

# **Spawning Ground Survey123 Forms**

Michelle Steg-Geltner, YN

Tribal Data Workshop

April 13, 2022



- **Showed them what is possible.**
- **Staff still getting used to digital data entry.**
- **Starting simple, other surveys**
- **Building flexible form to accommodate different projects**
- **Plan to try out next year**

Methow Basin - Coho - Spawning Ground Surveys													
River			Species	Coho Salmon		Samplers:							
Reach			Air & Water Temp			Page							
Date			Water Visibility			Weather Conditions:							
Redds	Live	Dead	Sample #	Scale Card	Position	Condition 1-3	Head Bag #	Fork	POH	Sex	No. Eggs	PIT Tag #: 3D9.1C2D..	Time Start: _____ Time End: _____ Remarks or Associated Redd #
<u>Total</u>	<u>Total</u>	<u>Total</u>	Remember: Samplers are ALL people in a crew, please record BOTH Air and Water Temp in Celcius. <u>Mort Condition</u> - 1 Fresh, 2 Fair, 3 Poor. <u>Weather Conditions</u> - Sunny, Overcast, Raining, Snowing. <u>Temperature</u> - record at noon or mid-survey.										

**Michelle Steg-Geltner**  
**Status and Trends Reporting Coordinator**  
**4.11.2022**



# Draft Redd/ Carcass Survey

## ▼ Header


Subbasin Name (to make into a cascading list)	River Name	
<input type="text"/>	<input type="text"/>	
Section	River Km	
<input type="text"/>	<input type="text"/>	
Reach ID	Date	
<input type="text"/>	<input type="text" value="Tuesday, April 12, 2022"/>	
Surveyors	Weather	
<input type="text"/>	<input type="text"/>	
Water Visibility (cm)	Flow (m/s)	Stage
<input type="text"/>	<input type="text"/>	<input type="text"/>
Water Temp (C)	Air Temp (C)	Start Time
<input type="text"/>	<input type="text"/>	<input type="text" value="3:55 PM"/>
End Time	Comment	
<input type="text" value="3:55 PM"/>	<input type="text"/>	

## ► Redds

## ► Carcasses


## ▼ Redds

▼ Collect data. Click "+" at bottom right to add a record.

Live fish on redd?	Species	Substrate (multiple)
<input type="text"/>	<input type="text"/>	<input type="text"/>
Sedimented?	Redd Length (m)	Redd Width (m)
<input type="text"/>	<input type="text"/>	<input type="text"/>
Redd Age	Note	
<input type="text"/>	<input type="text"/>	
GPS Click the compass icon in upper left to refresh to current location.		
<input type="text" value="45°31'N 122°42'W ± 69 m"/>		
		

## ▼ Carcasses

▼ Collect data. Click "+" at bottom right to add a record.

Species	Gender?	
<input type="text"/>	<input type="text"/>	
Fish Condition	Fish Length (cm)	Adipose clipped?
<input type="text"/>	<input type="text"/>	<input type="text"/>
PIT Tag (Full String)	PIT Tag (Clipped)	
<input type="text"/>	<input type="text"/>	
Floy tag #, color, location	Scale Sample #	Genetic Sample #
<input type="text"/>	<input type="text"/>	<input type="text"/>
Snout #	Note (other markings, etc.)	
<input type="text"/>	<input type="text"/>	
GPS Click the compass icon in upper left to refresh to current location.		
<input type="text" value="45°31'N 122°42'W ± 69 m"/>		
		



1 of 1





## Spawning Survey

### ▼ Spawning Survey Header

Project *	Stream - Reach *
<input type="text"/>	<input type="text"/>
Date *	Pass *
<input type="text" value="Tuesday, April 12, 2022"/>	<input type="text"/>
Index	Observer
<input type="text"/>	<input type="text"/>
Start Time	Start Temp
<input type="text" value="Time"/>	<input type="text"/>
End Time	End Temp
<input type="text" value="Time"/>	<input type="text"/>
Target Species	Water Visibility
<input type="text"/>	Poor <6', Fair 6-12', Good 1-3', Excellent >3'
<input type="text"/>	<input type="text"/>

Comments

### ▼ Details

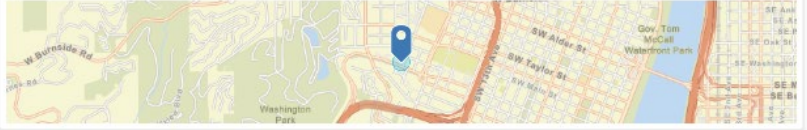
Feature Type \*

☐ Start ☒ Redd ☐ Carcass ☐ Prespawn ☐ Stop

River Mile

Comments

GPS Location



Photo



### ▼ Details

Feature Type \*

☐ Start ☒ Redd ☐ Carcass ☐ Prespawn ☐ Stop

Species

☐ Spring Chinook ☐ Fall Chinook ☐ Steelhead ☐ Coho ☐ Bull Trout

Redd ID

Live fish on Redd

Origin

☐ Hatchery ☐ Wild ☐ Unknown

River Mile

Comments

GPS Location

### ▼ Details

Feature Type \*

☐ Start ☐ Redd ☐ Carcass ☒ Prespawn ☐ Stop

Species

☐ Spring Chinook ☐ Fall Chinook ☐ Steelhead ☐ Coho ☐ Bull Trout


Origin

☐ Hatchery ☐ Wild ☐ Unknown

River Mile

Comments

GPS Location



Photo

### ▼ Details

Feature Type \*

☐ Start ☐ Redd ☒ Carcass ☐ Prespawn ☐ Stop

Species

☐ Spring Chinook ☐ Fall Chinook ☐ Steelhead ☐ Coho ☐ Bull Trout

Origin

☐ Hatchery ☐ Wild ☐ Unknown

River Mile

Sex

☐ M ☐ F ☐ U

MEPS Length (cm)

