

## Element 2 - Swainson's Hawk Survey and Monitoring Report Temporary Barriers Project 2011 Construction Season

The following is the report on Swainson's Hawk surveys and monitoring for the Temporary Barriers Project construction activities in the 2011 nesting season, described below. Swainson's Hawk surveys were initiated at all Temporary Barrier construction and storage sites April 8, 2011. Surveys, construction monitoring, and post-construction monitoring continued through July 26, 2011.

### Head of Old River Barrier

No barrier, physical or non-physical, was constructed at Head of Old River in 2011 due to high river flows. Predator studies were conducted but there were no construction activities at the site, and thus Swainson's Hawk survey and monitoring activities were minimal, survey on each day, April 8 and 21.

Pre-nest surveys indicated that Swainson's Hawks were likely to nest at typical locations (figure 1). Nests were constructed upstream of the barrier site in a cottonwood/willow tree group (1), downstream of the barrier on the north levee in a large oak (2), and downstream on the south side of the levee in an old walnut (3). One adult was observed on numerous occasions standing in the nest, but did not appear to be mated, and eventually abandoned the site. No project-related effects were noted.

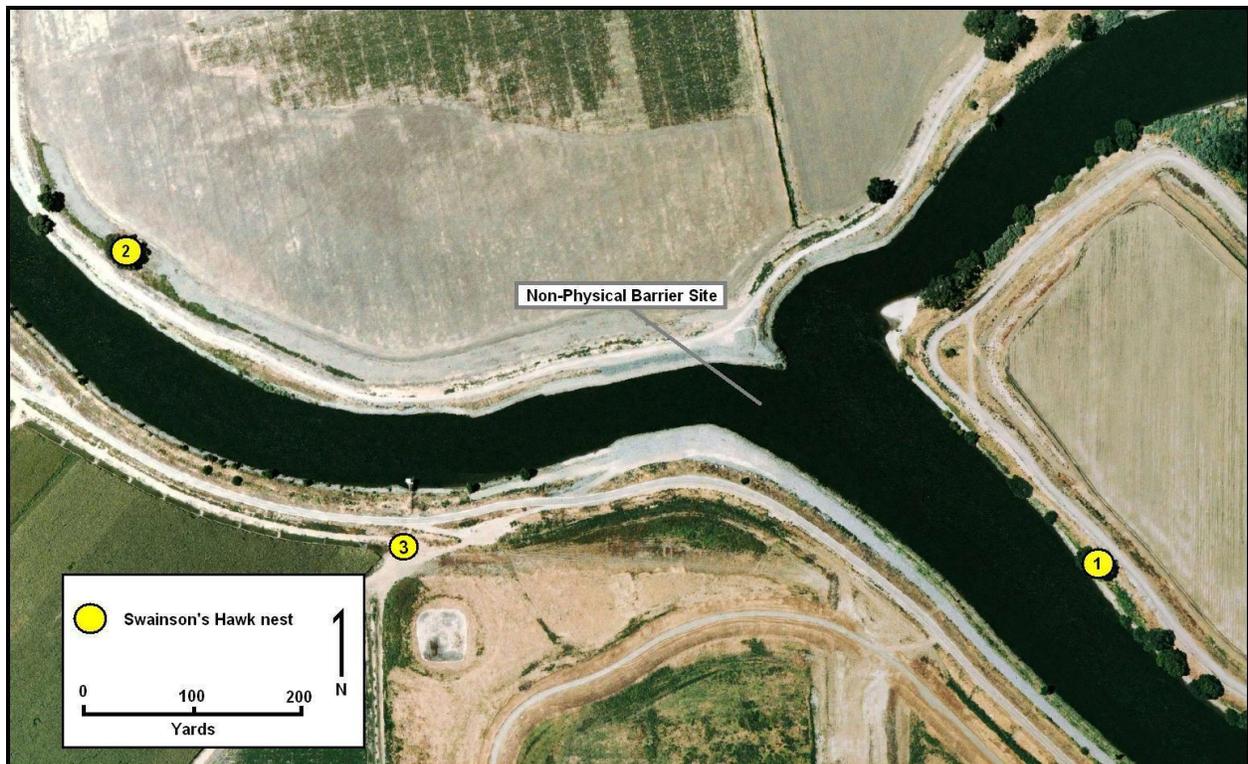


Figure 1. Swainson's Hawk nests at the Head of Old River barrier site in 2011.

### Middle River Barrier

Construction on the Middle River (MR) barrier was begun on June 1 and was completed on June 6. An Environmental Education Session was provided to all construction supervisors and crew for all barrier sites at the Old River at Tracy rock storage area on May 27.

The MR barrier site was surveyed/monitored beginning on April 8 through June 15. A pair of Swainson's Hawks constructed a nest on the island west of the barrier site (figure 2), but on May 27, they were not on the nest and there were no chicks in the nest. The adults were mating, indicating that they may have had an initial nest failure. The pair did not successfully nest in 2011 at that site. No project-related effects were noted.



Figure 2. Raptor nests at Middle River barrier site in 2011.

### Old River, Tracy Barrier

Construction of the Old River, Tracy (ORT) barrier was initiated on May 27 and was completed on June 15. Swainson's Hawk surveys and monitoring were conducted between April 8 and June 15. An Environmental Education Session was provided to DWR and construction personnel the morning of May 27 at the Old River Tracy rock storage site.

