



Lisa Norby

07/16/02 05:05 PM MDT

To: Linda Dansby/SANTAFE/NPS@NPS

cc:

Subject: Suggested revisions to Lemon EA

Linda,

I have made some minor revisions to the section of Chapter 3 that you have sent me. It is in redline / strikeout mode. Overall, I really like the revised format for the EA. I suggest making the following global changes to Chapter 3:

- Fix the fonts throughout the document so they are the same. Right now there are California FB and Arial fonts in the file.
- Title each section by the name of the resource topic instead of "Impacts on..." that topic since the section includes more than the impact section. The entire chapter should be called "3.0 Affected Environment and Environmental Consequences".
- Move the methodology section after the affected environment section since it pertains to the environmental consequences discussion and not to the affected environment text.
- Change "will" to "would" in the impact threshold definitions.
- Instead of describing impact on a "natural physical resource" in the impact threshold definition, replace it with the name of the impact topic.
- When describing the impacts from vehicle use describe them as "park, commercial, and recreational vehicle use" unless the impacts are different for the different types of vehicle uses.
- Remove "serious" from the description of the impacts from oil and gas spills. Since the impacts for the most part are described as localized and minor to moderate, they would not always be "serious".
- Make sure that under Alternative B it states that the wells would be drilled and may be completed to produce hydrocarbons (see my suggested changes to Alternative B text throughout the document).
- Condense the conclusion statements so they just list the impact context, intensity, and duration for each resource. You can remove the description of the alternative at the beginning of each of the conclusion statements to save space.

I have made all of the changes suggested above in the attached file through the Water Resources and Floodplains sections of the document.

Great job, we're almost there!! Let me know what I can do to help get the document finished.

Lisa Norby



Lemon EA chapter 3 In 7 16.doc

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Linda Dansby

07/15/02 06:25 PM MDT

To: Lisa Norby/DENVER/NPS@NPS

cc:

Subject: Still not quite done revised Ch 3

Lisa - it's 6:30 and I'm outta here - will be back Wednesday to complete the revisions for Loggerhead Shrike and the Neotropical Migrants sections.

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3.0. AFFECTED ENVIRONMENT and ENVIRONMENTAL CONSEQUENCES

Methodology

This section describes direct, indirect, and cumulative impacts under the two alternatives. Impacts are described in terms of context, duration, and intensity. The context or extent of the impact may be localized (affecting the project area or a single company) or widespread (affecting other areas of the park and/or the project area, or an industry). The duration of impacts could be **short-term**, ranging from weeks days to three years in duration, or **long-term**, extending up to 20 years or longer. Generally, short-term impacts would apply to construction activities and long-term impacts would apply to roads, production operations, and flowlines. The intensity and type of impact is described as negligible, minor, moderate, or major, and as beneficial or adverse. Where the intensity of an impact can be described quantitatively, the numerical data are presented. However, most impact analyses are qualitative.

Intensity thresholds are defined for each impact topic analyzed to establish the threshold or magnitude at which impacts would be "negligible, minor, moderate, or major." The intensity thresholds are derived from government regulatory standards, available scientific documentation, previously prepared environmental documents, and the professional judgment of NPS resource specialists. The intensity thresholds presented in this EA were developed specifically for Padre Island National Seashore. Over time, as new information becomes available about the resources in the park, or as NPS policies or government regulatory standards change, these definitions of intensity thresholds may be revised.

The impact analyses are organized by impact topic. Under each impact topic, the affected environment is described, impacts under each alternative is given, a cumulative impact analysis is provided (analysis area is park wide), and a conclusion is stated. The conclusion section summarizes all major findings, including whether or not an impairment of resources or values is likely or would occur. Impairment analyses are only performed for park resources and values.

Impairment: a major, adverse impact to a resource or value whose conservation is: 1) necessary to fulfill a specific purpose identified in the establishing legislation of Padre Island National Seashore; 2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or 3) identified as a goal in the park's general management plan or other relevant NPS planning documents.

Cumulative Impacts: The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions" (40 CFR 1508.7).