Marks

BKD

☐ Yes ☐ No

Spawn

☐ Yes ☐ No

Floy Tag

Scale Card

CWT

☐ Yes ☐ No

CWT No

Snout Card

Pittag

# Adult Traps

## Roza Dam Adult Trap (Prosser Denil next year)

Prosser Adult Sampling

Date	Time	Species Code	Status
4/12/2022	2:07 PM		Wild Brood
Fork	MEH	Weight	Prosser Adult PIT Tag
<input type="checkbox"/> Adipose-clip?		Radio Tag Data	
No	CWT?	Channel	Code
<input type="checkbox"/> Ventral?	63		
Brightness	Sex	ScaleLoc	
Comments	DNA Id:		
Coho Release Trib.		ID #	Init.
		New)	

Record: 1 of 1 Unfiltered Search

Roza Adult Collection

Species:	Roza Date	ID #	Roza PIT Tag	Recap. PIT Tag
WASCK	4/12/2022	E+04		
Fork	POH	Weight	Status	Origin
			Release	Ad Clip?
				Sex
				Injection
Comments				
Eye				
<input type="radio"/> Left				
<input type="radio"/> Right				
Elastomer Color				
<input checked="" type="radio"/> Red				
<input type="radio"/> Orange				
<input type="radio"/> Green				
CWT Body Location				
<input type="radio"/> Posterior Dorsal				
<input type="checkbox"/> Snout Tag?				
<input type="checkbox"/> LongTube?				
Tube?				
Radio Tag:				
Channel				
Code				
DNA Sample ID				
ScaleLoc				

Record: 1 of 1 Unfiltered Search

Adult Fish Trap Sampling 2

▼ Header

Ladder Code *	Date *	Operator Initials	
ro (Roza)	Tuesday, ...		
Default Species Refresh species field below to apply.	Default Purpose Refresh purpose field below to apply.	Last DNA # Steelhead	Last DNA # Spring Chinook
		0	0
Last DNA # Fall Chinook	Last DNA # Sockeye	Last DNA # Coho	
0	0	0	

▼ Bulk Fish Count Warning: Once you click "+" in bulk fish to expand below you will be adding a record.

+

▼ Fish Trap (Repeat Samples)

▼ Metrics

Time *	Species *	Purpose? *	Sex *
4:44 PM	(Refresh arrows to set from default)	(Refresh arrows to set from default)	(M, F, J, or P)
Fork Length *	POH Length *	Weight *	Recap PIT Tag Click in field before scan.

▼ Tags

Elastomer Eye	Elastomer Color	CWT? *	Ad Clip? (autopopulated from origin or enter here) *
<input type="radio"/> L	<input type="radio"/> Red	<input type="radio"/> Snout	<input type="radio"/> Yes
<input type="radio"/> R	<input type="radio"/> Orange	<input type="radio"/> Post-dorsal	<input checked="" type="radio"/> No
	<input type="radio"/> Green	<input checked="" type="radio"/> None	
Origin (autopopulated from tags or enter here) *	Species Code Assignment	Brood PIT Tag Click in field before scan.	
wild/natural			

▼ Samples

DNA Sample? *	Scale Sample? *
<input type="radio"/> Yes	<input type="radio"/> Yes
<input checked="" type="radio"/> No	<input checked="" type="radio"/> No

Comment

1 of 1

Count of records

1





# Adult Trapping & Dam Counts

## Prosser Video Counts

frmFISH ENTRY

### FISH TABLE DATA ENTRY

Fish Passage Date				
Ladder				
Spp				
Passage Time			Multiplier	Est. Fk Lgth
Viewer				
Mark Name				

Record: 14 1 of 1 Unfiltered Search



### Adult Fish Passage

#### Date & Ladder Header Page

*Enter data on this page once and do not change. Open & submit a new form for a new date, ladder, or viewer.*

**Passage Month**  
1 through 12  
1

**Passage Day**  
1 through month end  
28

**Passage Year**  
four-digit year greater than 2021  
2022

**Ladder** ✓ \*  
Options: ca, ce, lf, pb, ro, rt, vr1, vr2  
ca

**Viewer** ✓ \*  
Options: F, J, W, Temp  
F

To enter fish data, use arrow on bottom right to go to next page >>

1 of 2



### Adult Fish Passage

#### Fish Data Page

▼ **Fish Data Entry**

Press "+" at bottom to add a fish. Press the checkmark when done to submit.

**Fish Passage Date**  
1/28/22

**Ladder**  
ca

**Species** ✓ \*  
Options:  
1) h/w + a/j + coh/fck/sck/sum/fkco/spp  
2) h/w + sth/sock  
3) brwntr, bulltr, raintr, lamp, smbass  
hsth

**Military Time** \*  
must have two digits before and after colon, eg. 03:25  
03:25

1 of 1

2 of 2

# Juvenile Trapping

- Screwtraps (Yakima Basin) ~5 yr.
- Survey123 Form, rugged tablets
- Pittag entry
- Staff in Wenatchee using laptop, P4 export

Screw Trap Data Entry2

▼ Header

Location Name \*  
▼

Date \*  
Tuesday, April 12, 2022

Initials \*  
▼

Time \*  
2:57 PM

Fishing \*  
☐ Yes ☐ No

Rotating \*  
☐ Yes ☐ No

Air Temp (F)  
▼

Water Temp (F)  
▼

Staff Gage (#.##)  
▼

Efficiency Test \*  
☐ Yes ☐ No

Cloud (%)  
▼

Seconds per 1 final rotation  
▼

Debris Size Diameter (in)  
☒ none ☐ <2" ☐ 2-5" ☐ >5"

Water Clarity (in)  
☐ <6" ☐ 6-12" ☒ >12"

PIT Tag File  
▼

PIT Tag Vial 1  
▼

PIT Tag Vial 2  
▼

▼ Individual Fish Log

Species  
Steelhead / Rainbow

Length (mm)  
▼

Warning: Length out of normal range (is >300mm) or is empty.

