

Update on mobile catch records and eCreel in Oregon

Michelle Jones, Biometrician

ODFW, Salem HQ

Michelle.k.jones@odfw.oregon.gov

In 2019, Oregon provided anglers with a choice to use a smart phone app instead of carrying paper licensing documents

Salmon or Steelhead Species Code	Check One		Location Code	Month	Day
	Wild	Hatchery			
1	/	✓	226	4	17
2	/		225	9	6
3					
4					
5					

Wild/Hatchery not chosen

The screenshot shows the 'Harvest Info' app interface. At the top, there is a 'SAVE' button. The main title is 'Harvesting on Combined Angling Tag'. Below this, there are several sections with dropdown menus: 'SPECIES' (Chinook Sal...), 'TYPE' (Hatchery), and 'LOCATION OF HARVEST' (Select a Code...). At the bottom, the 'HARVEST DATE' is displayed as 03/03/2021 08:49 PM.

Licensing documents are for law enforcement



COMBINED ANGLING TAG LOCATION CODES

OCEAN HARVESTED FISH ONLY (FOR BAYS AND ESTUARIES USE RIVER SYSTEMS CODES)

CODE	COASTAL PORT OF DEPARTURE	CODE	COASTAL PORT OF DEPARTURE	CODE	COASTAL PORT OF DEPARTURE
1	Astoria	6	Salmon River	13	Charleston
18	Gresham Beach N to Astoria	7	Siletz Bay	20	Summit Bay
19	Cannon Beach	8	Dupee Bay	14	Randon
2	Nehalem Bay	9	Newport	15	Port Orford
3	Gresham	10	Waldport	16	Gold Beach
4	Nelata Bay	11	Flowerice	17	Brookings
5	Cape Kiwanda & Pacific City	12	Winchester Bay		

COASTAL RIVER SYSTEMS

CODE	WATERBODY	CODE	WATERBODY	CODE	WATERBODY
21	Alsea R. & Bay	240	Ichamus Slough	83	Siletz R. & Bay
22	North Fk. Alsea R.	56	Indian Cr. (Siuslaw R.)	84	Silvacoos R. & Lk.
23	South Fk. Alsea R.	57	Kikahie R.	85	Siuslaw R. & Bay
24	Applegate R.	58	Lake Cr. (Siuslaw R.)	86	North Fk. Siuslaw R.
25	Beaver Cr. (Lincoln Co.)	60	Miami R.	87	Sizes R.
26	Beaver Cr. (Clatsop Co.)	61	Middle Cr. (Coquille R.)	89	Smith R.
27	Big Cr. (Lane Co.)	62	Millcoona R.	90	North Fk. Smith R.
28	Big Elk Cr. (Yaquina R.)	63	East Fk. Millcoona R.	93	Suspension Cr.
29	Brush Cr. (Curry Co.)	64	West Fk. Millcoona R.	92	Sweet Cr. (Siuslaw R.)
30	Cape Cr.	65	Nearcticum R.	93	Tahkintich Cr. & Lake
31	Chelco R. & Bay	66	Nehalem R. & Bay below Hwy. 26/ Elsie	94	Tennille Cr. & Lake (Coos Co.)
32	Cook Cr. (Nehalem R.)	204	Nehalem R. above Hwy 26/Elsie	95	Tennille Cr. (Lane Co.)
33	Coos R. & Bay	87	North Fk. Nehalem R.	96	Three Rivers
34	South Fk. Coos R.	224	Nelkowan Cr.	97	Tillamook Bay
35	Coquille R. & Bay	69	Nestucca R. & Bay	98	Tillamook R.
36	North Fk. Coquille R.	70	Little Nestucca R.	194	Trask Cr.
37	East Fk. Coquille R.	51	New R.	99	Trask R.
38	South Fk. Coquille R.	71	Pistol R.	100	South Fk. Trask R.
39	Middle Fk. Coquille R.	72	Rock Cr. (Lane Co.)	102	Umpqua R. & Bay
40	Communa Cr.	73	Rock Cr. (Nehalem R.)	103	North Fk. Umpqua R. below Winchester Dam
41	Coos Cr.	74	Rock Cr. (Siletz R.)	205	North Fk. Umpqua R. from Winchester Dam to Rock Cr.
42	Deadwood Cr. (Siuslaw R.)	225	Rogue Bay up to Elephant Rock	219	North Fk. Umpqua R. from Rock Cr. to Soda Springs (Fly Area)
43	Drift Cr. (Alsea R.)	226	Rogue R. from Elephant Rock to Grave Cr.	104	South Fk. Umpqua R.
44	Drift Cr. (Siletz R.)	227	Rogue R. from Grave Cr. to Fishers Ferry Boat Ramp	105	Wilson R.
45	Ed Cr. & Lake	228	Rogue R. above Fishers Ferry Boat Ramp	106	South Fk. Wilson R.
46	Elk Cr. (Clatsop Co.)	77	Salmon R. (Coast)	107	Little North Fk. (Wilson R.)
47	Elk R.	78	Salmonberry R.	108	Winchuck R.
48	Euchre Cr.	79	Sand Lk.	110	Yachon R.
49	Fall Cr. (Alsea R.)	80	Schooner Cr. (Siletz R.)	111	Yaquina R. & Bay
50	Five R. (Alsea R.)				
51	Floras Cr.				
54	Hunter Cr.				
55	Illinois R.				

All recreational anglers must report salmon and steelhead harvest on harvest cards

Prior to 2019...

STATE OF OREGON GAME COMMISSION
SALMON—STEELHEAD—POMCK CARD
Jan. 1, 1956—Dec. 31, 1956 867

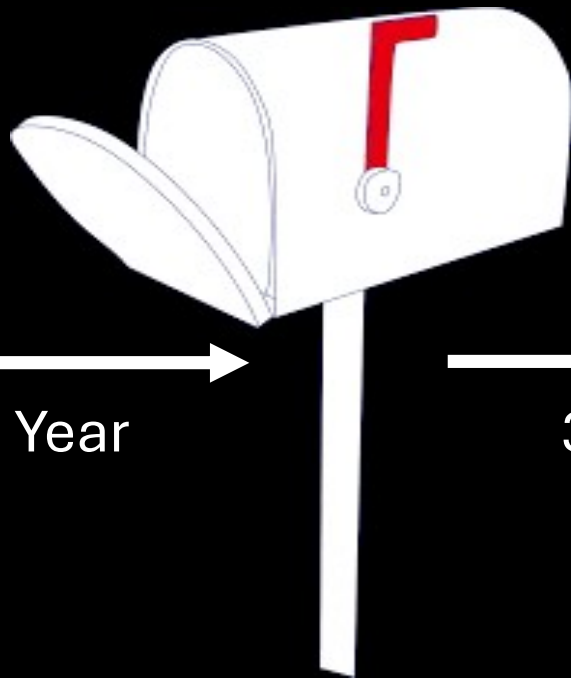
FISHING LICENSE NO. 915

FOR INSTRUCTIONS SEE OTHER SIDE

KIND OF FISH		Miles Downed	KIND OF FISH	
Check One			Check One	
Date	<input type="checkbox"/>		Date	<input type="checkbox"/>
Time	<input type="checkbox"/>		Time	<input type="checkbox"/>
Date	<input type="checkbox"/>		Date	<input type="checkbox"/>
Time	<input type="checkbox"/>		Time	<input type="checkbox"/>
Date	<input type="checkbox"/>		Date	<input type="checkbox"/>
Time	<input type="checkbox"/>		Time	<input type="checkbox"/>



1 Year

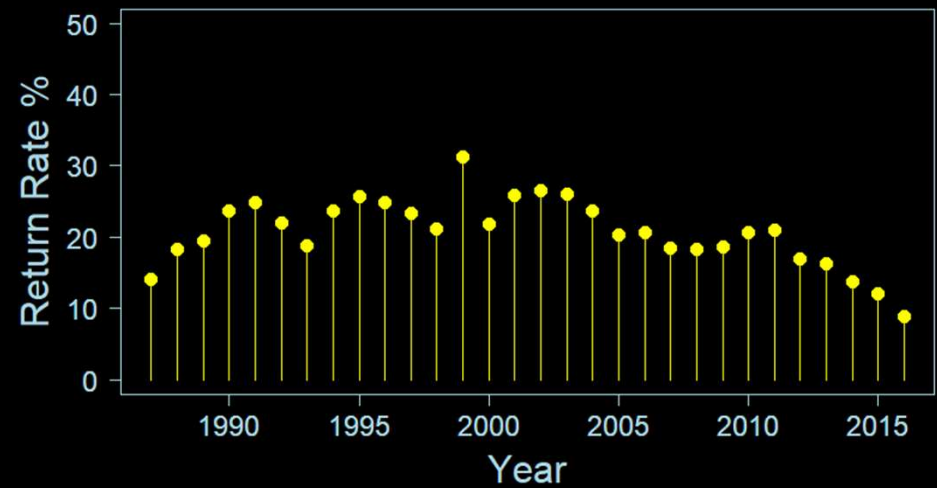


3 Years



Paper harvest card data contains many sources of uncertainty

Low Returns



Legibility

Salmon or Steelhead Species Code	Check One		Location Code	Month	Day
	Wild	Hatchery			
1	/	✓	226	4	17
2	/		226	9	6
3					
4					
5					

