

United States Department of the Interior



FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2010-F-0446-R002

JUN 15 2011

Ms. Alicia E. Kirchner
Chief, Planning Division
U.S. Army Corps of Engineers, Sacramento District
1325 J Street
Sacramento, California 95814

Subject: Reinitiation of Section 7 Programmatic Formal Consultation on the Natomas Levee Improvement Program's Landside Improvements Phase 4a Project, Sacramento and Sutter Counties, California

Dear Ms. Kirchner:

This is in response to your June 2, 2011, request to reinitiate formal consultation with the U.S. Fish and Wildlife Service (Service) for a second time on the Natomas Levee Improvement Program (NLIP), Landside Improvements Project, Phase 4a (Phase 4a) in Sacramento and Sutter Counties, California. Your request was received in our office on June 3, 2011. The Phase 4a biological opinion (81420-2010-F-0446-1) was completed on May 24, 2010 and tiered off a programmatic biological opinion (81420-2008-F-0195-5) for the entire NLIP project that was issued on October 9, 2008. The U.S. Army Corps of Engineers (Corps) re-initiated consultation on Phase 4a due to project description changes and an updated biological opinion was completed on May 31, 2011. The Corps is requesting reinitiation on the Phase 4a project, for a second time, due to a change in a borrow site location and construction of a new recirculation ditch. These actions have not been previously analyzed. This biological opinion addresses effects to the federally-threatened giant garter snake (*Thamnophis gigas*) and is issued under the authority of section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

This biological opinion is based on: (1) your June 2, 2011, letter requesting reinitiation; (2) the memorandum prepared by AECOM dated May 31, 2011; (3) an electronic mail (e-mail) sent from AECOM to the Service on June 2, 2011; and (4) other information available to the Service.



To provide ease of reading, language changed within a paragraph from the original biological opinion will be underlined. Therefore, the Phase 4a biological opinion is now amended as follows:

Page 12: Add the following section after the third paragraph under the **Project Description**:

Fisherman's Lake Recirculation Ditch

The Sacramento Area Flood Control Agency (SAFCA) will establish a new recirculation ditch to provide fresh water to the West Drainage Canal and Fisherman's Lake to enhance the circulation of water in this system. The recirculation ditch will be constructed from the eastern edge of The Natomas Basin Conservancy (TNBC) supply ditch on the Natomas Farms Preserve to the West Drainage Canal. This earthen-banked ditch will be constructed mostly in existing upland. The ditch will supply water from the Riverside Pumping Plant to the West Drainage Canal to bring additional flows into the Fisherman's Lake area and improve water quality, via the following existing ditches: Riverside Canal; Kimura Ditch; and TNBC supply ditch.

The recirculation ditch will be constructed between the Natomas Farms borrow site and the existing TNBC Natomas Farms managed marsh area. The ditch will head north along the eastern edge of the TNBC Souza Preserve, cross under Del Paso Road, and then tie into an existing TNBC supply ditch. The ditch will parallel the supply ditch for about 525 feet and then head north across the TNBC Rosa East Preserve to the West Drainage Canal.

The ditch will be about 6,300 feet long, 5 to 6 feet deep, and have a 5-foot-wide bottom and 3:1 side slopes. Additionally, a drainage ditch will be constructed parallel to and west of a portion of the recirculation ditch from the middle of the Natomas Farms Preserve to the southwest corner of the Rosa East Preserve. The ditch will be approximately 2,400 feet long, 6 to 8 feet deep, and have a 5-foot-wide bottom and 3:1 side slopes. A 12-foot-wide gravel access road will be constructed along the east side of the recirculation ditch and a 18-foot-wide access road will be constructed along the west side of the recirculation ditch, except through the Rosa East Preserve where it will be 12-foot-wide on either side of the recirculation ditch. All constructed access roads will be graveled to provide all weather access. Access roads are necessary to conduct inspection and maintenance activities along the ditch. TNBC has an existing maintenance road west of the existing managed marsh on Natomas Farms. A parallel gravel road is necessary to manage and maintain the new recirculation ditch. Construction of the recirculation ditch would convert 3.67 acres of upland giant garter snake habitat, adjacent to either existing managed marsh or canals and ditches, to aquatic giant garter snake habitat.

