



Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Cattle Fever Tick Eradication Program Fence Deterrent in Cameron and Willacy Counties, Texas

Final Supplemental Environmental Assessment

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Table of Contents

Table of Contents	i
1 Introduction and Purpose and Need	1
2 Alternatives	5
3 Affected Environment	10
3.1 Soil	10
3.2 Vegetation	10
3.3 Agriculture and Livestock.....	13
3.4 Wildlife.....	13
3.5 Water Quality	13
3.6 Air Quality.....	13
3.7 Tribal and Historical Properties	13
3.8 Human Health and Socioeconomics	14
4 Potential Environmental Consequences	15
4.1 Soil	15
4.2 Vegetation	16
4.3 Agriculture and Livestock Health	17
4.4 Wildlife.....	17
4.5 Water Quality	21
4.6 Air Quality.....	21
4.7 Tribal and Historical Properties	22
4.8 Human Health and Socioeconomics	23
4.9 Executive Orders	23
5 Cumulative Impacts	29
6 Persons and Agencies Consulted	31
Appendix A. References	1
Appendix B. Soil Types Surrounding Proposed Fencing Locations	1
Appendix C. Vegetation Surrounding Proposed Fencing Locations	1
Appendix D. Water Resources Surrounding Proposed Fencing Locations	1

List of Figures

Figure 1. The CFTEP area showing five locations of the high game fencing (red segments) in Cameron and Willacy Counties, Texas, proposed in the 2021 Final EA	4
Figure 2. Map of proposed alternative (blue line) and previously approved (yellow line) high game fencing at Laguna Atascosa National Wildlife Refuge (LANWR) Unit 4, Cameron County.	7
Figure 3. Map of existing fence (yellow line) along SH 100 and proposed fencing extensions (red lines) at Laguna Vista gap and Los Fresnos gap, Cameron County.	8
Figure 4. Map of proposed fencing at Jenkins Tract (yellow outline) and previously existing fencing at Boswell Tract (blue outline) at Laguna Atascosa National Wildlife Refuge (LANWR), Cameron County.	8
Figure 5. The CFTEP area in Cameron and Willacy Counties, Texas, showing fencing locations proposed in the supplemental EA and locations approved in the 2021 Final EA.....	9
Figure 6. General view of types of vegetation found along the Arroyo Colorado where the LANWR Unit 4 fencing would be installed (Picture credit: TAHC).	11
Figure 7. General view of vegetation found along SH 100 at Laguna Vista gap where fencing would be installed (Picture credit: Google Maps, 2022).	12
Figure 8. General view of vegetation found at Jenkins Tract where fencing would be installed (Picture credit: NFWF, 2017).	12

List of Tables

Table 1. Summary of 2019 USDA APHIS Reported GHG Emissions.	25
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1 Introduction and Purpose and Need

The U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA APHIS), Veterinary Services is responsible for (1) protecting and improving the health, quality, and marketability of U.S. animals by eliminating animal diseases, and (2) monitoring and promoting animal health and productivity. The Animal Health Protection Act of 2002, as amended (7 United States Code (U.S.C.) § 8301-8317), provides broad authority for USDA APHIS to prevent the introduction into or dissemination within the United States of any pest or disease of livestock (§ 8303-8305). The Act authorizes prohibition and restriction of the importation, exportation, and interstate movement of animals moving in trade and strays, as well as exportation, inspection, disinfection, seizure, quarantine, destruction and disposal of animals and conveyances (§ 8303-8308). This includes the ability to “carry out operations and measures to detect, control, or eradicate any pest or disease of livestock” and identifies specific cooperative programs as one way to achieve these actions (§ 8308).

Cattle fever ticks are agricultural pests of concern for U.S. livestock because they can cause devastating economic losses. These ticks reduce animal wellness by feeding on blood and inducing anemia. Ticks also spread protozoan parasites that cause disease. USDA APHIS established the Cattle Fever Tick Eradication Program (CFTEP) in 1906 as a cooperative State-Federal cattle fever eradication effort, which shared program costs and cooperation between the Federal government, States, local governments, and individual livestock producers. By 1943, the United States was declared free of cattle fever ticks (CFTs) (*Rhipicephalus (Boophilus) annulatus* and *R. (B.) microplus*), except in the Permanent Tick Quarantine Zone (PTQZ) in South Texas that extends more than 500 miles from Del Rio, Texas to the Gulf of Mexico.

To ensure U.S. animal health continues to be unaffected by CFTs and associated diseases (such as bovine babesiosis), the CFTEP works to prevent their establishment in the United States. Ongoing CFTEP efforts in Southern Texas include surveillance and patrolling for stray or smuggled tick-infested livestock, livestock movement quarantines, treatment of tick-infested animals, and vacating of tick-infested pastures and premises. While these methods are effective, the free-ranging movement of wildlife, such as white-tailed deer (*Odocoileus virginianus*) and other ungulates (hoofed animals), and stray livestock across non-fenced properties, and an increase in the overall white-tailed deer population, has led to increased CFT infestations in South Texas in recent years.

These tick hosts increase the potential for CFTs and disease to spread. CFT infestations cause lengthy quarantine restrictions on cattle herds and increased herd management efforts and expenses to cattle producers in the tick-free zone in South Texas. When these tick-infested animals enter pastures, the effectiveness of ongoing tick eradication measures (vacating pastures and systematic tick treatments for cattle) becomes compromised.

Game fencing can provide an additional tool toward CFT eradication and prevention efforts by serving as a deterrent to the unimpeded movement of CFTs spread by white-tailed deer and nilgai antelope (*Boselaphus tragocamelus*) from Mexico, thereby reducing or preventing tick outbreaks in the tick-free area. Free-ranging CFT wildlife hosts (such as white-tailed deer and nilgai antelope) easily jump over existing 4-foot-high fencing to forage. Eight-foot-high game fencing can serve as a deterrent to the unrestricted movement of tick hosts, and, in this way, enhance ongoing CFT eradication activities. Installing high game fencing, also may eventually contribute to the program's effort to reducing the use of chemicals needed to treat tick-infested cattle, as well as associated animal production costs.

In response to increasing tick infestations, USDA APHIS proposed funding the installation of 8-foot-high game fencing, upon landowner consent and agreement, at five locations in Cameron and Willacy Counties, Texas. USDA APHIS prepared an environmental assessment (EA), *Cattle Fever Tick Eradication Program Fence Deterrent in Cameron and Willacy Counties, Texas*, (USDA APHIS, 2021) that examined the potential impacts on the human environment associated with the proposed installation of high game fencing at the following locations: (1) Port Mansfield, (2) El Sauz Section 1, (3) Floodway, (4) Floodway-El Toro, and (5) Laguna Atascosa National Wildlife Refuge (LANWR) Unit 4 (Figure 1). These locations are open areas used by potential CFT wildlife hosts searching for food and shelter, or places where 4-foot high (low) cattle fencing currently exists. The Final EA and a Finding of No Significant Impact (FONSI) were published in July 2021.

Since the Final EA and FONSI were published, USDA APHIS has been working to obtain consent and approval from all private landowners to install sections of high game fencing at the proposed locations. In addition to running on LANWR property, the proposed LANWR Unit 4 fencing route passes through a privately-owned land parcel. In the event it may not be possible to obtain the necessary agreement to install the proposed fencing on the privately owned land, an alternate fence line route is being proposed and evaluated for the LANWR Unit 4 location in this supplemental EA.

As stated in the Final EA, APHIS continually evaluates additional locations for CFT fencing that are likely to benefit from improved fences but are within budgetary and practical constraints. USDA APHIS has identified two locations where installing fencing would meet the criteria. As a result, USDA APHIS is proposing in this supplemental EA the installation of fence line extensions at either end of the existing 8-mile game fence along state highway (SH) 100 in Cameron County. A third fencing project included in this supplemental EA, a net wire pasture fence on the Jenkins Tract on LANWR property in Cameron County designed to contain cattle under regular treatment for CFT is also being proposed.

The potential impacts to the human environment associated with these proposed fence installations are being evaluated in this EA which supplements the *Cattle Fever Tick Eradication Program Fence Deterrent in Cameron and Willacy Counties, Texas Final EA* (USDA APHIS, 2021). This supplemental EA is limited to providing information related to the proposed alternate high game fencing route at LANWR Unit 4, the high game fence extensions along SH 100, and the net wire pasture fence on the Jenkins Tract in Cameron County and the potential impacts that may occur as a result of these proposed actions.

This supplemental EA will incorporate by reference information presented in the Final EA; only sections with new or updated information will be included in this document. The supplemental EA will reference sections and page numbers from the Final EA to allow the reader to cross-reference the information.

This document is consistent with requirements in the National Environmental Policy Act of 1969 as amended (NEPA; 42 U.S.C. § 4321 et seq.), NEPA regulations promulgated by the Council on Environmental Quality (40 Code of Federal Regulations (C.F.R.) § 1500-1508) and APHIS implementing procedures at 7 C.F.R. part 372.

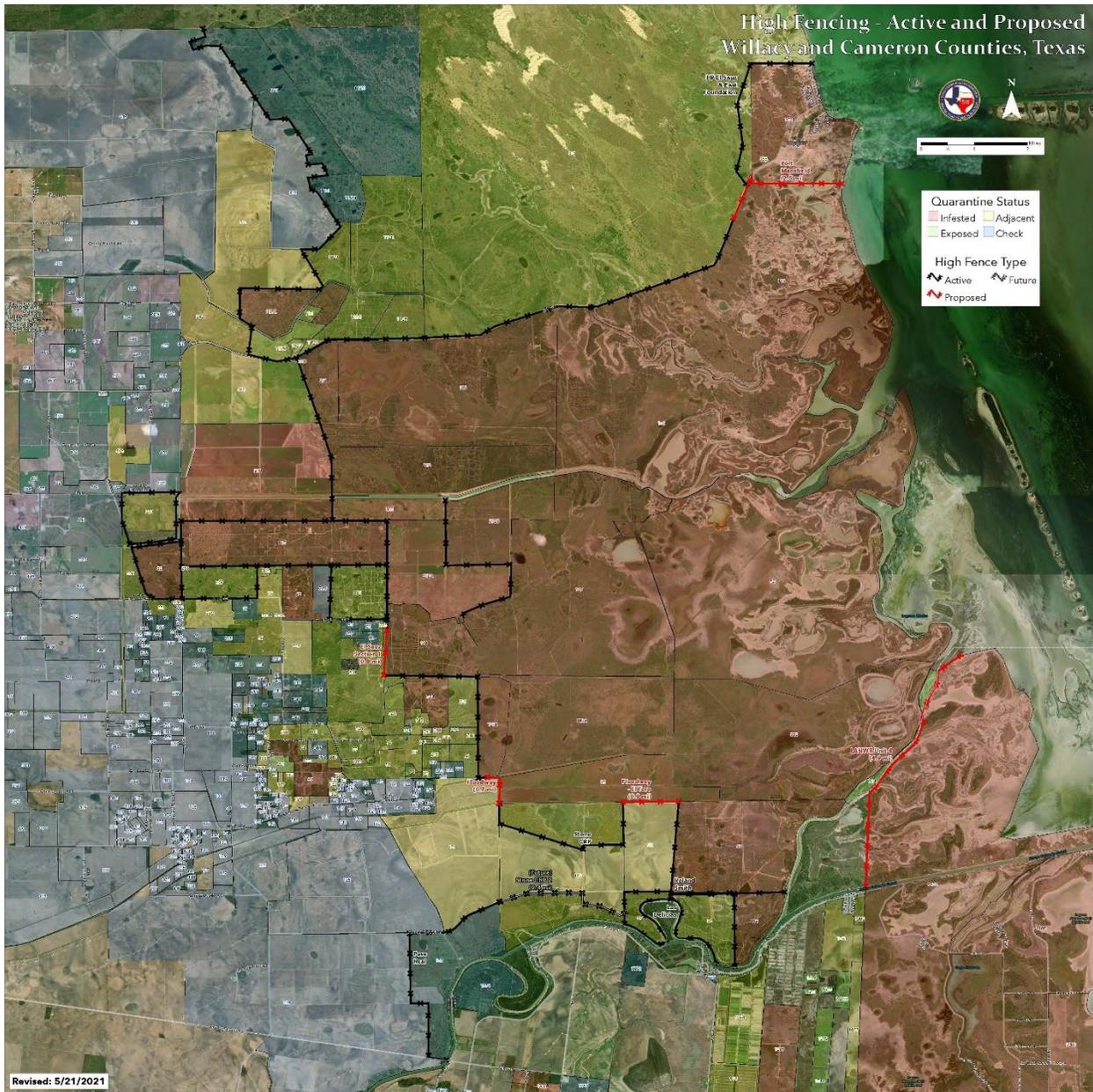


Figure 1. The CFTEP area showing five locations of the high game fencing (red segments) in Cameron and Willacy Counties, Texas, proposed in the 2021 Final EA

2 Alternatives

This supplemental EA considers two alternatives: a no action alternative and a proposed action alternative with a revised fencing route at LANWR-Unit 4 in Cameron County near the boundary with Willacy County and two additional locations in Cameron County where fencing would be installed enhancing ongoing CFTEP eradication activities.