Wild/Hatchery not chosen

Missing Information

Electronic cards provided new data streams



Immediate upload
Complete information



STATE OF OREGON GAME COMMISSION
SALMON - STEELHEAD PUNCH CARD
Jan. 1, 1956 - Dec. 31, 1956 867

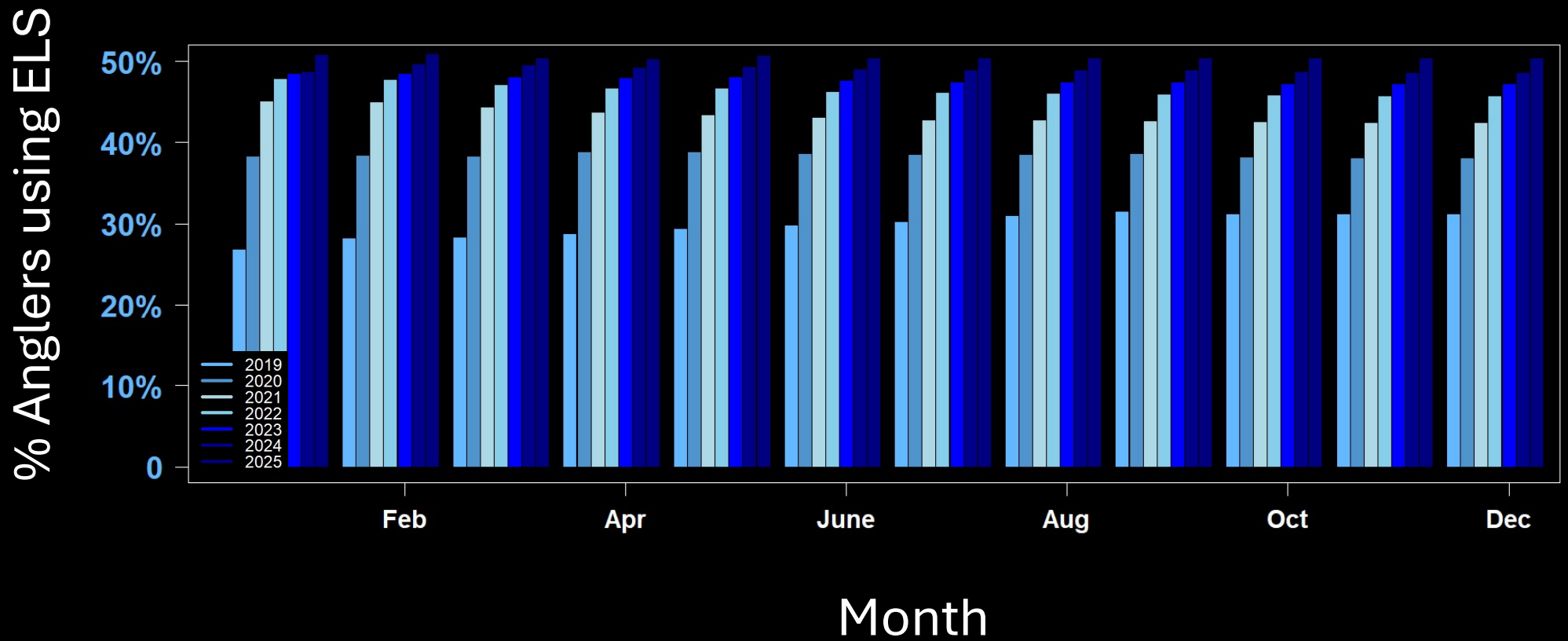
FISHING LICENSE NO. 965
FOR INSTRUCTIONS SEE OTHER SIDE

KIND OF FISH Check One		When Searched	KIND OF FISH Check One	
Date	River		Date	River

