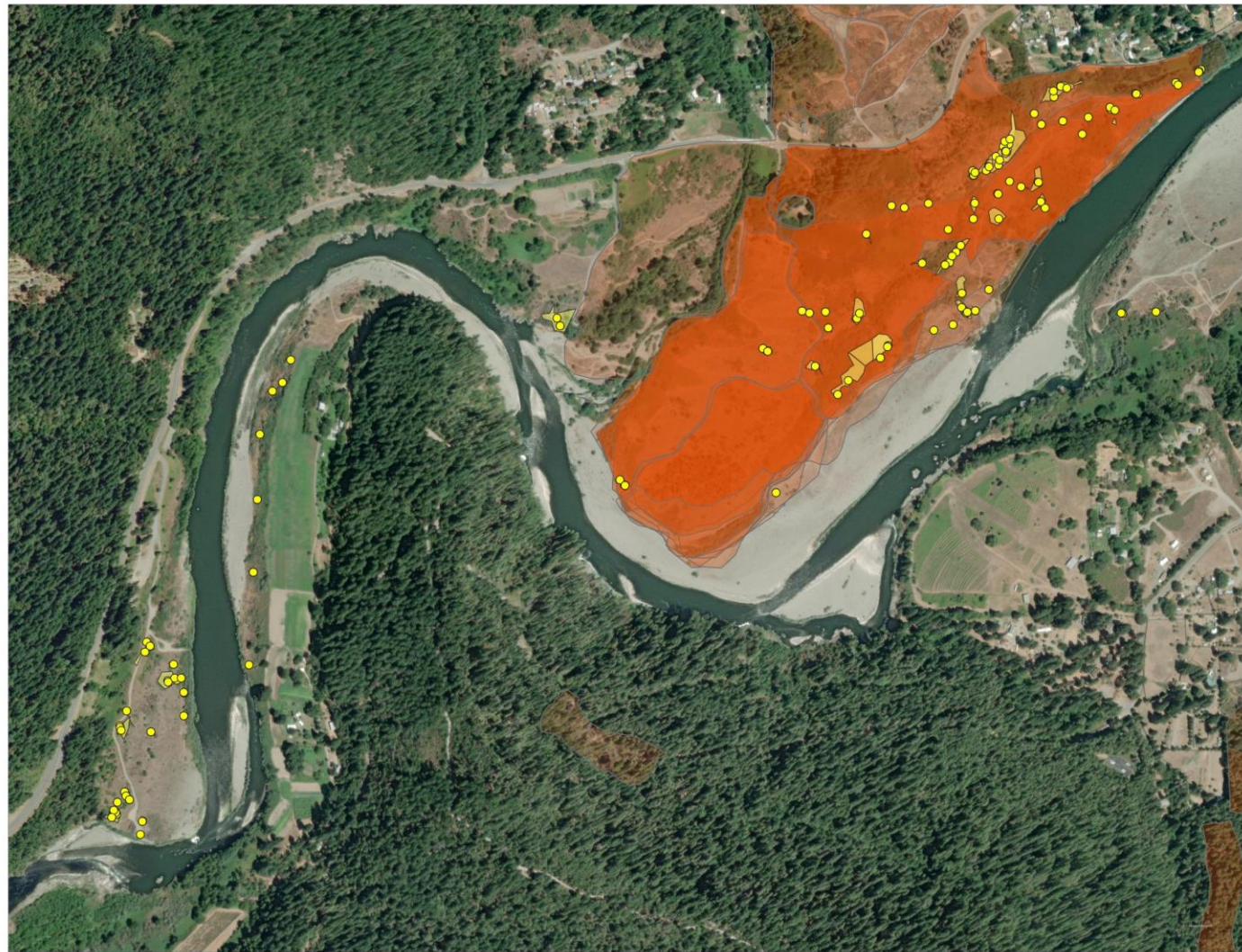
2021

Prescribed Fire in June
and October

More small oblong spurge
sites found at Tishániik. A
large site was found
downriver



