

Element 2 - Swainson's Hawk Survey and Monitoring Report Temporary Barriers Project 2012 Construction Season

The following is the compliance report on Swainson's Hawk surveys and monitoring for the Temporary Barriers Project construction activities in the 2012 nesting season. All observations and conclusions were made by Michael Bradbury, Staff Environmental Scientist for DWR, unless otherwise noted. Swainson's Hawks typically return to traditional nest sites in late March, and begin to lay eggs around the April 20. Great Horned Owls and Red-tailed Hawks typically nest two months and one month earlier, respectively.

Spring Head of Old River Barrier

The construction of the Spring Head of Old River Barrier (SHORB) began March 15 and was completed on April 1. Swainson's Hawk surveys were conducted beginning April 5, and completed on June 1. No Swainson's Hawks were nesting at the time the barrier was constructed. One Great Horned Owl nest was found near the construction site (Figure 3-1), but well away from those activities.

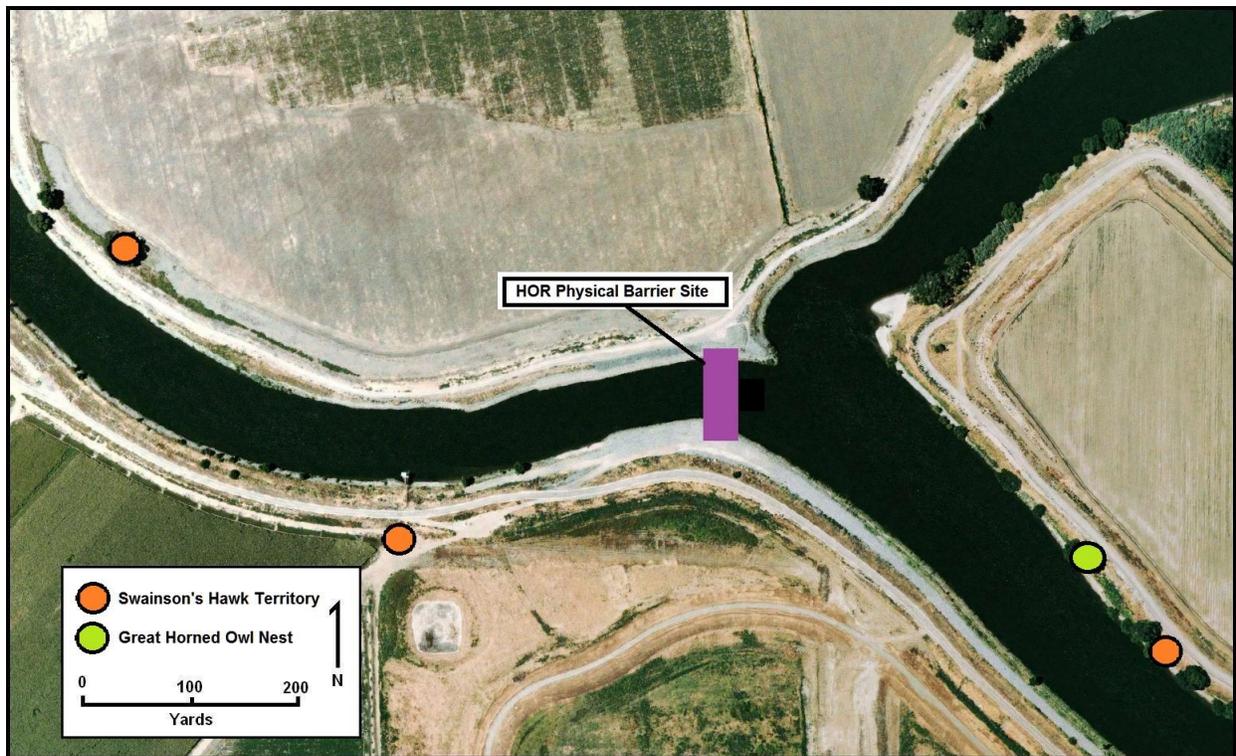


Figure 3-1. Swainson's Hawk nests at the Head of Old River barrier site in 2012.