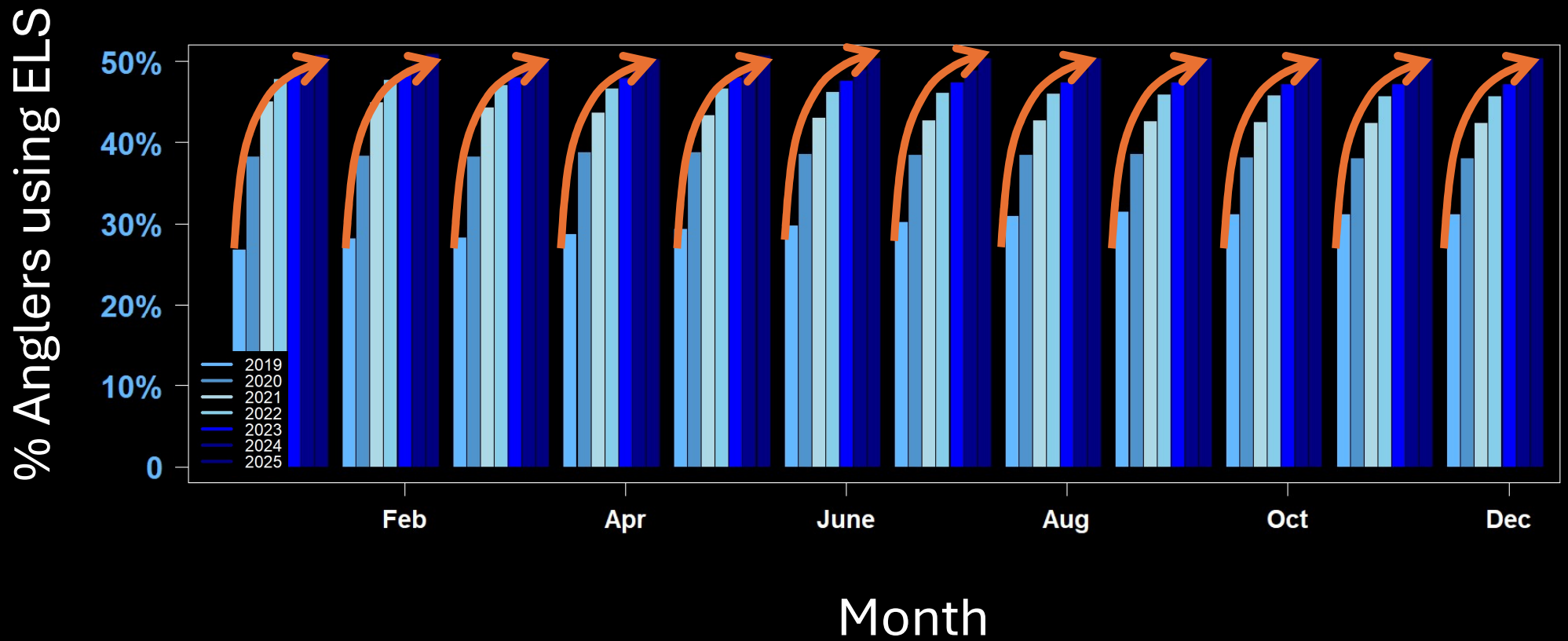
Delayed
Missing information



ELS use has steadily increased across years

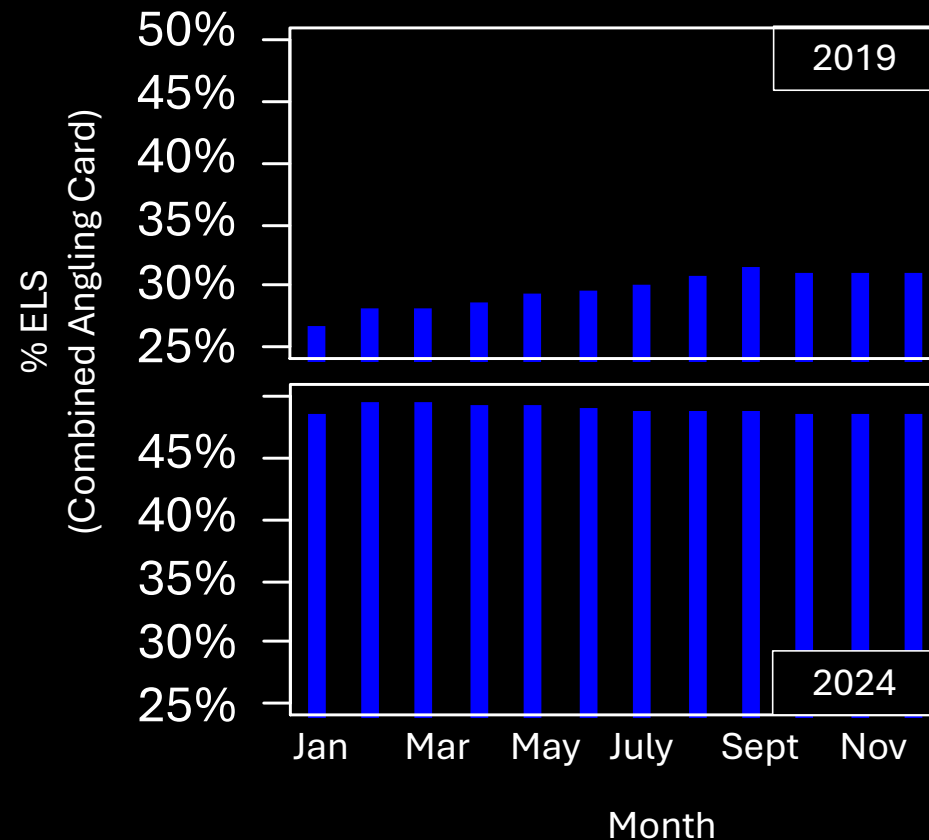


ELS use has steadily increased across years



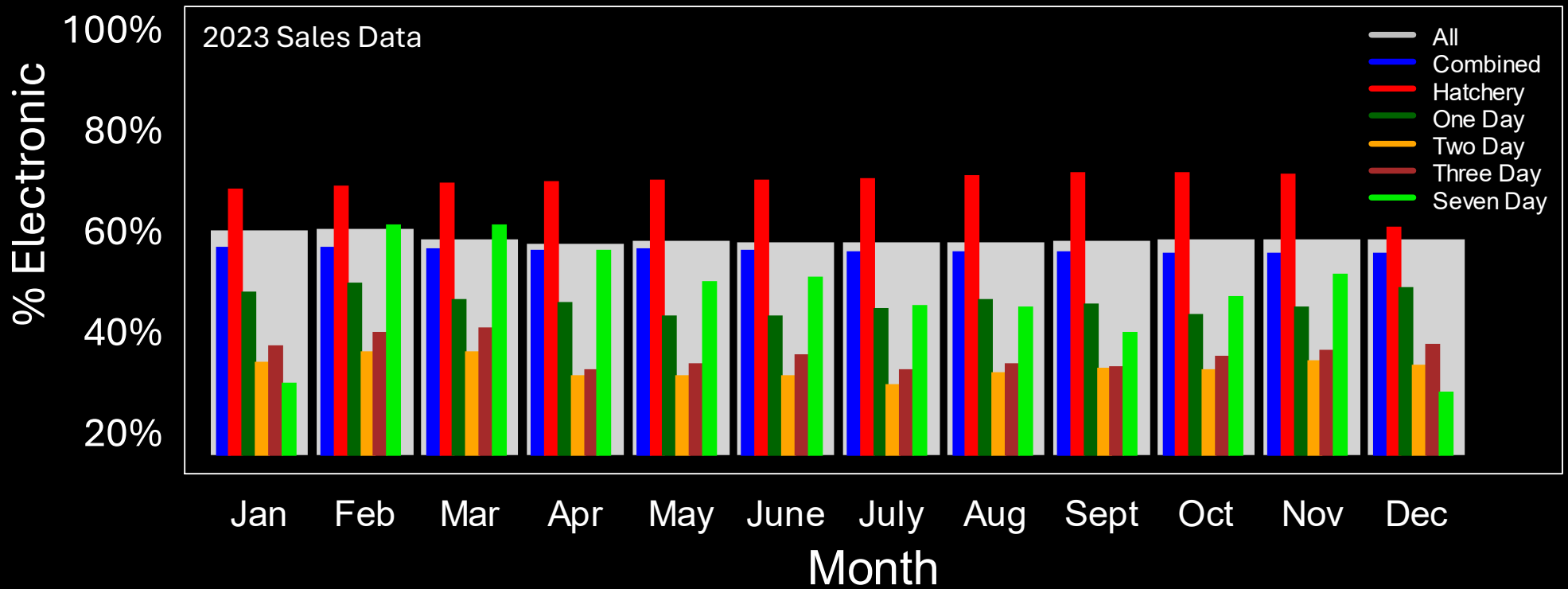
Within years, the proportion of anglers using ELS has stabilized

Initially, the proportion of anglers using ELS steadily increased throughout the year, while now it remains constant.

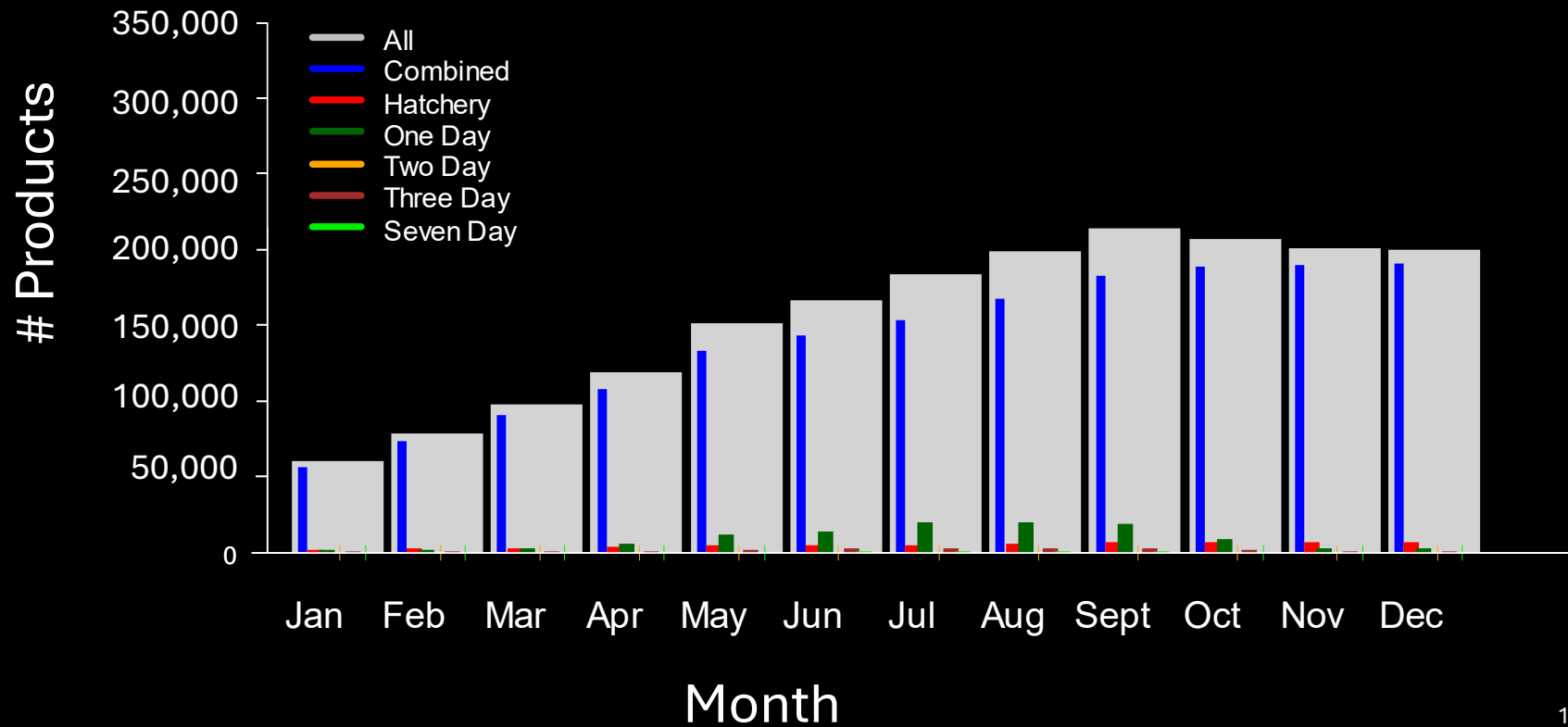


ELS use differs by licensing product

Proportion of Anglers Using ELS by Product Type



Total Valid Products by Month



Stratified harvest expansion from sales data:

$$\hat{H} = \sum_l^L \left[\sum_{m=1}^{m=12} \frac{N_{l,etag}}{p_{els\ l,m}} \right]$$

Stratified by **month**
and angling **product**

\hat{H} : Estimated harvest

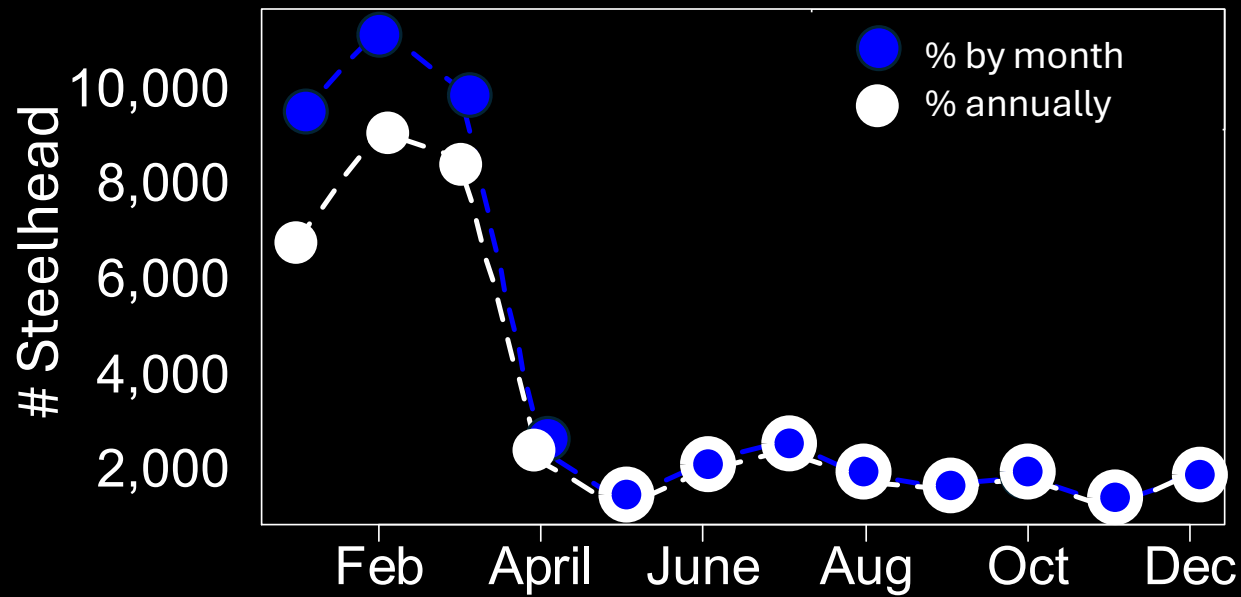
N_{etag} : Total harvest reported in the ELS system