Under the no action alternative, installation of the high game fencing proposed at the five locations in Cameron and Willacy Counties, Texas, in the 2021 Final EA would proceed pending private landowner consent and agreement to install fencing on their property (USDA APHIS, 2021). These fencing locations and the fencing lengths are: Port Mansfield (2.5 miles), El Sauz Section 1 (0.8 miles), Floodway (0.7 miles), Floodway-El Toro (0.9 miles), and LANWR Unit 4 (4.9 miles).

Under the preferred alternative, fencing at three locations in Cameron County is being proposed:

1. A modified fence route is proposed in the event landowner consent and agreement cannot be obtained to place fencing on the privately owned land segment that is part of the originally proposed LANWR Unit 4 fence route. The proposed alternate fence route 6.77 miles in length is shown in blue while the originally proposed route is in yellow (Figure 2).
2. Two extensions to the 8 miles of fencing along SH 100, 1.12 miles in Laguna Vista (the Laguna Vista gap) and 0.88 miles east of Los Fresnos (the Los Fresnos gap), are being proposed where nilgai crossings have been observed. The fence extensions are shown in red on Figure 3.
3. An 8.52-mile pasture height fence constructed of net wire that would serve to contain cattle on systematic treatment for CFTs is proposed for the Jenkin's Tract that is located on LANWR property. The proposed fencing is shown in yellow on Figure 4.

The three proposed fencing locations are described further, below:

The high game fencing proposed for LANWR Unit 4 would be placed on U.S. Fish and Wildlife Service (USFWS) refuge property and private property as near to the Arroyo Colorado as practical. The fence along the Arroyo Colorado would be constructed near an old existing fence line with fenceposts still present in some areas, and it would primarily cross grassy areas and salt flats. There are no changes in the proposed design of the game fencing as described in the Final EA (USDA APHIS, 2021).

Extensions at both ends of the 8 miles of existing fencing along SH 100 are being proposed as part of the preferred alternative. The extension at the Laguna Vista gap would be 1.12 miles in length and 0.88 miles at the Los Fresnos gap (Figure 3). The fence would be placed across salt

flats at the Laguna Vista gap and along the existing three-strand barb wire fence at the Los Fresnos gap. High game fencing at the Los Fresnos gap would have small squares at the bottom so ocelots and jaguarundi cannot pass through. The USFWS would like the fencing to redirect ocelots to the existing crossing tunnels so that they are not struck by vehicles on SH 100. The USFWS has recommended that fencing at the Laguna Vista gap have openings at the bottom of the fence line where there is habitat on both sides of the fence to allow connectivity for ocelots (USFWS, 2022).

The Jenkins Tract is located on LANWR property (Figure 4). The fencing would be installed to create an area to contain cattle on systematic treatment for CFTs. The Jenkins Tract fencing would not be a high game fence but would be a pasture height fence constructed of net wire with wires spaced far enough apart to allow ocelot, jaguarundi, and tortoises to pass through. The Boswell Tract located to the west of the Jenkins Tract is also used to contain cattle on systemic treatment for CFTs. Grazing cattle on the Jenkins Tract, in addition to the Boswell Track, would help serve as a buffer to the north-south movement of CFTs on nilgai and white-tailed deer and will reduce the overall number of CFTs on the landscape in the area.

Under the preferred alternative, the four fencing projects from the 2021 Final EA (Port Mansfield, El Sauz Section, Floodway, and Floodway-El Toro, discussed under no action, above) would proceed as described in the 2021 Final EA. Since there are no changes to the proposed fencing at these four locations in either alternative, these locations are not discussed further in this supplemental EA. The potential environmental effects associated with installation of high game fencing at these four locations in Cameron and Willacy Counties, Texas, were analyzed in the 2021 Final EA (USDA APHIS, 2021) and are incorporated by reference in this document. Figure 5 shows all the of the approved fencing segments from the 2021 Final EA and FONSI, the proposed alternative fencing at LANWR Unit 4, and the two new fencing projects in Cameron and Willacy Counties. USDA APHIS will support the cost of materials and installation for the high fencing and maintenance.

APHIS also considered, and then dismissed from consideration, alternatives with different wire fence components as well as additional locations. The lack of below-ground skirting and ungalvanized wire are deemed less effective over time because they require more maintenance, and consequently, APHIS would like to use the best available technologies to reduce long-term costs associated with fence upkeep. APHIS continually evaluates additional locations for CFT fencing; however, APHIS only fully evaluates areas likely to benefit from improved fences that are within budgetary and practical constraint.

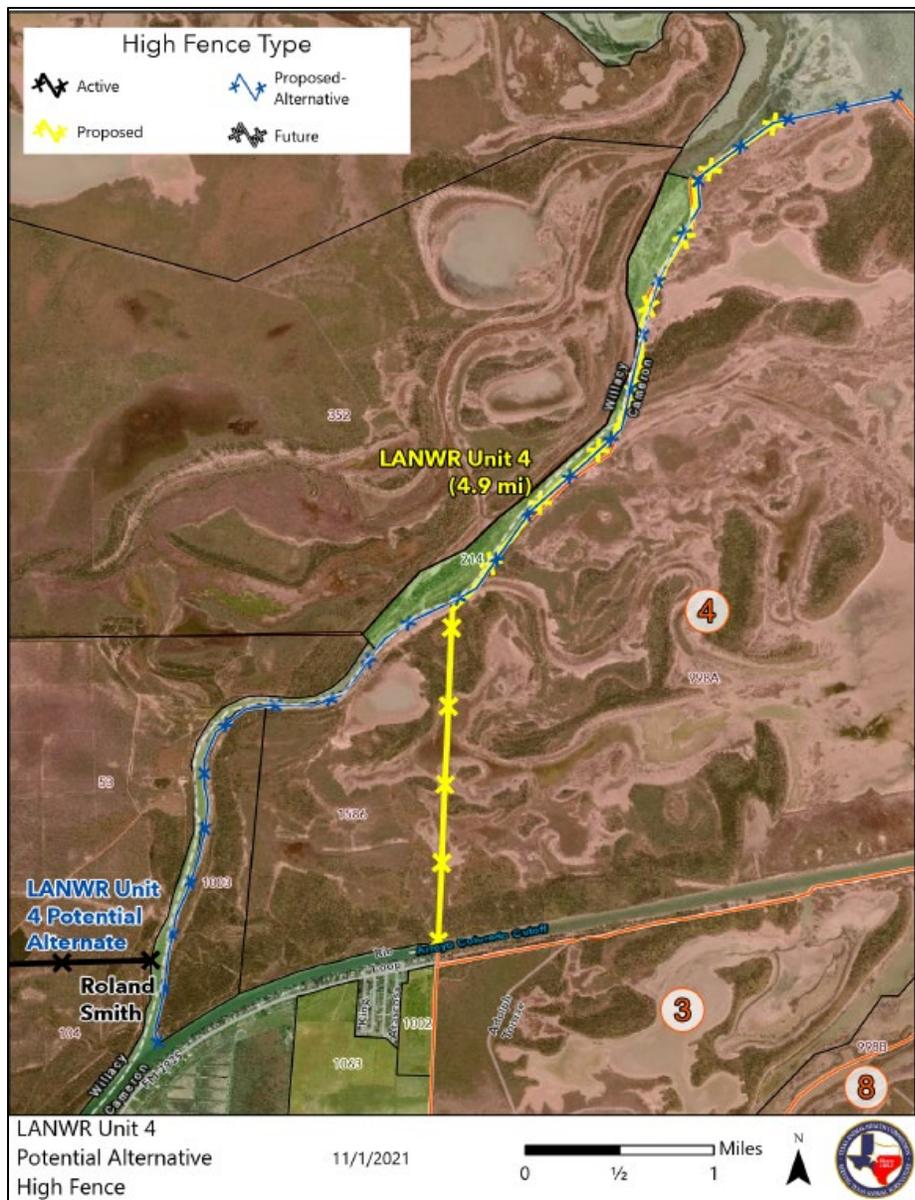


Figure 2. Map of proposed alternative (blue line) and previously approved (yellow line) high game fencing at Laguna Atascosa National Wildlife Refuge (LANWR) Unit 4, Cameron County.



Figure 3. Map of existing fence (yellow line) along SH 100 and proposed fencing extensions (red lines) at Laguna Vista gap and Los Fresnos gap, Cameron County.

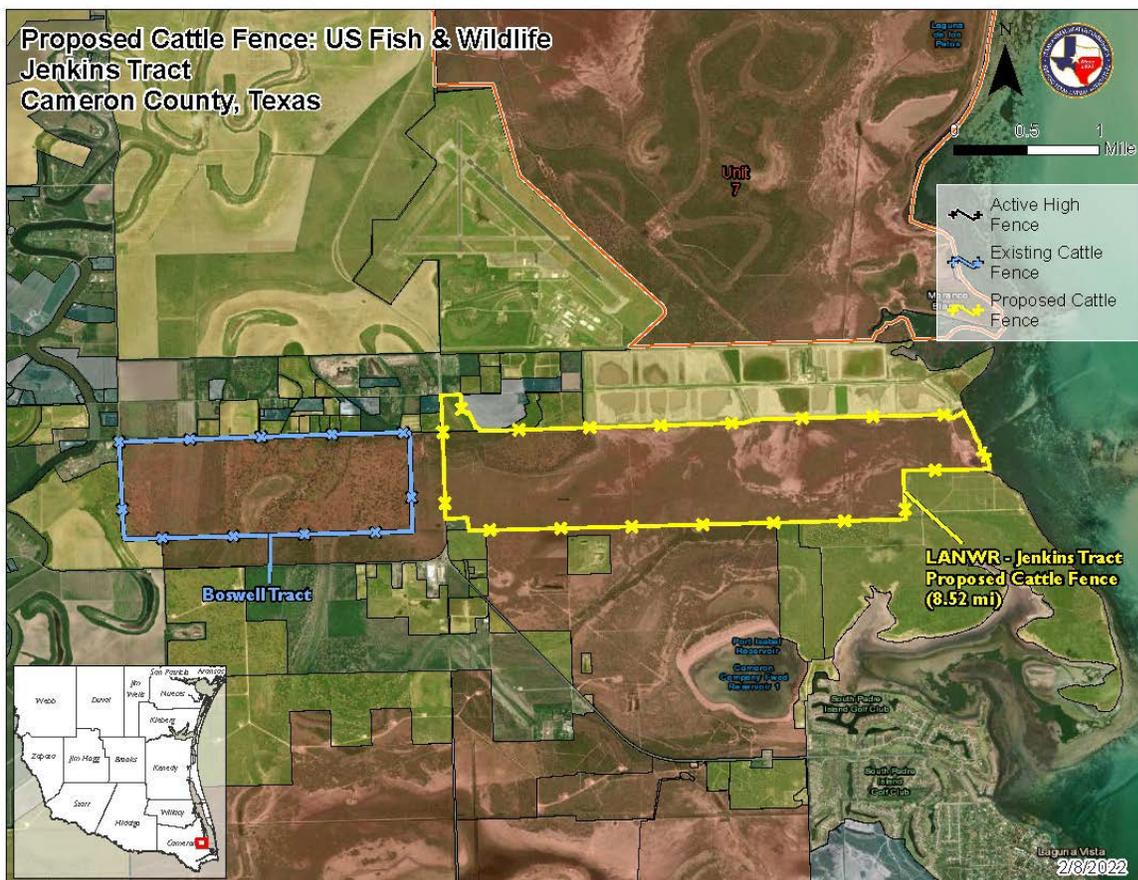


Figure 4. Map of proposed fencing at Jenkins Tract (yellow outline) and previously existing fencing at Boswell Tract (blue outline) at Laguna Atascosa National Wildlife Refuge (LANWR), Cameron County.



Figure 5. The CFTEP area in Cameron and Willacy Counties, Texas, showing fencing locations proposed in the supplemental EA and locations approved in the 2021 Final EA.

3 Affected Environment

This chapter describes the physical environment in Cameron County that potentially could be affected by both the no action and preferred alternatives presented in Chapter 2. Under the no action alternative, the fencing project at LANWR Unit 4 approved in the 2021 Final EA (USDA APHIS, 2021) would be built in Cameron, County. The proposed fencing locations being assessed in the preferred alternative in this supplemental EA at LANWR Unit 4, the Laguna Vista gap and Los Fresnos gap along SH 100, and the Jenkins Tract are in Cameron County.