Karuk fire practitioner, Deverous Frank



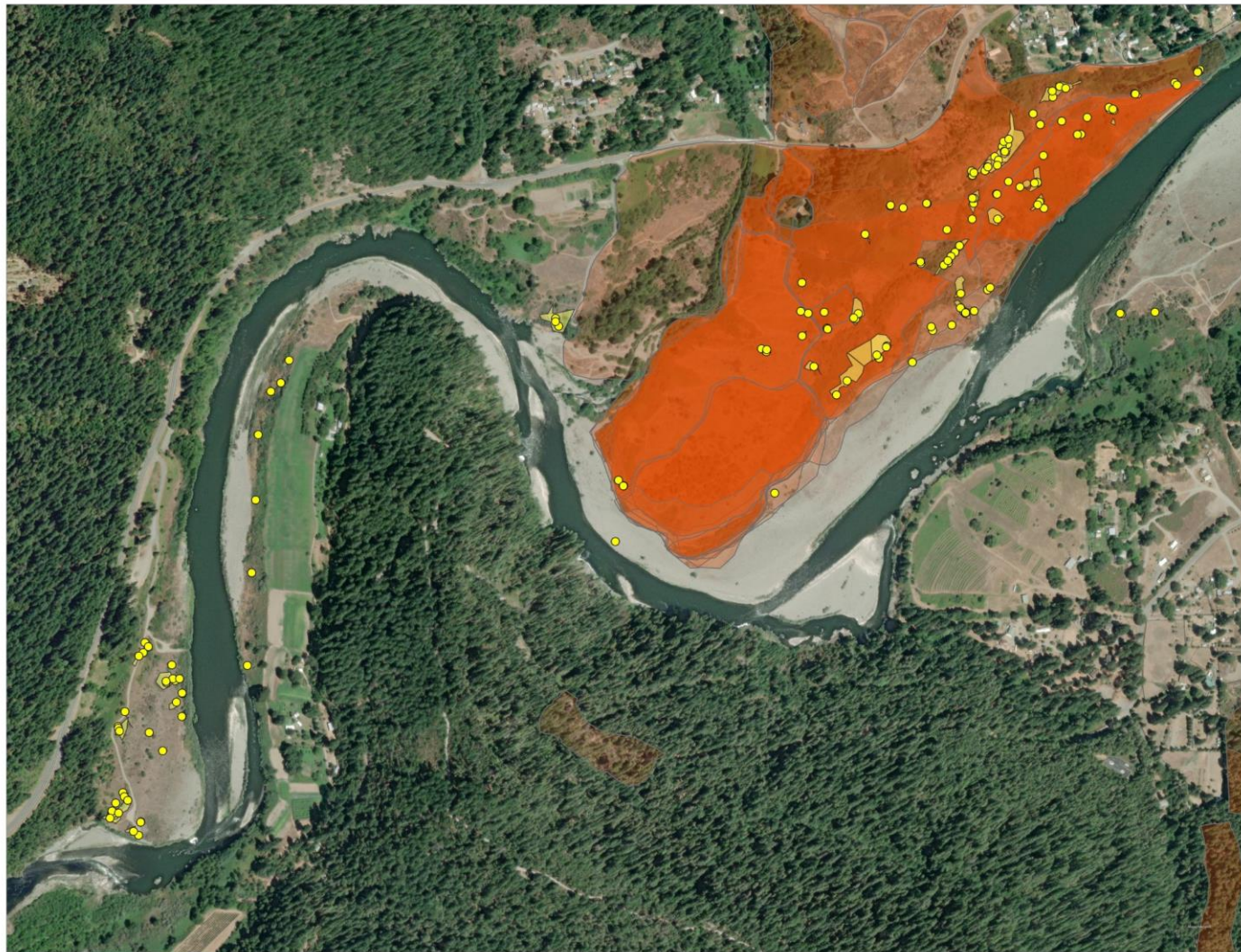
2022

Prescribed fires in
February, June and
October (first Indigenous
Women's TREX)