The following descriptions of park development and operations, and adjacent land uses provide the basis for analyzing cumulative impacts in this EA. These descriptions should be used in conjunction with the description of the affected environment for nonfederal oil and gas development that follows in the next section:

Park Development and Operations. Padre Island National Seashore was established to save and preserve a portion of the diminishing seashore of the United States that remains undeveloped, for the purposes of public recreation, benefit, and inspiration. Any developments on the coastal barrier island are vulnerable to the harsh corrosive salt-air atmosphere and require constant maintenance. Park developments are located in the northernmost 10 miles of

the park and consist of the minimum necessary to support park management and approximately 750,000 visitors annually. The Malaquite visitor center and concession facility was built in 1988 to replace the older pavilion structure damaged by Hurricane Allen. In August 1999, Hurricane Bret struck the park from the 32.5 to 56.8 mile markers, and created 21 washover channels. In addition to the visitor center/concession facility, there is a 1,150-vehicle parking lot, a park headquarters/ranger station/turtle incubation facility, 3 park housing units, a 40-site RV campground, wastewater treatment facility, Bird Island Basin and Yarborough Pass boat docks, an unpaved cross-island Yarborough Pass road, and a ¾-mile unpaved Grasslands Nature Trail. The paved, two-lane Park Road 22 provides access into the park, and westward to Bird Island Basin, or south to Malaquite Beach at which point the Gulf beach becomes the primary transportation corridor south. The beach is hard and accessible by both two- and four-wheel drive vehicles for 5 ½ miles at which point the beach corridor is only accessible by four-wheel-drive vehicles. Access to the park is also available via boat in the Laguna Madre or Gulf of Mexico. In total, existing park developments occupy 391 acres or 0.3% of the park. There are no past developments or activities that continue to impact the park's resources or values; and no new park developments are planned in the future.

Park activities that could contribute to impacts on park resources and values include prescribed fires, routine maintenance of park roads, park and visitor vehicle use, and public recreational activities such as motor boating, jet skiing, and burning of camp fires.

Adjacent Land Uses. Drilling and production of state-owned oil and gas is expected to continue from state tracts adjacent to the park boundaries, either on the east in the Gulf of Mexico, or on the west in the Laguna Madre. Exploration and development of federally-owned oil and gas in the Gulf of Mexico's outer continental shelf will also continue. In addition, oil tankers transporting products through the Gulf of Mexico could potentially impact the park should there be a spill incident. Military overflights are anticipated to continue. Also anticipated to continue would be the dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre in proximity to the park.

3.1. Impacts on Nonfederal Oil and Gas Development

Methodology

To analyze the impacts on nonfederal oil and gas development, the park reviewed current and historic drilling operations that have been conducted within the park since the mid-1900's. Information from the parks enabling legislation, current state and federal laws and regulations, and the parks approved Oil and Gas Management Plan were also utilized.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible:—the impact is barely measurable, and/or will not affect domestic energy supplies or BNP.

Minor:—the impact is slight but measurable, and/or will affect domestic energy supplies or BNP.

Moderate:—the impact is readily apparent, and/or will affect domestic energy supplies or BNP.

Major:—the impact is severely adverse or exceptionally beneficial, and/or will affect domestic energy supplies or BNP.

Affected Environment

Oil and gas exploration and production have been actively pursued on Padre Island since 1951. A total of 73 operations have occurred within the current boundaries of the park. During 1982-1992, two-dimensional seismic surveys were conducted over many areas of the park. Currently, there are 13 gas operations, including 6 wells, 1 saltwater well, and 6 pipelines occupying 349 acres or 0.27 percent of the park. All are under approved plans of operations. Four operations, including 1 abandoned production facility have ongoing clean-up and remediation activities associated with releases of oil and gas and other contaminating or hazardous substances (South Sprint Facility, Vector site, American Exploration/Louis Dreyfus abandoned production facility, and the former Chevron USA Onshore Production Facility). Until cleanup is successfully completed, impacts on park resources and values persist.

Two existing gas pipelines are located within the analysis area of the proposed project. AEP operates and maintains a 12-inch pipeline 3,300 feet west of the proposed wellsites. Duke Energy owns a currently inactive 10-inch pipeline located 2,400 feet west of the proposed wellsites. BNP proposes to connect a flowline into one of these pipelines should the wells be placed in production. Also included in the analysis area of the proposed Lemon/Lemon Seed Unit wells is a 12.5-mile segment of Gulf beach that BNP would use to access its wells. This segment of Gulf beach is currently used by 12 nonfederal oil and gas operators to access existing operations located throughout the park, by park staff to conduct routine park operations, and by an estimated 527,800 park visitors annually.

In 1999, the NPS prepared a reasonably foreseeable development (RFD) scenario for inclusion in the park's Draft Oil and Gas Management Plan/Environmental Impact Statement. The RFD forecasts projects that three-dimensional seismic surveys could be conducted over the entire park, and up to 18 wells could be drilled and produced over the next 30 years to develop the 80 BCF of natural gas estimated by the U.S. Geological Survey that remains beneath the park. The NPS projects that 3-D seismic surveys would directly impact up to 748 acres; and the 18 wells and associated construction of roads, well and production pads, and flowlines would directly impact up to 250 acres, for a total direct surface use of up to 998 acres or 0.77% of the park. It is expected that 3-D seismic surveys would result in short-term impacts lasting no more than 3 years until reclamation is satisfactorily achieved. It is reasonable to assume that as some wells are being drilled and produced that others would be plugged and abandoned. As of 2001, 3-D seismic surveys have been completed over the northern three-quarters of the park. There are no existing impacts on park resources and values from those seismic surveys. In June 2002, BNP drilled the Dunn-Murdock #1 well in the vicinity of the Yarbrough Pass boat dock. This constituted the first of the possible 18 wells that the NPS's RFD scenario projected could be drilled over the next 30 years. The Dunn-Murdock #1 well directly disturbed 2.01 acres within the park. Should the well be placed in production, BNP would reduce the pad size by 0.92 acres so that the long-term production phase of operations would utilize 1.09 acres.

