A topographic map of Northern California counties, including Del Norte, Humboldt, Trinity, Siskiyou, Tehama, Shasta, Modoc, Lassen, and Mendocino. The map is overlaid with the logo of the Department of Fish and Game, which features a mountain range, a rainbow trout, and a California quail. The text "Department of Fish and Game" is written in a large, black, serif font, curving around the central logo.

Department of Fish and Game

Scott Watershed Informational Forum
February 17, 2022

2021-22 Drought Response

Joe Croteau, Klamath Watershed Program Manager

Status of Coho and Chinook

- Southern Oregon/Northern California Coast Evolutionary Significant Unit of Coho Salmon
 - Listed as Threatened under the Federal and State Endangered Species Acts
 - 2014 Recovery Plan (NOAA Fisheries)
 - Extinction risk of Coho Salmon in the Shasta River is high
 - Extinction risk of Coho Salmon in the Scott River is moderate
 - Key Recovery Strategies for Shasta River
 - Reduce water temperature and increase dissolved oxygen in upper basin
 - Reduce warm tailwater inputs
 - Key Recovery Actions for the Scott River
 - Increase instream flows
 - Improve irrigation practices
- Chinook Salmon have similar life histories, experience similar challenges, and populations are trending downward.

2021 Drought Response

- Evaluate Conditions
- Develop drought strategies

- Interagency Coordination
- Initiate 2021 drought planning

2020

Q4

Q1

Q2

Q3

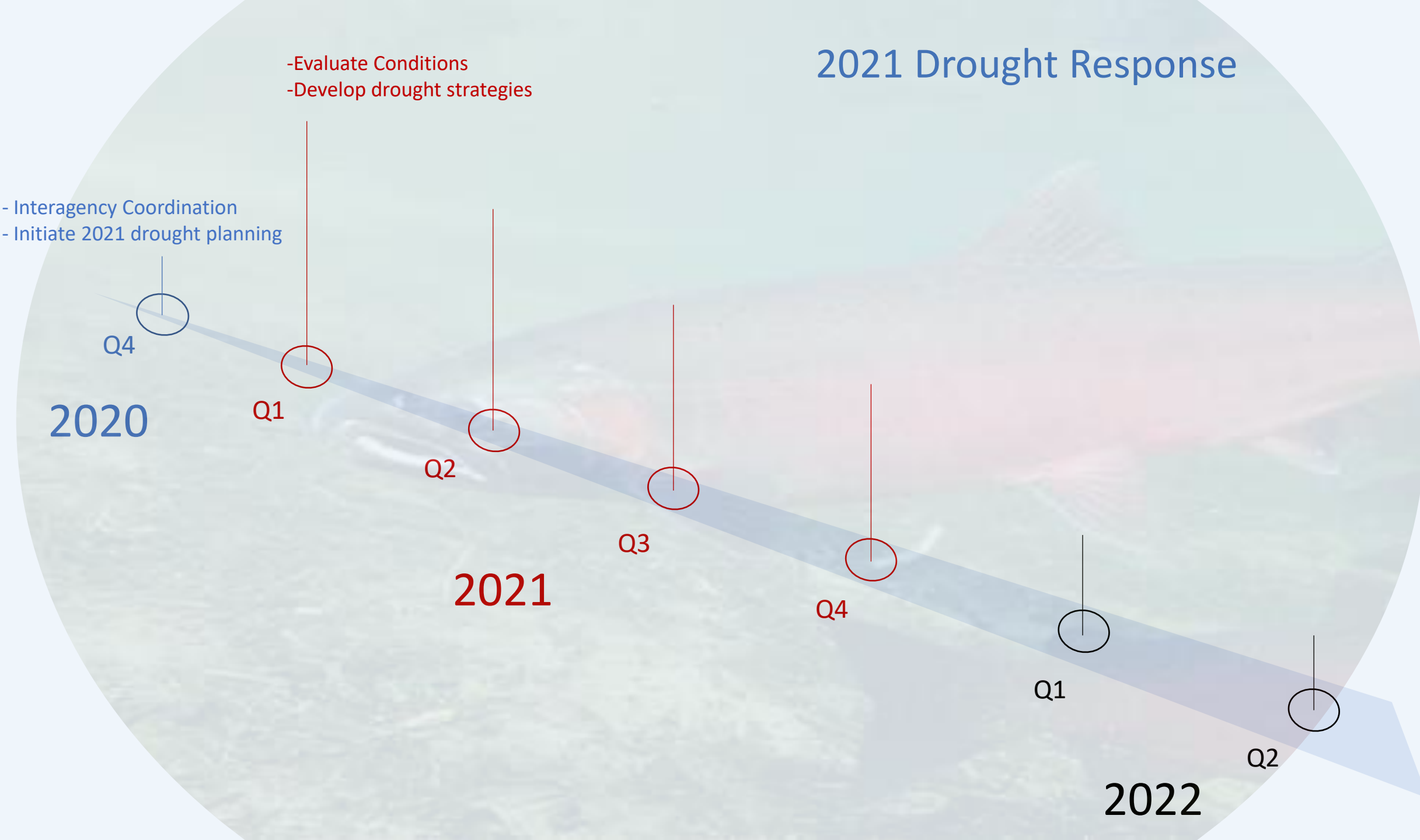
Q4

Q1

Q2

2021

2022



Chinook Migration Response

- Percent of Chinook Salmon migration estimated upstream of SRFCF and average daily flows (cfs) at USGS Fort Jones gage (11519500) for half month periods from September 1 - November 30 annually from 2008-2020.