More small oblong
spurge sites found
at Tishániik and Tûuyvuk



Visiting fire practitioner at Indigenous Women's
TREX, Sahoy Thrower



2023

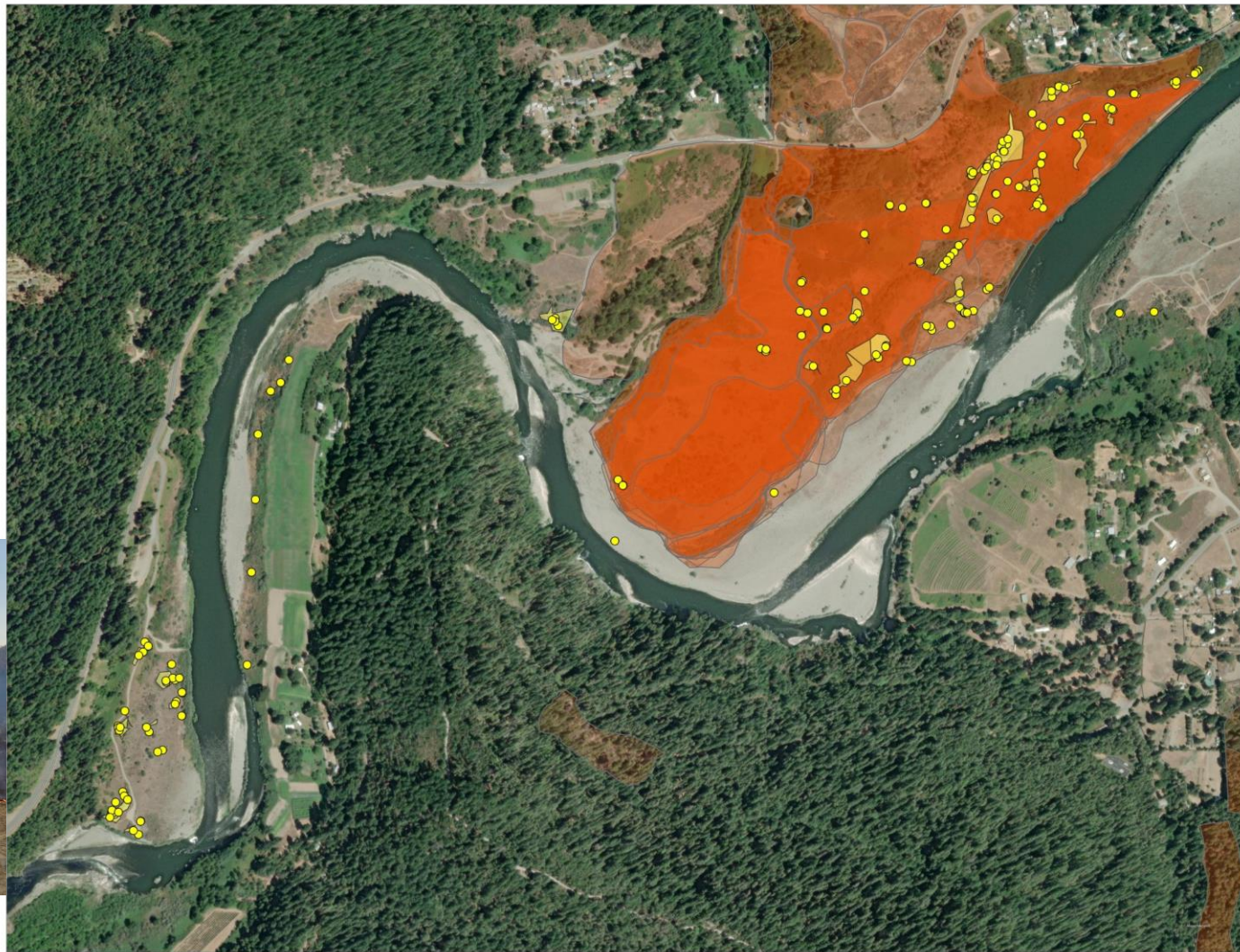