Specific resources described in this section are soil, vegetation, agriculture and livestock, wildlife, water quality, air quality, and human and socioeconomic environment. This supplemental EA will reference sections and page numbers from the 2021 Final EA to allow the reader to cross-reference with this supplemental EA. The information in the Final EA is being incorporated by reference (USDA APHIS, 2021), only new or updated information will be included in this section.

3.1 Soil

Soil types found in Cameron County were described in Section 3.1 of the Final EA (beginning page 8) (USDA APHIS, 2021); that information is being incorporated by reference. Maps showing soil types at the three locations of proposed fencing and the surrounding areas are provided in Appendix B.

Soils at LANWR Unit 4 (Figure B-1) are mainly from Group C/D that naturally have a very slow infiltration rate due to a high water table but will have a slow rate of infiltration if drained or Group D that consists of soils with a very slow infiltration rate and high runoff potential. The soils at the Laguna Vista gap and Los Fresnos gap (Figure B-2), are also predominantly Group D with small areas of Group C/D soils. The Jenkins Tract soils (Figure B-3) are mostly classified as Group C/D or D, with smaller areas with Group B and C soils. Group B soils consist of deep well drained soils with a moderately fine to moderately coarse texture and a moderate rate of infiltration and runoff. Group C soils have a layer that impedes the downward movement of water or fine textured soils and a slow rate of infiltration.

3.2 Vegetation

A description of vegetation areas found within Cameron County are described in Section 3.4 of the Final EA (page 16). General views of current cattle fencing and vegetation types in the program area are presented in Figure 8 of the Final EA (USDA APHIS, 2021). Maps showing vegetation found at the three locations of proposed fencing and the surrounding areas are provided in Appendix C.

Vegetative cover along the proposed fencing on LANWR Unit 4 is primarily emerging herbaceous wetland and shrub/scrub (see Figure C-1). Figure 6 shows a view of vegetation types

found along the Arroyo Colorado at LANWR Unit 4. Fencing along the Arroyo Colorado would be constructed near an old existing fence line with fenceposts still present in some areas, and it would primarily cross grassy areas and salt flats. As noted in the Final EA, the Texas Animal Health Commission inspected the vegetation in the program area and did not observe any native brush habitat/native thorn shrub along the entire length of existing fences on LANWR Unit 4 in Cameron County. However, the TAHC noted overgrown grass and mesquite tree branches where the high fencing is proposed.



Figure 6. General view of types of vegetation found along the Arroyo Colorado where the LANWR Unit 4 fencing would be installed (Picture credit: TAHC).

The proposed fence extensions at the Laguna Vista gap and Los Fresnos gap are mainly surrounded by herbaceous wetland vegetation and medium to low intensity development. The fencing would connect to current fencing running along the side of SH 100 designed to funnel wildlife to highway underpasses. The town of Laguna Vista is close to the Laguna Vista gap, while a portion of the Los Fresnos gap would be installed across SH 100 from the Del Mar Heights colonia. Figure 7 shows the vegetation and existing ocelot fencing found along SH 100.

The Jenkins Tract is part of a larger land parcel named the Boswell-Jenkins Tract. The 1,780-acre property is situated along Laguna Madre and contains coastal prairie, freshwater wetlands, bayfront and tidal saltmarsh habitat (NFWF, 2017). Vegetation at the Jenkins Tract is predominantly emerging herbaceous wetlands with some herbaceous grasses. The proposed cattle enclosure is surrounded by barren land, open water, cultivated crops, emerging herbaceous wetlands, grassland, and woody wetlands. Figure 8 shows the general types of vegetation that may be found on the Jenkins Tract.



Figure 7. General view of vegetation found along SH 100 at Laguna Vista gap where fencing would be installed (Picture credit: Google Maps, 2022).



Figure 8. General view of vegetation found at Jenkins Tract where fencing would be installed (Picture credit: NFWF, 2017).

3.3 Agriculture and Livestock

The agricultural profile describing agricultural land use and products for Cameron County were described in Section 3.3, beginning on page 16 of the Final EA (USDA APHIS, 2021). The information presented there is being incorporated by reference.

3.4 Wildlife

Wildlife found in Cameron County was described in Section 3.4 (page 17) of the Final EA (USDA APHIS, 2021). The information presented there is being incorporated by reference.

3.5 Water Quality

Water resources and quality in Cameron County were described in Section 3.5 of the Final EA, beginning page 17 (USDA APHIS, 2021); that information is being incorporated by reference.

LANWR Unit 4 lies within the Upper Pilot Channel-Laguna Madre Watershed (TPWD, 2022). The proposed fencing would follow the Arroyo Colorado which defines the border between Cameron and Willacy Counties. The Arroyo Colorado Cutoff borders the southern boundary of LANWR Unit 4. A map showing water resources in the vicinity of the proposed fencing at LANWR Unit 4 can be viewed on Figure D-1 in Appendix D.

The Laguna Vista and Los Fresnos gaps are in the Brownsville Ship Channel Watershed (TPWD, 2022). The Bahía Grande is located 0.56 miles from the proposed Laguna Vista gap fencing. A map showing water resources in the vicinity of the proposed fence extensions can be viewed on Figure D-2 in Appendix D.

The Jenkins Tract is located within the Laguna Atascosa Watershed (TPWD, 2022). Surface water bodies near the site and their distance from the Jenkins Tract include Laguna Vista Cove (0.04 miles), Resaca de Los Cuates (2.34 miles), and El Tular (2.37 miles). A map showing water resources in the vicinity of the Jenkins Tract can be viewed on Figure D-3 in Appendix D.

3.6 Air Quality

There are no changes in the affected environment for air quality discussed in the 2021 Final EA (USDA APHIS, 2021). That information is being incorporated by reference and can be found in Section 3.6 (page 8) of the Final EA.

3.7 Tribal and Historical Properties

According to the Bureau of Indian Affairs (BIA, undated), there are no Federally recognized Tribal lands in Cameron County, Texas. Using the Housing and Urban Development (HUD)'s Tribal Directory Assessment Tool (TDAT) USDA APHIS identified and consulted with the

Tribal Historic Property Offices (THPOs) in March 2022 to confirm the agency's activities have no effects on any potential Tribal or ceded lands in Cameron County.

USDA APHIS identified 35 historic properties located in Cameron County. The agency considered the historic buildings (houses, depots, church, warehouse, lighthouse, courthouse, and jail) and green places (such as cemetery, plantation, pasture, yard, ranch, park, fort, and battlefields) for potential effects. In Cameron County, the closest properties are the Palo Alto Battlefield and Point Isabel Lighthouse which do not overlap with the proposed fence locations because they are more than 20 miles away from the locations for fencing. USDA APHIS determined there would be no effect to historic properties and submitted both the analysis and associated maps to Texas Historic Commission (THC)/State Historic Preservation Office (SHPO) in March 2022 for their review and concurrence.

3.8 Human Health and Socioeconomics

General descriptions of the human and socioeconomic environments in Cameron County are discussed in the 2021 Final EA (USDA APHIS, 2021). That information is being incorporated by reference and can be found in Section 3.8 of the Final EA, beginning on page 18.

4 Potential Environmental Consequences

This chapter compares the potential environmental consequences associated with the no action and preferred alternatives. As described in Section 2, this supplemental EA considers a no action alternative with high game fencing proposed at LANWR Unit 4 as described in the 2021 Final EA (USDA APHIS, 2021) and a proposed action alternative with a revised fencing route at LANWR Unit 4 and two additional locations where fencing would be installed enhancing ongoing CFTEP eradication activities.

Under the no action alternative, USDA APHIS would continue to carry out current CFTEP operations that help prevent the spread of CFTs and potential exposure of cattle to babesiosis. High game fencing on LANWR Unit 4 would be installed as proposed in the 2021 Final EA (USDA APHIS, 2021). USDA APHIS would fund the fencing materials, installation, and maintenance. No fencing would be installed in Cameron County at the Laguna Vista and Los Fresnos gaps, and on the LANWR Jenkins Tract. The potential environmental consequences associated with installation of the originally proposed fence route at LANWR Unit 4 were evaluated in the 2021 Final EA and are incorporated by reference here.

Under the preferred alternative, USDA APHIS would fund the materials for and installation of high game fencing along the Arroyo Colorado on LANWR Unit 4, as well as maintenance of the fencing. Fencing would be extended at either end of the existing 8-mile game fence along SH 100. Also, as part of the preferred alternative, a net wire pasture fence designed to contain cattle under regular treatment for CFT would be installed on the Jenkins Tract.

The proposed high game fencing would deter wildlife movement in these areas and facilitate current CFT eradication efforts. However, the free-ranging movement of wildlife and stray livestock across non-fenced properties and increasing white-tailed deer population will likely continue to result in CFT infestations in South Texas. USDA APHIS would continue to support CFTEP efforts and regularly evaluate additional locations for CFT fencing that are likely to benefit from improved or new fencing.

4.1 Soil

Under the no action alternative, high game fencing on LANWR Unit 4 would be installed as proposed in the 2021 Final EA (USDA APHIS, 2021). Installation of the high game fencing would temporarily expose soil and potentially increase localized erosion. No long-term, direct, or indirect effects to soil are expected (see 2021 Final EA, page 17). Soil at Laguna Vista and Los Fresnos gaps and the Jenkins Tract would not be disturbed for fencing.

Under the preferred alternative, fence installation activities at the proposed locations would cause temporary soil disturbance and minimal soil loss along the new fence line areas.

Construction requires establishing a stable footing for the fencing, but construction activities last a short duration of time relative to the project's useful time span. Staging sites would occur in previously cleared areas, roads, or driveways. The sites would be determined on a case-by-case basis, depending upon the location of the fencing and an agreement between USDA APHIS and the concurring landowner. A crawler tractor, a type of equipment that is generally used to prepare ground for fence installation, would be used where needed to remove vegetation and level the ground surface.

Erosion impacts during the building of the fencing would be transient. Excavated soil would be scattered around each fence post. Earthen diversion berms may be required in some locations to prevent erosion beneath the fence. There is likely to be temporary soil compaction during construction activities but would be confined to the fence line during installation. As the vegetation regrows, soils would be secured and return to preconstruction conditions. Therefore, the fence is unlikely to influence the potential for flooding. In addition, the proposed fencing is permeable to water and not designed to impede water flow.

The effects to soil associated with construction and service vehicles would depend on the weight of the vehicles and number of trips through an area. USDA APHIS anticipates use of light-duty vehicles that do not create appreciable amounts of fugitive dust. To maximize program efficiency, USDA APHIS minimizes the number of trips for both construction and maintenance activities. While vehicles may move mud, the amount is related to how recently rain occurred.

Galvanized materials often used in fencing are usually coated with a layer of zinc that protects steel from rust and corrosion, which makes galvanized wires last for decades without any impact on soil depending on the environment (DOD, 2019). The program does not expect galvanized materials of the proposed game fencing to leach or cause any impact on soil attributes (such as pH and salinity) from zinc coating because these materials are recognized as inert, and they resist rust and corrosion (USDA APHIS, 2018). Galvanized wires are widely used for roofing, siding, gutters, telephone pole hardware, guardrails, storage, fencing, etc. (DOD, 2019). For these reasons, USDA APHIS finds the proposed actions do not have long-term, direct, or indirect effects to soil.

4.2 Vegetation

Under the no action alternative, temporary removal of vegetation along the originally proposed fence line on LANWR Unit 4 would be required prior to installation (USDA APHIS, 2021). Effects to vegetation are expected to be short-term (see 2021 Final EA, page 18). At the Jenkins Tract, Laguna Vista gap, and Los Fresnos, the existing vegetative cover described in Section 3.2 would continue to grow in the proposed fence areas unless a weather event (hurricane, tornado, etc.) destroyed it. Routine maintenance of these areas may involve the removal of vegetation.

Under the preferred alternative, installation of fencing at the proposed locations would require temporary removal of vegetation, particularly where posts and underground skirting are to be installed. An area between 5- and 20-feet wide may need to be cleared of vegetation and leveled in preparation for installing the fence. Based upon an area of 20-feet wide, each mile of prepared area is equivalent to a total 3.03 acres. Some areas may require less preparation than other areas because they may already have existing low fences that are maintained and free of growth, thereby requiring little removal of vegetation.

The holes in the wire mesh skirting are too large to stop underground seeds from germinating and would be ineffective at stopping overgrowth from nearby plants. Construction activities may temporarily alter soil moisture in the ecosystem, which may temporarily disturb the balance of microflora along the fence line. These short-term effects would end as the vegetation regrows. Routine fence maintenance may involve physical removal of vegetation that grows onto the fencing and interferes with fence integrity. USDA APHIS does not use pesticides to retain vegetation-free zones around fencing.