Methodology for Assessing Impacts

To analyze the impacts on nonfederal oil and gas development, the park reviewed current and historic drilling operations that have been conducted within the park since the mid 1900's. Information from the parks enabling legislation, current state and federal laws and regulations, and the parks approved Oil and Gas Management Plan were also utilized.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: the impact is barely measurable and would not affect domestic energy supplies or BNP.

Minor: the impact is slight but measurable and would affect domestic energy supplies or BNP.

Moderate: the impact is readily apparent and would affect domestic energy supplies or BNP.

Major: the impact is severely adverse or exceptionally beneficial and would affect domestic energy supplies or BNP.

Impacts of Alternative A, No Action, on Nonfederal Oil and Gas Development

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled. The impact on the domestic energy supply would depend on whether the exploratory wells would have discovered hydrocarbons that were producible. If so, not drilling and producing the wells would result in no impact on domestic energy supplies. There could be moderate to major adverse impacts on BNP due to the cost to lost revenues invested in collecting data and, preparing a plan of operations, and lost revenues since BNP would not not being permitted to develop their private mineral interests at this location.

Cumulative Impacts

Under Alternative A, No Action, the result of two exploratory wells not taking place out of the 17 remaining under the NPS RFD scenario would result in a minor adverse impact on nonfederal oil and gas development within the park. *(Linda: I deleted this sentence because we are not assessing the impacts on nonfederal oil and gas development in the park in this EA).* However, if BNP decides to not drill additional oil and gas wells, not drilling the wells could affect BNP's decisions to proceed with additional exploration and development in the vicinity of the park, there could be a moderate to major, adverse cumulative impact on BNP and a moderate cumulative impact on domestic energy supplies from potential production of oil and gas.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled or developed, resulting in no impact on domestic energy supplies, and a moderate to major adverse impact on BNP, due to uncertainty about future exploration and development. If BNP decides to not drill additional wells in the vicinity of the park there could be a moderate to major, cumulative, adverse impact on BNP and a moderate, cumulative impact on domestic energy supplies.

Impacts of Alternative B, Proposed Action, on Nonfederal Oil and Gas Development

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled, and if hydrocarbons are discovered and produced, would result in a negligible beneficial impact on domestic energy supplies. If a commercial field is discovered, the financial impacts on BNP and the associated mineral owners could range from minor to moderate beneficial impacts, depending on the quality of the discovery. Costs and time BNP has invested in with preparing a plan of operations, drilling and completing and or plugging the wells would result in a minor adverse impact on BNP.

Cumulative Impacts

Under Alternative B, Proposed Action, if the Lemon/Lemon Seed Unit wells are not produced, the cumulative impacts on nonfederal oil and gas development would be the same similar to as cumulative impacts under the nNo-aAction aAlternative. Should additional exploration and development wells anticipated under the RFD scenario be drilled and completed, production of petroleum resources under the park would increase available petroleum products to the domestic energy supplies, and may result resulting in a minor, beneficial, cumulative impact on domestic energy supplies and a minor to major, beneficial, cumulative impact on BNP and associated mineral owners. BNP's investment in preparing a plan of operations would be a minor adverse impact.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit the wells would be drilled, and if hydrocarbons are produced developed, would result in a negligible beneficial impact on domestic energy supplies. There would be, and a minor adverse impact on BNP due to costs and time invested in preparing a plan of operations, drilling and completing and/or plugging the wells. If additional wells are drilled and completed in the vicinity of the park, there could be a minor, beneficial cumulative impact on domestic energy supplies and a minor to major, beneficial cumulative impact on BNP and associated mineral owners.

3.4.3.2. Impacts on Air Quality

Methodology

To analyze the impacts on air quality, the park reviewed current state and federal laws regarding air quality and the parks approved Oil and Gas Management Plan.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible:—the impact is barely detectable and will not affect the parks designation as a Class II air shed.

Minor:——the impact is slight but detectable and will not affect the parks designation as a Class II air shed.

Moderate:——the impact is readily apparent and will not affect the parks designation as a Class II air shed.

