

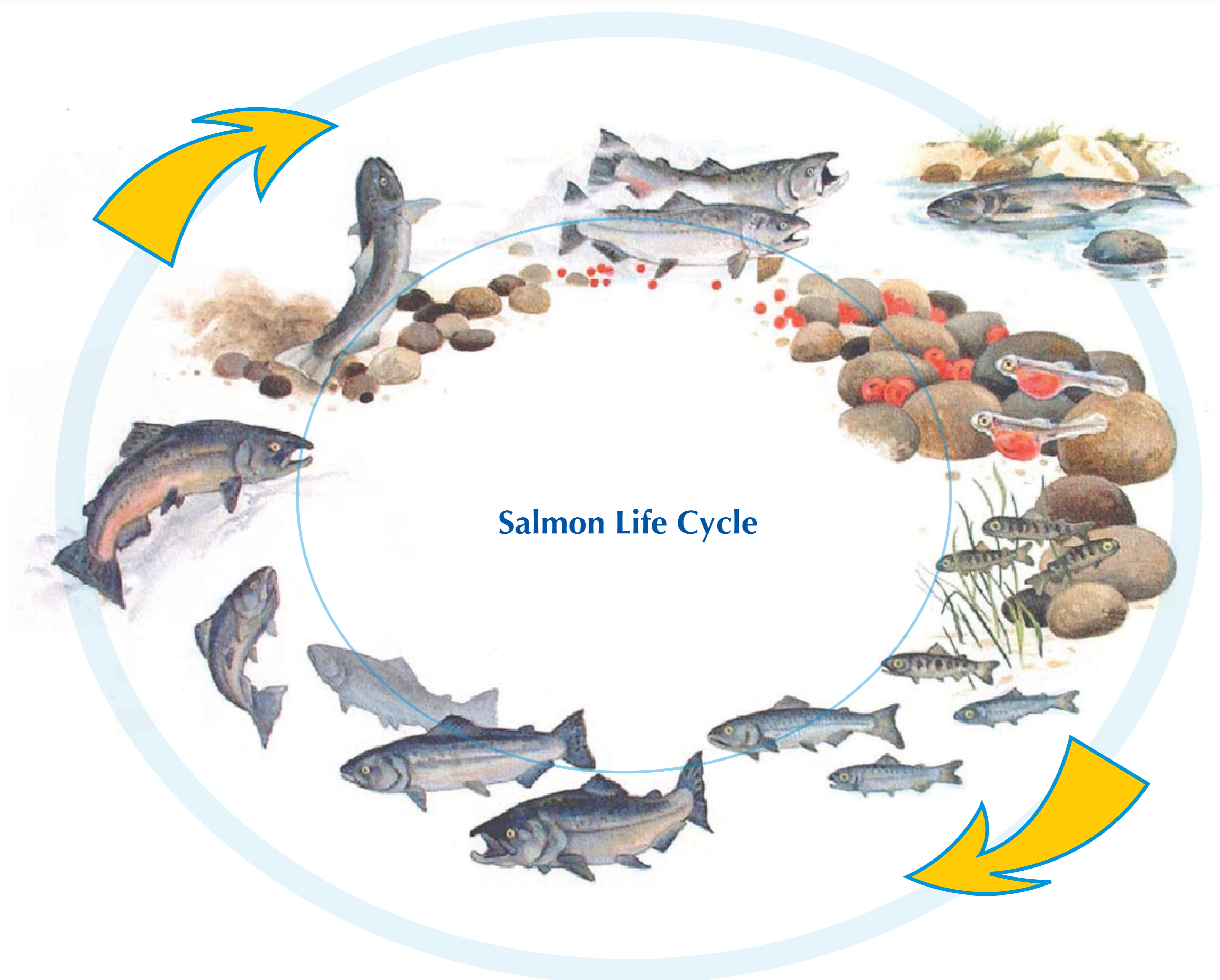
# FISH RESTORATION

## Conceptual Models

The Fish Management Work Group is currently building conceptual models of how they believe environmental factors will influence the abundance of spring-run and fall-run Chinook salmon in the San Joaquin River between Friant Dam and the Merced River confluence.