Prescribed Fire in July

No increase in oblong
spurge sites

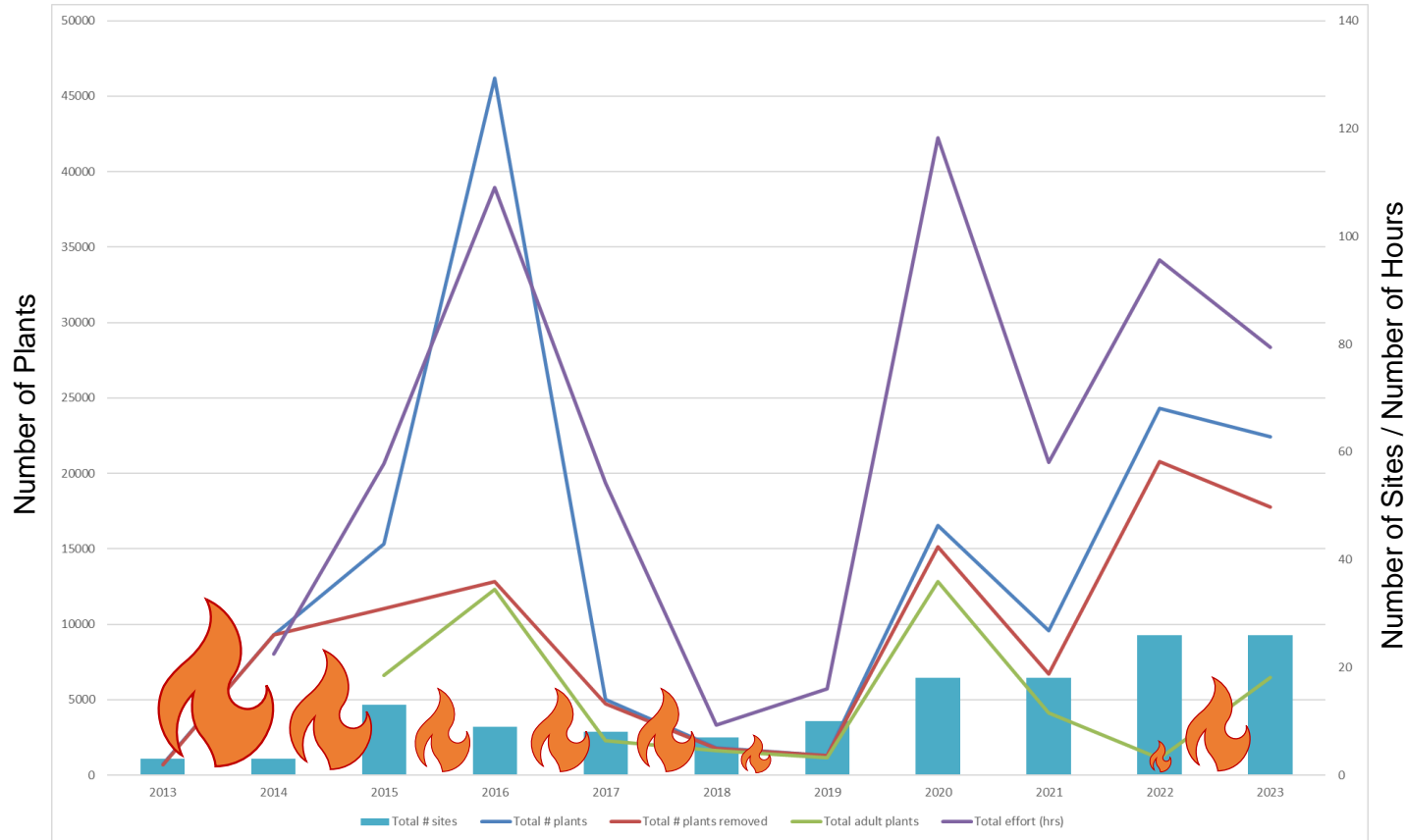
Karuk Pírish Plants and
MKWC begin weeding
together!