4.3 Agriculture and Livestock Health

Under the no action alternative, high game fence segments proposed for LANWR Unit 4 in the 2021 Final EA would help restrict the movement of white-tailed deer, nilgai and stray livestock within the fenced area (e.g., cattle and horses) (USDA APHIS, 2021, page 19). CFT-infested wildlife and stray cattle, like those observed in South Texas in recent years (USDA APHIS, 2017), would continue to move across non-fenced areas and may come in contact with local livestock. Unfenced areas are open corridors for wildlife hosts that are constantly searching for forage, shelter, and water resources, and whose unrestricted movements are likely to increase the spread of CFTs. CFT infested wildlife (such as white-tailed deer and nilgai antelope) may use open routes toward ranches increasing the likelihood of babesiosis outbreaks in U.S. cattle populations (Pérez de León et al., 2012).

Under the preferred alternative, existing high game fences would be extended along SH 100 in order to further restrict the movements of potential wildlife hosts of CFT. Cattle fencing on the Jenkins Tract, in addition to the existing fencing on the Boswell Tract, would help serve as a buffer to the north-south movement of CFTs on nilgai and white-tailed deer. By these actions, USDA APHIS expects reduced transport and spread of CFT by wildlife beyond tick-free areas in Cameron County, and as a result animal health is likely to improve because of the potential for fewer contacts between tick-infested wildlife and healthy livestock.

4.4 Wildlife

Under the no action alternative and the preferred alternative, the high-game fencing at LANWR Unit 4 would be designed to deter the movement of white-tailed deer and nilgai antelope, but the

movement of other wildlife would be minimally deterred. The fencing is deliberately designed to allow small animals to crawl through the fence holes, or larger animals being able to find and traverse both horizontal and vertical breaks in the fencing. These 7-inch by 12-inch openings will apply to the entire length of the fence and will allow movement of ocelots (*Leopardus pardalis*), jaguarundi (*Herpailurus yagouaroundi cacomitli*), and Texas tortoises (*Gopherus berlandieri*) across to northern ranches, thereby, enabling genetic exchange between neighboring populations (USDA APHIS, 2022). Larger animals such as coyotes (*Canis latrans*) and foxes (Canidae) would also be able to navigate the fence openings. The free movement of smaller to medium-sized animals such as American badger (*Taxidea taxus*), desert cottontail (*Sylvilagus audubonii*), Mexican ground squirrel (*Ictidomys mexicanus*), desert shrew (*Notiosorex crawfordi*), and southern plains woodrat (*Neotoma micropus*) would not likely be impacted by the high game fencing because they can pass through fence openings.

For the preferred alternative, high game fencing at the Los Fresnos gap would differ from fencing at the LANWR Unit 4 in that it would have small squares at the bottom so ocelots and jaguarundi cannot pass through. This fencing would serve to redirect ocelots to the crossing tunnels beneath the highway so that they are not struck by vehicles on SH 100. The USFWS has recommended that openings be left in the fencing at Laguna Vista gap where there is habitat on both sides of the fence to allow habitat connectivity for ocelots (USFWS, 2022). It is expected that other wildlife that may be impeded by the fencing at these locations would also utilize the highway underpasses.

At the Jenkins Tract, the fencing would be pasture height fence constructed of net wire with wires spaced far enough apart to allow ocelot, jaguarundi, and tortoises to pass through. Grazing cattle on the Jenkins Tract, in addition to the Boswell Tract, would help serve as a buffer to the north-south movement of CFTs on nilgai and white-tailed deer and will reduce the overall number of CFTs on the landscape in the area.

There may be negative effects of the proposed fencing on wildlife populations. For example, there may be accidental collisions into fencing by ungulates with poor depth perception when chased by predators. Fences can restrict wildlife access to forage and water resources, which could be critical during seasonal migrations or prolonged droughts (USDA APHIS, 2018). For these reasons, USDA uses the best available science to inform its decisions about fence design, materials, and sites. The design features of the high game fencing limit the potential for entanglement and allow passage of species.

Under both alternatives, corridor connectivity for ground-dwelling birds (such as wild turkey (*Meleagris gallopavo*) and northern bobwhite quail (*Colinus virginianus*) may be temporarily lost due to reduced ground-cover vegetation during the fence installation (Stromberg, 1990 cited in USDA APHIS, 2018). This temporary effect would cease as groundcover vegetation regrows.

Endangered Species Act

Section 7 of the Endangered Species Act (ESA) and ESA's implementing regulations require Federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened or endangered species or result in the destruction or adverse modification of critical habitat.

APHIS completed Section 7 consultation with USFWS on the no action alternative and the details of that consultation are discussed in the 2021 Final EA and are incorporated for reference (USDA APHIS, 2021).

APHIS determined that the preferred alternative (Alternative 2) will have no effect on the following federally listed species or their critical habitat: West Indian manatee (*Trichechus manatus*), piping plover (*Charadrius melodus*) and its critical habitat, red knot (*Calidris canutus*) and its proposed critical habitat, eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*), green sea turtle (*Chelonia mydas*), Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), hawksbill sea turtle (*Eretmochelys imbricata*), South Texas ambrosia (*Ambrosia cheiranthifolia*) and Texas ayenia (*Ayenia limitaris*).

APHIS determined that the preferred alternative may affect, but is not likely to adversely affect, the Gulf Coast jaguarundi (*Herpailurus yagouaroundi cacomitli*), ocelot (*Leopardus pardalis*), and northern aplomado falcon (*Falco femoralis*). USDA APHIS submitted a biological assessment (USDA APHIS, 2022) to the USFWS, Ecological Services, Alamo Sub-office on February 14, 2022, requesting their concurrence with these determinations. APHIS received a concurrence letter dated March 4, 2022 (USFWS, 2022).

Bald and Golden Eagle Protection Act

Background information on the Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668–668c) and their known habitats in Texas is detailed in the Final EA and is incorporated by reference (USDA APHIS, 2021).

Bald eagles are present year-round throughout Texas as spring and fall migrants, breeders, or winter residents (TPWD, undated a). According to TPWD (undated a), there are two bald eagle populations in Texas: breeding birds and nonbreeding or wintering birds. Breeding populations occur primarily in the eastern half of the state and along coastal counties from Rockport (Aransas County) to Houston (Harris County), which is north of Cameron County. Nonbreeding or wintering populations are located primarily in the Panhandle, Central, and East Texas, and in other areas of suitable habitat throughout the state (TPWD, undated a). Bald eagles are not

commonly reported to occur in Cameron County. An immature bald eagle was reported in Resaca de la Palma State Park in Cameron County on March 19, 2021 and is the southernmost Texas record in the eBird database (eBird, 2022). This immature bird appeared to be loosely associated with a group of vultures near the southeast corner of the state park, possibly associated with the reservoir nearby or just passing through (eBird, 2022).

Golden eagles are resident in Texas and breed from early February to November (Oberholser, 1974, as cited by Texas A&M, undated). Winter visitors are present from late August to late April; most are in Texas from early October to mid-March (Oberholser, 1974, as cited by Texas A&M, undated). Golden eagles breed in Texas as high as 8,600 feet in mountains and canyons (Oberholser, 1974, as cited by Texas A&M, undated). They are rare to locally uncommon in their range in west Texas (Lockwood and Freeman, 2004). Golden eagles are not reported to occur in Cameron County (Texas A&M, undated).

Fence construction could cause disturbance of bald or golden eagles in the area. However, neither species is reported to breed or even be present in Cameron County so nest disturbance would not occur. Non-breeding bald and golden eagles are also not expected to be present in Cameron County, thus fence construction activities would be unlikely to disturb eagles. Fence construction would be limited in time and scope. In any case, if program personnel discover the presence of any eagle or nest in the project locations, they would report this information to the State Wildlife Service, who would assist APHIS program personnel in minimizing potential impacts to the eagle or nest of concern following the Habitat Management Guidelines for Bald Eagles in Texas (TPWD, undated b).

Migratory Bird Treaty Act

Background information on the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703–712), the Central Flyway, and migratory birds found in the Central Flyway is detailed in the Final EA and is incorporated by reference (USDA APHIS, 2021).

According to Shackelford et al. (2005), some threats to migratory birds include: (a) habitat loss (such as food and shelter degradation by clearing of forestland and grassland), (b) human disturbance, (c) pet cats (which are serious threats to fledglings, roosting and nesting birds), and (d) introduction of exotic birds, and (e) collision with tall structures when flying at night or in fog.

Fence construction could cause disturbance to migratory birds and disturbance or destruction of nesting sites if brush is removed. APHIS will minimize impacts to migratory birds or nests, as possible. To avoid impacts to migratory birds, the USFWS recommends that APHIS conduct migratory bird surveys prior to mechanical clearing of brush and trees between March 15 and

September 15 (USFWS, 2022). Surveys should look for birds, nests, and eggs (USFWS, 2022). The USFWS recommends leaving a buffer of vegetation (≥ 100 feet) around detected songbird nests either until the young have fledged or the nest is abandoned (USFWS, 2022). Other species such as water birds or raptors require larger buffer distances of 500 feet or more (USFWS, 2022).

4.5 Water Quality

Under the no action alternative, fence installation along the original route proposed at LANWR Unit 4 in the 2021 Final EA would temporarily increase surface water runoff until vegetation regrows (USDA APHIS, 2021, page 18). Likewise, installation of the fencing along the proposed alternate route on LANWR Unit 4 would temporarily affect surface water.

Under both the no action and preferred alternatives, the proposed fencing will not be installed across any U.S. waterways. Both proposed routes of the high-game fencing at LANWR Unit 4 would be installed on USFWS Refuge property and private property as near to the Arroyo Colorado as practical. TAHC contacted International Boundary Water Commission (IBWC) regarding the proposed fence. IBWC indicated that as long as the fence does not cross the water that they have no jurisdiction. IBWC reviewed the proposed fence line and had no concerns.

Fencing would not alter ground permeability to stormwater. Galvanized wire is designed to be inert, resist rust and corrosion, and last for decades (DOD, 2019). The underground skirting of the fence is not of sufficient size to alter the usual water flow pattern in an area. After the installation of the high fencing, erosion from water flow through the fence's wire grid and underground skirting is expected to continue at pre-fencing or prior levels. USDA APHIS does not anticipate chlorine, zinc, heavy metals, or substantial particulate levels to enter runoff water either during or after fence construction based on the small footprint of activity at each fence-post location and the limited duration of construction activities.

Under the preferred alternative, one segment of fencing on the Jenkins Tract runs along the Laguna Vista Cove. The use of best practices for construction activities is expected to avoid or minimize impacts to water bodies during fence construction. Indirect effects of the proposed fencing installation to water resources include increased potential for erosion and sedimentation during construction activities and fence maintenance activities. Clearing vegetation for the proposed fencing projects could increase the potential for erosion and sedimentation into local drainages and receiving streams. The effects are expected to be temporary and minor. USDA APHIS does not expect long-term water quality impacts as a result of the proposed alternative.

4.6 Air Quality

Under both alternatives, emissions from vehicles used during fence installation and maintenance activities would result in the release of criteria pollutants (pollutants for which maximum

allowable emission levels and concentrations are enforced by State agencies). The number of service vehicle trips would be minimized by the program to reduce vehicle emissions. Effects from vehicular emissions are expected to be localized and minimal and have no impact of air quality in the area.

Fence construction may result in some soil and debris disturbance that may become airborne during installation. These airborne particulates should quickly settle, and not have any significant or long-term impact. USDA APHIS would minimize the potential for dust emissions during fence installation by using best-management practices including: (1) preserving grass and low-growing bush cover as much as possible, (2) mulching cleared vegetation and spreading it out over the easement, (3) periodically spraying water onto exposed soil to reduce the likelihood of traffic-raising dust, (4) using pre-determined staging areas to store fencing materials, and (5) replanting areas with native grasses to the extent necessary to reduce erosion. Vegetation removed or disturbed in the process of installing fencing is highly likely to regrow within several months.

Based on the overall small scale of CFTEP fencing projects, releases of air pollutants associated with any on-site construction or maintenance activities are expected to be low in volume, temporary in duration, and highly likely to rapidly dissipate below detectable levels. For these reasons, USDA APHIS finds that neither the no action nor the preferred alternative would create long-term effects to air quality.

4.7 Tribal and Historical Properties

The CFTEP proposed fencing activities will have no effect on Federally recognized Tribal or ceded lands in the program area. According to the Bureau of Indian Affairs (BIA, undated), there are no Federally recognized Tribal lands in Cameron County, Texas. Using the Housing and Urban Development (HUD)'s Tribal Directory Assessment Tool (TDAT) USDA APHIS identified and consulted with the Tribal Historic Property Offices (THPOs) in March 2022 to confirm the agency's proposed activities would have no effects on any potential Tribal or ceded lands in Cameron County.