The SHORB was removed from June 1 to June 21. Three Swainson's Hawk territories had been identified prior to the removal of the barrier, but none of the Swainson's Hawks there nested within ¼ mile of the construction activities.

Middle River Barrier

Construction on the Middle River (MR) barrier was begun on March 12 and was completed on March 16. Additional work was conducted at the barrier site in the first week of July. The barrier site was surveyed and monitored beginning in the second week of March by DWR Environmental Scientist Mike Cane. Swainson's Hawk surveys were not conducted until after the barrier was constructed when the birds had returned from their wintering grounds.

A pair of Swainson's Hawks constructed a nest on the island west of the barrier site (Figure 3-2) and were incubating eggs on April 30, but by July 1 and prior to additional construction at the MR barrier, the nest had failed according to observations made by Mike Cane and DWR Environmental Scientist Danika Tsao.

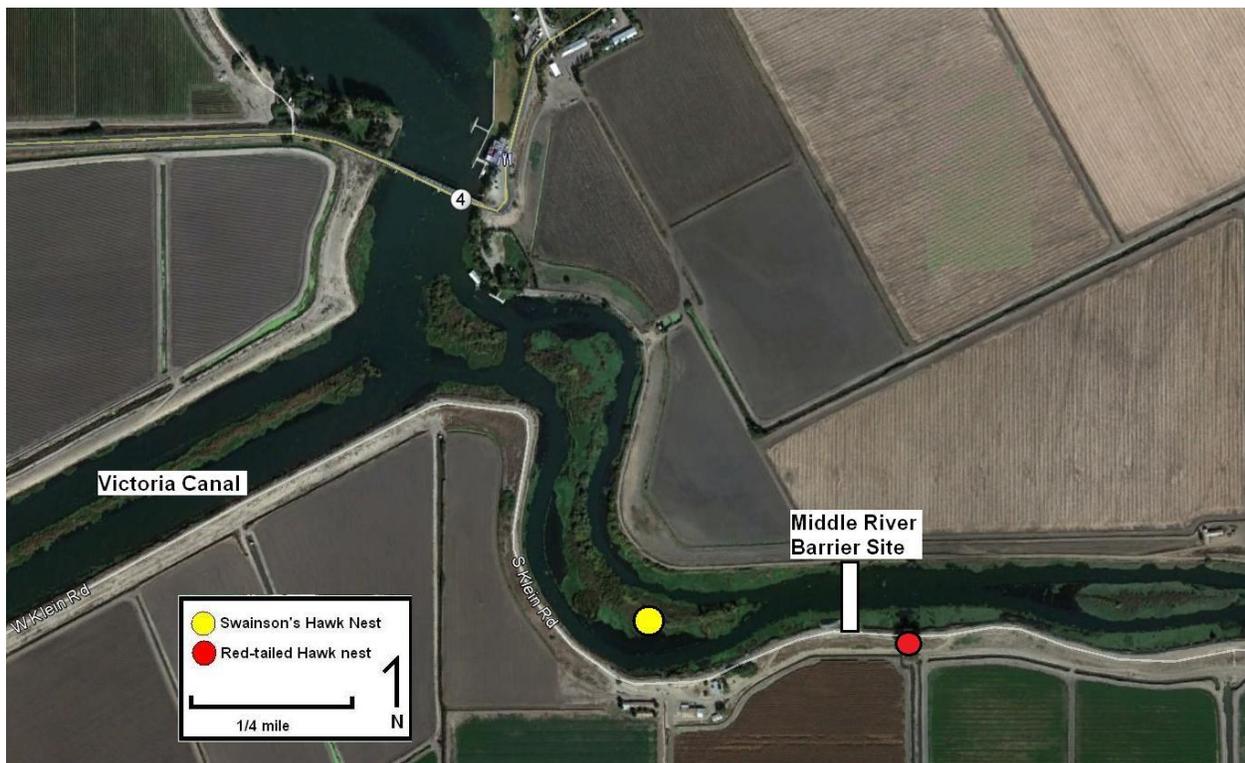


Figure 3-2. Raptor nests at Middle River barrier site in 2012.