Karuk fire practitioner, Will Jerry



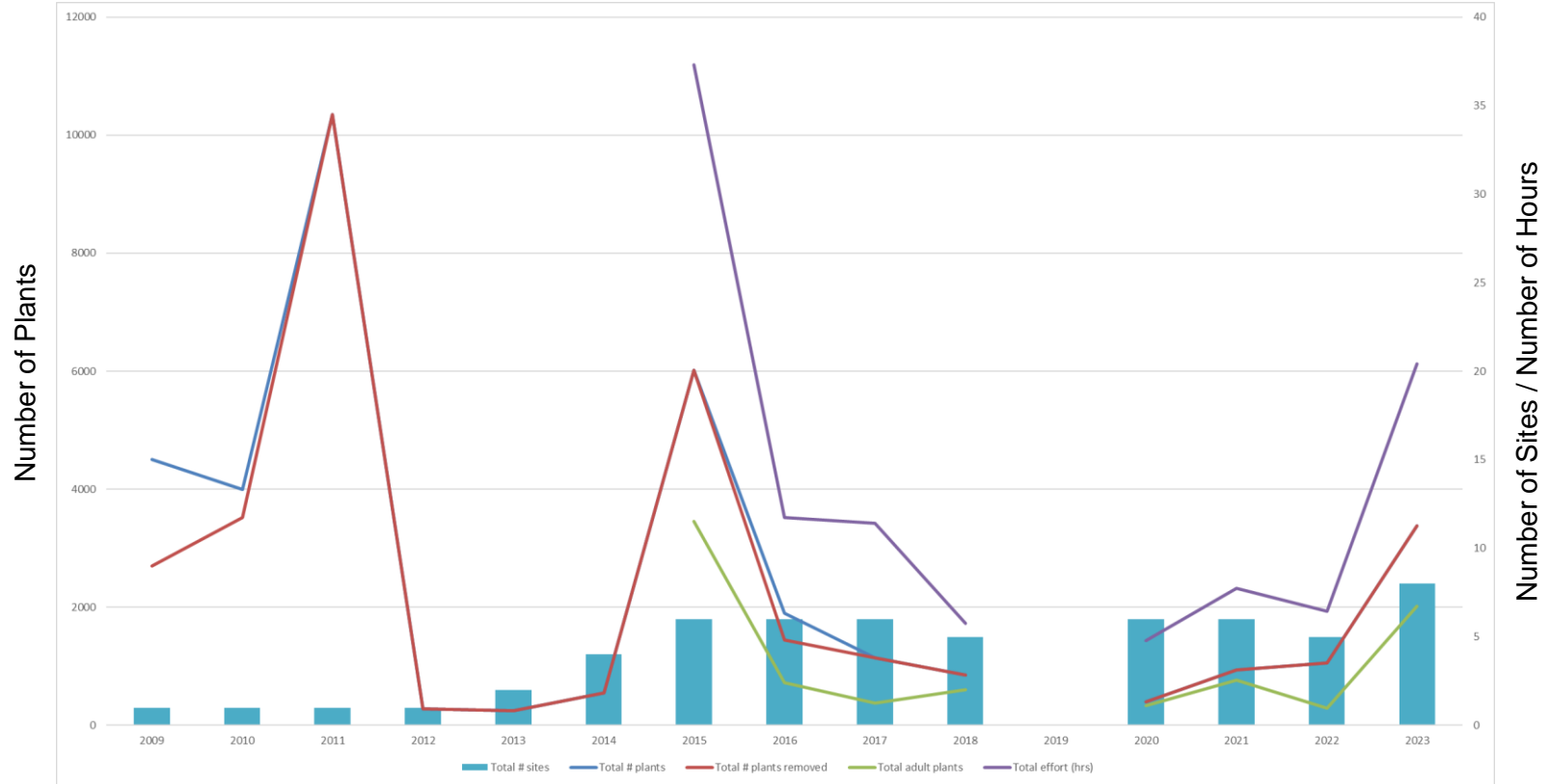
Tishániik



Size of the  fire icon indicates impact fire had to the overall spurge population.

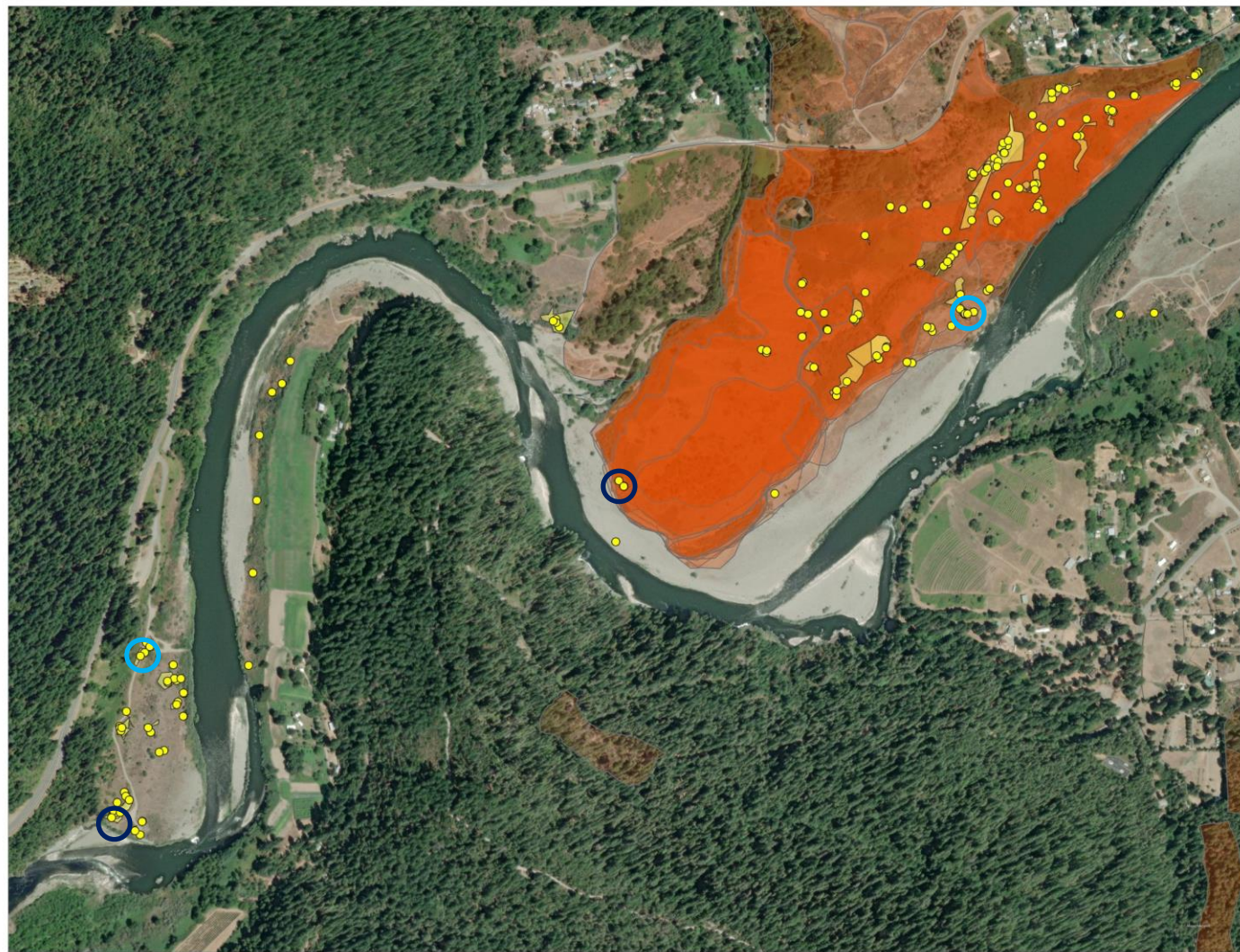
Larger icon is for more sites burned at higher intensity.