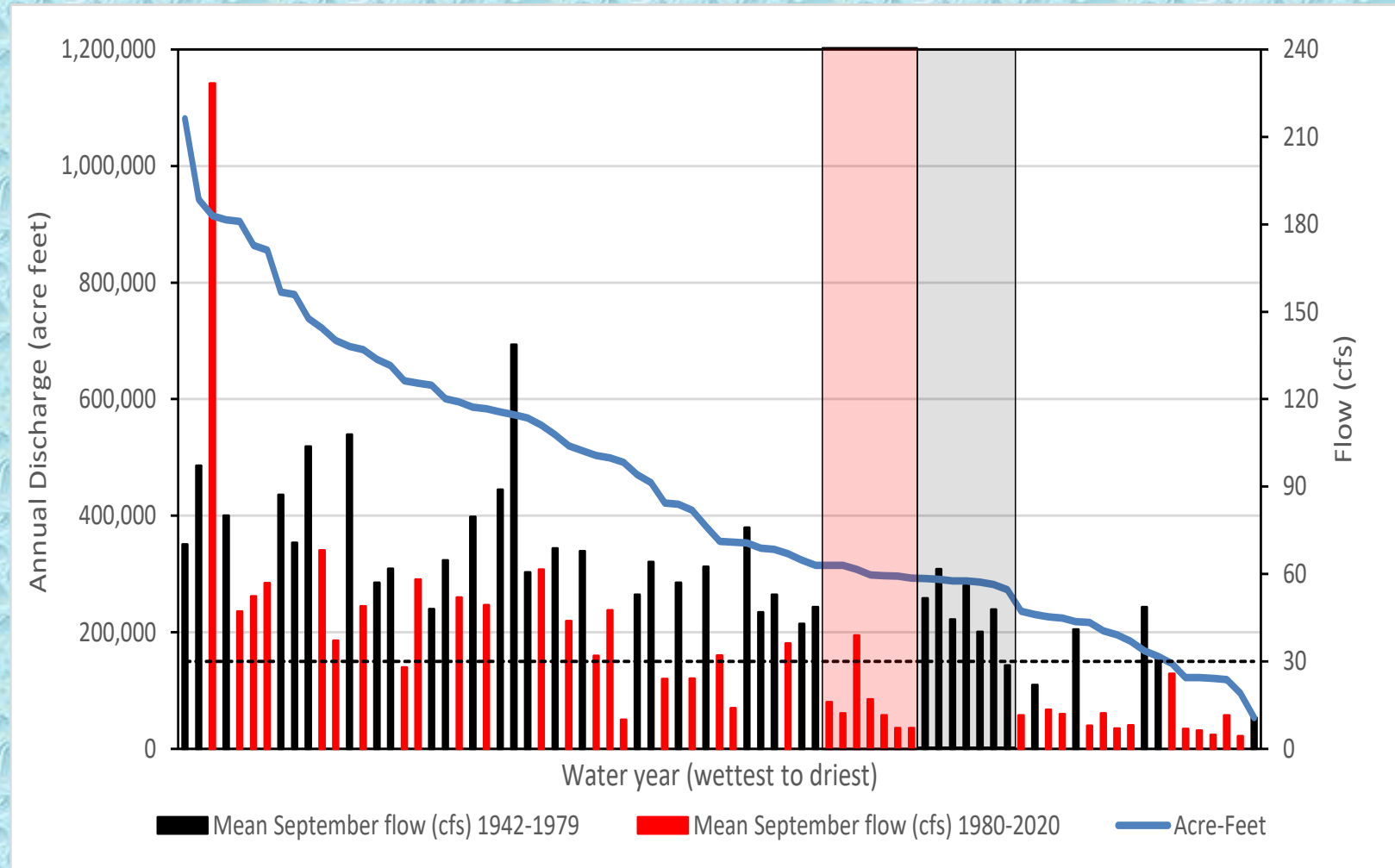
Run Year	Chinook Upstream of Counting Station	Average Daily Flow (cfs)					
		Sep 1- Sep 15	Sep 16-Sep 30	Oct 1- Oct 15	Oct 16 - Oct 31	Nov 1 - Nov 15	Nov 16 - Nov 30
2008	69%	15	19	33	41	159	122
2009	54%	7	7	10	25	37	59
2010	89%	28	45	49	199	409	287
2011	82%	58	66	88	94	95	111
2012	87%	10	15	23	37	56	223
2013	73%	7	17	44	46	47	54
2014	76%	7	7	7	51	72	222
2015	18%	7	7	6	6	7	8
2016	76%	11	9	22	554	534	495
2017	88%	45	59	62	69	94	541
2018	32%	8	8	10	15	22	53
2019	74%	15	34	45	52	56	56
2020	31%	6	7	7	7	9	16

Mean September Flows

pre and post 1980

Scott River annual flow (acre-feet) measured at USGS Fort Jones gage (11519500) for each water year ranked from wettest to driest from 1942-2020 (blue line). Mean September flows (cfs) for corresponding water years are plotted as red (1980-2020) and black (1942-1979) bars. For reference, a dashed black line has been placed at 30 cfs. Red and black highlighted sections show 14 years with very similar amounts of annual flow (seven years from each time period) and very different mean September flows.