In accordance with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations, USDA APHIS assessed the historic properties within Cameron County and analyzed the agency's action's potential effects on those properties. USDA APHIS found that the proposed action would have no effect on listed historic properties because none of these properties are in the program area (they are all located over 20 miles away from the proposed fence locations). USDA APHIS submitted its analysis and associated maps to Texas SHPO for their review. The SHPO concurrence with USDA APHIS's finding of no effect of the proposed action on historic properties is pending.

The USDA APHIS proposed action would not alter, change (restore or rehabilitate), modify, relocate, abandon, or destroy any historic buildings, edifices, or nearby infrastructure. USDA APHIS program activities would not directly or indirectly alter the characteristics of any listed historic property that qualifies it for inclusion in the National Register of Historic Properties. USDA APHIS activities would not use heavy equipment that could create noise levels requiring auditory protection. Any visual, atmospheric, or auditory impacts during the installation of high game fencing would be limited in duration, intensity, and area.

4.8 Human Health and Socioeconomics

CFTs do not pose a direct risk to public health in the United States. There are no direct human health impacts expected from uncontrolled CFT populations. The 2021 Final EA discusses in detail the human health and socioeconomic impacts of the agency's action (USDA APHIS, 2021). This information is incorporated in this supplemental EA by reference.

The materials and design features of fencing relating to this supplemental EA do not pose risks to ranchers and workers installing the fences (USDA APHIS, 2021; 2018). Such materials do not contain any chemicals that pose risks; galvanized wires are widely used for roofing, siding, gutters, telephone pole hardware, guardrails, storage, fencing, etc. (DOD, 2019). USDA APHIS does not expect its program to pose any long-term, direct, or indirect effects to public health. Ranchers near the program area may be eventually exposed to dust and noise associated with fence construction and maintenance activities, but such exposures are very limited because program activities take place on the refuge and private lands (LANWR Unit 4, Jenkins Track, Laguna Vista/Los Fresnos), which are away from public settings. Also, dust and vehicle emissions would be minimal given the limited scope and duration of the activities. Occupational workers, who have the greater potential for exposure, will adhere to safety instructions and other precautionary measures, including wearing proper personal protective equipment (PPE) (e.g., gloves, masks, and goggles, etc.) during program activities.

Regarding the potential socioeconomic impacts, fencing additions could be viewed as upgrades of existing fences, and this could eventually impact landowners if their property taxes increase due to perceived added value. Fencing upgrades and decreased access to ranch properties by wildlife may reduce the amount of bushmeat available to members of local communities. Overall, the effects of such potential property tax increase and/or reduction of bushmeat would be far lower than the effects associated with the extended fencing (e.g., reduced CFT spread and disease transmission to cattle population, reduced likelihood of human exposures to CFT and diseases from wildlife hosts, healthier cattle production, and related increased income).

4.9 Executive Orders

USDA APHIS complies with Executive Order (EO) 13045, "Protection of Children from

Environmental Health Risks and Safety Risks” by considering the likelihood and consequences of exposure to the proposed action. Residents aged 17 and younger represent 29.5 percent of the population in Cameron County (CIP, 2020). Under both alternatives, children are highly unlikely to live in or near locations with fencing. There are no fence segments on public places or facilities that children typically use (such as parks, playgrounds, schools, or outdoor community centers).

Climate change (CC) refers to long-term shifts in average weather patterns that define the Earth’s local, regional, and global climates. This includes changes in average daytime and nighttime temperature, precipitation, drought periods, periodicity of tornadoes and rainfall, polar ice melting, and ocean/sea level rise. Human-produced impact on global temperature (or anthropogenic global warming) may be avoided or reduced by agencies through consideration of CC during the NEPA process. NEPA requires U.S. federal agencies to examine the reasonably foreseeable effects of a proposed action on the human environment (40 CFR § 1508.1(g)). Federal agencies comply with EOs 13990 (“Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis”) and 14008 (“Tackling the Climate Crisis at Home and Abroad”) by considering:

- (1) the effects of CC on a proposed action,
- (2) the potential effects of a proposed action on CC, and
- (3) potential mitigation measures that could be applied to the proposed action.

Direct effects of CC on the CFTEP fence program include increased likelihood of introduction and modification of the incidence, prevalence, persistence, and locations of CFT outbreaks. Over time, biological modifications to *Rhipicephalus* spp. are highly likely to include more generations per year, increased reproductive rates, and populations that survive overwinter. Extreme precipitation and soil erosion coupled with overall drought increase the risk of livestock exposure to heat events that reduce productivity. All these direct effects elevate risks to U.S. agricultural and natural resources.

Specific examples of impacts to program operations include: (1) extreme weather events may interfere with the health, care, and treatment of livestock, (2) higher temperatures and drought may reduce health and immunity in livestock, (3) cattle fever tick program funding may be redirected to disaster relief and other emergency responses.

Pertinent findings from the USDA APHIS Annual Energy Report for 2019 (USDA APHIS, 2019) are summarized in Table 1 below. This is the last “pre-COVID [corona virus disease] pandemic” year with available data on all agency activities and includes contracted services. The electricity use in all buildings totaled 14,275.1 megawatt hours (MWh). There were no emissions reported for fugitive fluorinated gases, on-site landfills and municipal solid waste facilities, and industrial process emissions. There were no indirect emissions reported for purchased steam and

hot water, and chilled water. There was no reported impact of market-based renewable purchases. While increased greenhouse gas (GHG) emissions from videoconferencing or media streaming during COVID-19 outbreaks could be attributed to agency activities, these emissions would likely occur during telework and are not likely to be part of future agency building emission estimates.

Table 1. Summary of 2019 USDA APHIS Reported GHG Emissions.

Category	Total GHG in MT CO ₂ equivalents ¹
Standard Operations: Total purchased electricity consumption in buildings	11,401.4
Standard Operations: Mobile Emissions from the Federal Automotive Statistical Tool FAST for petroleum (diesel and gasoline)	25,222.5
Non-Standard Operations: Mobile Emissions from the Federal Automotive Statistical Tool for high intensity operations	64.1
Total Biogenic CO ₂ emissions	1,308.8
Total Agency Non-Aviation GHG Emissions	37,996.8
Total Standard Operations: vehicles operation and construction (gas)	115.7

Program	Fuel Used	Estimated GHG Emissions	Estimated GHG Emissions	Total GHG in metric tons (MT) CO ₂ equivalents ¹
Cattle Fever Tick Eradication (estimate based on similar programs)	13,873.8 gallons	CO ₂ = (8.31 kg/gal)(13,873.8 gal)(1000g/kg) + N ₂ O = (0.07 g/gal)(13,873.8 gal)(298 factor to convert to CO ₂) + CH ₄ = (0.36 g/gal)(13,873.8 gal)(25 factor to convert to CO ₂)	115,291,300 g + 289,417.6 g + 124,865 g	115.7

¹ Sources: USDA APHIS, 2019; USEPA, 2020

The CFTEP uses minor truck and passenger vehicle traffic to inspect, transport and treat affected cattle. Additionally, the installation and inspection of game fencing are all part of an integrated pest management program. We base calculations for the cattle fever ticks program vehicle GHG emissions on the annual fuel quantity used by vehicles and construction equipment.

The combined agency total for the other pertinent categories is less than 40,000 metric tons (MT) CO₂ equivalent. Based on the number of USDA APHIS programs, shared use of facilities, and assuming proportionate fleet uses, the cattle fever tick program emissions would be less than the former 25,000 MT CO₂ equivalent threshold for a quantitative analysis suggested by the

President’s Council for Environmental Quality (USDA APHIS, 2019; USEPA, 2020).

Under the No action alternative, the program would likely limit its activities to the maintenance of existing fences. In this regard, the exhaust emissions during movements of the service vehicles and the effects to air quality and CC would be negligible.

Under the preferred alternative, vehicle exhaust emissions are expected to be temporary and very minimum; and they would likely rapidly dissipate below detectable levels because the program would limit the number of service vehicle trips to/from the program area. Installation and maintenance activities are very limited in time and scope in comparison to the lifespan of the fencing. Based on the overall small scale of USDA APHIS fencing projects, any on-site construction emissions are expected to be low in volume, temporary in duration, and highly likely to rapidly dissipate below detectable levels. USDA usually reports its program air emissions annually. For these reasons, USDA APHIS finds both the no action and preferred alternatives would not create long-term or cumulative effects to air quality or CC.

Potential sources of GHG emissions inherent in CFT control or eradication activities include:

- Land vehicles used during program delivery and fence construction
- Soil Disturbance during fence construction
- Pesticide manufacture, livestock treatment, and application technologies

We considered the following mitigations to reduce GHG emissions resulting from cattle fever ticks program activities:

- Efficiently combining vehicle trips by personnel
- Construction of high game fencing in rural, isolated areas.
- Coordinating with animal health and pesticide manufacturers to discuss potential reductions of GHG emissions during manufacture and application technology development.

At the present time, discussions with pesticide manufacturers are in the planning stages. Efficient vehicle uses and improvements in fleet efficiency appear to be the most promising measures that could reduce CFTEP related GHG emissions.

Federal agencies comply with EO 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” EO 13985 “Advancing Racial Equity and Support for Underserved Communities Through the Federal Government,” and EO 14008 “Tackling the Climate Crisis at Home and Abroad” by identifying and addressing equity for underserved communities. In comparison to the rest of the United States, the project area appears to be low income with a large minority Hispanic population. In 2020, 89.5 percent of residents of Cameron County self-identified as Hispanic (CIP, 2020). In 2020, the per capita income reported

in Cameron County was \$36,700 with an unemployment rate of 10.2 percent. The poverty rate in 2020 was 24.4 percent (CIP, 2020). Major communities such as Brownsville, Harlingen, San Benito, cities are many miles away from the fencing locations.

A small portion of the proposed fencing (approximately 0.25 miles) will be installed in Laguna Vista. The demographics of Laguna Vista are 63 percent Hispanic, 33 percent white (non-Hispanic). Forty-nine percent of households have an income of \$50,000 per year or more and 33 percent of households have an annual income of \$75,000 or more (USEPA, 2022; USCB 2020).

The term "colonia" in Spanish means a community or neighborhood. Texas colonias are severely distressed, unincorporated residential communities located within 150 miles of the U.S.-Mexico border (TDA, 2021). Portions of the fencing will be installed near colonias. Colonias affected include: Arroyo City Annex Subdivision, Arroyo City Subdivision, Channel Lots, Coulson, Schwartz, Del Mar Heights, Chula Vista, Orason Acres, and Shoemaker Acres. The closest schools to the proposed fencing tracts near the colonias are over 3 miles away, so children will not be affected nor endangered by the installation of the fencing.

Most of the colonias are located a substantial distance from the proposed fencing. The exception is Del Mar Heights, which is located directly across from the proposed fencing. However, State Highway 100 provides a buffer between Del Mar Heights and the fencing since the proposed installation will be on the opposite side of the highway.

Federal agencies must ensure their programs and activities are accessible to persons with limited English proficiency as directed by EO 13166. To meet this need, USDA APHIS conducts outreach to English-speaking and Spanish-speaking communities through a variety of public notices and informational brochures about CFTEP program activities. USDA APHIS will invite all stakeholders, including colonia ombudspersons and residents of colonias, to any public meetings. If this EA leads to a FONSI, then USDA APHIS will provide a Spanish translation of the FONSI to program and Texas representatives for public dissemination.

The preferred alternative would not negatively affect the standard of lifestyle, social behavior patterns, or the needs of local communities. Fence construction and maintenance would not interfere with ongoing socioeconomic activities in Cameron County, particularly those at the airports, waterborne commerce, and recreation facilities.

On balance, USDA APHIS does not expect the proposed action to pose any disproportionately high and adverse effects to minorities or members of low-income/disadvantaged/underserved communities because they will share in the benefits of the preferred alternative and are highly unlikely to be exposed to effects associated with fence construction and maintenance.

5 Cumulative Impacts

Cumulative impacts on the environment result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of the entity conducting those other actions.

Currently, APHIS has other activities that may occur within Cameron County, primarily related to plant health and vertebrate pest control. Plant pest programs such as the Boll Weevil Eradication Program, the Imported Fire Ant Quarantine, and the Mexican Fruit Fly Quarantine exist within the county. Vertebrate pest control measures implemented by APHIS are on an as-needed basis. If detections of a boll weevil, imported fire ant or Mexican fruit fly are made, chemical treatments are applied to specific locations or to quarantined products shipped to an area not under quarantine. These treatments are infrequent and are made in crop fields or in nurseries using products that are registered by EPA for a wide variety of agricultural and non-agricultural uses.