Construction of the recirculation ditch will require installation of a drain outlet into the West Drainage Canal. An approximately 30-inch diameter pipe will be installed through the south bank of the West Drainage Canal. Rock slope protection will affect 0.01 acre area of giant garter snake aquatic habitat and temporarily affect 0.03 acre of giant garter snake upland. An existing agricultural drain culvert for the Rosa East Preserve is located where the proposed maintenance road will be constructed. Therefore, SAFCA has to relocate the agricultural drain culvert to the

east. A new drain pipe for the parcel will be constructed further east and will include placement of 350 square feet (0.01 acre) of rock slope protection around the pipe outfall in the West Drainage Canal. This would temporarily affect 0.01 acre of giant garter snake aquatic habitat and 0.03 acre of giant garter snake upland habitat to install the outfall.

Where the recirculation ditch crosses Del Paso Road, the ditch will be placed in a set of four 18-inch diameter reinforced concrete pipe culverts trenched under the road. Installation of these culverts will also cross through the roadside ditch on the south side of Del Paso Road. The pipe culverts will be installed via trenching under the roadside ditch and then the trenches will be backfilled and the roadside ditch will be re-established. This will result in approximately 0.001 acre of temporary effects to the roadside ditch. The southern roadside ditch is ephemeral, carrying occasional surface runoff from Power Line Road to Fisherman's Lake. The northern roadside ditch, which flows from the West Drainage Canal pump at Fisherman's Lake to the eastern boundary of the Novak property, infrequently carries water when the pump is activated, based on TNBC water demands for their Swainson's hawk preserves. Because these ditches are characterized as ephemeral features, they do not support suitable aquatic habitat for giant garter snake.

The portion of the recirculation ditch which crosses TNBC property will continue to be owned by TNBC. The portion of the ditch adjacent to SAFCA's proposed managed marsh will be owned by SAFCA with a conservation easement granted to TNBC. The entire recirculation ditch will be managed and maintained by TNBC. SAFCA will provide long-term funding to TNBC for management and maintenance of the recirculation ditch.

Page 21: Change the section under **Fisherman's Lake Borrow Area and Novak Borrow Site** from:

The 469-acre Fisherman's Lake Borrow Area consists of multiple parcels beginning at Powerline Road and extending south to and beyond Radio Road. Existing land uses include orchard, field crops, and rice cultivation. Some lands in the area include managed marsh and agricultural upland (field crop) areas owned by TNBC; these conservation areas will not be used for borrow operations. Approximately 367 acres of the Fisherman's Lake Borrow Area will be available for excavation of borrow material and used for several project purposes: levee improvements, relocation and extension of the Riverside Canal, woodland mitigation, other habitat creation, and borrow. The areas excavated for borrow material will be reclaimed as agricultural land, or converted to managed habitat including, grassland, agricultural land, or managed marsh depending on their location and existing land use. Plans for managed habitat elements are currently under design (detailed plans will be included in the Phase 4a Mitigation Monitoring Plan [MMP]). However, it is anticipated that portions of the AKT, Johnson, Natomas Urban Development, and Sharma parcels within the Fisherman's Lake borrow area will be converted into managed marsh complex with the remainder of these parcels to be reclaimed as grassland and agricultural land and managed as Swainson's hawk foraging habitat. Field crops on the Natomas Boot parcel will be reclaimed to this use following the temporary borrow operations. New irrigation pipes and drainage pipes will be installed to service these sites.