Tûuyvuk

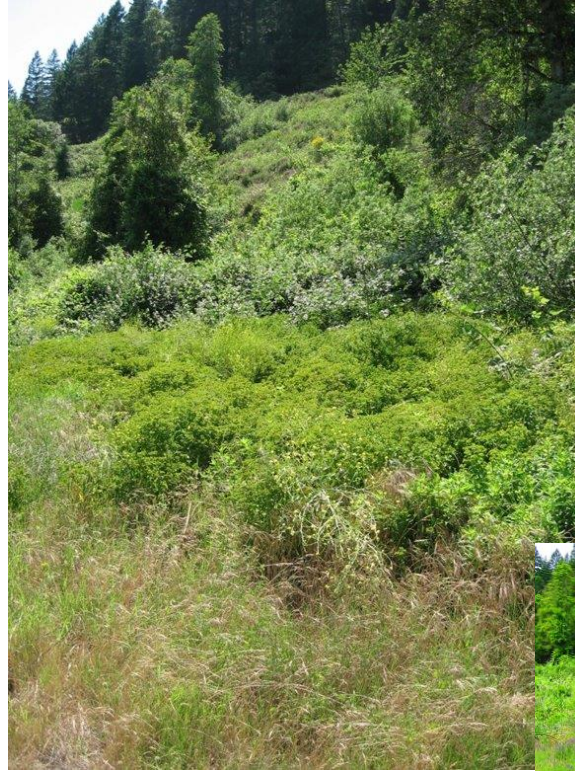


Closer look at Sites

- Larger infested area, large plants at initial treatment, high density
- Smaller infested area, smaller plants at initial treatment, moderate density