Weight (g)  
▼

Smolted  
☐ 1 ☐ 2 ☐ 3

Recap  
☐ Yes ☒ No

Mortality  
☐ Yes ☒ No

PIT Tag (Full String)  
(Click in this field, then scan the tag. Note: Keyboard app must be left open in the background)

PIT Tag (Clipped)  
(appears automatically)

Individual Fish Comments  
(fish condition, mark for efficiency test, other species, etc.)

DNA Slot No.  
▼

Scale Card No.  
▼

1 of 1

▼ Juvenile Bulk Fish Count

Species  
Steelhead / Rainbow

How many? \*  
▼

Comment  
▼

1 of 1

▼ Fish Count Summary

Total Fish Count  
▼

sthd fish count	lamprey fish count	Chinook fish count	coho fish count
▼	0	0	0

General Comments  
▼


HONOR. PROTECT. RESTORE.

Yakama Nation Fisheries



# Juvenile Trapping

<https://dashboard.yakamafish-star.net/dashboard>



HOMEABOUTDASHBOARD

HOME / DASHBOARD / QA / SCREW TRAP CONSOLIDATED FORM

Tip: Hover over the magnifying glass at the top of the table to see filter options. If downloading data, please only download one year at a time to avoid getting bogged down.

New EntryExport to Excel

		Location	Date	Time	Fishing	Fish Count	# Tag	Eff. Recap	Mort	Avg. Len	Avg. Wt	Mort %	Min/Max
			4...		(All)								
▶	Edit	Lower Toppenish	4/9/2022	09:48:00.0...	✓								
▼	Edit	Upper Toppenish	4/9/2022	10:57:00.0...	✓	2	2	0	0	169.00	54.05	0	168/170

Rotating: true

Seconds/Rotation: 15

Pit Tag Vial 1:

Pit Tag Vial 2:

Initials: Jr

General Comments:

Efficiency Test: false

Efficiency Test No:

Water Temp: 48

Air Temp: 50

Bulk Count: 0

Debris Size Diameter: <2

Water Clarity: >12

Cloud Percentage:

Staff Gage:

Species	Length	Weight	Smolted	Recap	Mortality	PITTag No	Individual Fi...	DNAVial No	Scale Card ...	Condition F...
steelhead	168	52.6	2	<input type="checkbox"/>	<input type="checkbox"/>	3DD.0077D62E06		19	4	1.10932269...
steelhead	170	55.5	3	<input type="checkbox"/>	<input type="checkbox"/>	3DD.0077D5F9C6		18	4	1.12965601...








# Juvenile Trapping

<https://dashboard.yakamafish-star.net/dashboard>



HOME

ABOUT ▾

DASHBOARD 

[HOME](#) / [DASHBOARD](#) / [QA](#) / JUVENILE ABUNDANCE ESTIMATE



## Steelhead Juvenile Abundance Estimates

Location:

Upper Toppenish ▾

Go

Export

Show 50 ▾ entries

YEAR	NUMBER CAPTURED	NUMBER CAPTURED ADJUSTED	NUMBER PIT TAGGED	SEASON (DAYS)	DAYS NOT OPERATING	% OF SEASON NOT OPERATED	NUMBER RELEASED	NUMBER RECAPTURED	POOLED EFFICIENCY	POOLED ESTIMATE	OUTMIGRANT ABUNDANCE ESTIMATE	ESTIMATED STANDARD ERROR	CV	95% CI + OR -	PRODUCTION
2016 - 2017	659	659	605	249	9	3.61	604	46	7.62	8653	10464	2133	20.38	4180.68	137.5
2017 - 2018	1524	1524	1459	240	0	0	1361	102	7.49	8643	25418	3208	12.62	6287.68	334.01
2018 - 2019	1819	1831	1296	238	6	2.94	1270	158	12.44		15102	13554	8.97	2653.84	198.45
2019 - 2020	1576		1335	157	0	0	1154	99	8.58						
2020 - 2021	1387		1124	204	2	0.98	730	63	8.63						
2021 -	365		340	148	0	0	264	17	6.44						