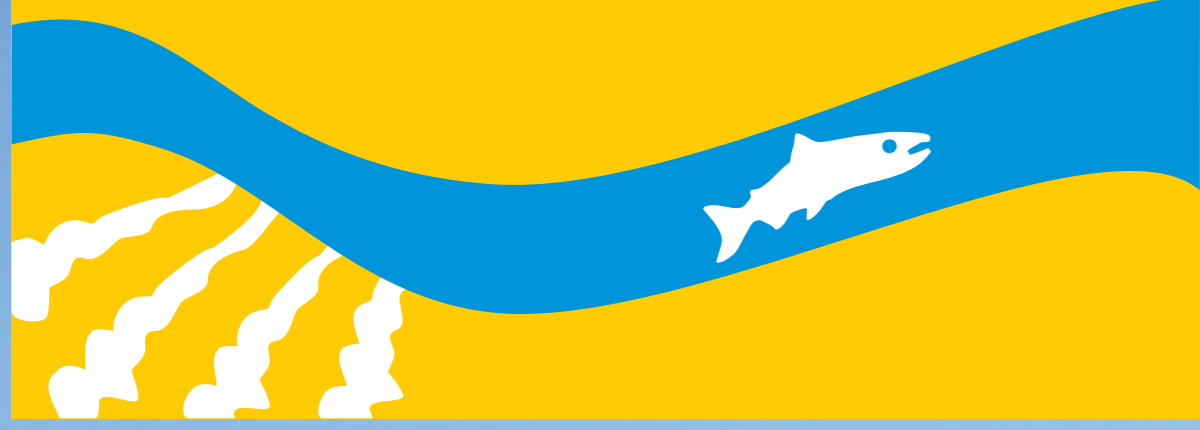
These conceptual models include a thorough and in-depth review of background literature and existing appropriate models on the life history and biology of California Central Valley spring- and fall-run Chinook salmon.

The models are precursors to quantitative models that will be used to assist in the evaluation of program alternatives, guide flow management, and help identify key habitat restoration needs. They will also help identify key knowledge gaps and hypotheses that will be addressed by an adaptive management process that includes a rigorous monitoring program.



### Each conceptual model contains the following components:

- Graphic depictions of the current understanding of Central Valley spring- and fall-run Chinook salmon life cycles and limiting factors (e.g., physical, chemical, and biological)
- A narrative description reviewing background literature on the basic life history requirements and potential stressors in the San Joaquin River Basin
- Spring- and fall-run Chinook salmon knowledge gaps
- Controllable and uncontrollable limiting factors that are believed to affect the recovery of Chinook salmon populations in the San Joaquin River Basin



# FISH RESTORATION



## Milestones

<b>2007</b> October	Restoration Administrator submits recommendations to the Secretary
<b>2009</b> September	Complete Program Environmental Impact Statement/Report (PEIS/R)
<b>2009</b> October	Initiate Interim Flows and Monitoring Program in San Joaquin River
<b>2010</b> September	U.S. Fish & Wildlife Service (USFWS) submits a completed permit application to the National Marine Fisheries Service (NMFS) for the reintroduction of spring-run Chinook salmon
<b>2012</b> April	NMFS issues a decision of the spring-run Chinook salmon permit application
<b>2012</b> December	Reintroduce spring- and fall-run Chinook salmon
<b>2013</b> December	Complete Phase 1 channel improvements
<b>2014</b> January	Initiate full Restoration Flows
<b>2016</b> December	Complete Phase 2 channel improvements
<b>2024</b> December	Submit report to Congress on the reintroduction of spring- and fall-run Chinook salmon



San Joaquin River at State Route 145



Potential Spawning Habitat



Chinook Salmon

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## Water Management Goal from the Settlement

“ To reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement. ”

- Natural Resources Defense Council v. Kirk Rodgers, as Regional Director of the United States Bureau of Reclamation, *et al.*

## How do we accomplish the goal?

- Develop guidelines necessary for understanding the river system and methodology to release and monitor Interim and Restoration Flows
- Develop a Plan for recirculation, recapture, reuse, exchange or transfer
- Develop a Recovered Water Account and Program

## Water Management Milestones

2007 October	Water Management and Physical Improvements Options Technical Memo
2007 December	Initial Restoration Flow Guidelines Technical Memo
2008 February	Recovered Water Account Report
2008 June	Final Restoration Flow Guidelines Technical Memo
2009 September	Program Environmental Impact Statement/Report (EIS/R)