To:

The 469-acre Fisherman's Lake Borrow Area consists of multiple parcels beginning at Powerline Road and extending south to and beyond Radio Road. Existing land uses include orchard, field crops, and rice cultivation. Some lands in the area include managed marsh and agricultural upland (field crop) areas owned by TNBC. Approximately 367 acres of the Fisherman's Lake Borrow Area will be available for excavation of borrow material and used for several project purposes: levee improvements, relocation and extension of the Riverside Canal, woodland mitigation, other habitat creation, and borrow. The areas excavated for borrow material will be reclaimed as agricultural land, or converted to managed habitat including, grassland, agricultural land, or managed marsh depending on their location and existing land use. Plans for managed habitat elements are currently under design (detailed plans will be included in the Phase 4a Mitigation Monitoring Plan [MMP]). Portions of the AKT and Sharma parcels within the Fisherman's Lake borrow area will be converted into a managed marsh complex with the remainder of these parcels to be reclaimed as grassland and agricultural land and managed as Swainson's hawk foraging habitat. Field crops on the Natomas Boot parcel will be reclaimed to this use following the temporary borrow operations. New irrigation pipes and drainage pipes will be installed to service these sites.

Due to residual agriculture chemicals at the Johnson property and the small size of the Natomas Urban Development property, SAFCA needed to find an additional borrow site both for material for levee construction as well as space to create managed marsh as compensation for the proposed NLIP project. SAFCA is proposing to purchase, in fee title, a portion of the Natomas Farms Preserve that is currently serving as mitigation for the Natomas Basin Habitat Conservation Plan (NBHCP). This property is farmed for hay production and managed as Swainson's hawk foraging habitat. To compensate for the loss of a 42.5 acre portion of the Natomas Farms Preserve, TNBC will designate 42.5 acres of excess lands they own and manage but are not committed to mitigation to serve as mitigation for the NBHCP. This land will be located within the Bolen West Preserve. Borrow activities would temporarily affect about 12.4 acres of giant garter snake upland habitat.

Once borrow activities are completed, SAFCA will convert the parcel to managed marsh. TNBC will be granted a conservation easement on the site and will be responsible for management of the site with an endowment funded by SAFCA.

Supply water for the Natomas Farms managed marsh will come from an existing supply channel located at the south end of the Natomas Farms parcel. The water will flow through culverts from the supply channel into the managed marsh. Similarly, water would need to flow out of the managed marsh to maintain water circulation and prevent stagnation within the managed marsh channels. Therefore, a new drainage ditch will be established on the north side of the Natomas Farms parcel transporting drainage water away from the site.

The new drainage ditch for the Natomas Farms borrow site will be constructed parallel to the recirculation ditch to the west and would cross under the southern roadside ditch and under Del Paso Road. The installation of two 18-inch diameter pipe culverts for the new drainage ditch will result in less than 0.001 acre of temporary effects to the roadside ditch. Finally, a construction access ramp off Del Paso Road will be constructed to the west of the Natomas Farms drainage ditch to provide access to the Natomas Farms site and the ditches. The construction entrance will consist of placement of approximately one foot of aggregate rock over filter fabric to the elevation of the road and existing ground to provide a stable and level driving surface to the site. A culvert will be placed under the aggregate to maintain flows of the southern roadside ditch. The construction of the entrance ramp will result in another 0.01 acre of temporary effects (fill) to the Del Paso Road roadside ditch. The southern roadside ditch is ephemeral, carrying occasional surface runoff from Power Line Road to Fisherman's Lake. Because these ditches are characterized as ephemeral features and do not have constant water during the summer, they do not support suitable aquatic or upland habitat for giant garter snake.

Due to the change in the borrow site, SAFCA will need to create an additional haul road to provide access to the Natomas Farms borrow site. The haul road will be extended from the north side of the Sharma borrow site over a crossing of the west end of Kimura Ditch. A 100-foot long culvert would be placed that would affect 0.01 acre of aquatic giant garter snake habitat and 0.45 acre of upland habitat. SAFCA has considered that these effects will continue over two years and will compensate for them as though they are permanent.