An active Red-tailed Hawk nest was identified in the second week of March, and observations on July 1 and 2 indicate that at least one young fledged from the nest.

Old River/Tracy Barrier

The Old River Tracy (ORT) barrier was constructed from March 15 to April 6. Swainson's Hawk surveys were conducted from April 5 to April 30. No Swainson's Hawks nested near the barrier site prior to the completion of the construction activities. A Red-tailed Hawk pair and Great Horned Owl pair each nested across the river from the ORT barrier rock storage area (Figure 3-3). On April 30, the Red-tailed Hawks had at least one chick and the Great Horned Owls had at least two chicks. A Great Horned Owl pair nested in the eucalyptus tree on the in-stream island upstream of the barrier site. On April 5, an owl was seen on the nest incubating. On April 30, the nest was empty and had apparently failed.

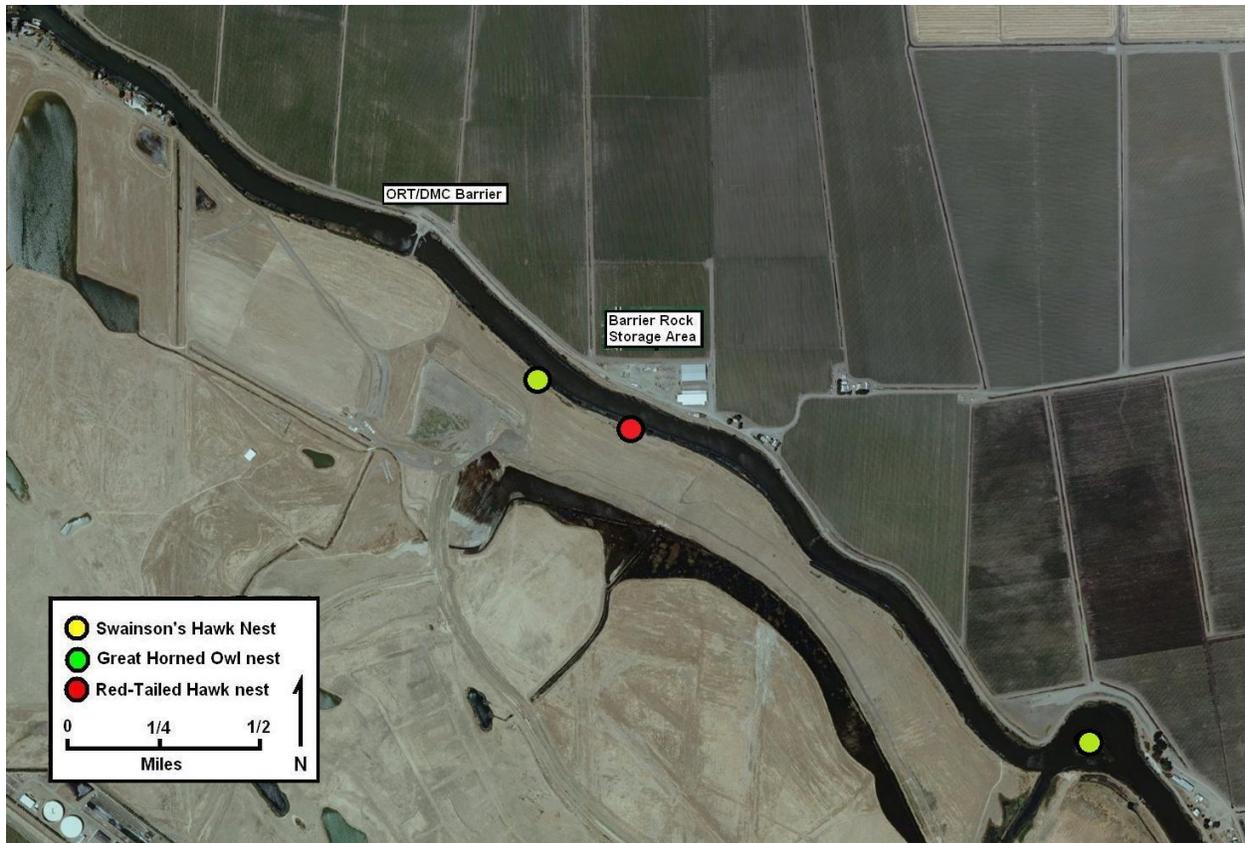


Figure 3. Raptor nests at Old River, Tracy barrier site in 2012.

Grant Line Canal Barrier and Accessory Areas

Construction of the Grant Line Canal (GLC) barrier began in the second week of April and was completed May 5; construction activities ended on May 7. Swainson's Hawk surveys were initiated on April 5 and surveys and monitoring were completed on June 1, with an incidental observation of the GLC nest on June 27. Seven raptor nests and one nest territory were found and monitored during the nesting and construction season (Figure 3-4) near the barrier site, haul road and rock-storage site.

Three pairs of Swainson's Hawks nested in the project area, and a fourth pair of Swainson's Hawks had a nest territory but did not nest. All three pairs of nesters were late laying eggs, which didn't occur until the first week of May. Nest one (1) was in a willow tree along the north portion of the haul road; it was built on an old Red-tailed Hawk nest which was in danger of falling out of the tree even before the female Swainson's Hawk laid eggs. By mid-May, the nest collapsed and failed. Nest two (2) was constructed in a walnut tree at the south end of the haul road. As of June 1 (post-construction), the female was still on eggs, and no additional observations were made of the nest. Nest three (3) was built at the top of an oak tree on Grant Line Canal, 250 meters east of the barrier. On June 1, the female appeared to be on eggs, and on June 27, one young chick was observed on the nest, being fed by the female. A pair of Swainson's Hawks occupied a territory 400 meters west of the barrier on the in-channel island. Although the pair aggressively defended its territory, they did not build a nest.