Scott River flow and September Flows



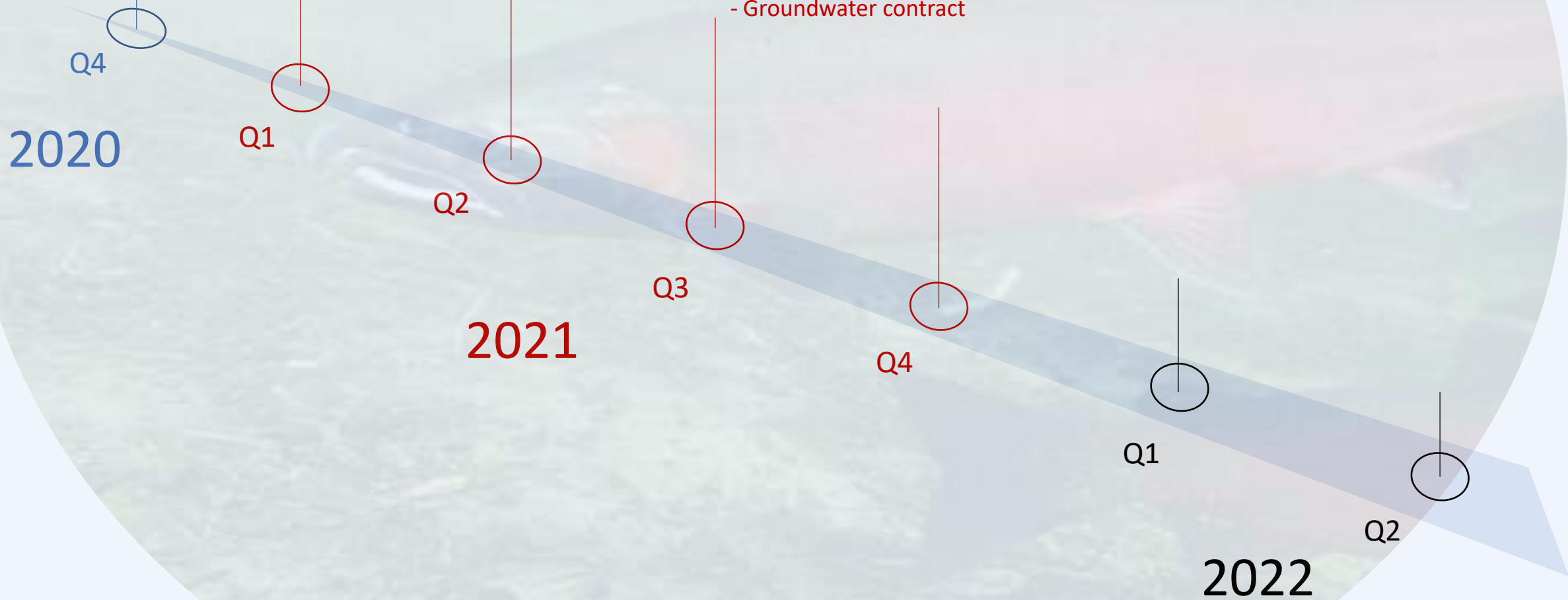
2021 Drought Response

- Evaluate Conditions
- Develop drought strategies

- CDFW transmits flow setting request to SWB
- Governor's drought proclamation
- CDFW transmits emergency flow rec's to SWB

- SWB Workshops
- SWB Vote and OAL Approval
- Groundwater contract

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Q4

2020

Q1

Q2

2021

Q3

Q4

Q1

2022

Q2

Where Did Scott River Rec's Come From

Review of Scott River adjudication and Klamath National Forest Right,

CDFG 1974 – Stream flow needs for Anadromous Salmonids in the Scott River,

Division of Water Rights 1975 – Hydrogeologic Conditions in the Scott Valley,

Correspondence between CDFG and SWRCB in the 1970's leading up to the 1980 Decree,

Scott River Adult Coho Spawning Ground Surveys,

Yurok 2015_Evaluation of Anadromous Fish Flow Needs,

2020 field notes comparing fall flows to adult migration,

2020 CDFW juvenile outmigration and annual reports,

Attachment 1 of our May 3 correspondence to the SWRCB (2017 Flow Study),

Attachment 2 of our May 3 correspondence to SWRCB (Internal memo), and

In consultation with CDFW subject matter experts.

What Does Bare Minimum Mean

Avoiding the extinction vortex

- Maintaining genetic diversity/viability
- Minimizing population level impacts from catastrophic events such as disease outbreaks, severe drought, poor ocean conditions, etc.
- Maintain life history diversity (accommodating late and early spawners, etc.)