Large Sites – Tishániik and Tûuyvuk

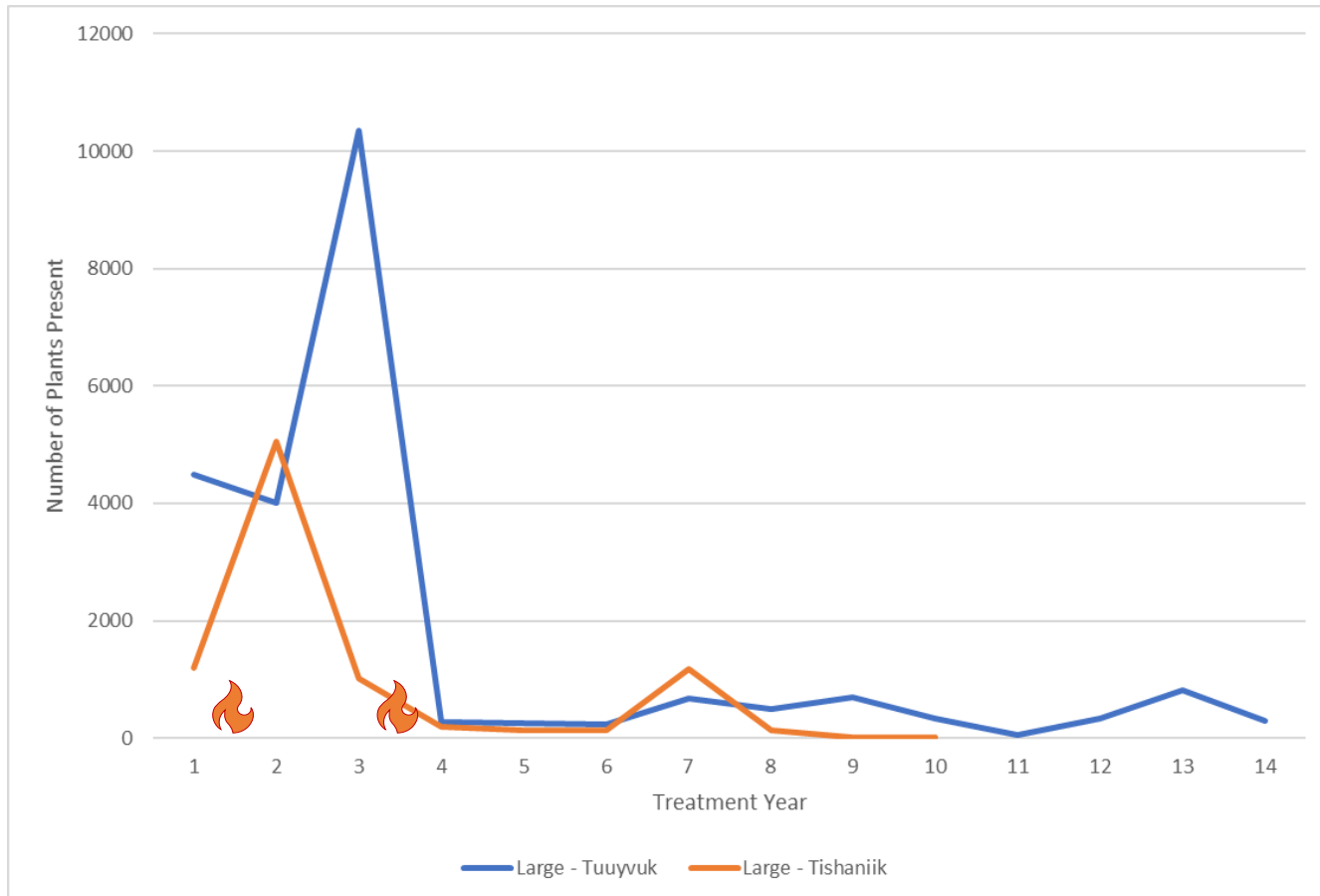


Tûuyvuk site in 2009.

Removing spurge at Tûuyvuk w/
Orleans El. students in 2012.

Before pulling at Tishanik in 2013,
and pulling after the fire in 2014.





Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Large - Tuuyvuk	4500	4000	10350	283	250	230	677	487	702	339	61	332	825	305	
Large - Tishaniik					1200	5054	1009	191		136	130	1188	130	13	8

