

4.5 BIOLOGICAL RESOURCES

The purpose of this section is to analyze the potential environmental consequences of the project alternatives on biological resources, including wildlife and habitats, Federally listed species, migratory birds, and jurisdictional waters of the U.S. The analysis of potential effects was based on the biological setting as determined from field surveys conducted by H. T. Harvey & Associates and Analytical Environmental Services in 2004, 2005, and 2006, by consultation with the USFWS, and reviewing known literature and metadata, including the California Natural Diversity Database (CNDDDB). Potential direct effects to biological resources associated with the development of each project alternative are discussed below.

4.5.1 ALTERNATIVE A – PROPOSED PROJECT

POTENTIAL EFFECTS TO WILDLIFE AND HABITATS

Terrestrial Resources

Development of Alternative A would affect habitats that are utilized by wildlife species. **Table 4.5-1** provides a summary of the acreage of each habitat type that would be affected under the three different surface wastewater disposal options for Alternative A, as described in **Section 2.2.7**, and shown in **Figure 2-8**. As shown in **Table 4.5-1**, Option 1 and Option 3 would affect 41% of the 305-acre Madera site, primarily dryland wheat fields. Option 2 would affect 56% of the property, also dryland wheat fields. This habitat provides limited resources for wildlife due to frequent plowing and weed control measures associated with farming practices. Furthermore, farming practices disrupt burrows and groundcover used by fossorial mammals. Species found in cultivated habitats are typically widespread and accustomed to disturbances. No significant impacts to wildlife and habitats would result with the implementation of Alternative A.

TABLE 4.5-1
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE A

Configuration Number	Habitat Type	Acreage Affected	Percentage Affected
Option 1	Dryland Wheat Fields	126.5	41%
Option 2	Dryland Wheat Fields	170.6	56%
Option 3	Dryland Wheat Fields	126.5	41%

SOURCE: H. T. Harvey & Associates, 2004; AES, 2005.

Aquatic Resources

Potential impacts to Schmidt Creek and downstream aquatic habitat from the discharge of tertiary treated wastewater include changes in flow and vegetation characteristics of the waterways. The riparian vegetation within the ditch is not continuous and is primarily composed of herbaceous species, both upland and hydrophytic. Flowing water was absent during the survey periods and the addition of a permanent water source in Schmidt Creek ditch would stimulate the growth of hydrophytic vegetation and ultimately create conditions for the growth of a diverse riparian

habitat. Thus, impacts to plant species within the Schmidt Creek ditch from surface disposal would be less than significant. The addition of high quality recycled water to Dry Creek (downstream of Schmidt Creek) would flush particulates, remove debris, increase low flows, and provide better habitat for aquatic species by supplying more water for the development of shading riparian vegetation (Hopkins et al., 2002). One way the discharge could potentially impact the aquatic habitat is if the discharged effluent increases the water temperature of Dry Creek by more than five degrees Fahrenheit. This impact can be avoided by the implementation of mitigation measures in **Section 5.2.4**.

STATE SPECIAL-STATUS SPECIES

As discussed in **Section 3.5.4**, three State special-status species have the potential to occur on the Madera site. The site provides foraging habitat for the Swainson's hawk and northern harrier and potential nesting habitat for the California horned lark. The potential for the project to impact these species is described below. These species are not necessarily afforded protection under the Federal Endangered Species Act.

Swainson's hawk is unlikely to forage on the site. The nearest CNDDDB record documents a nest on the Fresno County side of the San Joaquin River, approximately 15 miles from the Madera site (CNDDDB, 2004). During the reconnaissance-level survey, performed by H.T. Harvey and Associates (June 2004), an assessment of potential Swainson's hawk foraging habitat within five miles of the Madera site was made by driving the major roads in the area bordered by Avenue 26 on the north, Road 28½ on the east, Avenue 12 on the south, and Road 16 on the west. The area within the 5-mile radius of the Madera site is primarily composed of orchards and vineyards, isolated cultivated fields (planted and fallow), pastures, and developed land. Crops that provide quality foraging habitat (alfalfa and pasture) were rare within the five-mile radius of the site, and in small (up to 20 acres) isolated plots. Alternative A is not expected to impact Swainson's hawk.

The northern harrier is not likely to occur on the site because there is very little suitable foraging habitat in the vicinity. Additionally, there are no recorded occurrences of this species within five miles of the Madera site. Alternative A is not expected to impact the northern harrier.