Page 31: Add the following additional Conservation Measures:

Giant Garter Snake

- Establish high-visibility exclusionary fencing and barriers prior to the start of construction in order to protect suitable giant garter snake habitat that is located adjacent to borrow areas. This fencing will be used to separate the existing TNBC Natomas Farms marsh and all of the Kimura Ditch west of the haul road crossing from borrow operations at the Sharma and Natomas Farms sites. Protective fencing and barriers will also be in place along the west bank of Fisherman's Lake and along the northern boundary of the TNBC Cummings Reserve to prevent snakes from moving into the AKT and Sharma sites during borrow operations.
- Prior to construction, SAFCA will install a temporary culvert slightly above the ordinary high water mark (OHWM) between Fisherman's Lake and the east end of Kimura Ditch under the planned haul road along the RD 1000 corridor. This will provide a protected passage for snakes under the RD 1000 maintenance road to Kimura Ditch and to the existing Natomas Farms managed marsh during borrow operations.
- TNBC and Reclamation District 1000 will suspend all maintenance activities during the borrow activities.
- Prior to the commencement of borrow operations, the Mosquito and Vector Control District will stock the existing managed marshes at the TNBC Natomas Farms and

Cummings Preserves with mosquito fish (*Gambusia affinis*) to provide an additional attractant for snakes to remain in the managed marshes for refuge.

Page 33: Change the following paragraph in the **Effects from Proposed Action** from:

Construction activities within the Fisherman's Lake area will temporarily affect both upland and aquatic giant garter snake habitat. Ground disturbing activities such as degrading levees along the Plant 3 Channel (0.28 acre) and excavation and installation of re-circulation drain pipe along the Plant 3 Channel (0.001 acre) will temporarily affect 0.281 acre of giant garter snake upland habitat. Construction within aquatic features such as widening the Sharma north ditch (0.13 acre); placement of rock under culverts and pipe crossings (0.187 acre); and dewatering segments of the Plant 3 Channel (3.1 acres) for culvert installation, haul road placement, and Riverside Canal pipe crossings would temporarily affect 3.417 acres of aquatic giant garter snake habitat. Dewatering of the Plant 3 Channel would occur in segments with each segment's construction lasting no longer than five days and no more than two segments occurring at any one time. Riprap would displace a total of 0.187 acre of soil substrate in Plant 3 Channel, Sharma north ditch, and Fisherman's Lake. The change of substrate will result in a small area within the overall canals, which will no longer be available for vegetative growth. However, given the small individual areas (the largest being 0.09 acre) and the ability of the snake to continue to use the areas for foraging and basking, this is viewed as a small, temporary affect to giant garter snakes. The SAFCA will conduct construction as outlined in the conservation measures as part of the project description. All of the above activities are temporary and the disturbances will be conducted during one giant garter snake's active season (May 1 to October 1). The sites will be returned to the pre-existing condition.

Construction activities will permanently affect upland and aquatic giant garter snake habitat. The SAFCA will place concrete structures over 0.006 acre of upland habitat adjacent to Plant 3 Channel, making this upland habitat unavailable to the giant garter snake for use as overwintering habitat or basking habitat. A 0.34-acre segment of the Sharma North Ditch would be disconnected from the TNBC Supply Ditch, which will mean the area will no longer receive water from the managed irrigation system, which is the source of water during the summer when giant garter snakes are most active. A 0.09-acre segment of the Sharma north ditch would be filled when a maintenance road is constructed adjacent to the Kimura west ditch. Installation of a haul road crossing would result in the piping of 0.34 acre of the Plant 3 Channel for more than one summer. Because of the multiple seasons that the haul route would be in place, the multiple year loss of basking and overwintering habitat available to the snake, and the disturbance of large vehicles driving on the haul road, this activity is included as a permanent effect. Permanent effects are compensated through the creation of managed marsh within the AKT and Sharma borrow sites. Creation of 0.786 acre of managed marsh and permanent protection of this marsh through a conservation easement will compensate for the effects of the construction activities within giant garter snake upland and aquatic habitat described in this paragraph.

