

Key Messages from the EDO document: Downstream Impacts of Program Water Management

Program water operations impacts on the Lower Platte River

- Central and Lower Platte River hydrology
 - Median discharges (1995-2015) at the Grand Island, North Bend and Louisville stream gauges were 1,200 cfs, 3,930 cfs and 6,800 cfs respectively.
 - Flows from the Central Platte River constitute 31% of Lower Platte flows at North Bend and 18% of flows at Louisville.
- Impacts of Central Platte withdrawals up to 1,000 cfs for Program retiming projects
 - Impact quantification requires understanding of relationship between flow/stage and pallid sturgeon habitat suitability/connectivity and the relationship between habitat availability and pallid sturgeon use and/or condition. These relationships are highly uncertain.
 - Based on habitat suitability and connectivity relationships from Peters and Parham 2008, reductions due to PRRIP retiming projects would generally reduce Lower Platte suitability and/or connectivity by less than 5%. It is unknown whether or not changes of this magnitude are biologically important to pallid sturgeon.
 - Other factors, such as depletions authorized under the new depletions plan, may be additive to Program withdrawals and consequently have additive impact, but the combined effects are not well understood at this time.
- Impacts of late-spring pulse flow release
 - Implementation of the late-spring pulse flow release would generally increase Lower Platte River habitat suitability by less than 5%. Channel connectivity below the Elkhorn River would also change little but connectivity upstream of the Elkhorn could increase by around 10% in dry to normal years. It is unknown whether or not changes of this magnitude are biologically important to pallid sturgeon.
 - Other factors, such as flow contributions from Tamarack Phase 1, may be additive to Program releases and consequently have additive benefit, but the combined effects are not well understood at this time.

External factors that will affect the Program's influence on the Lower Platte

- Loup River hydrocycling
 - Within-day hydrocycling of Loup River discharge creates flow/stage fluctuations of greater amplitude than a central Platte River pulse flow release of 4,000 cfs.
- Future depletions
 - 25-year future depletions for ongoing and new activities are estimated to be 107 cfs (77,468 ac-ft) at North Bend and 459 cfs (332,316 ac-ft at Louisville).