# **Yakama Nation Fisheries**

## **STAR**

### **Information Management System**

*Data Capture, Management and Sharing*

*Michelle Steg-Geltner*

*Status and Trends Reporting Coordinator*

*4.11.2022*

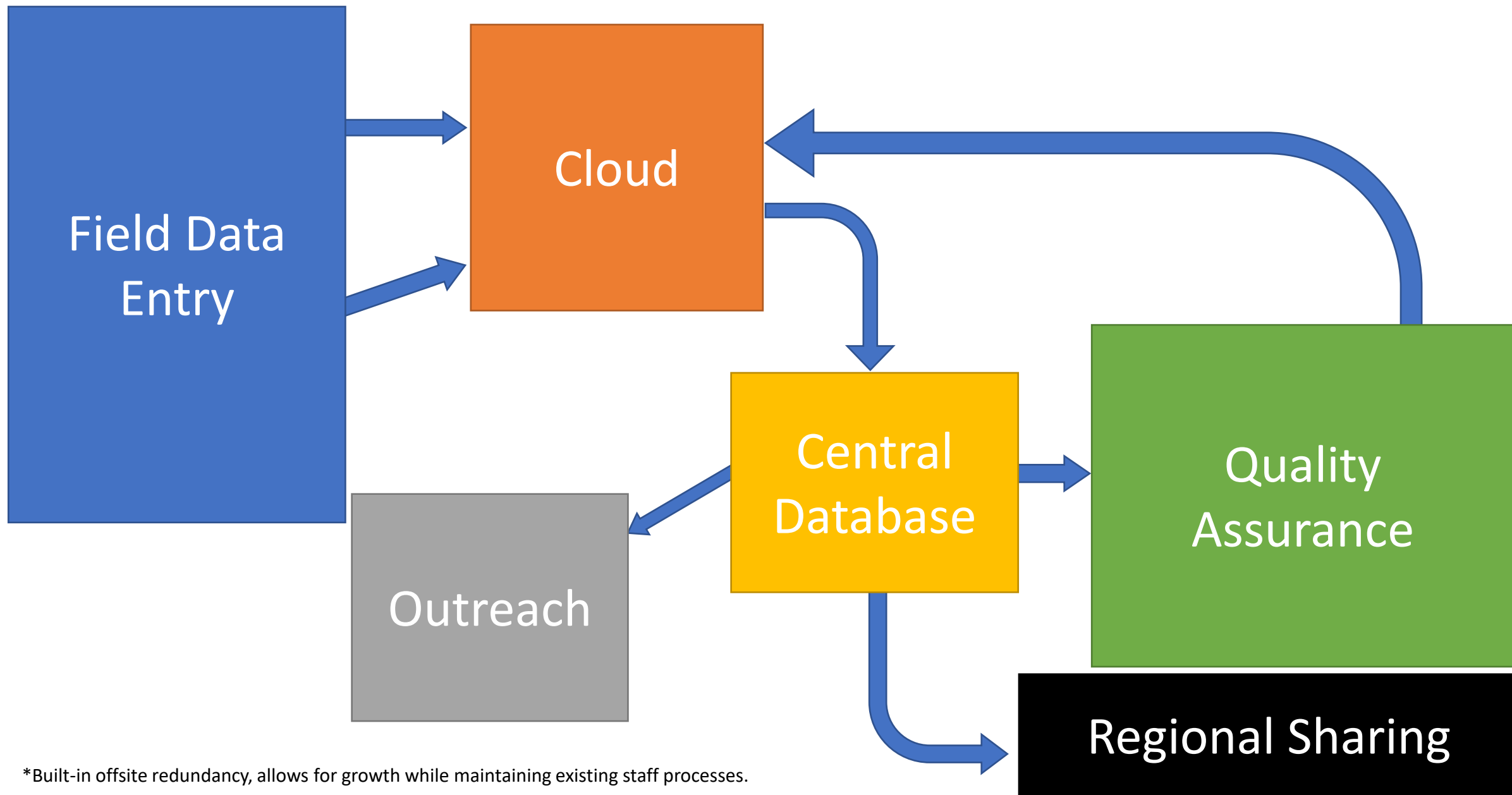
## ***Driving Factors:***

- 1. Increased demand on staff time to report in certain formats***
- 2. Increased demand on projects to share data (Need for Efficiency)***
- 3. Need for internal consolidation, review, sharing, documenting progress***
- 4. Ability to pass (simplified) processes on to new staff***
- 5. Usability of legacy data***



# Field Data Workflow

End-to-end solution with ESRI tools (Survey 123/ArcGIS online) and YN's STAR Project



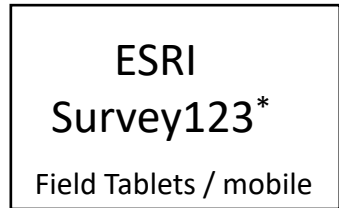
\*Built-in offsite redundancy, allows for growth while maintaining existing staff processes.



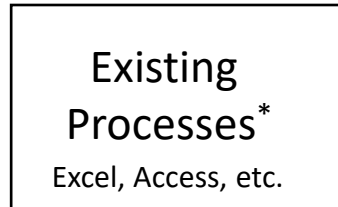
# Field Data Workflow

End-to-end solution with ESRI tools (Survey 123/ArcGIS online) and YN's STAR Project