p_{els} : Proportion of all licensed anglers with an
ELS license **in month m**

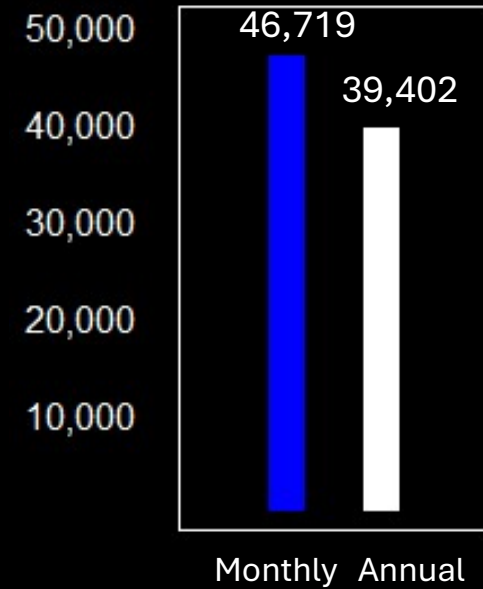
l : index for **licensing product**

L : Total number of **licensing products**

Stratifying by month prevents under-estimating winter and spring harvest

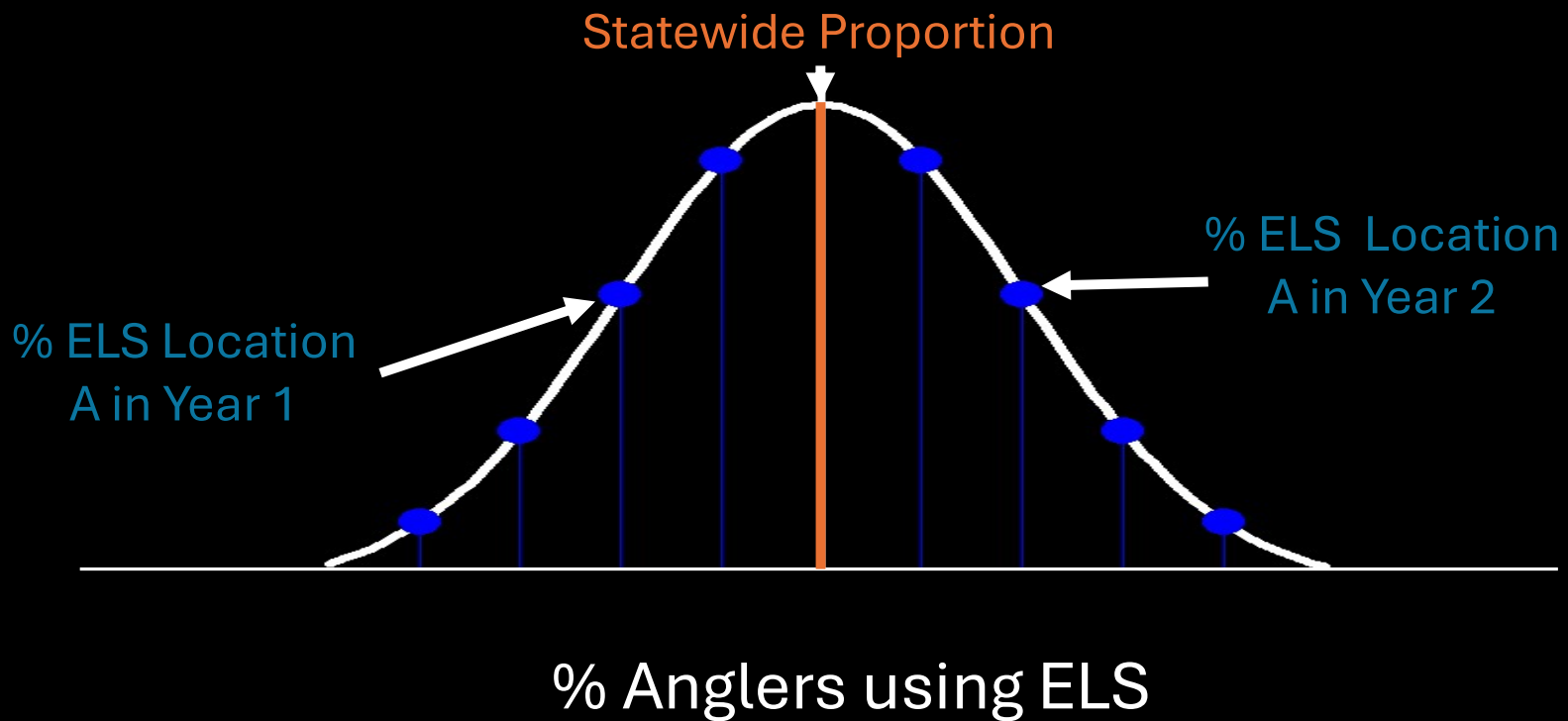


Annual Harvest Estimate



Sales Data Assumption

Anglers at specific locations are random draws from a single distribution



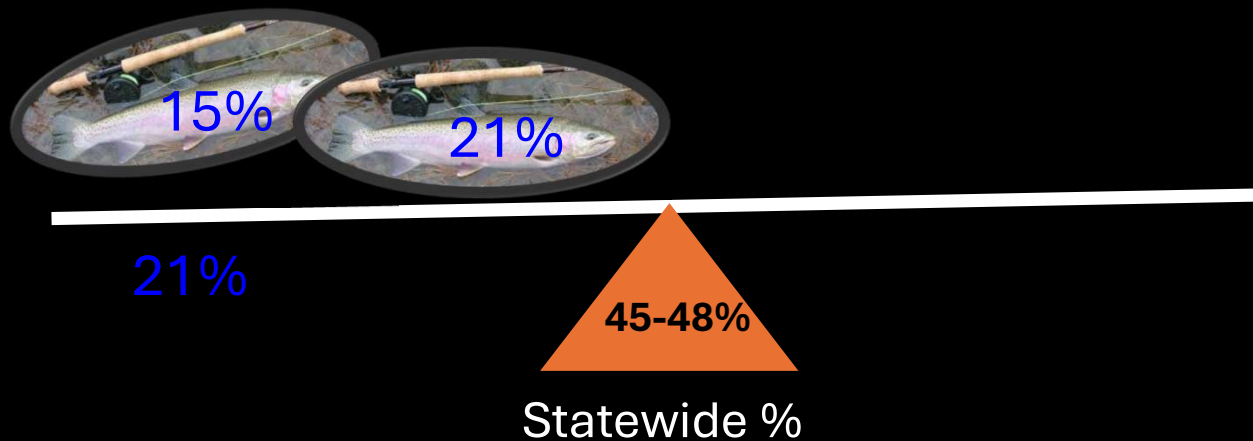
ELS Adoption in Rogue Steelhead Fishery

In 2021/2022 creel surveys found ~ 15% of Rogue River Steelhead anglers used ELS



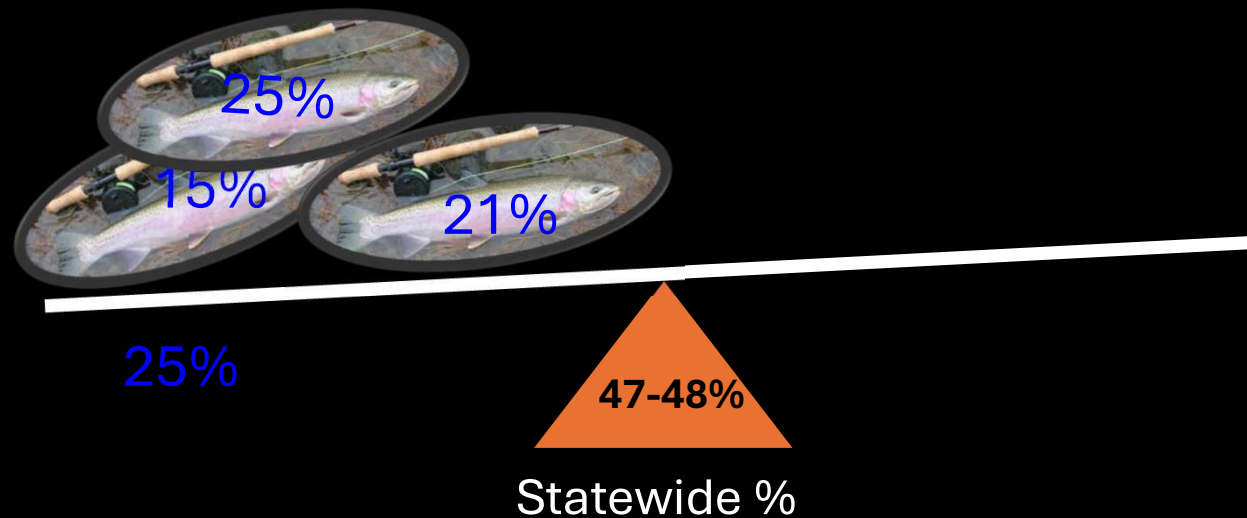
ELS Adoption in Rogue Steelhead Fishery

In 2022/2023 creel surveys found ~21% of Rogue River Steelhead anglers used ELS



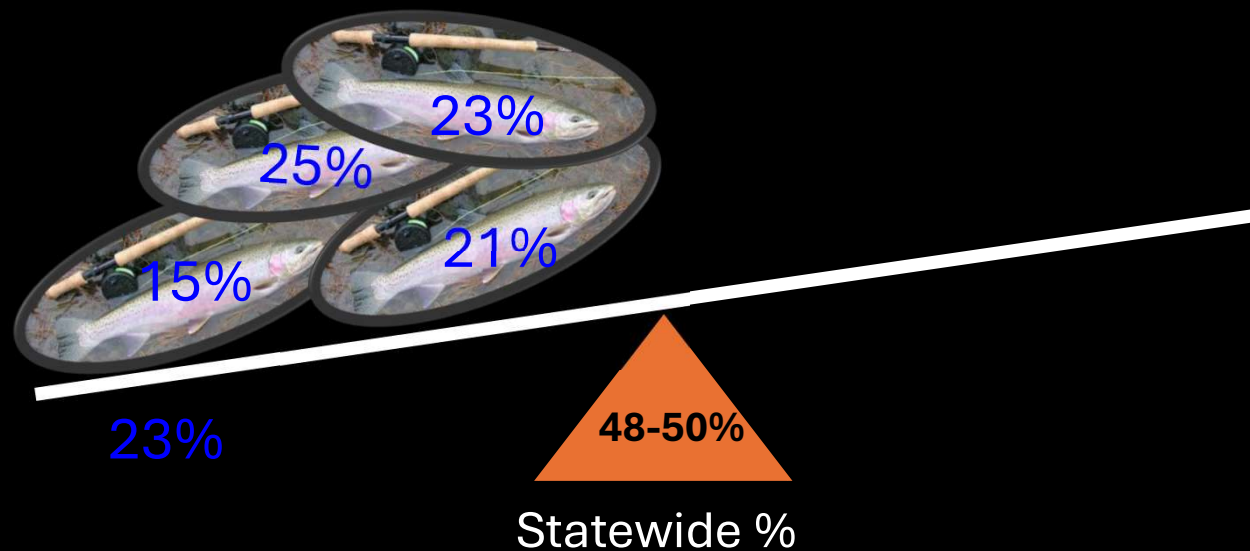
ELS Adoption in Rogue Steelhead Fishery

In 2023/2024 creel surveys found ~25% of Rogue River Steelhead anglers used ELS



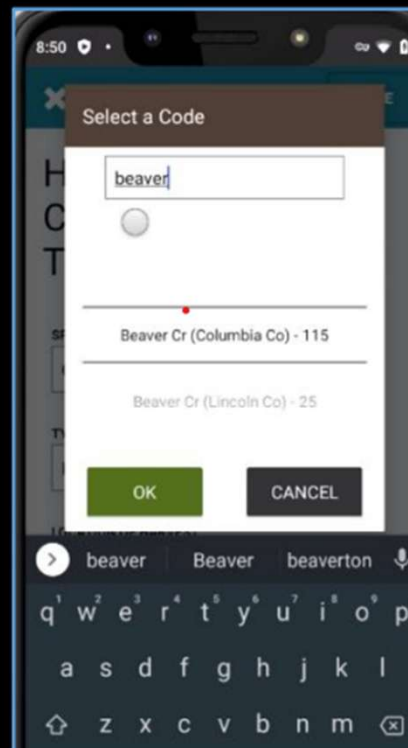
ELS Adoption in Rogue Steelhead Fishery

In 2024/2025 creel surveys found ~ **23%** of Rogue River Steelhead anglers used ELS



Relying on sales data is nuanced and subject to many sources of bias and uncertainty

- Multiple product types
- Misreporting (location, species, etc.)
- No geographic resolution



COMBINED ANGLING TAG LOCATION CODES

OCEAN HARVESTED FISH ONLY (FOR BAYS AND ESTUARIES USE RIVER SYSTEMS CODES)

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1	Astoria	6	Salmon River	13	Charleston
18	Gearhart Beach N to Astoria	7	Siletz Bay	20	Sunset Bay
19	Cannon Beach	8	Depue Bay	14	Bandon
2	Nehalem Bay	9	Newport	15	Port Orford
3	Garibaldi	10	Waldport	16	Gold Beach
4	Néahalem Bay	11	Florence	17	Brookings
5	Cape Kiwanda & Pacific City	12	Winchester Bay		

COASTAL RIVER SYSTEMS

CODE	WATERBODY	CODE	WATERBODY	CODE	WATERBODY
21	Alsea R. & Bay	240	Isthmus Slough	81	Siletz R. & Bay
22	North Fk. Alsea R.	56	Indian Cr. (Siuslaw R.)	84	Silcox R. & Lk.
23	South Fk. Alsea R.	57	Kilchis R.	85	Siuslaw R. & Bay
24	Applegate R.	58	Lake Cr. (Siuslaw R.)	86	North Fk. Siuslaw R.
25	Beaver Cr. (Lincoln Co.)	60	Miami R.	87	Sixes R.
26	Beaver Cr. (Tillamook Co.)	61	Middle Cr. (Coquille R.)	89	Smith R.
27	Big Cr. (Lane Co.)	62	Millcoima R.	90	North Fk. Smith R.
28	Big Elk Cr. (Yaquina R.)	63	East Fk. Millcoima R.	75	Soupsione Cr.
29	Brush Cr. (Curry Co.)	64	West Fk. Millcoima R.	92	Sweet Cr. (Siuslaw R.)
30	Cape Cr.	65	Nearacum R.	93	Tahkenitch Cr. & Lake
31	Chetco R. & Bay	66	Nehalem R. & Bay below Hwy. 26/ Elsie	94	Tennile Cr. & Lake (Coos Co.)
32	Cook Cr. (Nehalem R.)	67	Nehalem R. above Hwy 26/ Elsie	95	Tennile Cr. (Lane Co.)
33	Coos R. & Bay	204	Nehalem R. above Hwy 26/ Elsie	96	Three Rivers
34	South Fk. Coos R.	67	North Fk. Nehalem R.	97	Tillamook Bay
35	Coquille R. & Bay	224	Neskowin Cr.	98	Tillamook R.
36	North Fk. Coquille R.	69	Nestucca R. & Bay	194	Yoga Cr.
37	East Fk. Coquille R.	70	Little Nestucca R.	99	Trask R.
38	South Fk. Coquille R.	51	New R.	100	North Fk. Trask R.
39	Middle Fk. Coquille R.	71	Potter R.	101	South Fk. Trask R.
52	Cow Cr.	72	Rock Cr. (Lane Co.)	102	Umpqua R. & Bay
40	Cummins Cr.	73	Rock Cr. (Nehalem R.)	103	North Fk. Umpqua R. below Winchester Dam
42	Deadwood Cr. (Siuslaw R.)	74	Rock Cr. (Siletz R.)	201	North Fk. Umpqua R. from Winchester Dam to Rock Cr.
