

# **Report to the Pacific Fishery Management Council on Klamath River Fall Chinook Interim Management Measures**

## **PFMC Klamath River Fall Chinook Ad Hoc Work Group**

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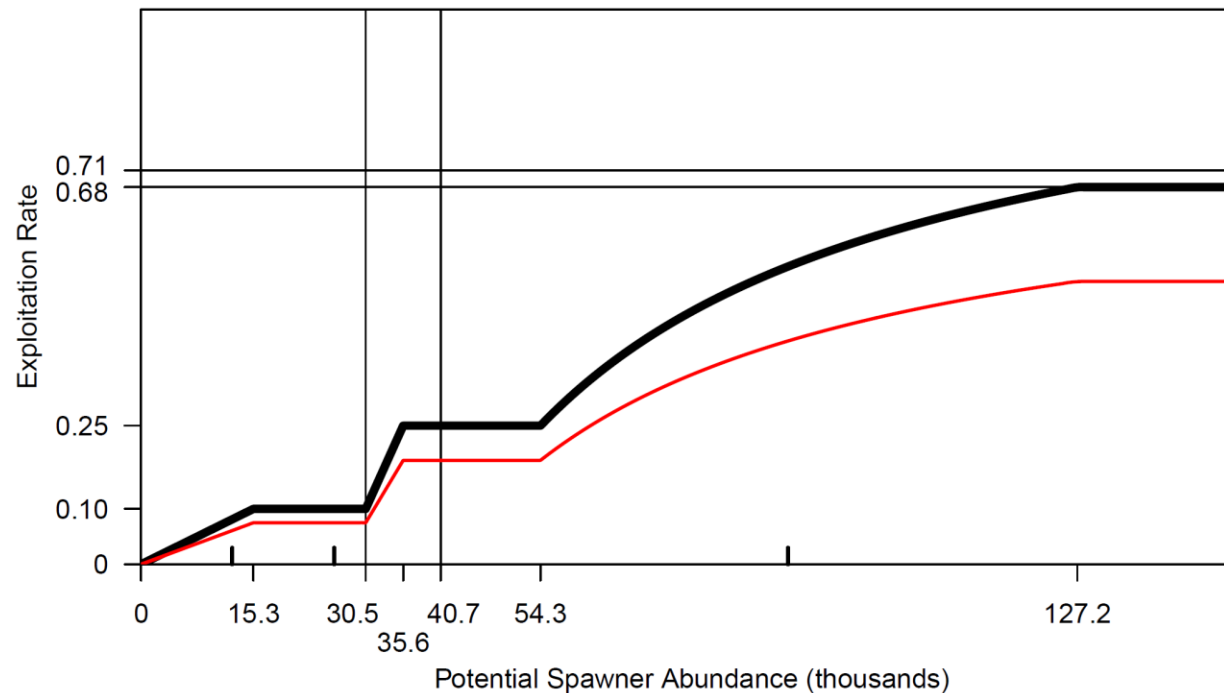
**Rich Zabel, National Marine Fisheries Service**



Photo credit: Katie Falkenberg, Swiftwater Films

# Background

- In March 2024, the WG provided a report outlining eight alternative management options for Council consideration
- The Council adopted a 20% buffer to the allowable exploitation rate (ER) for 2024
- The allowable ER was reduced from 25% to 20%