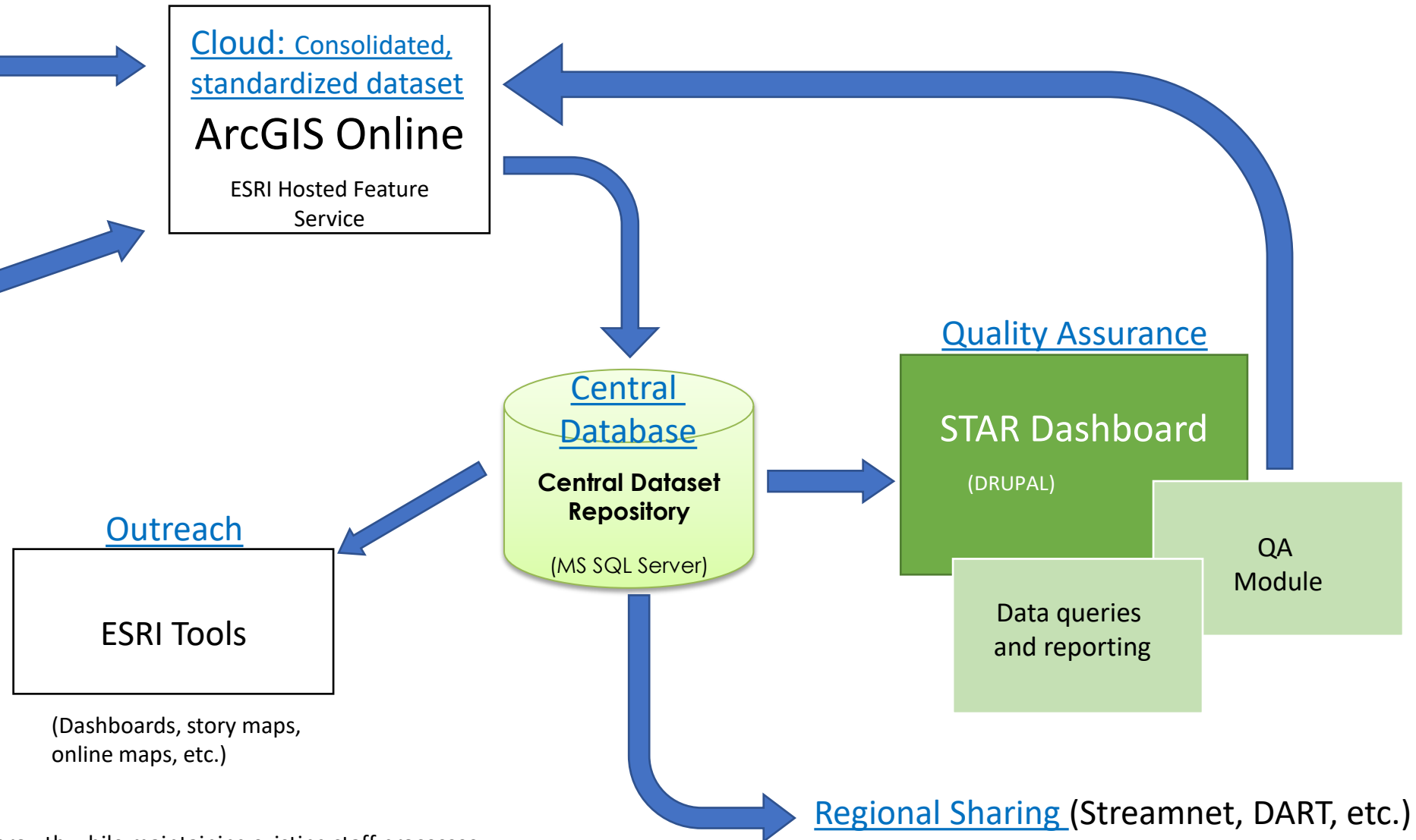
Yakima screw trap, UC habitat/  
snorkel, lamprey surveys.



## Field Data Entry



(Nelson Springs) Dam Counts,  
Roza Trap Samples,  
Klickitat Counts, etc.  
Legacy datasets also.



\*Built-in offsite redundancy, allows for growth while maintaining existing staff processes.



# **Our Need for Our Approach**

- 1. No top-down implementation, siloed legacy***
- 2. Need for project by project implementation, demonstration of advantages***
- 3. Lacking technical staff***
- 4. Prioritization of our priorities (individualized outputs to serve needs)***
- 5. Need for self-supportable, in-house tools and systems***
- 6. Start in-house, then share regionally***





# Advantages: Tailored to Staff Needs E.g. UC Kelt Reconditioning

UC Kelt PreRelease

▼ Header

Date \*  

Tuesday, April 12, 2022

▼ Individual Fish Log

▼ Pre-release fish (repeat). Note: when you click "+" you are adding a fish. You do not need to click "+" after the last fish.

PIT Tag (Full String) \*  
(Click in this field, then scan the tag. Note: Keyboard app must be left open in the background)

PIT Tag (Clipped)  
(appears automatically)

YN Floy Tag

Tank  

☐ 1

☐ 2

☐ 3

☐ 4

Fork Length (cm)

Weight (g)

POH (cm)

Fat (%)

Blood Sample ID

Comments

1 of 1

UC Kelt Mortality

▼ Individual Fish Log

▼ Deceased Fish (repeat). Note: when you click "+" you are adding a fish. You do not need to click "+" after the last fish.

Date \*  

Tuesday, April 12, 2022

PIT Tag (Full String) \*  
(Click in this field, then scan the tag. Note: Keyboard app must be left open in the background)

PIT Tag (Clipped)  
(appears automatically)

Cause

Tank  

☐ 1

☐ 2

☐ 3

☐ 4

Eggs Retained

Copepods

UCKelt Intake

▼ Header

Date  

Tuesday, April 12, 2022

Initials

Event Site  

MSKF

Location of Capture  

☐ MSKF

☐ WNFH

☐ RI

☐ BVR

☐ HCS

☐ LBC

☐ MSH

☐ SFG

Collection Method  

☐ Spawn

☐ Dam

☐ Trap

☐ Skip

▼ Individual Fish Log

▼ Captured fish (repeat). Note: when you click "+" you are adding a fish. You do not need to click "+" after the last fish.

Fork Length (cm)

POH (cm)

Weight (g)

Sex  

☐ M

☒ F

Event Type  

☐ Recapture

☒ Mark

PIT Tag (Full String) \*Required\*  
(Click in this field, then scan the tag. Note: Keyboard app must be left open in the background)

Fat (%)

PIT Tag (Clipped)  
(appears automatically)

Floy Tag

Tank  

☐ 1

☐ 2

☐ 3

☐ 4

Copepods

Comments

1 of 1

UCKelt Maturation

▼ Individual Fish Log

▼ Fish status (repeat). Note: when you click "+" you are adding a fish. You do not need to click "+" after the last fish.