43	Drift Cr. (Alsea R.)	225	Rogue Bay up to Elephant Rock	219	North Fk. Umpqua R. from Rock Cr. to Soda Springs (Fly Area)
44	Drift Cr. (Siletz R.)	226	Rogue R. from Elephant Rock to Grave Cr.	104	South Fk. Umpqua R.
45	El Cr. & Lake	227	Rogue R. from Grave Cr. to Fishers Ferry Boat Ramp	105	Wilson R.
46	Elk Cr. (Clatsop Co.)	228	Rogue R. above Fishers Ferry Boat Ramp	106	South Fk. Wilson R.
47	Elk R.	77	Salmon R. (Coast)	107	Little North Fl. (Wilson R.)
48	Eschere Cr.	78	Salmonberry R.	108	Winchuck R.
49	Fall Cr. (Alsea R.)	79	Sand Lk.	110	Yachats R.
50	Five R. (Alsea R.)	80	Schooner Cr. (Siletz R.)	111	Yaquina R. & Bay
51	Flora Cr.				
55	Illinois R.				

eCreel

Sample the fish,
not the angler

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FEATURE ARTICLE

Paradigm Shift: Applying Capture–Recapture Techniques to Electronic Licensing System Data to Estimate Chinook Salmon Harvest

Brian L. Riggers*

Oregon Department of Fish and Wildlife, 28655 Highway 34, Corvallis, Oregon 97333, USA

Michelle K. Jones 

Oregon Department of Fish and Wildlife, 4034 Fairview Industrial Drive Southeast, Salem, Oregon 97302, USA

Abstract

Implementing creel surveys that produce robust and unbiased estimates of harvest can be complicated, expensive, and labor intensive. Additionally, field personnel often face safety risks associated with traversing roads and highways, occasionally under inclement travel conditions. Here, we develop an alternative method to estimate recreational fish harvest using a hybrid creel that employs capture–recapture techniques in conjunction with data collected from the Oregon Department of Fish and Wildlife’s electronic licensing system. We evaluated the method by comparing harvest estimates between the new approach (e-creel) and estimates from a traditional roving creel conducted on four of Oregon’s coastal Chinook Salmon *Oncorhynchus tshawytscha* populations in 2019. Our results indicated that Chinook Salmon harvest estimates derived from our hybrid creel approach were more precise than estimates using traditional creel methods. Both methods generated statistically equivalent estimates of Chinook Salmon recreational harvest, differing by only 3.4%. Estimated mean harvest was 1,264 Chinook Salmon based on the e-creel approach versus 1,258 based on the traditional creel approach. On average, the e-creel estimates reduced the SE by 41% relative to traditional creel estimates. Post hoc assessment of spending associated with creel projects in 2019 suggested that a total savings of US\$74,525 in personnel and operational cost, corresponding to an average 15% budget reduction per investigation, could be realized by transitioning from a traditional creel design to an e-creel design.

Time Step 1 – Anglers report their catch

Recorded in ELS
(marked)

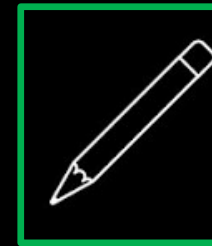
X1



or

Recorded on Paper
(unmarked)

X0



These fish are our “M”

Time Step 2 – Creelers look for harvested fish

Seen in creel

X₁



Not seen in creel

X₀



or

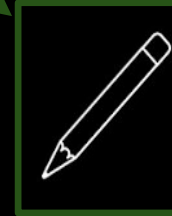


These fish are our total captures, “c”

Recorded in ELS

Yes

No



1

0

Observed in Creel?

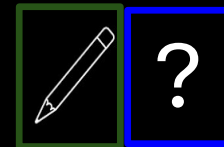
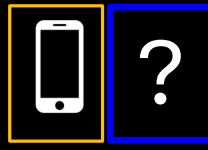
Observed in Creel?