A positive cumulative impact from the additional fencing as part of the CFTEP would be a reduction in interactions between tick-infested wildlife with cattle in the United States. The reduction in ticks and associated diseases would provide economic benefits to the livestock industry by providing economic stability and would position the U.S. livestock industry to remain competitive as markets evolve (Miller et al., 2013; Pérez de León et al., 2012). Economic benefits to taxpayers may also occur through decreased costs to maintain the CFTEP.

Other aspects of the CFTEP, such as chemical control measures and trail maintenance, should be considered when assessing cumulative impacts. We expect that these CFT management measures contribute less to the cumulative impacts to the environment compared to fence construction and maintenance. The reduction in ticks also could result in a reduction of chemical control measures used as part of the CFTEP. Due to the restrictions in how chemical control measures are managed by the CFTEP, risk to the general human population is not expected. However, any reductions in chemical use would benefit workers by reducing exposure and subsequent risk. The reduction in the need for chemical control measures also would have a beneficial cumulative impact to the livestock industry in reducing the probability of chemical resistance developing in cattle fever ticks, which has been observed in Mexico (Pérez de León et al., 2012). Chemical use in the CFTEP is restricted in such a way to avoid non-target fish and wildlife impacts, or the type of chemical poses a low risk to most non-target populations.

Trails that allow the CFTEP to perform surveillance of cattle and wildlife coming from Mexico have been in existence since approximately 1938 and have resulted in the loss of some native habitat. Maintenance of these trails requires periodic clearing on private and public property. The loss of habitat is minor relative to the economic development that has occurred in the county since the trails were established. The length of trail is not expected to increase in the future and

maintenance of the trail would be coordinated with private landowners as well as affected public land management agencies to minimize impacts to ecological resources.

The cumulative impacts to the human environment from the actions evaluated in this EA are not expected to contribute significantly when compared to the impacts from current and future activities occurring in Cameron County, including other existing fencing, agriculture, energy production, highway maintenance and construction, and property development. The cumulative impacts from the preferred alternative when assessed in relation to the current baseline and past, present, and future activities constitute a small incremental or transient change to the human environment and any incremental cumulative impacts would be negligible. Some of these cumulative changes may be positive such as the reduction in CFTs and the associated economic benefits from having tick-free cattle.

6 Persons and Agencies Consulted

The CFTEP is a cooperative effort between Federal government, State of Texas, local governments, and individual livestock producers, who share program costs. USDA APHIS has consulted with several people and agencies to gather, exchange, and/or review the information included in this Environmental Assessment. These individuals and agencies are:

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Appendix A. References

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Appendix B. Soil Types Surrounding Proposed Fencing Locations

The seven classes of hydrologic soil group followed by definitions:

- **Group A** - Group A soils consist of deep, well drained sands or gravelly sands with high infiltration and low runoff rates.
- **Group B** - Group B soils consist of deep well drained soils with a moderately fine to moderately coarse texture and a moderate rate of infiltration and runoff.
- **Group C** - Group C consists of soils with a layer that impedes the downward movement of water or fine textured soils and a slow rate of infiltration.
- **Group D** - Group D consists of soils with a very slow infiltration rate and high runoff potential. This group is composed of clays that have a high shrink-swell potential, soils with a high water table, soils that have a clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material.
- **Group A/D** - Group A/D soils naturally have a very slow infiltration rate due to a high water table but will have high infiltration and low runoff rates if drained.
- **Group B/D** - Group B/D soils naturally have a very slow infiltration rate due to a high water table but will have a moderate rate of infiltration and runoff if drained.
- **Group C/D** - Group C/D soils naturally have a very slow infiltration rate due to a high water table but will have a slow rate of infiltration if drained.

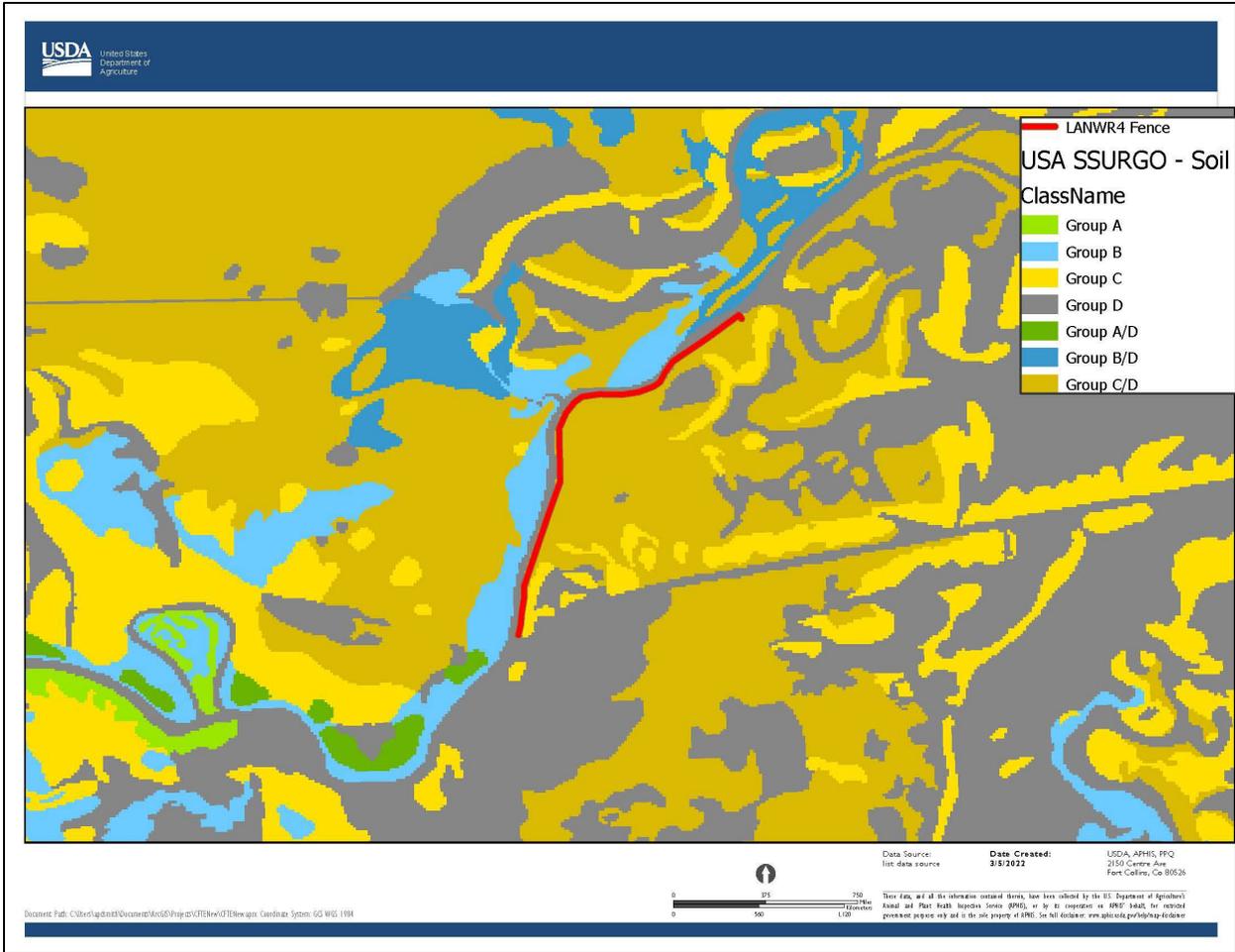


Figure B-1. Soil types at proposed fencing location LANWR Unit 4 and surrounding area.

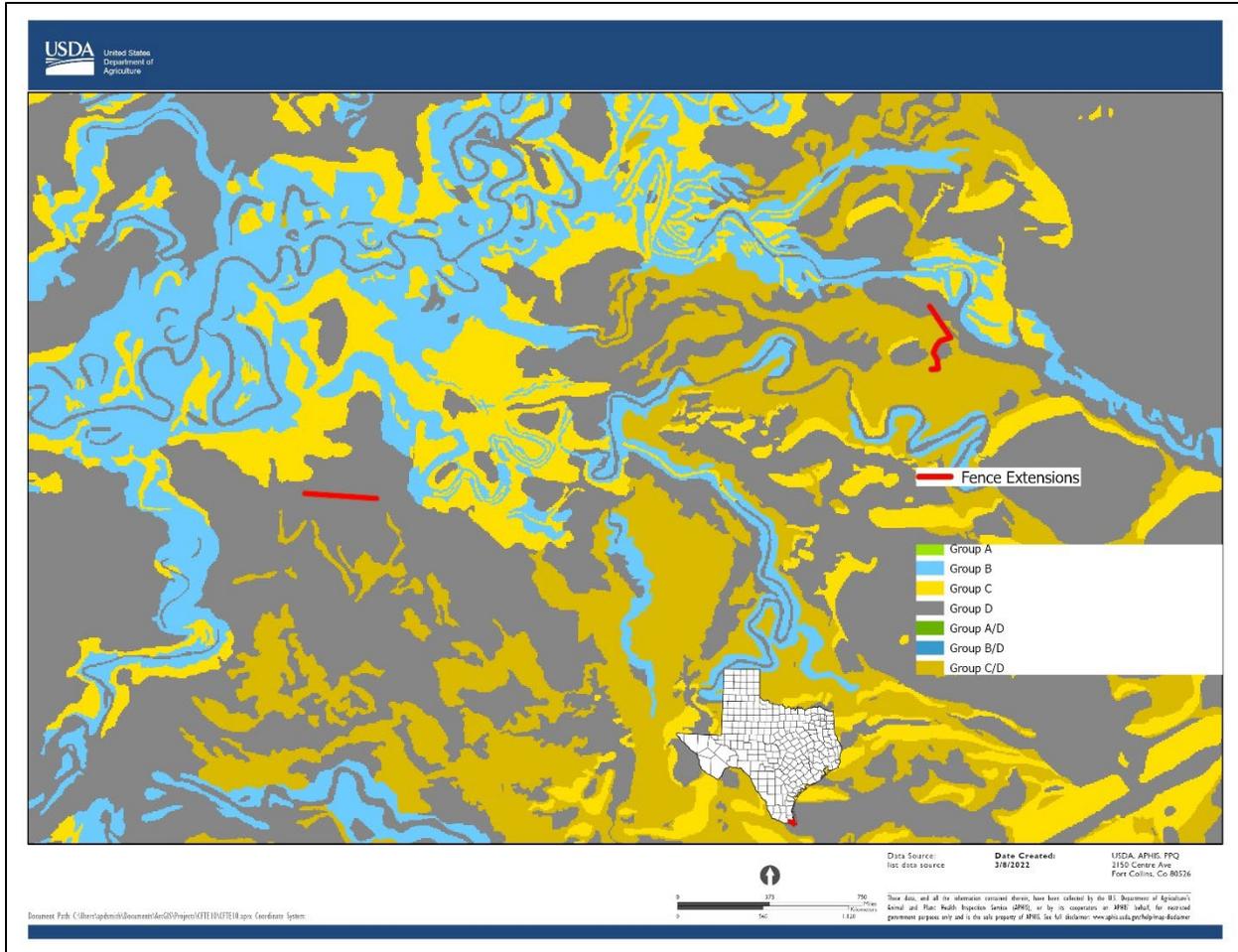


Figure B-2. Soil types at proposed fencing locations at Laguna Vista gap and Los Fresnos gap and surrounding area.

