

THE NESTING ECOLOGY OF THE INTERIOR LEAST TERN
ON THE YELLOWSTONE RIVER, MONTANA ^{TWS}

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We estimated the population density of the interior least tern (*Sterna antillarum athalassos*) on the Yellowstone River, Montana, quantified available nesting habitat at 3 river-flow rates, and characterized nesting habitat, during the 1994-1995 breeding seasons. In 1994, the run-off from mountain snow-pack occurred 1 month earlier than historically or in 1995. Mean monthly flow rates in 1995 exceeded historical rates by approximately 1,500 cubic meters/second (cms), and rates in 1994 by 600 cms. A larger number of adult least terns was observed during 1994 (n=40), than in 1995 (n=24). In 1994 and 1995, peak nest initiation occurred between the weeks of 8-21 June (x=457.4 cms, SE=73.1), and 22 June - 5 July (x=1,064.4 cms, SE=99.1), respectively. Vegetated channel bars were exclusively used for nesting during both years; 10 different channel bars were colonized, 9 were used in 1994, 5 of which were

recolonized in 1995. Average colony size was 1.93. Therefore, least terns on the Yellowstone River did not nest in large groups. Mean reproductive estimates were: apparent nest success, 79.3%; fledglings/nest attempt, 0.69; and clutch size, 2.45. A longer breeding season, due to earlier peak flows and lower river levels earlier in the season, likely contributed to more successful reproduction in 1994: 23 young were fledged in 1994, whereas only 1 was fledged in 1995. Weather related mortality was presumed to be the cause in 1995. Nests were not inundated from floods during either season. Human disturbance of nesting colonies was not observed on the Yellowstone River. Though predators were present within the study area, only 1 predation event was witnessed: a woodhouse toad (*Bufo woodhouseii*) was observed ingesting a 1-2 day old chick. Terns nested on vegetated channel bars that were

exposed above river level the longest amount of time throughout the breeding season. In addition, height measurements taken along the crest of the cobble dome toward the upstream point, were not different. As river levels dropped, more habitat was available on nesting than on non-nesting channel bars. Consequently, nesting habitat with flat cobble domes was less susceptible to inundation. The rapid stage fluctuation and sediment carrying capacity of the free-flowing Yellowstone River likely contributes to the maintenance of the early successional stage of channel bar nesting habitat, and aides in the

deposition of sediment on channel bars. Though inundation from dam releases on the Yellowstone River is nonexistent, there is a danger of flooding nesting terns from controlled tributaries, Big Horn and Tongue Rivers. Simultaneous releases from dams, especially during increasing discharge rates of the Yellowstone, would place least tern reproductive efforts on the Yellowstone River in serious danger of inundation. Communication between individuals responsible for water regulation on the Big Horn and Tongue Rives will help prevent human induced mortality of the Yellowstone River least tern population.