Yes

No

Yes

No



Capture Histories:

X_{11}

X_{10}

X_{01}

X_{00}

These are our total recaptured, "R"

A less presuming alternative - eCreel

Large Sample

$$\hat{H} = \frac{MC}{R}$$

\hat{H} : Estimated harvest

M : Total number of fish entered by anglers into the ELS system

C : Total fish observed by surveyors (including paper-tagged fish)

R : Total fish observed by surveyors that were also tagged electronically

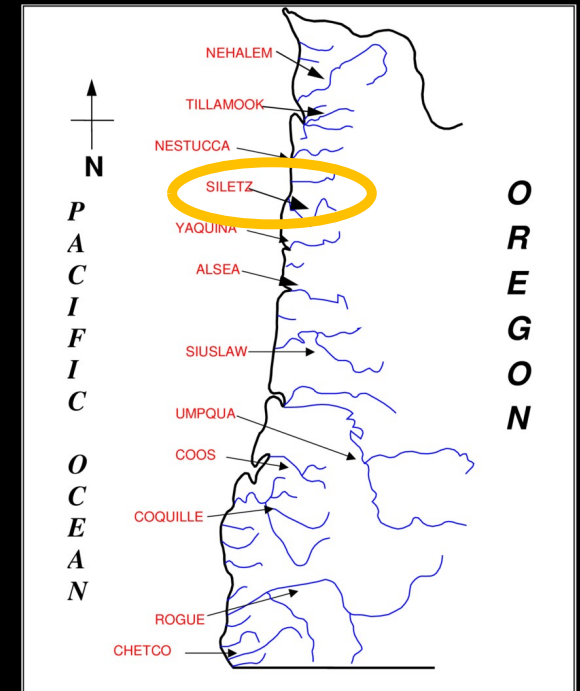
Small Sample

$$\hat{H} = \frac{(M + 1)(C + 1)}{R + 1} - 1$$

Fall Coastal Chinook Fisheries

Location	Year	eCreel -Estimate (SD)	ELS Expansion*	% Δ
Salmon River*	2019	1,001 (144)	798*	25%
	2020	903 (903)	921*	2%
	2021	1,084 (79)	852*	27%
	2022	794 (62)	747*	6%
	2023	1,231 (133)	960*	28%
	2024	1,870 (112)	1,381*	35%
Siletz River*	2019	1,776 (176)	2,096	15%
	2020	1,826 (94)	2,414	24%
	2021	1,745 (85)	2,036	14%
	2022	2,406 (123)	2,727	12%
	2023	3,142 (100)	3,868	18%
	2024	4,744 (142)	4,276	11%

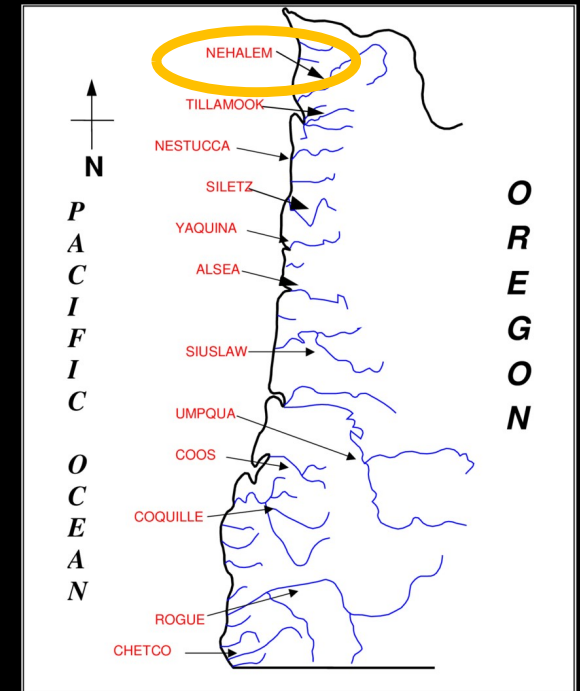
**The ELS expansions presented here are not a direct match with the exact dates of each eCreel and are for general inference only.*



Fall Coastal Chinook Fisheries

Location	Year	eCreel Estimate (SD)	ELS Expansion	%△
Nehalem River*	2019	1,527 (133)	1,499*	2%
	2021	1,858 (122)	2,598*	28%
	2022	1,983 (108)	2,555*	22%
	2023	2,408 (120)	2,921*	17%
	2024	2,575 (103)	2,798*	8%
Elk River	2019	565 (67)	518	9%
	2020	489 (37)	447	9%
	2021	493 (37)	495	1%>
	2022	632 (42)	354	78%
	2023	452 (33)	412	9%
	2024	348 (21)	284	22%

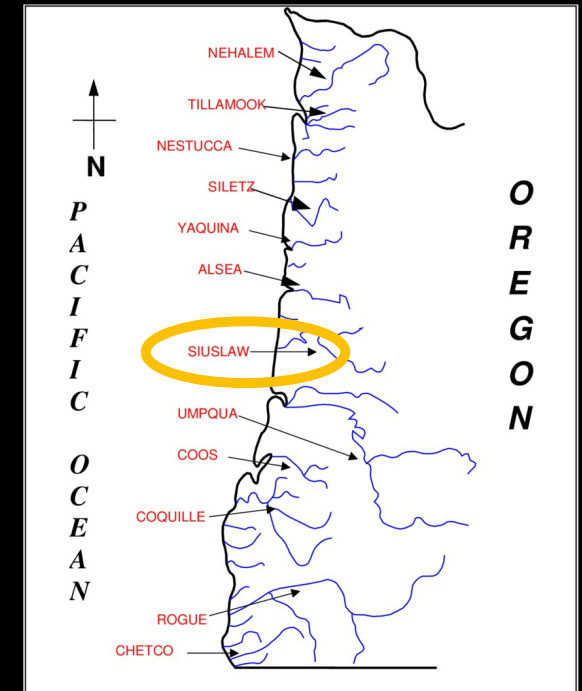
**The ELS expansions presented here are not a direct match with the exact dates of each eCreel and are for general inference only.*



Fall Coastal Chinook Fisheries

Location	Year	eCreel Estimate (SD)	ELS Expansion	% Δ
Siuslaw River	2020	1,314 (55)	1,248	5%
	2021	1,591 (80)	1,691	6%
	2023	2,070 (77)	2,434	15%
	2024	1,838 (55)	2,277	19%
Sixes	2020	503 (86)	423	19%
	2021	277 (33)	234	18%
	2022	215 (14)	210	2%
	2023	269 (29)	356	24%
	2024	211 (19)	149	41%

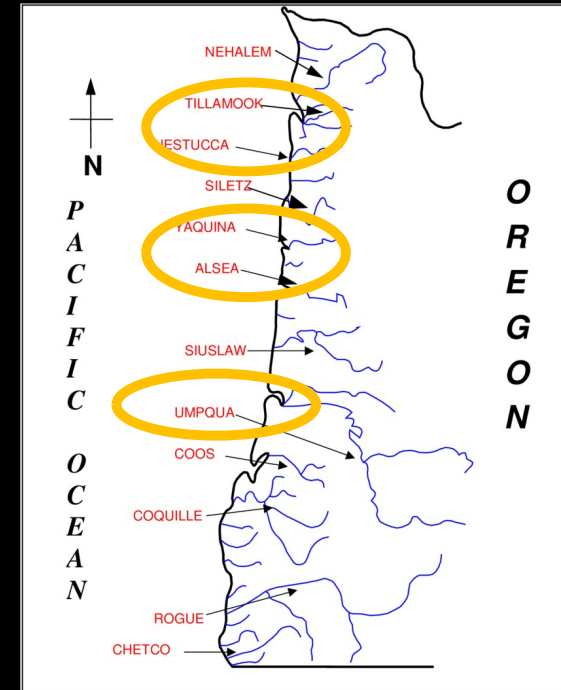
**The ELS expansions presented here are not a direct match with the exact dates of each eCreel and are for general inference only.*



Fall Coastal Chinook Fisheries

Location	Year	eCreel Estimate (SD)	ELS Expansion	\u25b2 %
Umpqua River	2022	2,392 (87)	2,962	20%
	2023	1,922 (61)	2,484	23%
	2024	2,063 (82)	2,071	<1%
	2025	664 (Wild)	604 (Wild)	<1%
		148 (Hatchery)	136 (Hatchery)	9%
Tillamook River	2022	356 (52)	330	8%
Nestucca River	2023	1,176 (51)	2,598	55%
	2024	2,206 (110)	2,072	6%
Yaquina River	2023	519 (78)	432	20%
	2024	553 (50)	502	10%
Alsea River	2023	2,365 (180)	3,189	26%
	2024	2,662 (133)	3,352	21%

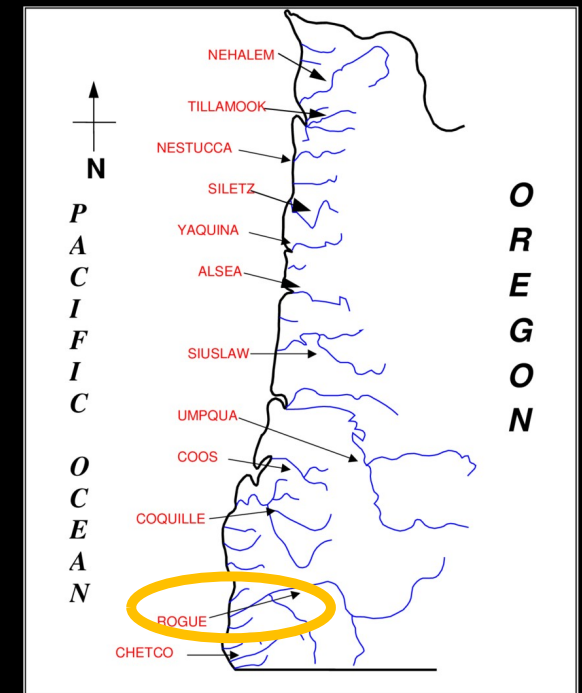
**The ELS expansions presented here are not a direct match with the exact dates of each eCreel and are for general inference only.*



South Coast Fall Chinook Fisheries

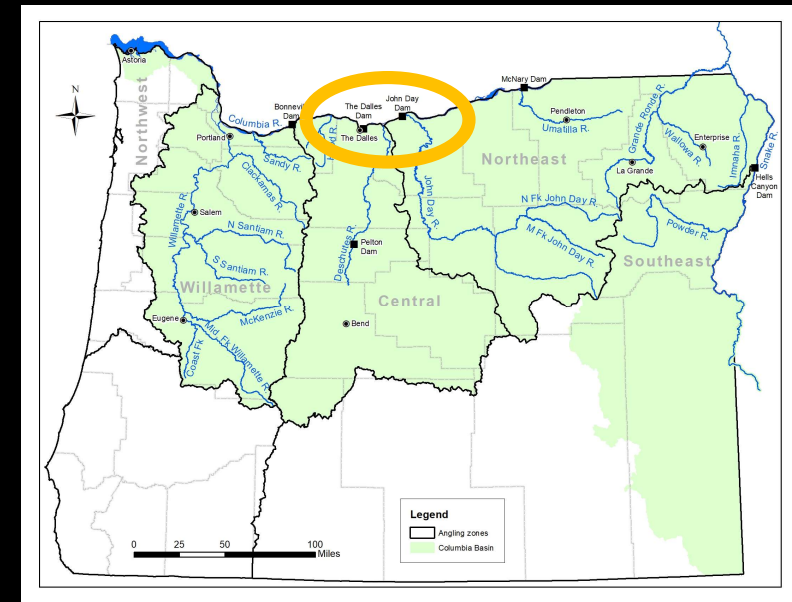
Location	Type	Year	eCreel	Creel	△ %
Rogue Bay	Hatchery	2023	160	172	7%
		2024	320	287	11%
		2025	88	107	18%
Wild	Wild	2023	3,814	3,647	4%
		2024	4,976	4,409	12%
		2025	2,830	2,512	12%

Data provided by Laura Green and other district staff.