Maintaining sufficient stocks

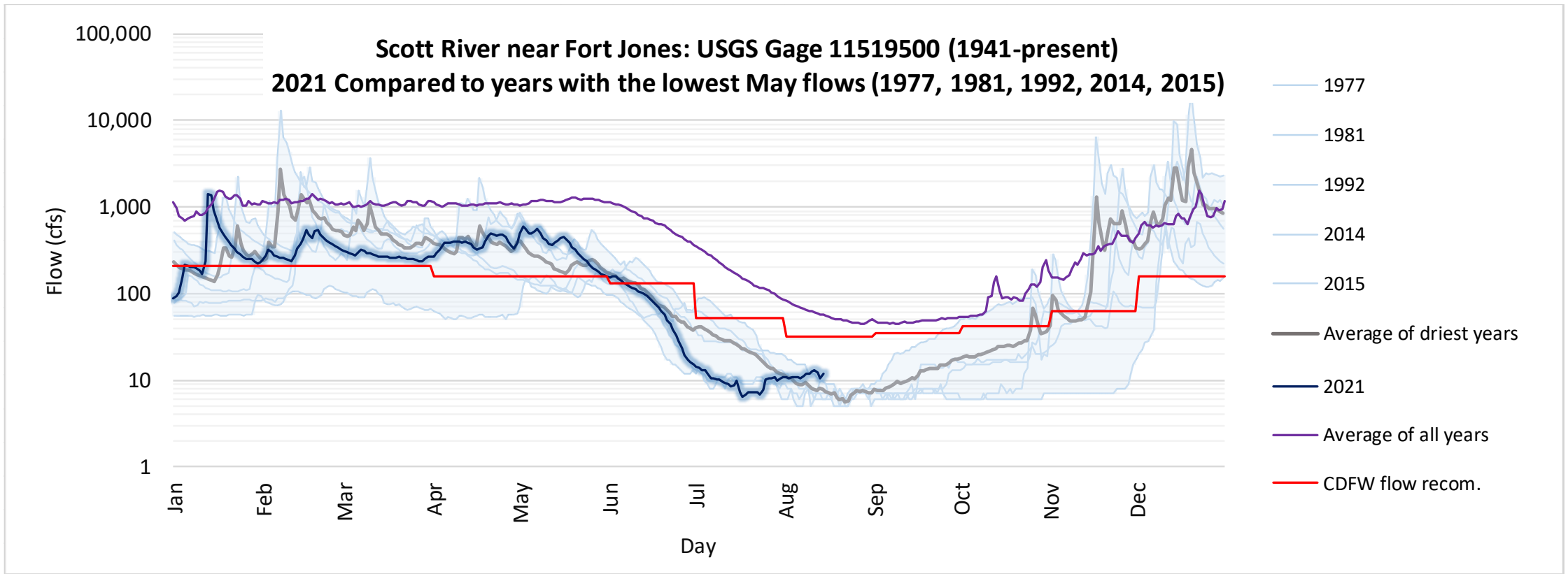
- Provide sport, commercial and tribal fishery opportunity
- Increase marine derived nutrients to benefit entire ecosystem

Every cfs matters

- Access to habitat
- Mitigates temperature impacts
- Provide habitat for riparian and in- stream flora and fauna including aquatic invertebrates (salmonid food)

2021 Drought Emergency Recommendations, Scott River, Fort Jones Gage

- Comparison of recommended flows vs:
 - Impaired average of driest years
 - Impaired average of all years
 - 2021 flows



Scott River Reach 9 Groundwater Contract

A response to 2021 Governor's drought proclamation

Contracted on Reach 9 reflecting on 2020 challenges

Groundwater forbearance on three ranches from August 1 to December 1

Price was set on an estimate of lost commodities

Commitment to implementation and effectiveness monitoring

Contract in and of itself did not influence local hay prices

Contact information

Fort Jones Gage

Oct 4 +13"

Oct 4 +21"

Oct 4 +4.25"