Horned larks are not likely to use the site while wheat is planted, but could be present when the site is fallow. Therefore, if a grain crop is cultivated on the Madera site prior to conversion, no impacts to this species are expected to result from Alternative A.

The hoary bat has the potential to roost in trees on the Madera site. Only a few trees exist on the Madera site. Removal of these trees would constitute a less than significant impact. Nonetheless, mitigation in **Section 5.2.4** will minimize impacts to the hoary bat.

FEDERALLY LISTED SPECIES

As discussed in **Section 3.5.4**, no Federal special-status species were observed on site. Biological field surveys showed the Madera site is ruderal and subject to constant human disturbance. Therefore, it does not provide habitat for the Federally-listed special-status invertebrates, fish, amphibians, reptiles, or plant species.

MIGRATORY BIRD AND OTHER FEDERAL SPECIAL-STATUS BIRD SPECIES

The development of Alternative A would affect vegetation communities that could potentially support active migratory bird nests. Migratory birds and their nests are protected from “take” according to the federal Migratory Bird Treaty Act. Alternative A could adversely affect active migratory bird nests if vegetation removal activities associated with project construction occur during the nesting season. This is potentially a significant impact. Potential adverse direct effects to migratory birds and other special-status bird species will be avoided or minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

WATERS OF THE U.S.

A delineation of waters of the U.S. occurring within the site identified Schmidt Creek realignment ditch and other seasonal wetlands totaling 8.51 acres (H. T. Harvey & Associates, 2005). These features are subject to U.S. Army Corps of Engineers (USACE) jurisdiction under the Clean Water Act and any discharge of dredged or fill material within the drainages would require a Department of the Army permit.

There are no anticipated direct effects due to the construction of facilities to jurisdictional waters of the U.S. because the proposed casino and associated facilities are all located elsewhere on the Madera site. A clear-span bridge is proposed over the Airport ditch to connect the access road to Road 23, thereby avoiding any impact to the creek. All other jurisdictional waters of the U.S. have been avoided in the design phase and protected from indirect effects by a 50-foot buffer.

4.5.2 ALTERNATIVE B – REDUCED INTENSITY

POTENTIAL EFFECTS TO WILDLIFE AND HABITATS

Terrestrial Resources

Development of Alternative B would affect the dry wheat field habitat that is primarily used by wildlife species accustomed to human disturbance (see the vegetation community descriptions in **Section 3.5.2**). **Table 4.5-2** provides a summary of the acreage of each habitat type that would be affected under the three different surface wastewater disposal options for Alternative B, as described in **Section 2.3.6**. **Figure 2-12** shows the three different options for the wastewater facilities. As shown in **Table 4.5-2**, Option 1 and Option 3 would affect approximately 32% and 31% of the 305 acres respectively, primarily dryland wheat fields. Option 2 would affect

approximately 40% of the property, also dryland wheat fields. This habitat provides limited resources for wildlife due to frequent plowing and weed control measures associated with farming practices. Furthermore, farming practices disrupt burrows and groundcover used by fossorial mammals. Species found in cultivated habitats are typically widespread. No significant impacts to wildlife and habitats would result with the implementation of Alternative B.

TABLE 4.5-2
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE B

Configuration Number	Habitat Type	Acreage Affected	Percentage Affected
Option 1	Dryland Wheat Fields	98.7	32%
Option 2	Dryland Wheat Fields	122.5	40%
Option 3	Dryland Wheat Fields	95.2	31%

SOURCE: H. T. Harvey & Associates, 2004; AES, 2005.

Aquatic Resources

Similar to Alternative A, potential impacts to Schmidt Creek and downstream habitat from the discharge of tertiary treated wastewater include changes in flow and vegetation characteristics of the waterways. As with Alternative A, the addition of a permanent water source in Schmidt Creek ditch would stimulate the growth of hydrophytic vegetation and ultimately create conditions for the growth of a diverse riparian habitat, a less than significant impact. One way the discharge could potentially impact the aquatic habitat is if the discharged effluent increases the water temperature of Dry Creek by more than five degrees Fahrenheit. This impact can be avoided by the implementation of mitigation measures in **Section 5.2.4**.

STATE SPECIAL-STATUS SPECIES

Alternative B would result in fewer impacts to State special-status species because it would develop a smaller area. Species with the potential to occur on the Madera site are discussed under Alternative A. These species are not necessarily afforded protection under the Federal Endangered Species Act. Nevertheless, mitigation is provided in **Section 5.2.4** for potential impacts to state special-status species.