Zone 6 Columbia River

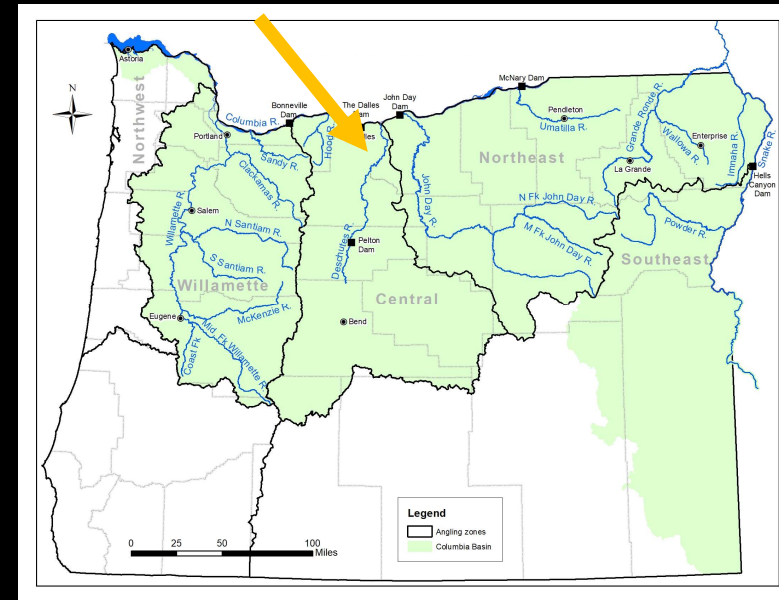
Species	Year	eCreel	Roving Creel	%△
Spring Chinook	2023	2,022	1,038	94%
Spring Chinook	2024	1,375	1,440	4%
Summer Chinook	2023	189	54	200%
Fall Chinook	2023	12,035	15,848	30%
Fall Coho	2023	2,987	2,445	22%
Summer Sockeye	2023	63	50	26%



Creel estimates and data provided by Andrea Carpenter

Deschutes River

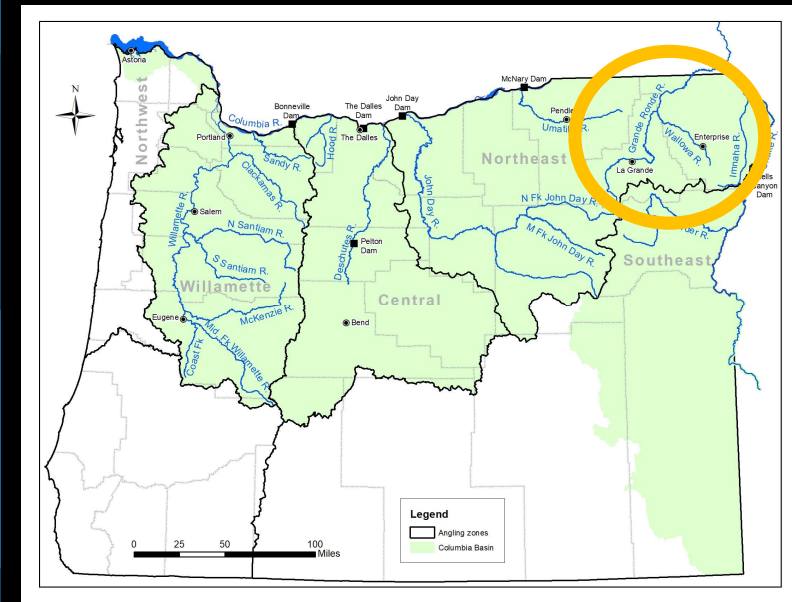
Species	Year	eCreel	ELS Expansion	% 
Chinook – Wild	2023	1,293	1,091	18%
	2024	1,012	773	31%
Chinook – Hatchery	2023	49	60	23%
	2024	76	57	33%
Coho – Wild	2023	136	95	43%
	2024	176	148	18%
Coho - Hatchery	2023	26	26	0
	2024	93	70	33%
Steelhead - Hatchery	2023	791	976	19%
	2024	1,590	1,809	12%



Creel estimates and data provided by Lindsay Powel and Jason Seals

East Region Steelhead Fisheries

Location	Species	Year	eCreel	ELS	\%△
Imnaha	Steelhead	2021	87 (35)	57 (13)	52%
		2022	48 (22)	29 (12)	65%
		2023	90 (13)	94 (24)	4%
		2024	80 (9.6)	88 (39)	9%
Lower Grande Ronde	Steelhead	2021	144 (27)	64 (18)	125%
		2022	162 (30)	109 (23)	32%
		2023	350 (44)	195 (38)	44%
		2024	202 (32)	171 (44)	18%
Wallowa	Steelhead	2021	784 (159)	508 (65)	54%
		2022	623 (120)	321 (57)	94%
		2023	840 (16)	722 (71)	16%
		2024	1037 (167)	620 (81)	67%



- Discrepancies may be linked to differences in overlap between fishery & reporting codes

Gibson, P.P, Felhaus, J.W., & M.J., Greiner. 2024 Evaluation of eCreel methods for monitoring steelhead harvest in the Grande Ronde and Imnaha basins. Oregon Department of Fish and Wildlife East Region Research.

How do we advance the method to work for fisheries without reporting requirements?



Released targeted fish



Sensitive non-target species



Warmwater species

Option 1: Create ratios with marked fish

E-creel					
Run year	Harvest estimate (full ELS data set)	SD of harvest estimate	Wild catch per harvest	Estimated wild catch	
Imnaha (loc. 144)					
2021	143	59.7	1.364	195	
2022	80	37.5	2.667	213	
2023	131	19.6	1.353	177	
2024	174	23.6	0.815	142	
Lower Grande Ronde (loc. 231-233)					
2021	199	38.4	4.222	840	
2022	198	36.7	2.387	473	
2023	473	60.1	1.719	813	
2024	312	52.9	3.854	1202	
Wallowa (loc. 234-235)					
2021	925	184.6	0.471	436	
2022	788	155.2	0.608	479	
2023	1036	94.9	0.451	467	
2024	1402	220.0	0.500	701	

Gibson, P.P, Felhaus, J.W., & M.J., Greiner. 2024 Evaluation of eCreel methods for monitoring steelhead harvest in the Gande Ronde and Imnaha basins. Oregon Department of Fish and Wildlife East Region Research.

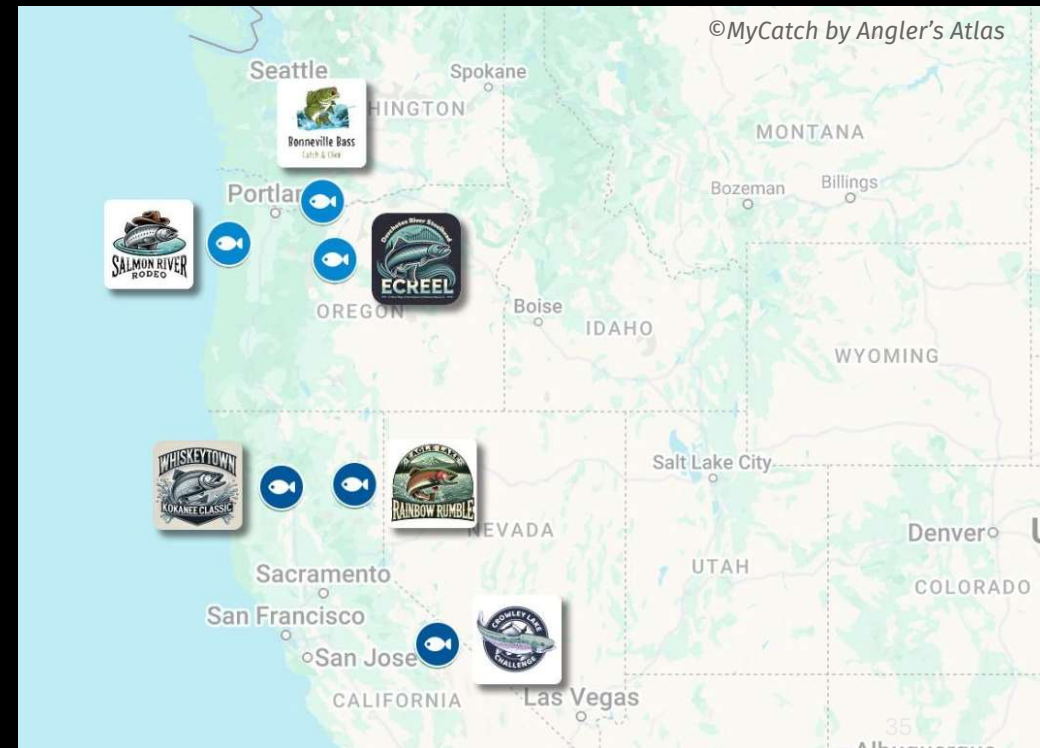
Option 2: Create incentivized platforms for voluntary reporting