Fort Jones

Google Earth

41°37'41.18" N 122°55'01.12" W elev 2687 ft eye alt 10.90 mi

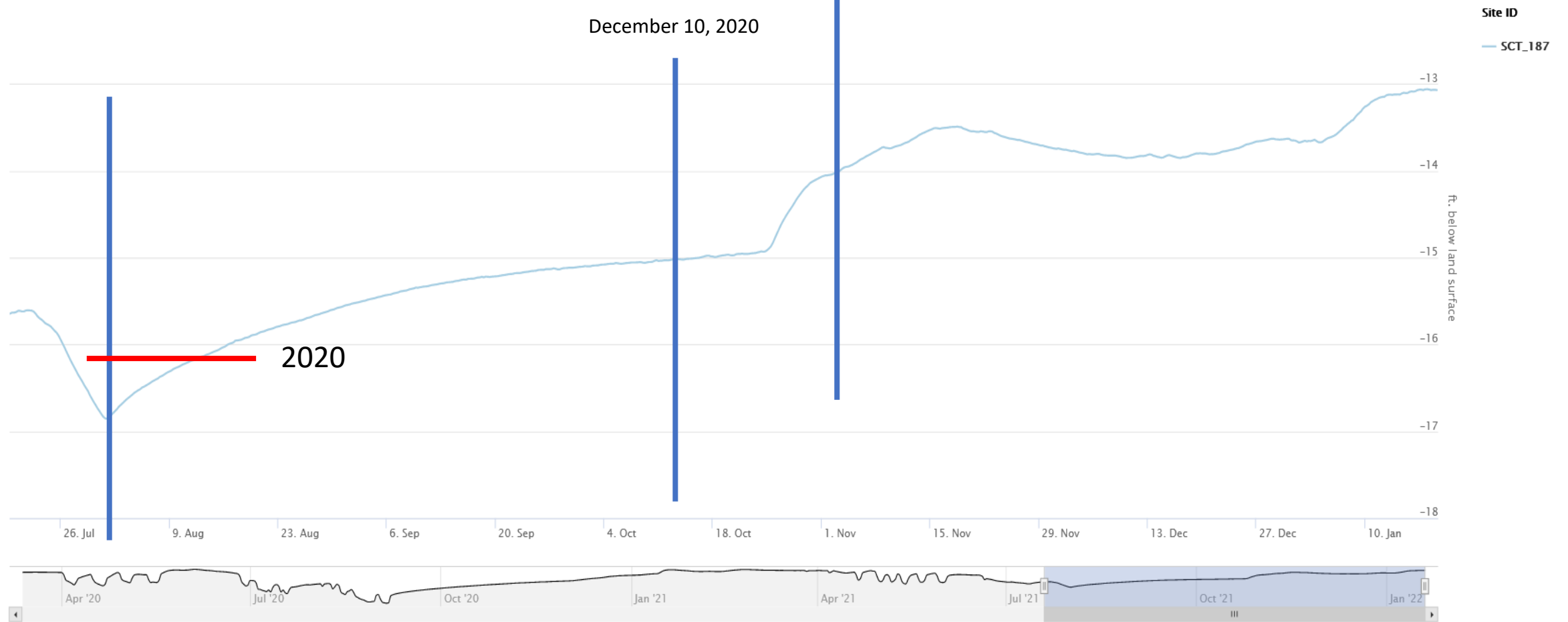


Groundwater level, last updated 2022-01-19 10:51:33 PST

January 6, 2021

Zoom 1m 3m 6m YTD 1y All

From Jul 19, 2021 To Jan 19, 2022



These data are provisional and subject to change. Values may be summarized to hourly or daily frequency, but 15 minute frequency data is always available via download in the [Data tab](#).

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- Groundwater contract

- Implementation monitoring
- Monitor adult salmon response
- Adjustment to Shasta winter flows