FEDERALLY LISTED SPECIES

Due to the relatively close configuration of each option associated with Alternative B and Alternative A, potential project impacts are similar to the potential impacts generated by Alternative A. The primary difference between the two alternatives is that Alternative B will use less acreage. No project-related impacts are expected to occur to other Federal special-status species. Biological surveys showed the Madera site does not provide habitat for the special-status invertebrates, fish, amphibians, reptiles, or plant species identified to occur in the Kismet, California 7.5' USGS quadrangle.

MIGRATORY BIRD AND OTHER SPECIAL-STATUS SPECIES

Alternative B could adversely affect active migratory bird nests if vegetation removal activities associated with project construction occur during the nesting season. This is potentially a significant impact. Potential adverse direct effects to migratory birds and other special-status species will be avoided or minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

WATERS OF THE U.S.

There are no anticipated direct effects, due to the construction and placement of the facilities, to potentially jurisdictional waters of the U.S. As with Alternative A, the project has been designed to avoid potentially jurisdictional wetlands on the site (i.e., 50-foot buffer) and would include a clear-span bridge to connect the access road with Road 23.

4.5.3 ALTERNATIVE C – NON-GAMING USE***POTENTIAL EFFECTS TO WILDLIFE AND HABITATS******Terrestrial Resources***

Despite the reduction in the intensity of land development, the grading footprint of Alternative C would be generally similar to the previous alternatives. As previously stated, species utilizing the dry wheat field habitat are wildlife that has grown accustomed to and can coexist with human disturbance. **Table 4.5-3** provides a summary of the acreage of each habitat type that would be affected under the three different surface wastewater disposal options for Alternative C, as described in **Section 2.4.6**., and shown in **Figure 2-17**. As shown in **Table 4.5-3**, Option 1 and Option 3 would affect approximately 26% of the 305 acres, primarily dryland wheat fields. Option 2 would affect 27% of the property, also dryland wheat fields. This habitat provides

TABLE 4.5-3
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE C

Configuration Number	Habitat Type	Acreage Affected	Percentage Affected
Option 1	Dryland Wheat Fields	80.8	26.5%
Option 2	Dryland Wheat Fields	82.7	27%
Option 3	Dryland Wheat Fields	80.4	26%

SOURCE: H. T. Harvey & Associates, 2004; AES, 2005.

limited resources for wildlife due to frequent plowing and weed controls associated with farming practices. Furthermore, farming practices disrupt burrows and groundcover used by fossorial mammals. Species found in cultivated habitats are typically widespread and accustomed to disturbances. No significant impacts to wildlife and habitats would result with the implementation of Alternative C.

Aquatic Resources

Potential impacts to Schmidt Creek and downstream aquatic habitat from the discharge of tertiary treated wastewater include changes in flow and vegetation characteristics of the waterways. These impacts would be similar to Alternative A, except that treated wastewater flows would be much lower with Alternative C. As with Alternative A, the addition of a permanent water source in Schmidt Creek ditch would stimulate the growth of hydrophytic vegetation and ultimately create conditions for the growth of a diverse riparian habitat, a less than significant impact. One way the discharge could potentially impact the aquatic habitat is if the discharged effluent increases the water temperature of Dry Creek by more than five degrees Fahrenheit. This impact can be avoided by the implementation of mitigation measures in **Section 5.2.4**.

STATE SPECIAL-STATUS SPECIES

Alternative C would result in fewer impacts to State special-status species because it would develop a smaller area. Species with the potential to occur on the Madera site are discussed under Alternative A. These species are not necessarily afforded protection under the Federal Endangered Species Act. Nevertheless, mitigation is provided in **Section 5.2.4** for potential impacts to state special-status species.

FEDERALLY LISTED SPECIES

Alternative C is reduced significantly in overall size, as compared with Alternatives A and B, and potential project impacts are similar to those generated by the other two alternatives. Biological surveys showed the Madera site does not provide habitat for any Federal special-status species identified to occur in the Kismet, California 7.5' USGS quadrangle or the surrounding eight quadrangles. Alternative C will therefore not impact any Federally-listed species.