Three Swainson's Hawk nests, one Red-tailed Hawk nest, and one Great Horned Owl nest were found from the instream island southeast of the barrier, to the large pine tree to the northeast (figure 3). On May 13, all nests were active; the Swainson's Hawks were incubating eggs, and the Red-tailed Hawk and Great Horned Owl had chicks. On May 27, prior to the initiation of construction of the ORT barrier and following a cold storm with high wind and hail, Swainson's

Hawk nests 1 and 2 had failed, as had the Red-tailed Hawk nest. The Great Horned Owl nest may have failed, but due to the size and mobility of the chicks, they simply may not have been

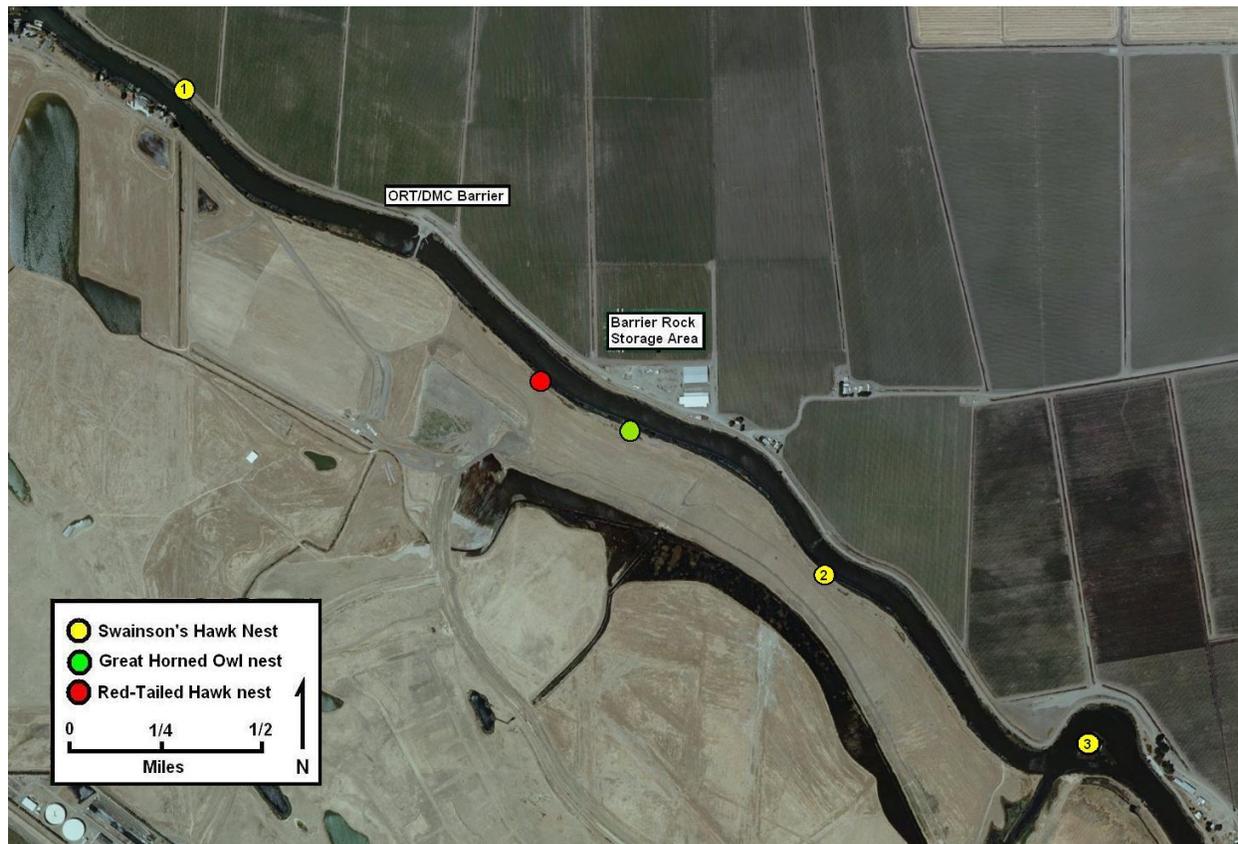


Figure 3. Raptor nests at Old River, Tracy barrier site in 2011.

visible within the branches of their nest tree. Only the Swainson's Hawks nesting on the island (nest 3) were known to successfully fledge young. All nest failures at the site were assumed to be weather related. No project effects were noted.

#### Grant Line Canal Barrier and Accessory Areas

Construction of the Grant Line Canal barrier began on June 10 and was completed August 3. An Environmental Education Session was provided to DWR and construction personnel the morning of June 10 at the Howard Road storage site.

Raptor surveys of the GLC rock storage site, haul road and barrier site were initiated on April 8 and continued through July 26 at which time all raptor chicks were fledged. Six raptor nests were identified and monitored throughout the nesting and construction season (figure 4). A Red-tailed Hawk nested in a pine tree east of and adjacent to the Howard Road rock storage site and fledged 2 young. A Great Horned Owl nested in a willow between Howard Road and Clifton Court Road and fledged 4 young.

By July 14, the Swainson's Hawk pairs at nest sites 1 and 3 fledged 2 young and 1 young, respectively. The Swainson's Hawk pairs at nest sites 2 and 4 failed prior to the initiation of



Figure 4. Raptor nests near the Grant Line Canal construction facilities in 2011.

construction at the site, and with proximal timing to other area nest failures.

The male adult from nest 3 was severely injured near the haul road while construction activities were ongoing, but it is unknown how the injury occurred. The bird was taken to UC Davis Veterinary Center, and later sent to the Raptor Center, where it eventually recovered and was released. The day after the male was injured, the female adult Swainson's Hawk at nest 3 found a new mate and provider for her 3 week old chick. As stated above, the chick eventually fledged.

The high number of raptor nest failures around construction sites was consistent with other areas within the Delta and north in 2011, with the Natomas Basin population experiencing a 60% nest failure, compared to the 30% normal failure rate. The likely explanation was weather.