

Drought effects on winter-run Chinook

2011

SHASTA DAM

2,048,000
eggs

RED BLUFF DIVERSION DAM

849,000
juveniles
survived
to pass
Red Bluff

41%
survival

DELTA

Drought conditions reduce survival of endangered winter-run salmon. In the summer months, winter-run egg and fry in the upper Sacramento rely on cold-water releases from Shasta Reservoir to keep the river cool enough for them to survive.

In years of high flow, there is plenty of water to cool the river. In 2011, over 41% of the eggs laid in the upper river survived to pass Red Bluff Dam as juveniles.

In 2015, record drought left very little cold water in Shasta to cool the upper Sacramento. Despite the many eggs laid by returning adult salmon, only 3% survived to reach Red Bluff. Those few survivors face further high mortality as they continue through the Delta and into the ocean.

Many decisions about Central Valley and State Water Project operations are designed to help endangered winter-run salmon survive to reach the Delta. NOAA Fisheries is closely monitoring juvenile winter-run as they migrate through the Delta to minimize additional loss.

2015

SHASTA DAM

9,744,000
eggs

RED BLUFF DIVERSION DAM

318,000
juveniles
survived
to pass
Red Bluff

3%
survival

DELTA