To:

Construction activities within the Fisherman's Lake area will temporarily affect both upland and aquatic giant garter snake habitat. Ground disturbing activities such as degrading levees along the Plant 3 Channel (0.28 acre); excavation and installation of a recirculation drain pipe along the Plant 3 Channel (0.001 acre); and placing culverts in the West Drainage Canal (0.06 acre) will temporarily affect 0.341 acre of giant garter snake upland habitat. Construction within aquatic features such as widening the Sharma north ditch (0.13 acre); placement of rock under culverts and pipe crossings (0.187 acre); dewatering segments of the Plant 3 Channel (3.1 acres) for culvert installation, haul road placement, and Riverside Canal pipe crossings; and placing culverts in the West Drainage Canal (0.02 acre) would temporarily affect 3.437 acres of aquatic giant garter snake habitat. Dewatering of the Plant 3 Channel would occur in segments with each segment's construction lasting no longer than five days and no more than two segments occurring at any one time. Riprap would displace a total of 0.187 acre of soil substrate in Plant 3 Channel, Sharma north ditch, and Fisherman's Lake. The change of substrate will result in a small area within the overall canals, which will no longer be available for vegetative growth. However, given the small individual areas (the largest being 0.09 acre) and the ability of the snake to continue to use the areas for foraging and basking, this is viewed as a small, temporary affect to giant garter snakes. SAFCA will conduct construction as outlined in the conservation measures as part of the project description. All of the above activities in suitable giant garter snake habitat are temporary and the disturbances will be conducted during one giant garter snake's active season (May 1 to October 1).

Conversion of the Natomas Farms borrow site from hay to managed marsh and construction of a recirculation ditch will convert 42.5 acres of hay cropland. Of these 42.5 acres 12.4 acres are adjacent to the TNBC Natomas Farms managed marsh. This area is managed for Swainson's hawk habitat through agricultural operations such as mowing and discing. In creating the recirculation ditch 3.67 acres will be converted to giant garter snake aquatic habitat and the remainder will become associated upland habitat that will be disturbed less frequently than the current agricultural activities. This managed marsh will serve as compensation for Phases 2, 3, and 4a of the proposed project. Effects to giant garter snakes for the original borrow sites as included in the original biological opinion would have affected 47.9 acres of row crop and 32.13 acres of ruderal grassland/fallow crop. The changes in borrow sites have lessened the overall acreage of land that would be affected in the Fisherman's Lake area. Giant garter snakes are known to travel overland and acreage that will no longer serve as a borrow area will provide more area for snakes to use for overland travel during the construction period.

Construction activities will permanently affect upland and aquatic giant garter snake habitat. SAFCA will place concrete structures over 0.006 acre of upland habitat adjacent to Plant 3 Channel, making this upland habitat unavailable to the giant garter snake for use as overwintering habitat or basking habitat. A 0.34-acre segment of the Sharma North Ditch will be disconnected from the TNBC Supply Ditch, which will mean the area will no longer receive water from the managed irrigation system, which is the source of water during the summer when giant garter snakes are most active. A 0.09-acre segment of the Sharma north ditch will be filled when a maintenance road is constructed adjacent to the Kimura west ditch. Installation of a haul

road crossing would result in the piping of 0.34 acre of the Plant 3 Channel and 0.01 acre of Kimura Ditch as well as 0.45 acre of adjacent suitable giant garter snake upland habitat for more than one summer. Because of the multiple seasons that the haul route would be in place, the multiple year loss of basking and overwintering habitat available to the snake, and the disturbance of large vehicles driving on the haul road, this activity is included as a permanent effect. Permanent effects will be compensated through the creation of managed marsh within the AKT and Sharma borrow sites. Creation of 1.236 acres of managed marsh and permanent protection of this marsh through a conservation easement will compensate for the effects of the construction activities within suitable giant garter snake upland and aquatic habitat described in this paragraph.