MIGRATORY BIRD AND OTHER SPECIAL-STATUS SPECIES

Alternative C could adversely affect active migratory bird nests if vegetation removal activities associated with project construction occur during the nesting season. This is potentially a significant impact. Potential adverse direct effects to migratory birds and other special-status species will be avoided or minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

WATERS OF THE U.S.

As with Alternative A and Alternative B, there are no anticipated direct effects, from the development of facilities, to potentially jurisdictional waters of the U.S. The footprint of Alternative C is similar to the previous alternatives, though the land use is changed, and would retain the previously mentioned buffers (around identified wetlands) and clear-span bridge to connect to Road 23.

4.5.4 ALTERNATIVE D - NORTH FORK LOCATION

POTENTIAL EFFECTS TO WILDLIFE AND HABITATS

Terrestrial Resources

Development of Alternative D would affect Interior Live Oak Woodland that is utilized by a wide variety of fauna. The complete layout of the complex and associated facilities is within the Interior Live Oak Woodland, and as such would affect the vegetation community as well as three streams located in the proposed development area. **Table 4.5-4** provides a summary of the acreage of the habitat type that would be affected under the three different surface wastewater disposal options for Alternative D, as described in **Section 2.5.6.**, and shown in **Figure 2-20**. As shown in **Table 4.5-4**, all three options would affect approximately ten percent of the total 78.8 acres on the North Fork site. Furthermore, the development of the site would cause wildlife species, indigenous to the area, to utilize other similar geographic regions. Although there is an abundance of similar habitat within the area and an impact of approximately 8 acres is relatively insignificant, the value lies in the mostly undisturbed nature of the site (intrinsic value). Wildlife, unaccustomed to human disturbance, would decrease not only in the immediate area but also along the periphery of the development, being displaced by species adapted to human activity. This impact would be significant and mitigation measures are outlined in **Section 5.2.4**.

TABLE 4.5-4
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE D

Configuration Number	Habitat Type	Acreage Affected	Percentage Affected
Option 1	Interior Live Oak Woodland	7.9	10%
	Stream Habitat	0.2	16%
Option 2	Interior Live Oak Woodland	9.4	12%
	Stream Habitat	0.2	16%
Option 3	Interior Live Oak Woodland	7.1	9%
	Stream Habitat	0.2	16%

SOURCE: H. T. Harvey & Associates, 2004; AES, 2005.

Aquatic Resources

Potential impacts to the on-site unnamed tributary of Willow Creek and downstream aquatic habitat from the discharge of tertiary treated wastewater include changes in flow and vegetation characteristics of the waterways. The unnamed tributary is an ephemeral stream and the addition a permanent water source would stimulate the growth of hydrophytic vegetation and ultimately create conditions for the growth of a diverse riparian habitat. The downstream waters, Willow Creek, would benefit from increased flows of high quality recycled water by providing better habitat for resident rainbow trout.

If the discharged effluent increases the water temperature of Willow Creek by more than five degrees Fahrenheit, it could significantly impact aquatic species downstream of the confluence of Willow Creek and the unnamed tributary. This impact can be avoided by the implementation of mitigation measures in **Section 5.2.4**.

STATE SPECIAL-STATUS SPECIES

Section 3.5.4 states that three State special-status species have the potential to occur on the North Fork site: the tree anemone, the northern goshawk and the pallid bat. If these species occur on the North Fork site, Alternative D would potentially impact them by removing nesting and foraging habitat. The North Fork site is within lands held in Trust by the U. S. government, so State-listed species are not afforded the same protections as Federally-listed species. The potential for Alternative D to impact these species is discussed below.

The tree anemone was not observed on the North Fork site during surveys performed on May 11 and 12, 2005. These surveys were conducted during this species' bloom period, which is from May to July. Alternative D is not expected to impact this species.

The northern goshawk typically breeds at either higher altitudes or higher latitudes than the North Fork site. This species was not observed on the site and no impacts to northern goshawk breeding habitat are expected to result from Alternative D.

The pallid bat has the potential to roost in buildings and tree cavities on the North Fork site. Between 7.1 and 9.4 acres of interior live oak habitat (**Table 4.5-4**), as well as existing structures, will be removed. Removal of several acres of woodland and existing structures would constitute a potentially significant impact. Mitigation in **Section 5.2.4** will ensure that any impacts would be less than significant.

FEDERALLY LISTED SPECIES

Table 3.5-4, (Section 3.5.4) lists six species that could potentially be affected by the development of Alternative D. Of these species, two have the potential to occur on the project site: Mariposa pussypaws (*Calyptridium pulchellum*) and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*).