# Work since March 2024

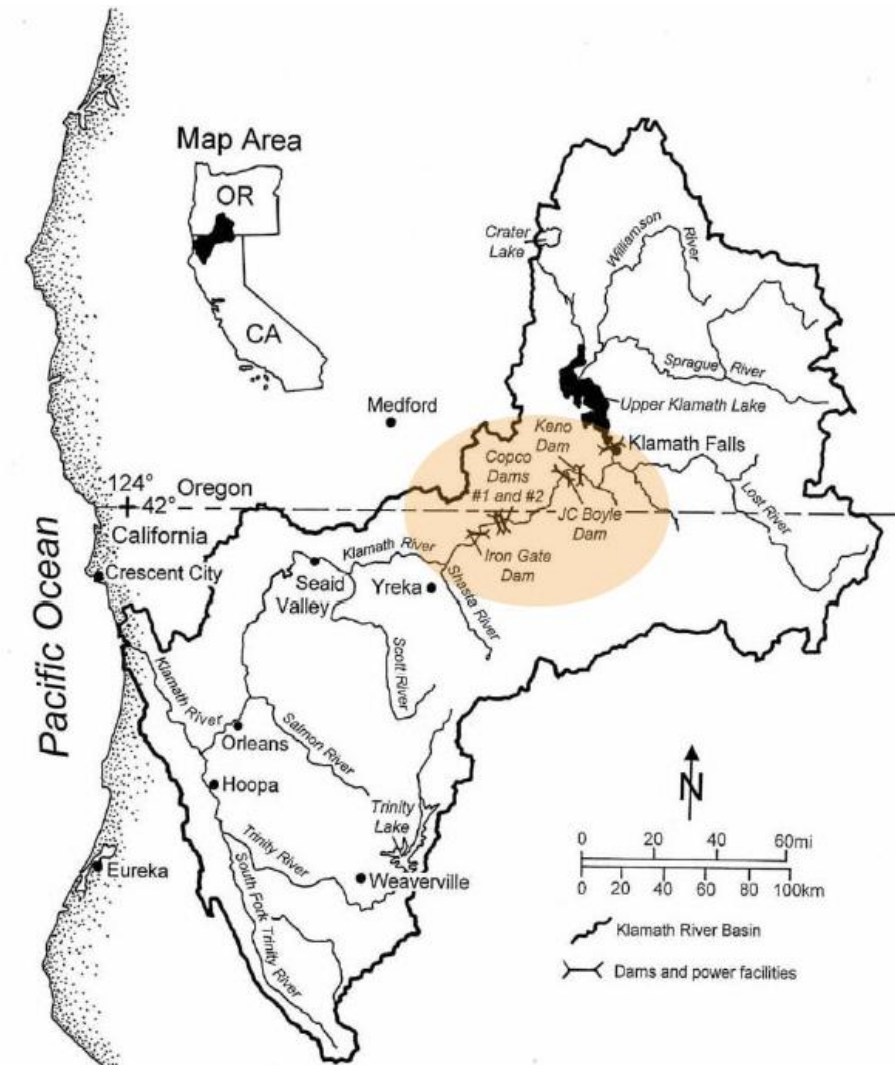
- Development of new interim management options
- Assessment of the benefits, challenges, necessary next steps
  - Some Alternatives may not be ready for implementation in 2025

# 1. Current HCR with range of buffers (status quo)

- Benefits:
  - Readily implementable
  - Similar to buffering approaches the Council has implemented in recent years
  - Same approach used for KRFC in 2024
- Considerations and Challenges:
  - Selecting a targeted action that will result in the desired outcome could be difficult given the uncertainty in the Klamath Basin following dam removal
- Next steps and Timeline
  - Approach does not require further work for implementation
  - If selected for use in planning 2025 fisheries, the Council would need to specify the buffer now or in March 2025

## 2. Sub-Basin Management: Separate management of Trinity and Klamath sub-stocks

- Potential Benefits:
  - Increased protection for spawners most likely to contribute to the repopulation of the Upper Klamath River
  - Does not constrain fisheries on stocks which are unlikely to contribute to repopulation





## 2. Sub-Basin Management (continued)

- Considerations and Challenges:
  - Are data sufficient for more assessment stratification?
  - A cohort reconstruction model for the balance of the Klamath Basin would need to be modified to accommodate two sub-basins
  - Modification of existing, or development of new harvest models needed
  - The Workgroup does not have the expertise or capacity to develop and/or implement sub-basin management

## 2. Sub-Basin Management (continued)

- Additional Considerations and Challenges:
  - Some members of KRWG believe that added granularity to stock assessments would not address the management challenges associated with dam removal and the addition of new habitat
  - Other members believe adding conservation benefit to one sub-basin (the Klamath) while not reducing harvest opportunities in another (the Trinity) could strike a balance between harvest opportunity and conservation



## 2. Sub-Basin Management (continued)

- Necessary next steps:
  - In collaboration with relevant agencies, develop separate cohort reconstruction for Klamath independent of Trinity (will include review and adoption of Trinity cohort reconstruction that is not currently being developed to inform management)
  - Develop separate stock-recruit relationships for both sub-basins
  - Develop separate HCRs for each sub-basin
  - Evaluate data sufficiency to inform management of the two independent stocks (e.g. CWT data, time/area strata, and contact rate estimation)
  - Modifications of existing, or development of new harvest models
  - May need an FMP amendment

### Request:

**The KRWG requests the Council provide guidance on whether it is appropriate for this workgroup to continue to explore the sub-basin management approach as described above**

# 3. Habitat-based approaches

- Benefits:
  - Estimates of capacity of the available habitat could allow for estimates of the production potential of that habitat
  - Can inform management
- Considerations and Challenges:
  - The KRWG does not have the expertise to develop and implement a habitat-based approach
- Necessary next steps
  - The KRWG encourages the initiation of a thorough analysis of habitat quantity and quality in the newly available reaches in the near future

## Request:


**The KRWG requests that the Council provide guidance on whether it is appropriate for this workgroup to continue to explore the habitat-based management approach as described above**

# 4. Matrix-based approach

ER buffer based on a score derived from an array of area-specific and life history-specific metrics

Example scoring matrix to derive and interim conservation buffer to the allowable exploitation rate