Small sites – Tishániik and Tûuyvuk

- 2014 - Tishaniik



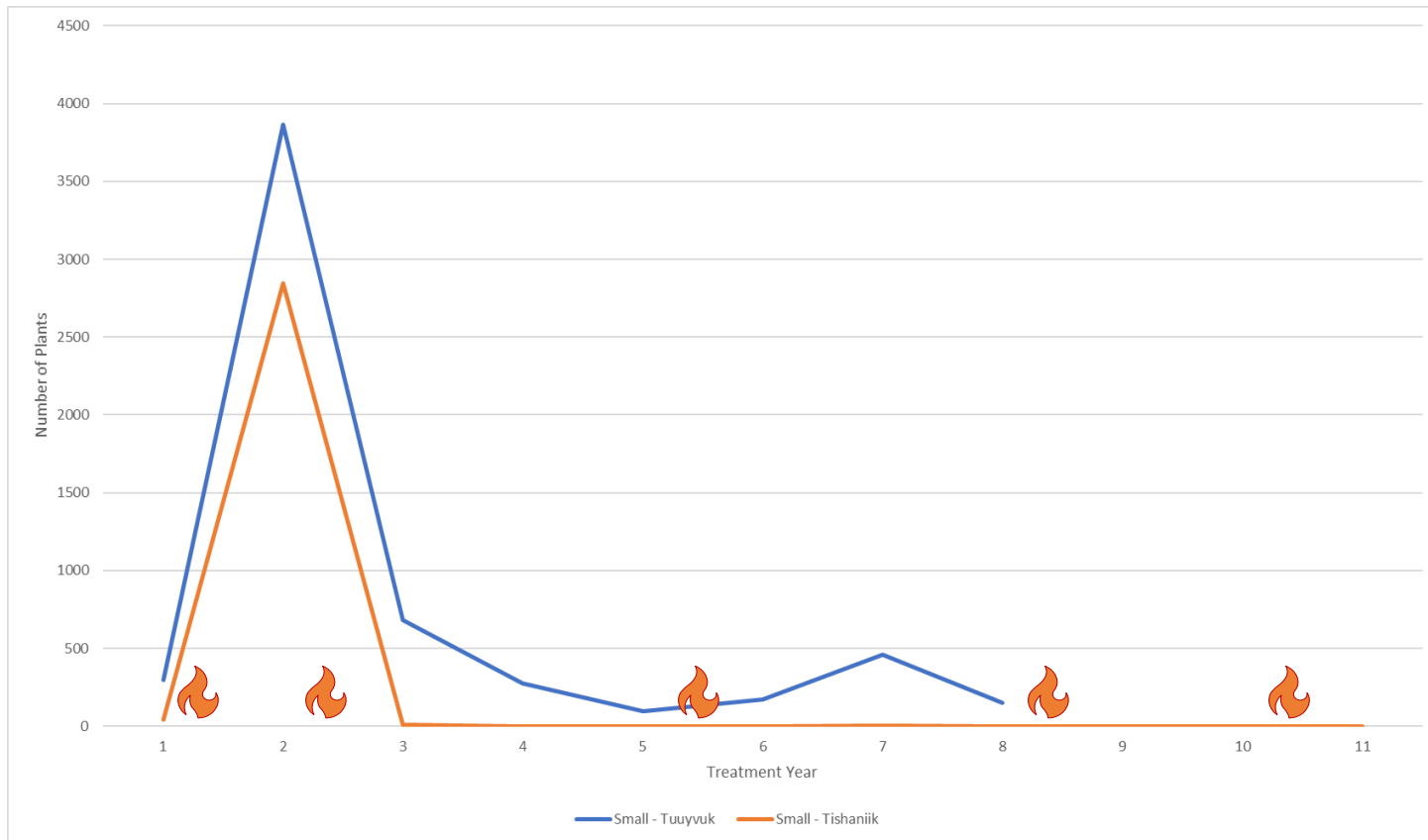
First manual removal in 2014 following the 2013 wildfire (first treatment = fire). Burned again in 2014, 2020, 2017 and 2022

- 2015 - Tûuyvuk



2015 is the second treatment year, small plants in that blackberry.





Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Small - Tuuyvuk			300	3866	683	277	97	171	462		151
Small - Tishaniik	40	2844	12				2	1	0	0	

Conclusions

- Fire stimulates spurge seedbank & increases access to weed sites
- Funding, coordination, and experience can be limiting factors
- Spurge site eradication is possible!
 - Repeated burning (restored traditional fire regimes)
 - Integrated manual weed removal with fire
- Restored Indigenous ownership results in active restoration & community use



Tishániik - a site of cultural practice and intergenerational learning



Karuk youth and KDNR instructors blend TEK & Western STEM for outdoor learning opportunities

Next steps

- Refine burn timing for native plant benefit
- Seed native grasses
- Cultural resource-centered weeding
- Dam removal and large-scale restoration to restore river channel
- Increased capacity for Karuk engagement in collaborative plants restoration



Thank you!

Heather Rickard –
Pírish Plants Division
Coordinator, Karuk Tribe
Department of Natural
Resources, herrickard@karuk.us

Tanya Chapple –
Plants Program Director, Mid
Klamath Watershed Council,
tanya@mkwc.org



WESTERN KLAMATH
RESTORATION
PARTNERSHIP