- Interagency Coordination
- Initiate 2021 drought planning

2020

2021

2022

Q4

Q1

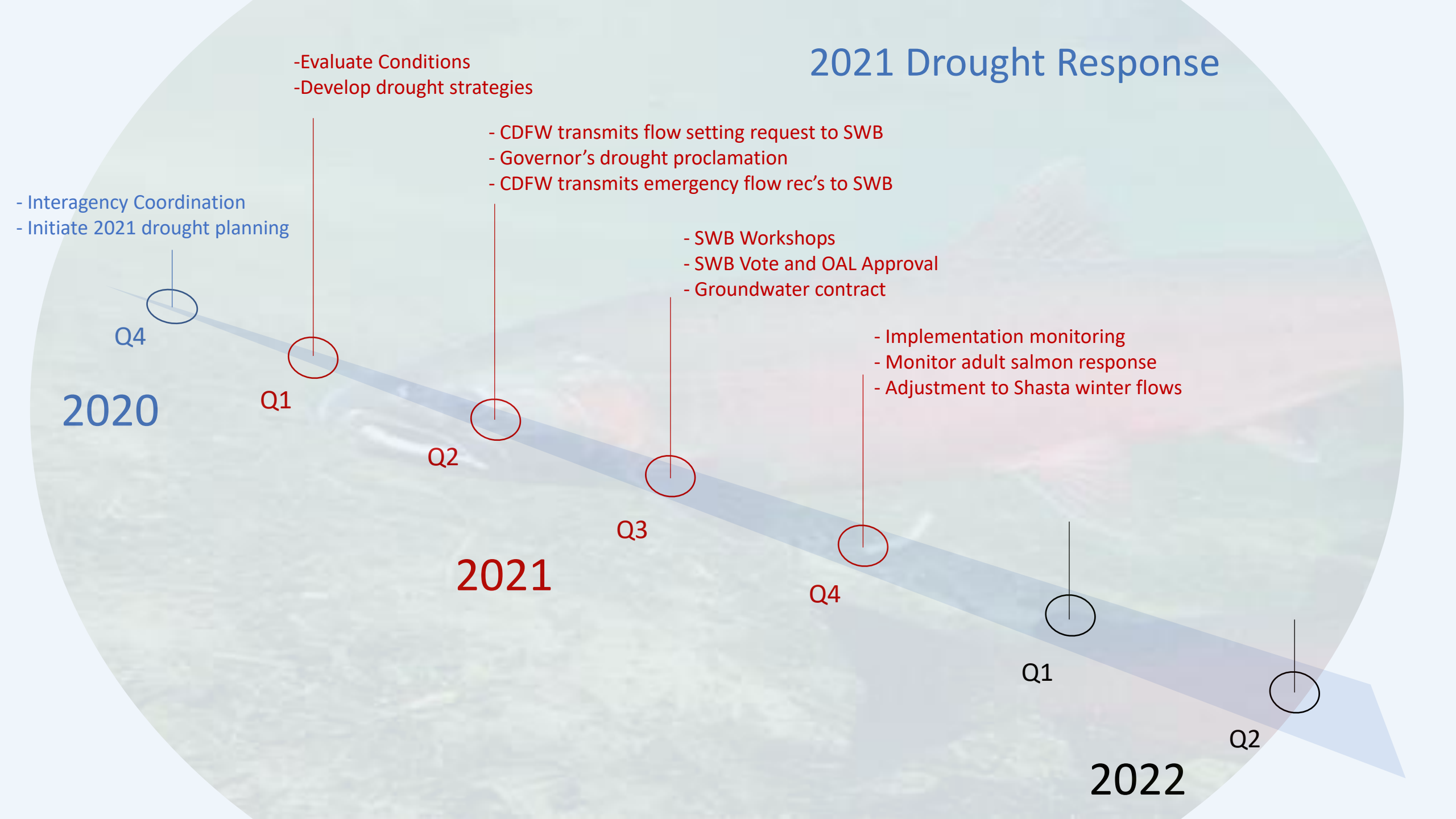
Q2

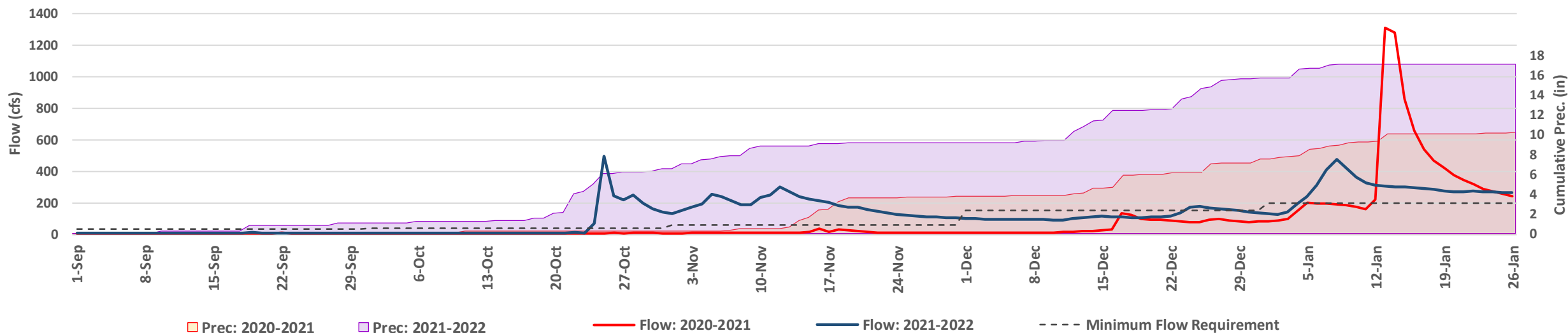
Q3

Q4

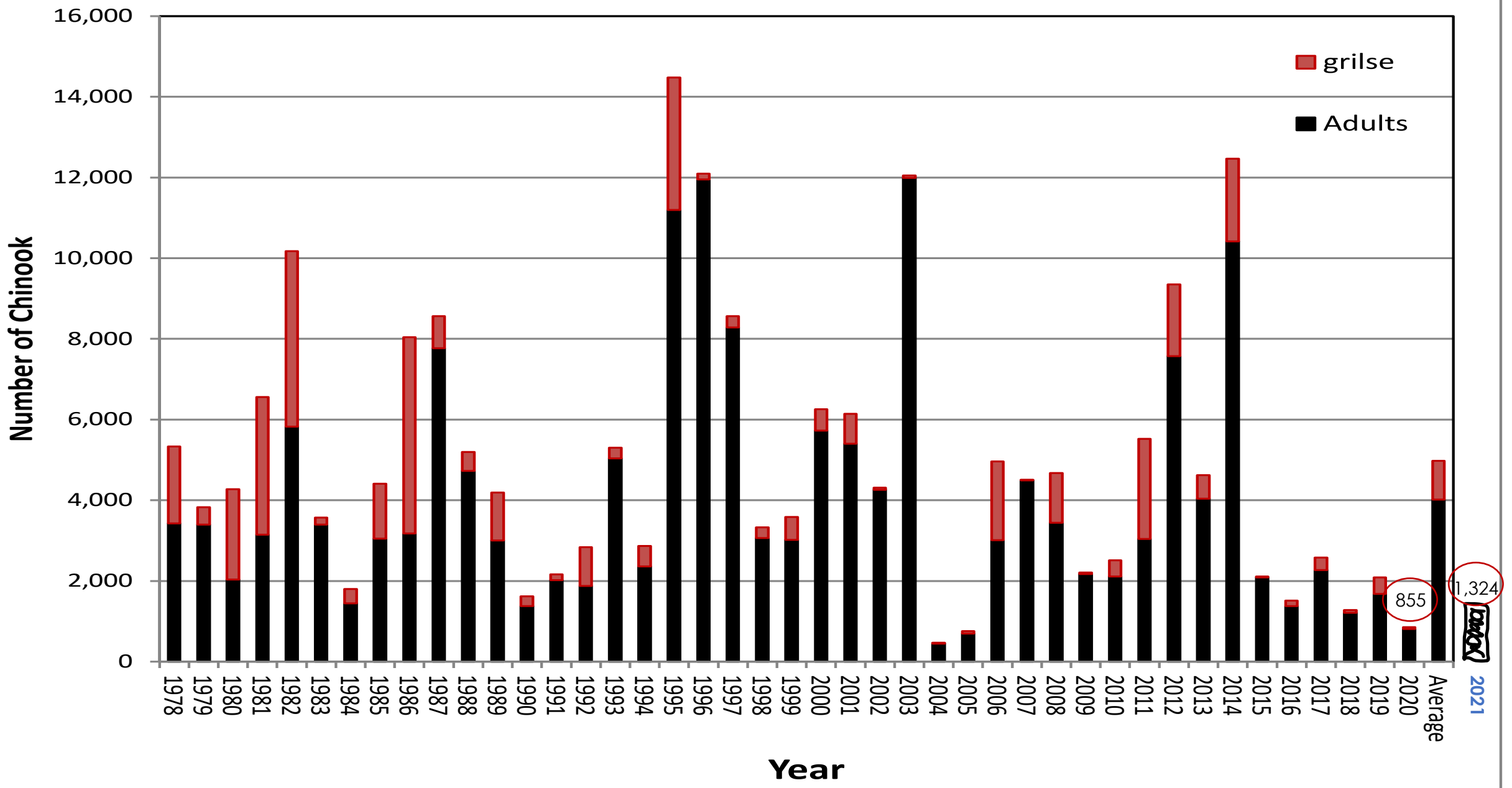
Q1

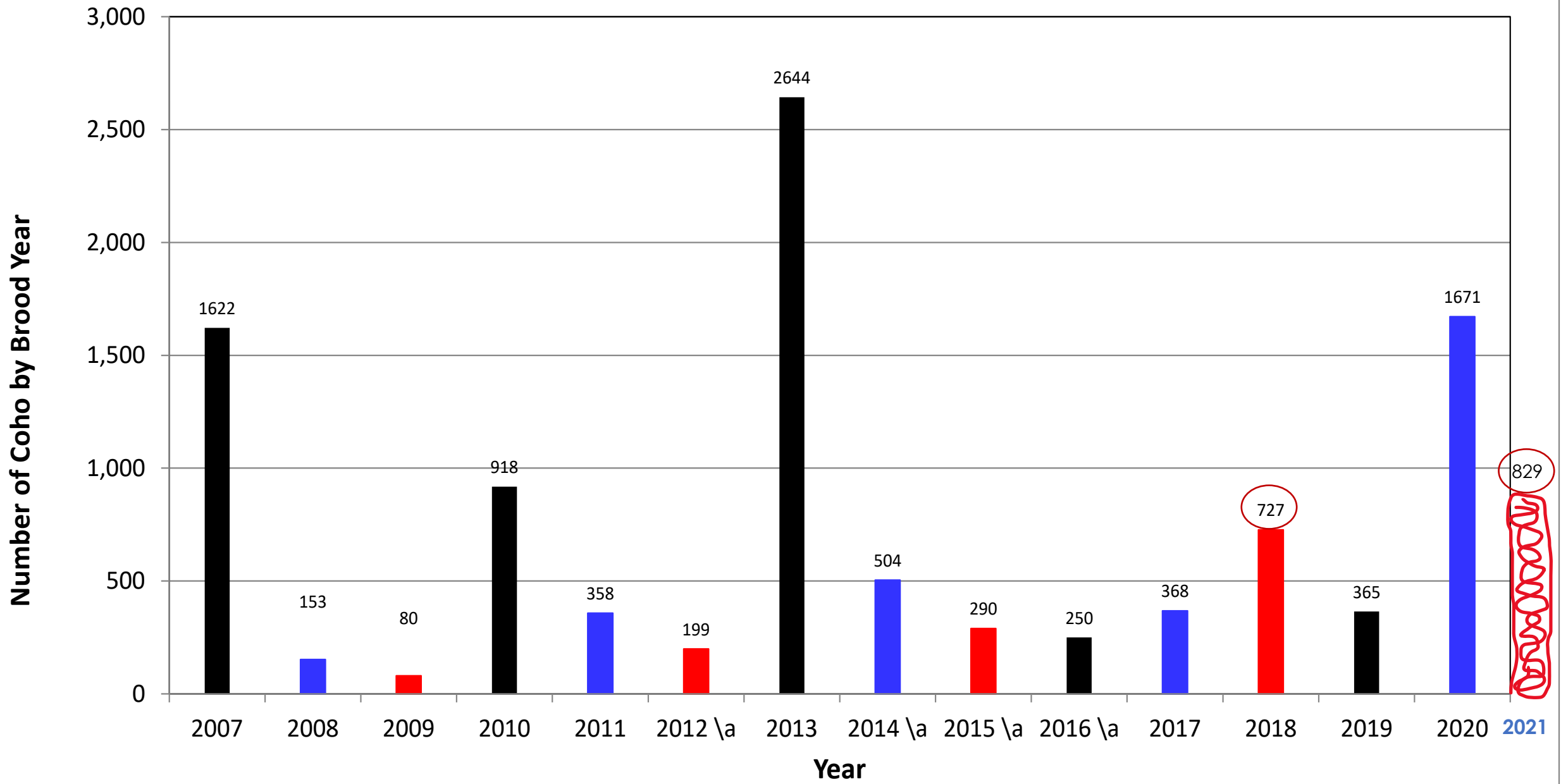
Q2





Cumulative Precipitation (in) and flow (cfs) at USGS **Scott River** nr Fort Jones gage in the period of September through January of water years 2020-2021, and 2021-2022. [flow data reference: USGS; precipitation data reference: PRISM Climate Group, Oregon State University. Precipitation is estimated at the location of USGS gage (with the assumption that it represents the average rainfall of the Scott River watershed)]





/a Abundance affected by early removal of the counting station which may have resulted in under counts of coho in footnoted years.