Fishery-specific events set as pilot case-studies across 6 locations in Oregon & California

- Bonneville Pool
- Crowley Lake
- Deschutes River
- Eagle Lake
- Salmon River
- Whiskey Town Lake

Partners

- MyCatch by Angler's Atlas
- National Fish and Wildlife Foundation
- Oregon Department of Fish and Wildlife
- California Department of Fish and Wildlife
- Many local angling organizations and retailers



General Design

- Create a virtual event
- Design a prize structure
- Recruit anglers
- Angler creates marks
- Surveyors provide recaptures

2025 Deschutes River Hatchery Steelhead ECREEL
Event ended October 20, 2025 at 4:00 AM UTC

[Overview](#) [Feed](#) [Prizes](#) [Rules](#) [Checklist](#)

Overview

[See All Sponsors](#)

Event Boundary

LOCATION
Deschutes River

TIME PERIOD
Aug 16, 2025 - Oct 19, 2025

TOTAL PRIZE VALUE
\$5,000 USD

ENTRY FEE
Regular Entry Fee - Free

Eligible Species

Steelhead

LEADERBOARD
Most Hatchery Steelhead

1	Rafael Vega	10
2	Jesse Scovell	5
3	Jason Barker	5
4	makenna baker	4
5	Justin Frazier	3

Angler Recruitment

- Anglers come for the prizes.
- The prizes structure encourages complete data.



JOIN ANY TIME!

Catch & Click

June 1 - July 31, 2024

Free Entry

- Special Day Prizes
- Weekly Prizes
- Grand Prizes

\$10,000 in prizes



Longest Fish

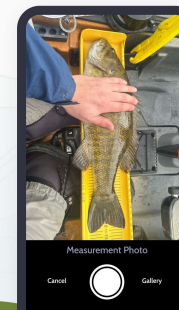
Hidden Lengths



Shortest Fish

Greatest Spread

ENTER ALL BASS YOU CATCH!



- ◆ Fish between Bonneville Dam and Dalles Dam
- ◆ Uses **MyCatch** app
- ◆ Length based event
- ◆ Your secret spots stay secret

SIGN UP



AnglersAtlas.com/events

MyCatch events support fisheries research and management. The **Bonneville Bass Catch and Click** event is testing two innovative mark-recapture methods: (i) through app reporting (the mark) and creel surveys (the recapture) we will be testing if that Smallmouth Bass catches can be reasonably estimated using this approach and (ii) through app reports (the recapture) of tagged Smallmouth Bass (the mark), we will be developing a population estimate for this stretch of the Columbia. Both research projects are in collaboration with Oregon DFW. For more information please contact the organizer, Sean Simmons, by email (sean@anglersatlas.com)



Weekend Prizes

Over \$2,000 in prizes to be won opening weekend!

SIGN UP



AnglersAtlas.com/events

Opening Weekend - Longest RB	\$200	Cash
Opening Weekend - 2nd Longest RB	\$100	Crowley Lake Fish Camp Gift Certificate
Opening Weekend - 3rd Longest RB	\$50	Crowley Lake Fish Camp Gift Certificate
Opening Weekend - Longest BT	\$200	Cash
Opening Weekend - 2nd Longest BT	\$100	Kittredge Sports Gift Certificate
Opening Weekend - 3rd Longest BT	\$50	Kittredge Sports Gift Certificate
Opening Weekend - Longest CT	\$200	Cash
Opening Weekend - 2nd Longest CT	\$100	The Troutster Gift Certificate
Opening Weekend - 3rd Longest CT	\$50	The Troutster Gift Certificate
Opening Weekend - Longest SP	\$200	Cash
Opening Weekend - 2nd Longest SP	\$100	TBD
Opening Weekend - 3rd Longest SP	\$50	TBD
Opening Weekend - Hidden Length RB	\$100	Crowley Lake Fish Camp Gift Certificate
Opening Weekend - Hidden Length BT	\$100	Kittredge Sports Gift Certificate
Opening Weekend - Hidden Length CT	\$100	The Troutster Gift Certificate
Opening Weekend - Hidden Length SP	\$100	TBD
Opening Weekend - Smallest RB	\$50	Crowley Lake Fish Camp Gift Certificate
Opening Weekend - Smallest BT	\$50	Kittredge Sports Gift Certificate
Opening Weekend - Smallest CT	\$50	The Troutster Gift Certificate
Opening Weekend - Smallest SP	\$50	TBD
Opening Weekend - Greatest spread	\$100	Cash
Opening Weekend - Most fish	\$100	Cash

Opening Weekend Dates: 6/27-29

RB-Rainbow Trout, BT-Brown Trout, CT-Cutthroat Trout, SP-Sacramento Perch

This event is part of a multi-state, citizen science research project to test new fisheries research and management methods with anglers playing a key role.

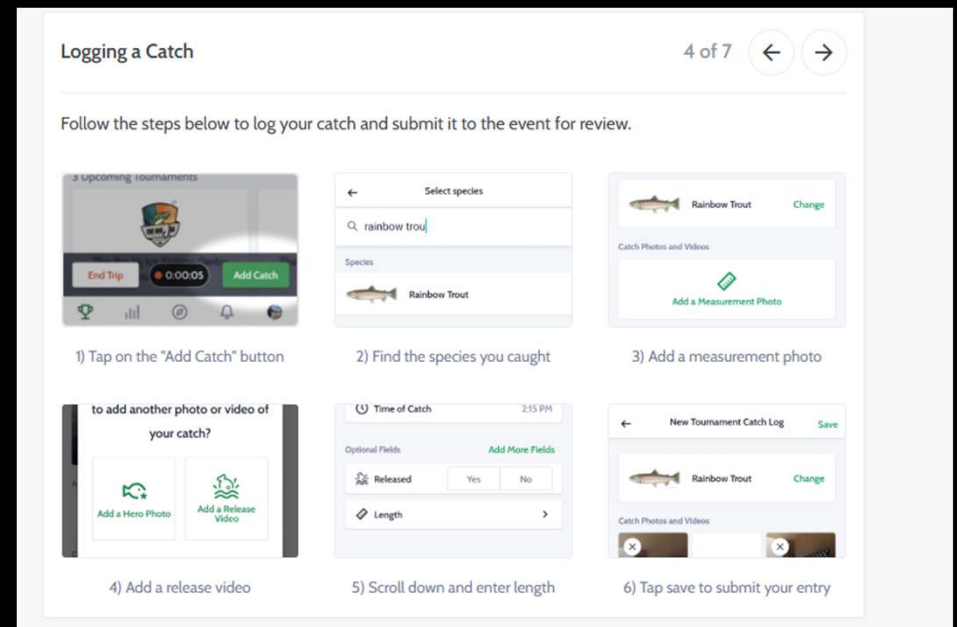
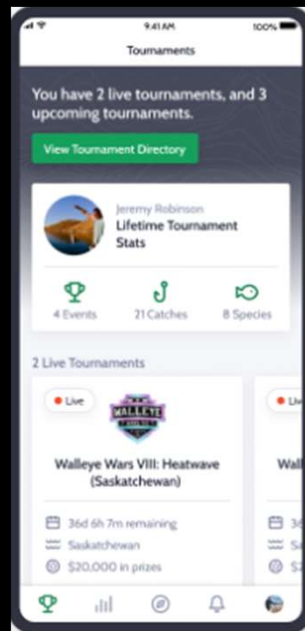
Anglers report fish (m) that surveyors can find through interviews (R)

Key statistical point:

- Agency staff don't know who is participating in the event

Why do we care?

- The particular fish observed with on-the-ground surveys are randomized, and this ensures full mixing of tagged and untagged catch




2024 Preliminary Estimates

Location	Species	eCreel		Creel		% Δ (from Creel)
		Estimate	Error	Estimate	Error	
Crowly Lake	Brown Trout	1,857	371	1,255	3,440	47%
	Rainbow Trout	2,173	235	1,982	6,209	10%
	Cutthroat Trout	3,052	995	409	2,767	646%
	Sacramento Perch	8,357	1,866	15,852	47,788	47%
Bonneville*	Smallmouth Bass*	11,684*	-	14,996*	-	28%
Eagle Lake	Rainbow Trout	742	128	900	494	17%
Salmon River	Chinook	1,534	514	1,708	115	10%
Whiskeytown	Kokanee	1,643	235	1,552	721	6%

* Estimate for the 2025 program. Only one recapture during the 2024 program so no estimate was generated.

2024 Estimates and Data

Location	Species	eCreel		Raw Recoveries		% 
		Estimate	Error	Captures (marking rate)	Recaptures (from creel) (Recapture Rate)	
Crowly Lake	Brown Trout	1,857	371	72 (4%)	15 (21%)	47%
	Rainbow Trout	2,173	235	53 (2.5%)	31 (58%)	10%
	Cutthroat Trout	3,052	995	28 (<1%)	2 (7%)	646%
	Sacramento Perch	8,357	1,866	26 (<1%)	9 (35%)	47%
Bonneville*	Smallmouth Bass*	11,684*	-	2,099 (18%)	146 (6%)	28%
Eagle Lake	Rainbow Trout	742	128	63 (8%)	18 (29%)	17%
Salmon River	Chinook	1,534	514	29 (20%)	5 (17%)	10%
Whiskeytown	Kokanee	1,643	235	254 (15%)	32 (13%)	6%

* Estimate for the 2025 program. Only one recapture during the 2024 program so no estimate was generated.

New Sources of Bias

- Surveyors may cause participation rates to increase, which in turn positively biases the recapture rates (i.e., fish observed are more likely to be marked because they were observed).



Moving Forward

- Repeat pilot studies in 2025 (currently ongoing)
- Increase angler recruitment and engagement
- Restrict when people can enter fish



Questions



Extra Slides