Special Status Plant Species

The North Fork site has habitat for the Federal special-status plant species Mariposa pussypaws. As described in **Table 3.5-4**, habitat for this species is chaparral and cismontane woodland on granitic substrate. The loss of Interior Live Oak Woodland (acreages shown in **Table 4.5-4**) could significantly affect these species. Mitigation measures to avoid potential impacts to special-status plant species are identified in **Section 5.2.4**.

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)

Federal Status - Threatened

Elderberry shrubs (*Sambucus* spp.), the host plant for the VELB, occur in the Open Foothill Pine Woodland and Interior Live Oak Woodland habitats on the North Fork site. Due to the presence of the shrubs, development of the site could significantly impact VELB populations. Of the 52 plants found on the North Fork site, 50 have the potential to be impacted by Alternative D. These shrubs are described in **Table 4.5-5** and shown in **Figure 4.5-1**.

TABLE 4.5-5
ANTICIPATED EFFECTS TO ELDERBERRY BUSHES – ALTERNATIVE D

Location	No. of Plants	Stem diameters (inches)			Exit Holes Present?	In Riparian Habitat?
		1" to 3"	3" to 5"	> 5"		
eld1	1	6	0	0	no	yes
eld2	2	0	0	0	no	yes
eld3	8	6	0	0	yes	yes
eld4	3	8	0	0	yes	yes
eld5	6	4	0	0	yes	yes
eld6	1	0	0	0	no	yes
eld8	1	6	0	0	no	no
eld9	1	1	0	0	no	no
eld10	1	2	0	0	no	yes
eld11	1	2	0	0	no	no
eld12	1	3	0	0	no	no
eld13	2	7	0	0	yes	no
eld14	1	1	0	0	no	yes
eld15	1	4	0	0	yes	yes
eld16	1	0	0	0	no	yes
eld17	1	5	0	0	no	yes
eld18	1	1	0	0	no	no
eld19	6	24	2	0	no	no
eld20	1	1	0	0	no	yes
eld21	2	15	0	0	yes	yes
eld22	4	0	0	0	no	yes
eld23	2	2	0	0	no	yes
eld24	1	1	0	0	no	yes
eld25	1	1	0	0	no	yes

SOURCE: AES, 2006.

The majority of these elderberries will be impacted by the grading necessary to stabilize the site prior to construction. Additionally, if Alternative D is adjusted to include widening of Mission Drive, the two shrubs in location eld7 on the eastern side of the road may also be impacted. Mitigation measures to reduce potential impacts to valley elderberry longhorn beetle are shown in **Section 5.2.4**.

FIGURE 4.5-1 IMPACTS TO ELDERBERRY LONGHORN BEETLE HABITAT

MIGRATORY BIRD AND OTHER SPECIAL-STATUS SPECIES

The development of Alternative D would affect vegetation communities that could potentially support active migratory bird nests. Migratory birds and their nests are protected from “take” according to the Federal Migratory Bird Treaty Act. Alternative D could adversely affect active migratory bird nests if vegetation removal activities associated with project construction occur during the nesting season. This is potentially a significant impact. Potential adverse direct effects to migratory birds and other special-status species will be avoided or minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

WATERS OF THE U.S.

H.T. Harvey and Associates conducted a delineation of the North Fork site on May 11 and 12, 2005. The delineation identified approximately 1.19 acres of potentially jurisdictional waters of the U.S and would require verification from the USACE. Potential project-related impacts to waters of the U.S. include the loss of three streams located in the northwestern portion of the property, totaling approximately 0.2 acres (**Table 4.5-6**). Other potential affects include dewatering, increased turbidity, increased temperature, and an increase in pollutant loads of downstream habitats.

TABLE 4.5-6
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE D

Project Component	Acreage Affected
Casino Complex and Facilities	0.2
Total	0.2

SOURCE: H. T. Harvey & Associates, 2005; AES, 2005.

This is potentially a significant impact. A permit from the USACE pursuant to Section 404 of the Clean Water Act would need to be acquired prior to construction. Potential adverse direct effects to waters of the U.S. would be avoided or minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

4.5.5 ALTERNATIVE E – NO ACTION

Under Alternative E, the No Action Alternative, the current agricultural and rural residential forms of land use for both the Madera site and North Fork site would remain unchanged. No impacts to biological resources would occur and no mitigation is required.