

RESEARCH NOTE

Green Sturgeon (*Acipenser medirostris*) in the San Joaquin River, California: new record

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Green Sturgeon (*Acipenser medirostris*) are an anadromous species, known to occur along the North American Pacific coast and connected estuaries and rivers, from Ensenada, Mexico to the Bering Sea (Moyle 2002; Wydoski and Whitney 2003; Moser et al. 2016). As mature adults, they return to natal freshwater systems every two to four years to spawn (Moser et al. 2016). There are three known spawning populations of Green Sturgeon. The populations in the Klamath River, California, and Rogue River, Oregon, constitute the northern Distinct Population Segment (DPS), and the spawning population in the Sacramento River Basin, California, constitutes the southern DPS (Adams et al. 2006; Moyle 2002; Moser et al. 2016). Green Sturgeon southern DPS were listed as “threatened” in 2006 under the Federal Endangered Species Act, largely due to loss of critical habitat and declining populations (National Marine Fisheries Service 2006).

During fisheries monitoring activities for the San Joaquin River Restoration Program (SJRRP; Bureau of Reclamation, Region 10 California Great Basin) a single Green Sturgeon was captured on the mainstem San Joaquin River (SJR), California, within the boundaries of the SJRRP Restoration Area (from Merced River confluence to Friant Dam) on 11 April 2020 (Figure 1). The individual was incidentally captured in a fyke trap that was targeting salmonids. The fyke trap is constructed of 5.0-cm chain link formed over 6 consecutive 3.0-m hoops (7-m long x 3-m height). The trap contained two throats with the smaller opening of 60-cm. Trapping location was approximately SJR river kilometer (RKM) 190.7, 300 m upstream of the SJR confluence with the Merced River (37.347065, -120.976280) in the vicinity of Hills Ferry, California. We identified the captured individual using commonly accepted external characteristics, including a noticeable olive green patch on the abdomen, a bony plate behind the anal and dorsal fin, and barbels positioned closer to the mouth than



Figure 1. Reclamation Fisheries Biologist with a Green Sturgeon captured incidentally while conducting fisheries monitoring in the mainstem San Joaquin River, California, approximately 300 m upstream of the Merced River confluence with the San Joaquin River, Stanislaus County, CA, USA.

snout (Moser et al. 2016). An adult White Sturgeon (*Acipenser transmontanus*) was also captured in the same trap and was opportunistically used for comparison. Green Sturgeon morphometrics were as follows; 1,260 mm fork length, 1,418 mm total length, and girth of 532 mm. We checked the individual with an Innovasea Systems (Boston, MA) VR100 acoustic receiver and a passive integrated transponder (PIT) reader to determine if the individual was previously tagged. No tissue sample was taken, nor was the individual tagged. We released the individual upstream of the trapping location and appeared healthy upon release.

This finding represents the second confirmed record of an adult Green Sturgeon in the San Joaquin River Basin, upstream of Stockton California, as an adult was confirmed in the Stanislaus River in 2017 (Anderson et al. 2018), and the furthest most upstream confirmed record in the SJR (Moyle 2002; Beamesderfer et al. 2004). Unconfirmed angler reports (Dubois and Danos 2016) have been discounted, for the purpose of this note, due to potential errors in reported capture locations (Dubois, J. California Fish and Wildlife, personal communication). This record extends Green Sturgeon reported range ~71 RKM, and represents a new record for Stanislaus County, California, USA (Moyle 2002). Though spawning was not observed and has never been reported for the species in the SJR, the date of capture was within the timeframe of reported spawning immigrations of adult Green Sturgeon in the Sacramento River basin (March–June; Benson et al. 2006; Heublein et al. 2009).

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Author Contributions

Conceived and designed the study: ZS, TB

Collected the data: SR

Performed the analysis of the data: ZS, SR

Authored the manuscript: SR, ZS

Provided critical revision of the manuscript: ZS, TB

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