Date \*  

Tuesday, April 12, 2022

PIT Tag (Full String) \*  
(Click in this field, then scan the tag. Note: Keyboard app must be left open in the background)

PIT Tag (Clipped)  
(appears automatically)

Blood Sample ID

E2 (pg/ml)

Maturation Status  

☐ Maturing

☐ Non-Maturing

☐ Borderline

Suggested Action  

☐ Release

☐ Evaluate at Release

☐ Hold

Release Location:

Comments

1 of 1

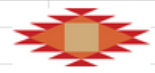


UC Kelt Consolidated

New Intake New Mort New Maturity New Pre-Release Export to Excel

PITTAG	Latest Form	Form Date	Tank	Sex	Length (cm)	Weight (g)	Maturity Status	Suggested Action	Mort	Rel/Mort Date
3DA.1A19B20250	INTAKE	05/05/2021	1	F	83	4594			N	
3DA.1A19B203B8	MORTALITY	06/16/2021	2	F	71	3072			Y	06/16/2021
3DA.1A19B20437	PRERELEASE	09/21/2021	1	F	73	4030	maturing	release	N	09/21/2021

Transaction Type	Event Date	Tank	Sex	Length (cm)	Weight (g)	POH (cm)	Event Type	Event Site	Method	Floy Tag	YN Floy Tag	Location
INTAKE	05/05/2021	1	F	72	3034	60	Mark	MSKF		14		wnfh
MATURATION	09/21/2021											
PRERELEASE	09/21/2021	1		73	4030	59				454		



Honor. Protect. Restore.

Export to Excel

Kelt Roster Report

Date from: Date to: Tank: All, 1,2,3,4

Tank	PIT Tag	Floy Tag	Intake Date	Date of Last activity	Fork Length (cm)	Weight (g)	Sex	Fat %
1	3DA.1A19B203B8	64	4/21/2021		71	3072	F	0.9
1	3DA.1A19B20250	1	4/21/2021		83	4594	F	0.7
1	3DA.1A19B20B8C	119	4/14/2021		72	3124	F	0.8
1	3DA.1A19B20D58	73	4/7/2021		67	2264	F	1
Tank 1 Total #:		4	Most Recent Intake Date:		4/21/2021	Total Weight:		13054
2								
2								
2								
2								
Tank 2 Total #:		0	Most Recent Intake Date:			Total Weight:		
3	3DA.1A19B205E8	7	04/28/2021		60	2780	F	
3	3DA.1A19B20B39	82	5/5/2021		68	2298	F	0
Tank 3 Total #:		2	Most Recent Intake Date:		5/5/2021	Total Weight:		5078
4								
4								
4								
4								
Tank 4 Total #:		0	Most Recent Intake Date:			Total Weight:		
Combined total:		6	Most Recent Intake Date:		5/5/2021	Total Weight:		18132



## **Areas Not Covered:**

**Not a comprehensive data warehouse.**

**Not implemented across all projects.**

**Targeted just for those who need help with a specific process.**



# From previous presentation...

	CDMS	STAR
Staff Required	2-3 (data coordinator / facilitator, system administrator, programmer)	2-3 (data coordinator / facilitator, system administrator, programmer)
System Requirements	4 servers (web, database, ArcGIS, authentication)	2 servers (web, database)
Technology	AngularJS, Rest Services ASP.net Web API (.Net 4.0), MS SQL Server, ArcGIS Enterprise	Drupal, PHP, MS SQL Server, MySQL, REST Services ASP.net Web API (.Net 4.0) ArcGIS online
Open Source? (developed by)	Yes (Umatilla Tribe – Ken Burcham)	Yes (Drupal a content management system (CMS) used by many – QW configures custom modules based on YN needs )
Ability to store datasets? (how?)	Yes (manual setup)	Yes (manual setup)
Ability to QA datasets	Yes	Yes
Ability to share data regionally (e.g. CAX)	(individuals are working developing the ability)	Yes
Field data capture	Excel? MS Access? (Manual)	Survey 123, MS Access, Excel
Field data automated to central system?	(individuals are working on ability to load, though not automated)	Yes. (and can edit/add a record in the field, validation)
Reports	Report server	Report server
Data query available to public/staff	yes	yes
Years in development	7+	4+

# From previous presentation...

Pros	Cons?
Hybrid, or CDMS	
Would be on same system as CTUIR, Nez Perce, CRITFC <i>may</i> be able to provide some support.	Is there a reason why we should be on the same system as them? We can't count on CRITFC support.
CDMS may be a better catalogue, has more metadata. Has track changes inherent in the system.	Still requires coding to get datasets into the system, as well as to develop queries e.g. for tracked changes, and to share.
	Would need more resources, technical staff to host and maintain. Combining systems would be complicated
	Transferring over to/developing this system would take time away from making other progress (set us back a year or two). Loss of momentum.
	Intranet based (maybe con?)
STAR system	
Friendly user interface, tools specifically for unique dataset/ user needs	Similar to CDMS, does also need coder/developer to add/modify to this (sql, java?).
Is compatible with yakamafish website, should be easier to manage, maintain for our staff	Although backend does still need slq programming
Has tools in place to flow data into and out of it.	Continuing development needed (of course)