2021 Drought Response

- Interagency Coordination
- Initiate 2021 drought planning

Q4

2020

Q1

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Q2

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Q3

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Q4

- Implementation monitoring
- Monitor adult salmon response
- Adjustment to Shasta winter flows

2021

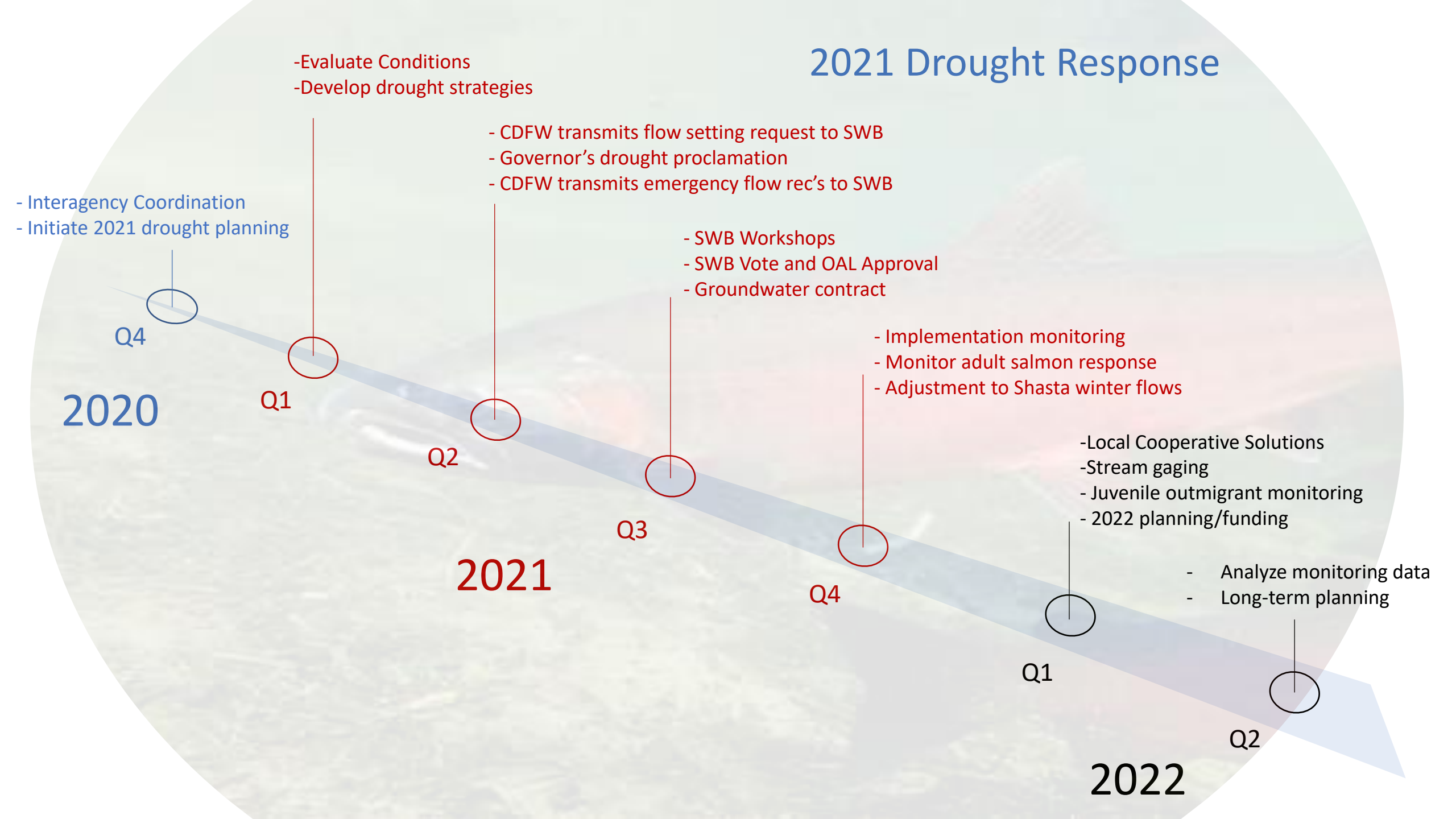
- Local Cooperative Solutions
- Stream gaging
- Juvenile outmigrant monitoring
- 2022 planning/funding

Q1

- Analyze monitoring data
- Long-term planning

Q2

2022



2022

- Hired a drought response coordinator
 - Increase tributary gaging
 - Local cooperative solutions
 - Restoration assistance
- Monitor drought conditions
 - Rally funding sources
 - Continue to evaluate minimum flows
 - Consider strategic tributary contribution



2004 California Recovery Strategy

The Recovery Strategy emphasizes cooperation and collaboration at many levels, and recognizes the need for funding, public and private support for restoration actions, and maintaining a balance between regulatory and voluntary efforts...The success of this Recovery Strategy will ultimately be determined by the long-term commitment and efforts **of all** who live in, or are involved with, coho salmon watersheds.





Questions/Comments