Total NA Adults Above IG		Proportion of NA KM Run Above IG		0+ NO Juvenile Emigration Below IG		Fall Creek Hatchery Smolt Release		Fall Creek Hatchery Jack/Smolt Rate	
Adults	Score	Proportion	Score	Juveniles	Score	Smolts	Score	Rate	Score
>10,000K	10	1.0	6	>1,881,900	10	>1,750,000	10	>0.0490%	10
8,875	9	0.9	7	1,670,186	9	1,575,000	9	0.0430%	9
7,750	8	0.8	8	1,458,473	8	1,375,000	8	0.0370%	8
6,625	7	0.7	9	1,246,759	7	1,175,000	7	0.0310%	7
5,500	6	0.6	10	1,035,045	6	975,000	6	0.0250%	6
4,375	5	0.5	9	823,331	5	775,000	5	0.0190%	5
3,250	4	0.4	8	611,618	4	575,000	4	0.0130%	4
2,125	3	0.3	7	399,904	3	375,000	3	0.0070%	3
1,000	2	0.2	6	188,190	2	175,000	2	0.0010%	2
<1,000	1	<0.2	5	<188,190	1	< 175,000	1	< 0.0010%	1

Total Score	ER Buffer
50	Lowest
45 to 49	
40 to 44	
35 to 39	
25 to 29	
20 to 24	
15 to 19	
10 to 14	
< 10	Highest

## 4. Matrix-based approach (continued)

- Benefits:
  - Data needed for implementation are readily available
  - Biologically driven and based on empirical data
  - Sufficient expertise present on the Workgroup
  - The performance of matrix components is specific to the life history stages of fish in or originating from the area of restoration and repopulation
  - A matrix can be used with the current KRFC stock complex approach or with a Trinity and Klamath specific (sub-basin) approach
  - Conceptually similar to other matrices used for other stocks in PFMC management

## 4. Matrix-based approach (continued)

- Considerations and Challenges:
  - The range of adult escapement above IG is based on historical Klamathon Rack data from a period with different overall productivity and hatchery/natural-origin fractions than the current time
  - Work remains to be done on identifying an appropriate range of buffers
  - Additional components could be considered for inclusion in the matrix

# 4. Matrix-based approach (continued)

- **Next steps and Timeline**

- KRWC recommends additional refinement of the approach, with guidance from the Council
- Barring unforeseen delays, the Workgroup anticipates that this approach could be ready for implementation during 2028 fishery planning

## **Request:**

**The KRWG requests guidance from the Council on whether further development of this approach should be undertaken**

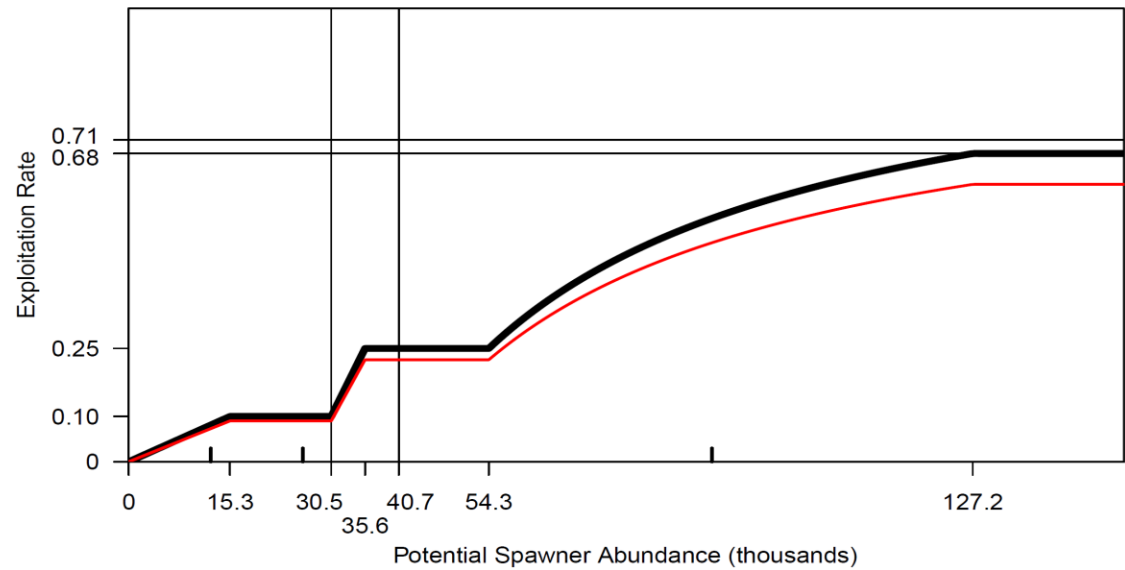
Back up Slides



# Buffers Considered in March 2024

Reduced ER at all levels of abundance

### 10% Buffer on allowable ER



### 25% Buffer on allowable ER