# End-to-End Data Capture, Consolidation, and Sharing

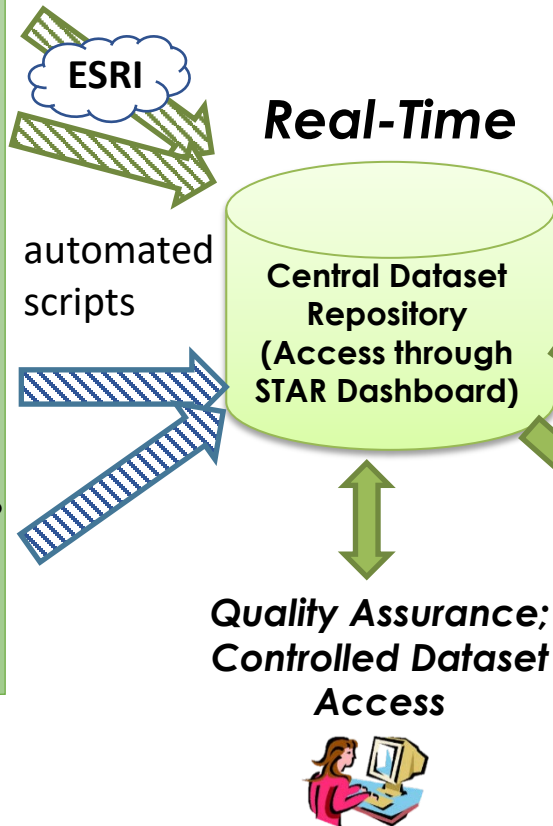
## Data Capture

Survey123  
ArcGIS Online

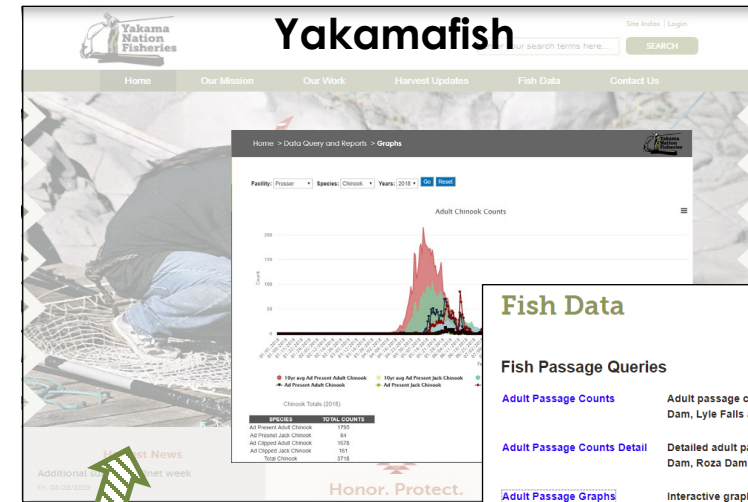
- Screw traps
- UC habitat, fish surveys
- Lamprey & habitat surveys
- Dam counts
- Trap Samples
- Hatchery tagging & sampling
- Harvest monitoring?

Existing Processes  
(Excel, Access, etc.)

**Field Data**



Fish data is displayed for public view, sharing



Embedded

## Fish Data

### Fish Passage Queries

#### Adult Passage Counts

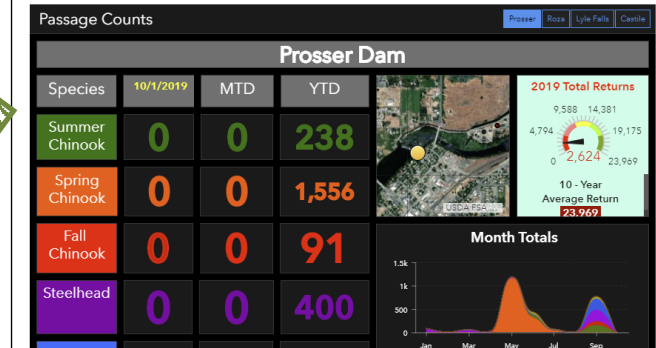
Adult passage count query for Prosser Dam, Roza Dam, Lyle Falls and Castile Falls

#### Adult Passage Counts Detail

Detailed adult passage count query for Prosser Dam, Roza Dam, Lyle Falls and Castile Falls

#### Adult Passage Graphs

Interactive graphs of annual adult passage for Prosser Dam, Roza Dam, Lyle Falls and Castile Falls