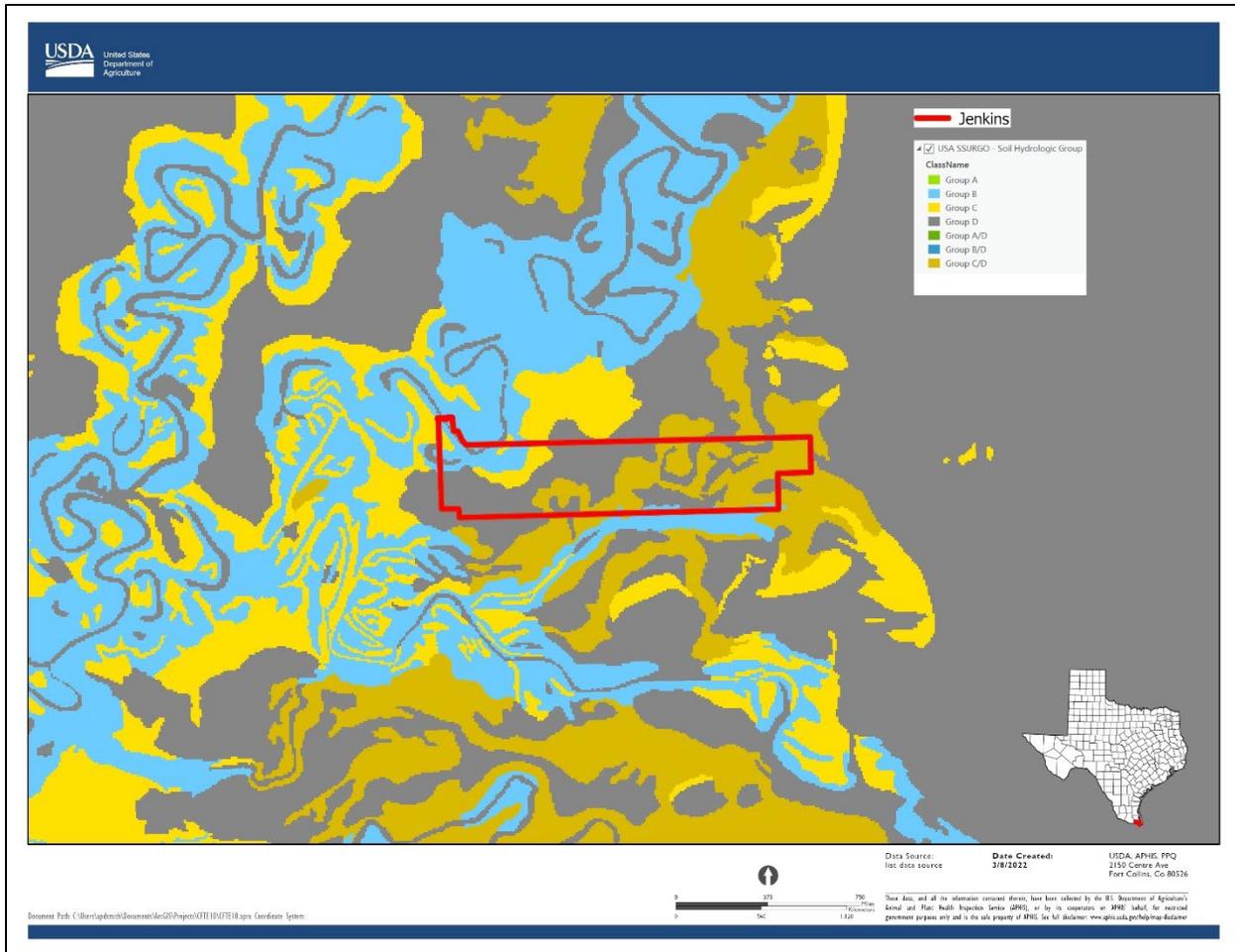


Figure B-3. Soil types at proposed fencing location Jenkins Tract and surrounding area.

Appendix C. Vegetation Surrounding Proposed Fencing Locations

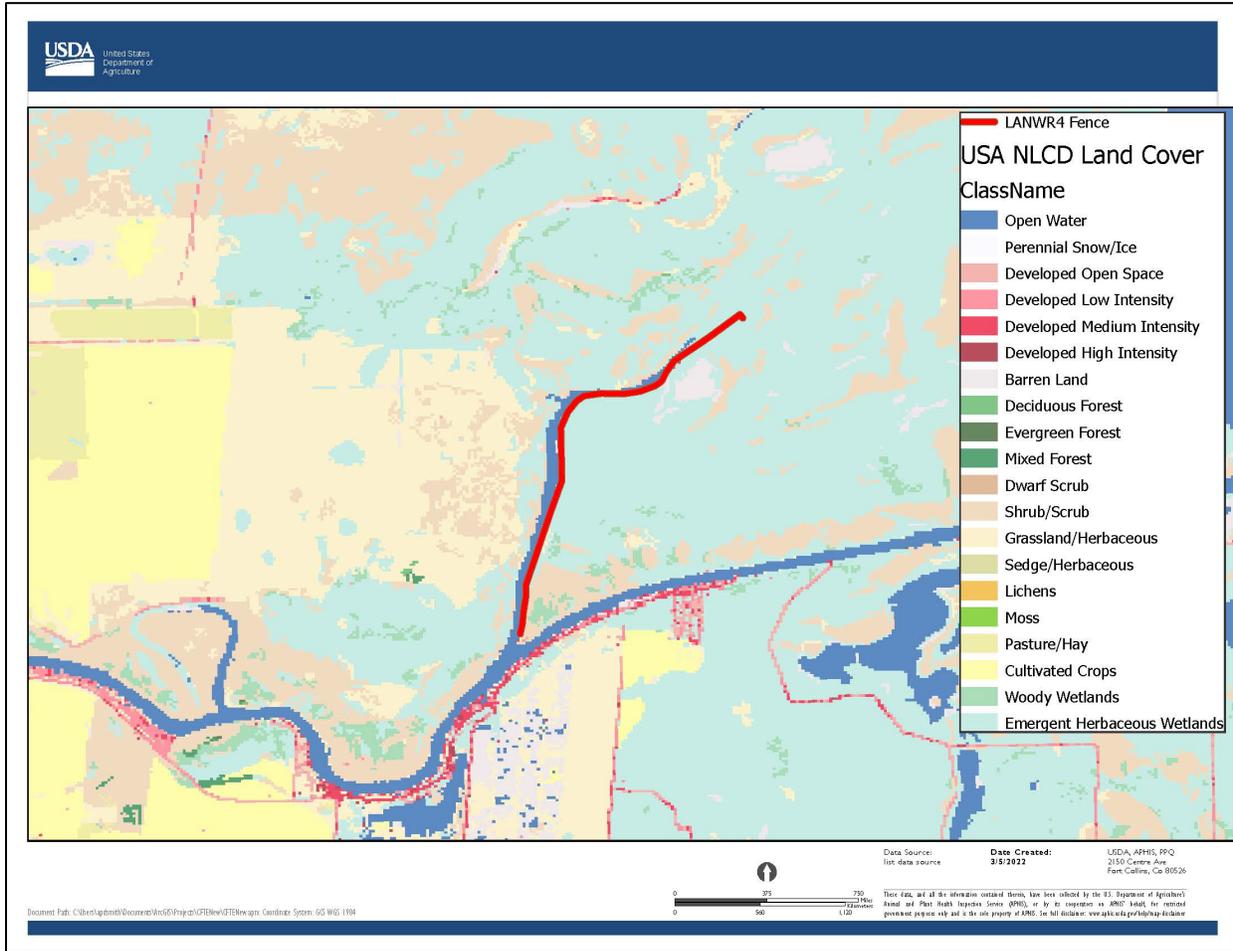


Figure C-1. Vegetation at proposed fencing location on LANWR Unit 4 and surrounding area.

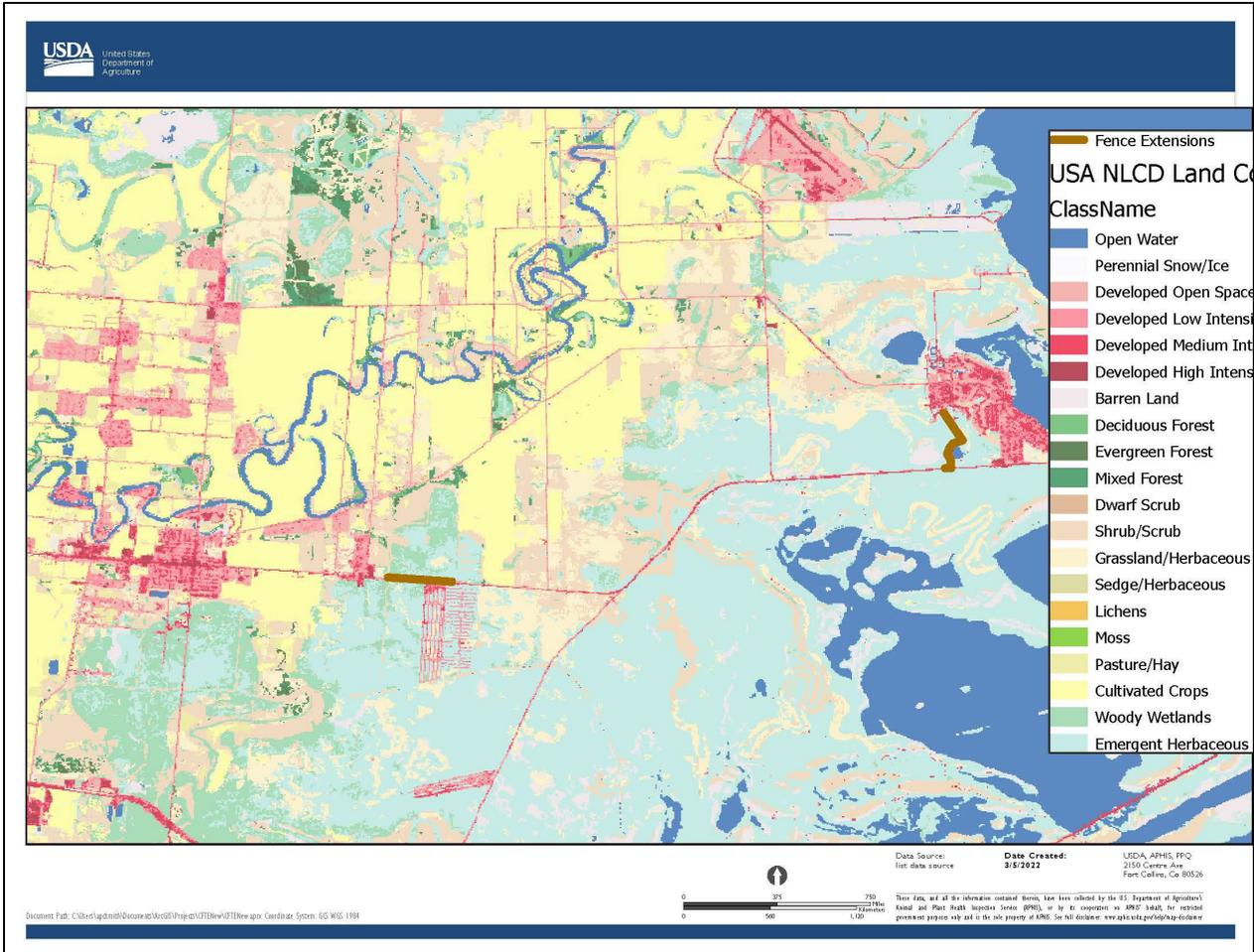


Figure C-2. Vegetation at proposed fencing locations at Laguna Vista gap and Los Fresnos gap and surrounding area.

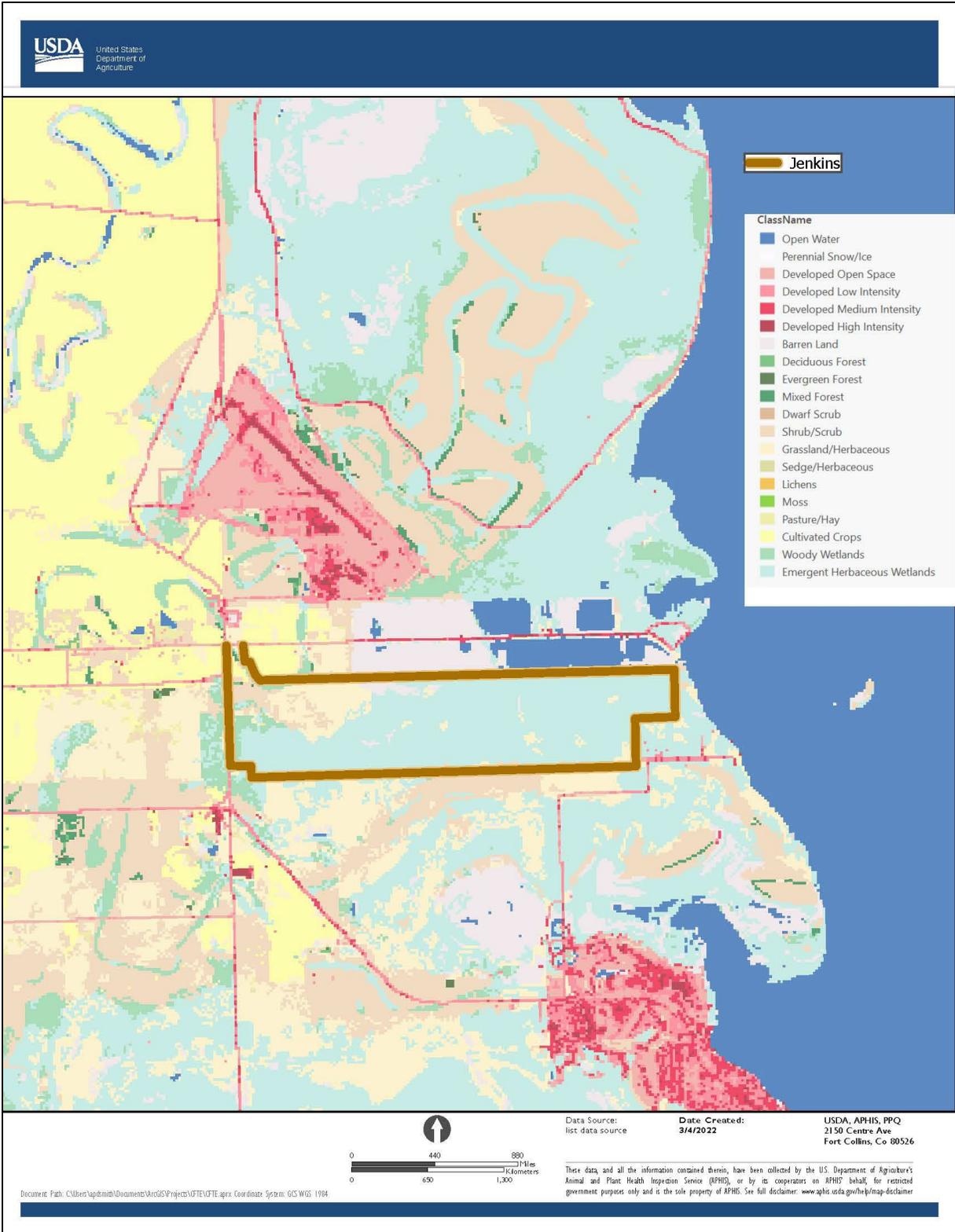


Figure C-3. Vegetation at proposed fencing location on the Jenkins Tract and surrounding area.