Page 36: Change the **Amount or Extent of Take** from:

The Service anticipates that incidental take of the snake will be difficult to detect or quantify for the following reasons: giant garter snakes are cryptically colored, secretive, and known to be sensitive to human activities. Snakes may avoid detection by retreating to burrows, soil crevices, vegetation, or other cover. Individual snakes are difficult to detect unless they are observed, undisturbed, at a distance. Most close-range observations represent chance encounters that are difficult to predict. It is not possible to make an accurate estimate of the number of snakes that will be harassed, harmed or killed during Phase 4a construction activities (staging areas, work on canal banks, soil borrow areas, and vehicle traffic to and from borrow areas) or long-term maintenance of the GGS/Drainage Canal and Brookfield rice. In instances when take is difficult to detect, the Service may estimate take in numbers of individual snakes per acre of habitat lost or affected as a result of the action. Therefore, the Service anticipates that giant garter snakes inhabiting 57.65 acres of aquatic and 27.62 acres of upland habitat may be harassed, harmed, or 3 giant garter snakes killed by loss and destruction of habitat due to construction of Phase 4a.

To:

The Service anticipates that incidental take of the snake will be difficult to detect or quantify for the following reasons: giant garter snakes are cryptically colored, secretive, and known to be sensitive to human activities. Snakes may avoid detection by retreating to burrows, soil crevices, vegetation, or other cover. Individual snakes are difficult to detect unless they are observed, undisturbed, at a distance. Most close-range observations represent chance encounters that are difficult to predict. It is not possible to make an accurate estimate of the number of snakes that will be harassed, harmed or killed during Phase 4a construction activities (staging areas, work on canal banks, soil borrow areas, and vehicle traffic to and from borrow areas) or long-term maintenance of the GGS/Drainage Canal and Brookfield rice. In instances when take is difficult to detect, the Service may estimate take in numbers of individual snakes per acre of habitat lost or affected as a result of the action. Therefore, the Service anticipates that giant garter snakes inhabiting 57.66 acres of suitable aquatic and 28.07 acres of suitable upland habitat may be harassed, harmed by destruction of habitat and construction activities. The Service anticipates that 3 giant garter snakes may be killed by construction activities in Phase 4a.

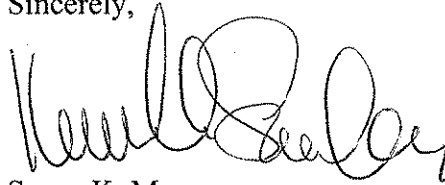
Page 35: Add the following paragraph at the end of the Conclusion:

Given the overall scope of the project that was analyzed in the May 24, 2010, and May 31, 2011, Phase 4a biological opinions, the changes reflected within this reinitiation are relatively minor. The SAFCA has incorporated conservation measures within their project description that will minimize and avoid effects to giant garter snakes. This biological opinion would include the loss of an additional 0.46 acre of aquatic and upland giant garter snake habitat. SAFCA has permanently affected approximately 113 acres of giant garter snake habitat with the entire NLIP project. Permanent habitat loss is being compensated through the creation of approximately 120 acres of managed marsh habitat adjacent to Fisherman's Lake. These lands will be protected in perpetuity with a conservation easement held by TNBC and maintenance and management will be assured through SAFCA's funding of an endowment.

This concludes formal consultation with the Corps on the Natomas Levee Improvement Program, Landside Improvements Phase 4a Project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the proposed action may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or (4) a new species or critical habitat is designated that may be affected by the proposed action.

If you have any questions regarding this biological opinion on the Natomas Landside Improvements Project, please contact Jennifer Hobbs, Senior Fish and Wildlife Biologist at (916) 414-6541 or Kellie Berry, Chief, Sacramento Valley Division at (916) 414-6645.

Sincerely,



fen Susan K. Moore
Field Supervisor

cc:

Elizabeth Holland, Corps, Sacramento, CA
Todd Gardner, CDFG, Sacramento, CA
Peter Buck, SAFCA, Sacramento, CA
Kelly Holland, AECOM, Sacramento, CA