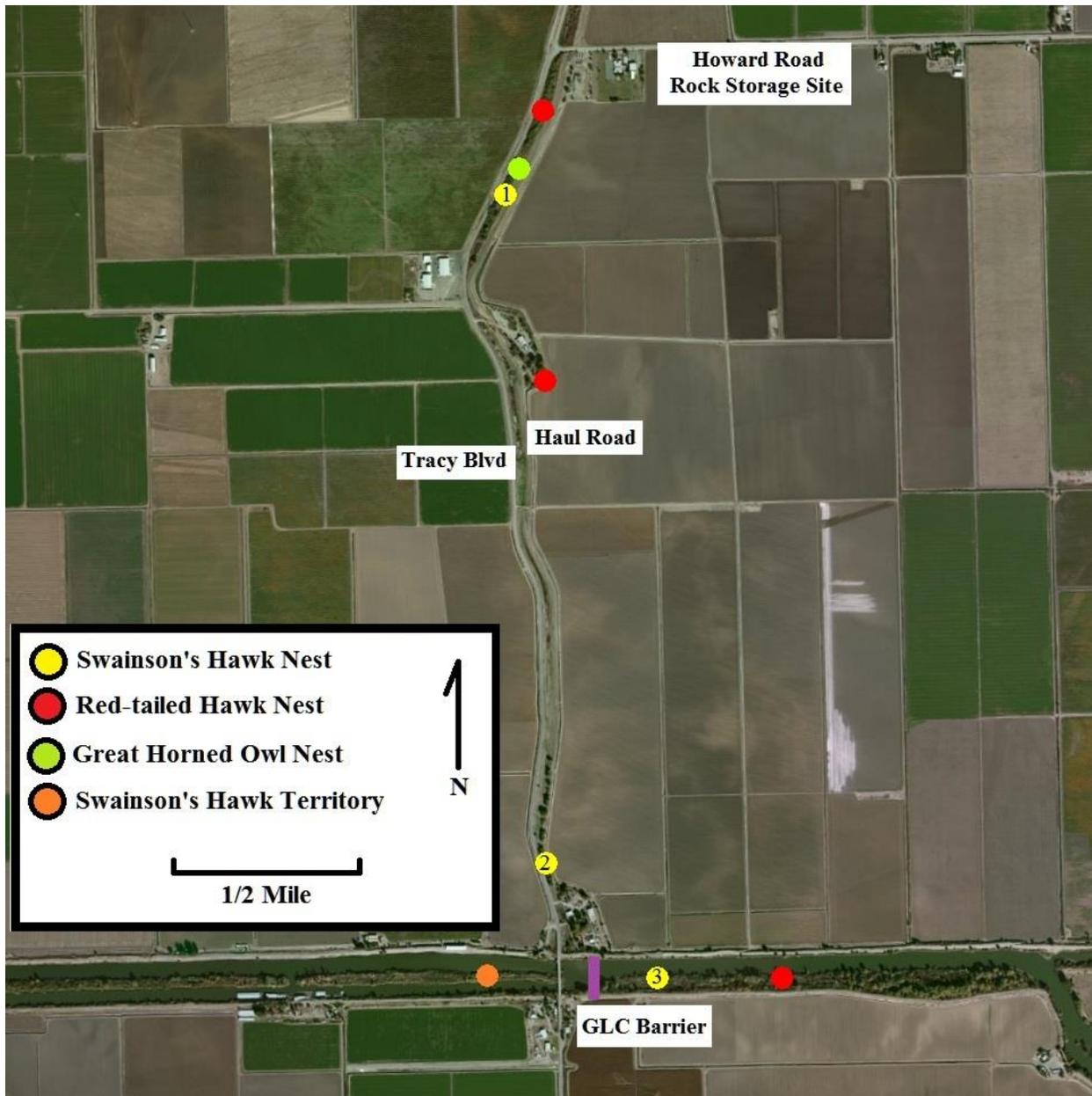


Figure 4. Raptor nests near the Grant Line Canal construction facilities in 2012.

Three Red-tailed Hawks nested in the vicinity of project activities, two along the haul road and one on Grant Line Canal. Each of the three nesting pairs produced at least one chick, which were observed post-project. One pair of Great Horned Owls also nested along the haul road and produced at least two chicks. They used the same nest they used the previous year, an old Red-tailed Hawk nest, and the nest collapsed before the chicks fledged. At least one chick managed to stay in the tree or adjacent trees for several days, but it is unclear if it survived.

Two issues were noted for the last day of construction: flatbed trailers carrying mats for the boat ramp were parked immediately across from the Swainson's Hawk nest on GLC, and there was some human activity as those trailers were prepared for off-loading and removal. The ITP for the project requires that disturbance near Swainson's Hawks nests be limited to the greatest

extent possible, so no parking zones should be established within 200 yards of an active nest. Also, dust abatement measures were not in place during those activities, and a great deal of dust was being blown to the active nest, which could have resulted in nest abandonment. Dust abatement measures required in the project permits should be adhered to.

Conclusions and Additional Information

The 2012 nesting season was another bad year for Swainson's Hawks, as well as Red-tailed Hawks and Great Horned Owls. At the initiation of surveys it was noted that all raptor species observed in the South Delta and locations around the Sacramento Valley were late in egg laying; some were very late. According to available migration data, Swainson's Hawks were late returning from wintering grounds, and left California very early for areas south of the US border. Nest failure was high for all three species, and those that successfully raised young typically only had one chick. The pattern and results of nesting for the three species indicates that food resources were limited, although it is not clear why that was, whether a natural cycle for the prey species, or if it was weather related.

Although 2012 was a difficult year for nesting raptors, there was no indication that construction activities at the barrier sites had any detrimental effects on the nesting raptors.