Appendix D. Water Resources Surrounding Proposed Fencing Locations

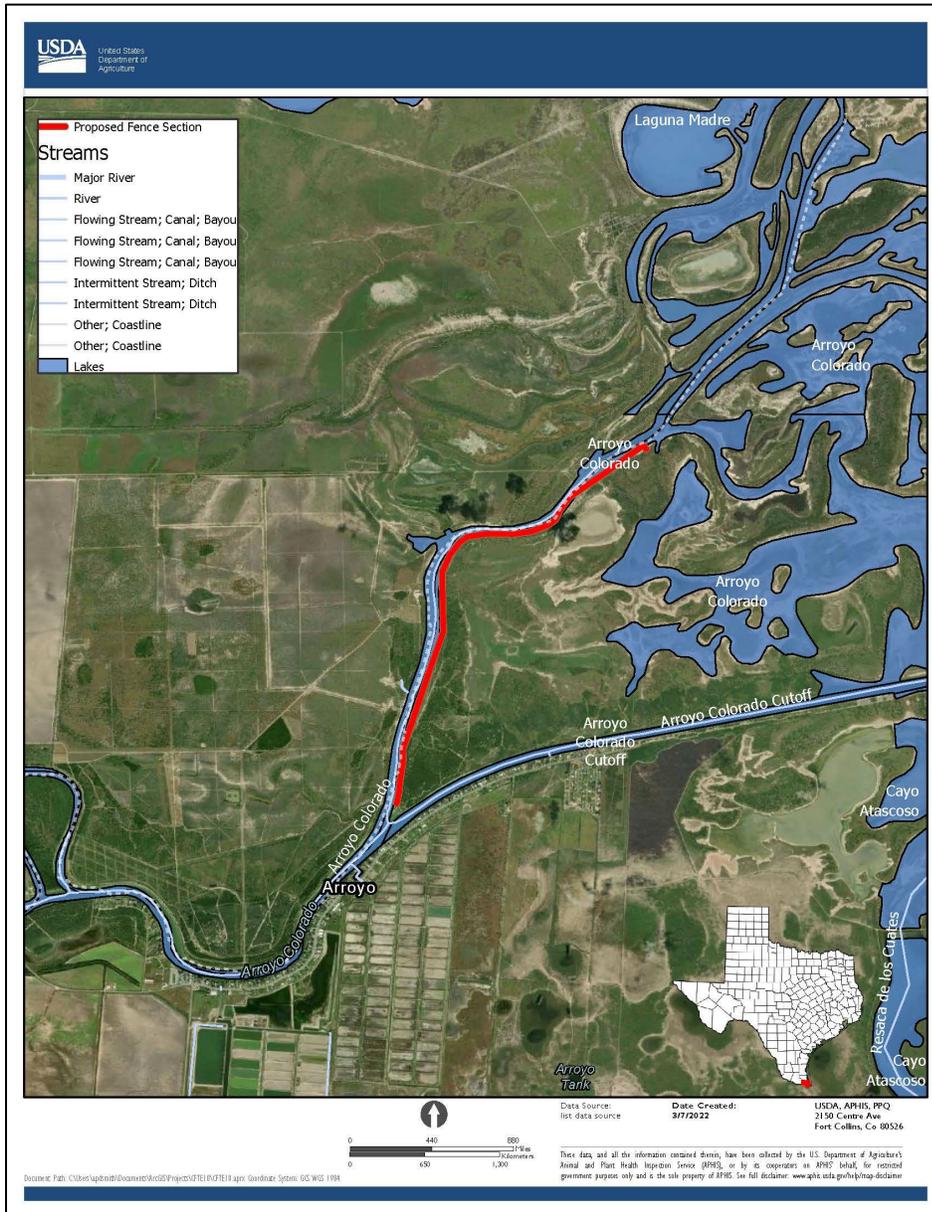


Figure D-1. Water resources located in the area of LANWR Unit 4.

Waterbody and distance from LANWR Unit 4:

Arroyo Colorado	0 miles
Arroyo Colorado Cutoff	1.17 miles
Cayo Atascoso	2.69 miles
Laguna Madre	3.00 miles

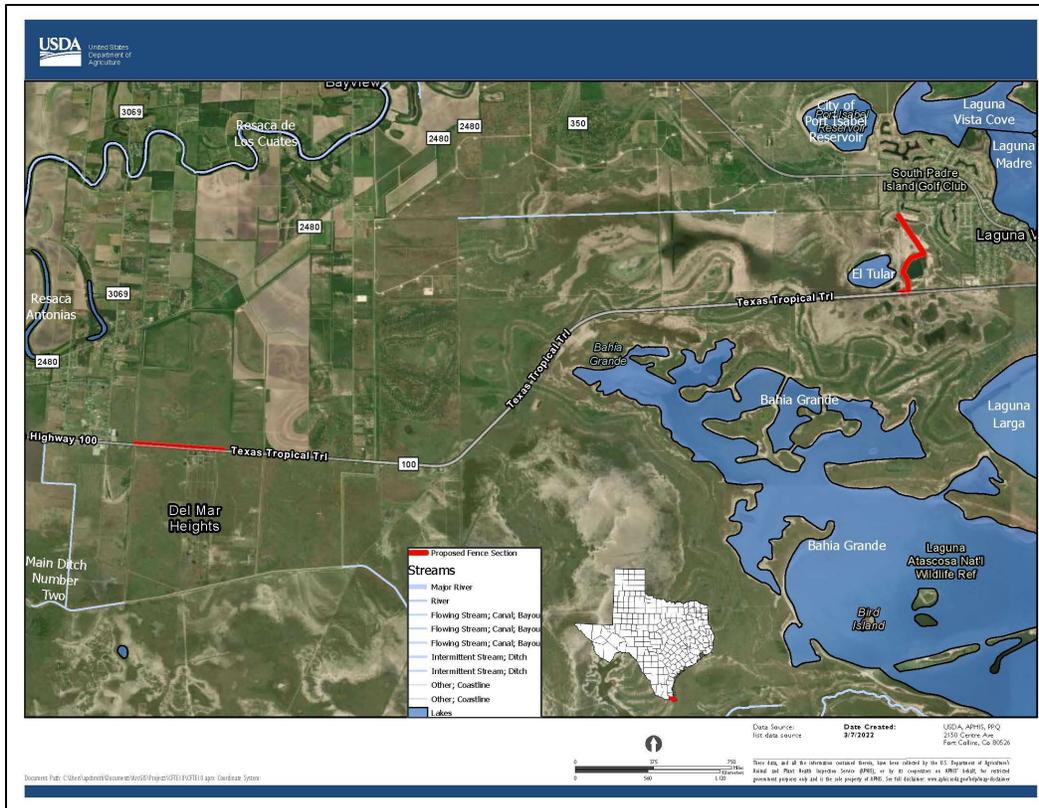


Figure D-2. Water resources located in the area around the Laguna Vista and Los Fresnos gaps.

Waterbody and distance from Laguna Vista and Los Fresnos gaps:

Bahía Grande	0.56 miles
Laguna Vista	3.60 miles
Laguna Larga	3.75 miles
San Martin Lake	4.21 miles
Resaca Antonias	4.86 miles

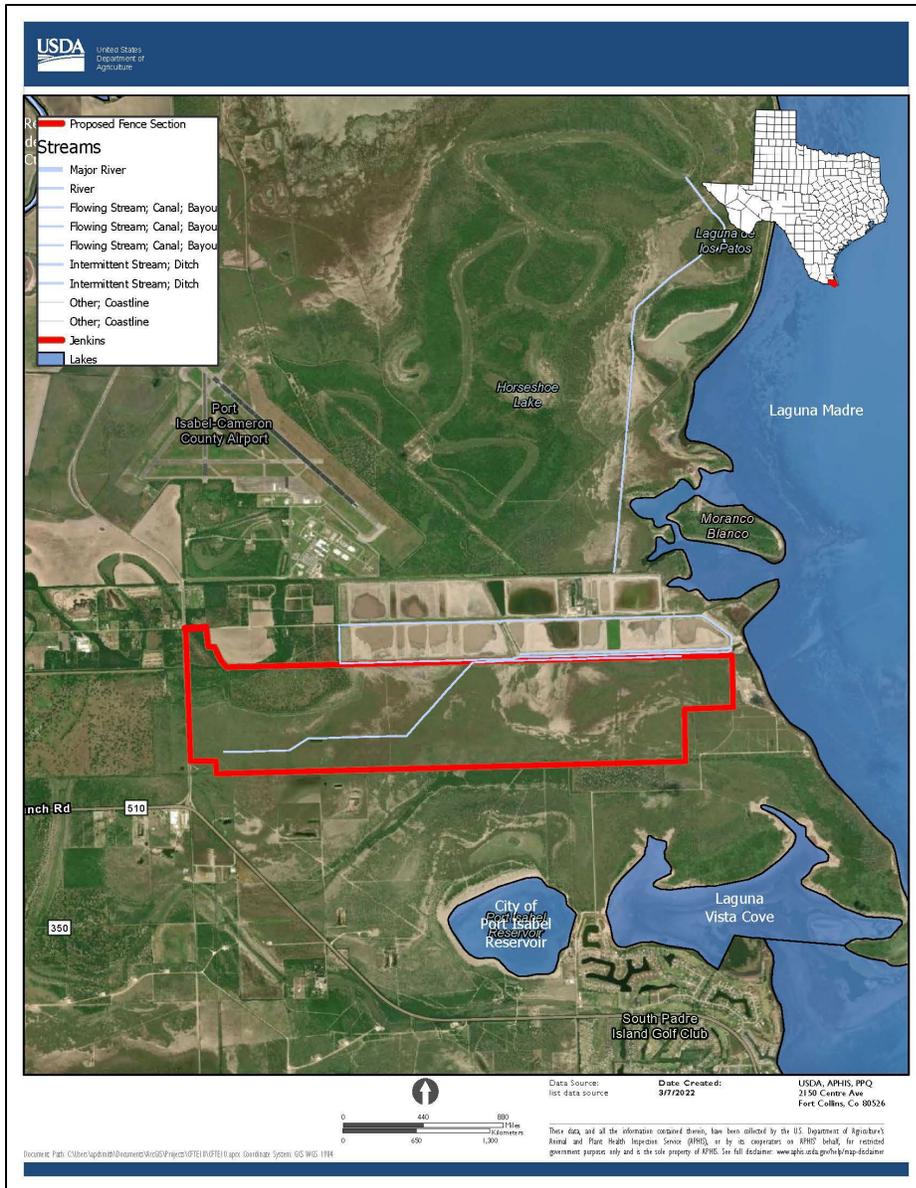


Figure D-3. Water resources located in the area of the Jenkins Tract.

Waterbody and distance from Jenkins Tract:

Laguna Vista Cove	0.04 miles
Resaca de Los Cuates	2.34 miles
El Tular	2.37 miles
Intracoastal Waterway	3.23 miles
Bahía Grande	3.27 miles
Laguna Larga	3.37 miles
Bahía Grande	3.70 miles
Cayo Atascoso	3.89 miles