**PUSH** data to external partners,  
or they retrieve from us.  
(Streamnet, CAX, DART)

Key

Partly or fully automated  
**Green** Completed  
**Blue** Some in-progress

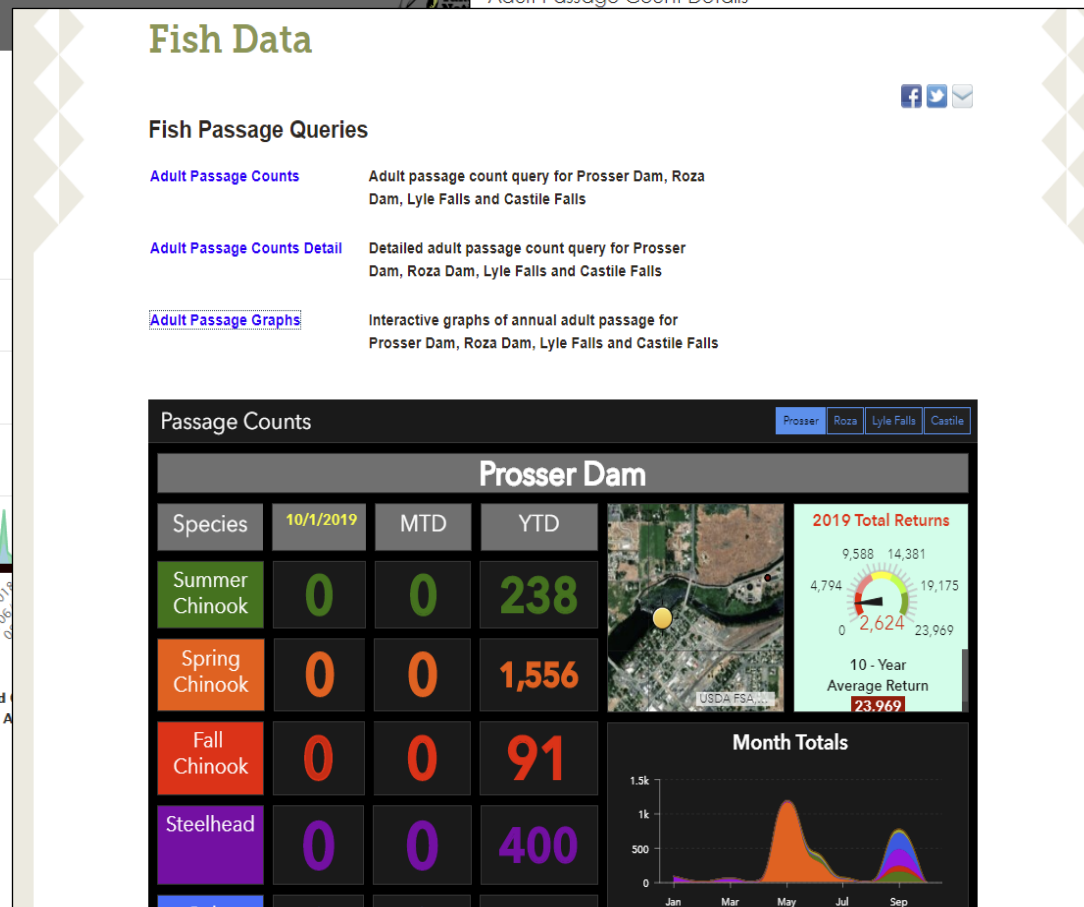
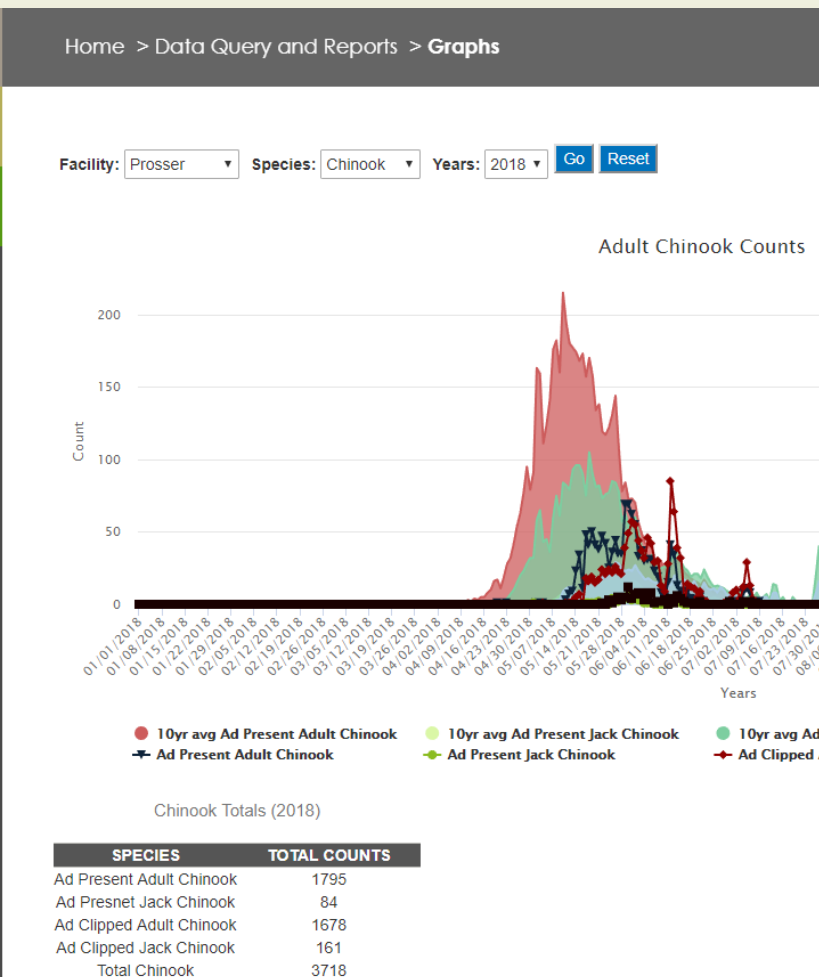
HONOR. PROTECT. RESTORE.







# Data Display, Query, and Sharing Tools: **Public Access**



ickitat River RM 2.4). With the exception of some fish that are collected for hatchery broodstock or after sampling. The counts do not include fish that ascended the natural waterfalls or fish that ing fish counting that occurs as fish are returned directly to the fishway without handling or

		TOTAL SUMMER CHINOOK				TOTAL FALL CHINOOK			
SUM	WJSUM	HASUM	HUSUM	WAFCK	WJFCK	HAFCK	HJFCK	UAFCK	UAFCK
-	-	-	-	-	-	-	-	-	-
-	-	-	-	56	56	197	46	-	355
-	-	-	-	-	-	-	-	-	-
-	-	-	-	18	6	21	1	-	46
-	-	-	-	8	3	22	7	-	40
-	-	-	-	28	17	62	14	-	121
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	3	3	2	-	8
-	-	-	-	2	1	4	10	38	55
-	-	-	-	-	7	4	1	-	12
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	112	93	313	81	38	637

hafck - marked adult fall chinook, hafcko - marked adult fall chinook or, hasck - marked adult spring chinook, hasum - marked adult summer chinook, hjfck - marked jack fall chinook, hjfcko - marked jack fall chinook or, hjsck - marked jack spring chinook, hjsum - marked jack summer chinook, uafck - unknown adult fall chinook, uafcko - unknown adult fall chinook or, uasck - unknown adult spring chinook, ujfcko - unknown jack fall chinook or c, ujsck - unknown jack spring chinook, wafck - unmarked adult fall chinook, wafcko - unmarked adult fall chinook or coh, wasck - unmarked adult spring chinook, wasum - unmarked adult summer, wjck - unmarked jack fall chinook, wjckco - unmarked jack fall chinook or coho, wjsck - unmarked jack spring chinook, wjsum - unmarked jack summer Chinook