Major:——the impact is severely adverse and/or will affect the parks designation as a Class II air shed.

Affected Environment

According to the TNRCC and the Final Oil and Gas Management Plan/Environmental Impact Statement (PAIS 2000), Kenedy County continues to be an attainment area for regulated pollutants. Prevailing southeast winds from March through September and north-northeasterly winds from October through February are likely to dissipate any pollutants in the park (PAIS 2000). Padre Island National Seashore is designated as a Class II air shed by the State of Texas, as authorized by the Prevention of Significant Deterioration provisions of the Clean Air Act. The park's air quality is protected by allowing limited increases over baseline concentrations of sulfur dioxide, nitrogen oxides, and particulate matter (PAIS 2000).

Methodology for Assessing Impacts

To analyze the impacts on air quality, the park reviewed current state and federal laws regarding air quality and the parks approved Oil and Gas Management Plan.

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The thresholds of change for the intensity of an impact are defined as follows:

Negligible: the impact is barely detectable and would not affect the parks designation as a Class II air shed.

Minor: the impact is slight but detectable and would not affect the parks designation as a Class II air shed.

Moderate: the impact is readily apparent and would not affect the parks designation as a Class II air shed.

Major: the impact is severely adverse and/or would affect the parks designation as a Class II air shed.

Impacts of Alternative A, No Action, on Air Quality

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on air quality. However, impacts on air quality in the analysis area would continue as the result of vehicle use along the 12.5 mile segment of Gulf beach by park staff, visitors, and 13 nonfederal oil and gas operators; visitor campfires along this segment of Gulf beach; and the continuing operation of 2 gas pipelines. The possibility exists for leaks or spills of hydrocarbon products along the two pipelines. Spilled hydrocarbon products could volatilize and enter the atmosphere. In the vicinity of a leak, concentrations of gas and other constituents could provide a source for explosion or fire. These impacts could be serious on a very local level localized, with minor to major, short-term adverse impacts on air quality; however, with the mitigation measures included in the operator's plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced. Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, visitor use on the beach, and continuing operation of the two pipelines, would result in localized, long-term, negligible to minor, adverse impacts on air quality within the analysis area.

Cumulative Impacts

Under Alternative A, cumulative impacts on air quality throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park; and from new drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario. As some operations are developed, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to air quality impacts include prescribed fires, routine maintenance of park roads, park, commercial, and recreational and visitor vehicle use, and use of motorboats public recreational activities such as motor boating and burning of camp fires. Adjacent land uses that could contribute to impacts on the park's air quality include state- and federally-leased oil and gas operations in the Laguna Madre or Gulf of Mexico. As a result of these activities, cumulative impacts on air quality in the park is expected to be localized around point sources, short-term because emissions would be readily dissipated by prevailing winds, and range from negligible to minor adverse impacts. Air quality is expected to stay within state and federal standards.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on air quality. E; however, existing park, commercial, and recreational vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines would result in localized, short- to long-term,

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negligible to minor, adverse impacts on air quality within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and park, commercial, and recreational vehicle visitor uses are expected to result in localized, negligible to minor, adverse impacts on air quality throughout the park, and to remain within state and federal standards. No impairment to air quality would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Air Quality

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be completed to produce hydrocarbons.

Existing impacts on air quality within the analysis area would be similar to Alternative A, No Action, with localized, short- to long-term, negligible to minor, adverse impacts associated with vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines.

Construction of the access road, well/production pad and flowline would result in localized and short-term increases in emissions of particulate matter during from ground-disturbing activities such as, importing and compacting caliche base materials, and use of vehicles and other machinery vehicle exhaust. Emissions of particulate matter, nitrogen oxides, carbon monoxide, carbon dioxide, and sulfur dioxide would be greatest during the short-term drilling and workover operations due to increased use of vehicles and large gasoline and diesel engines used to power the drill rig, pumps, and auxiliary equipment, resulting in short-term, negligible to minor adverse impacts on air quality, localized near the wellsite. Prevailing winds are expected to quickly dissipate emissions quickly out of the area. If the wells are not productive, impacts on air quality would return to levels described under the No Action Alternative. However, if the wells are placed in production, over the long-term production phase of operations, emissions would continue but at reduced levels, resulting in localized, and long-term, negligible, adverse impacts on air quality.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts would be similar to those described under No Action, with impacts localized around point sources resulting localized, in negligible to minor, adverse impacts on air quality throughout the park, and within state and federal standards.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and could be placed into production produced. Construction of the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short- to long-term, negligible to minor, adverse impacts on air quality within the analysis area. Cumulative impacts would be similar to those described under No Action, with localized, negligible to minor, adverse impacts on air quality throughout the park, and would remain within state and federal standards. No impairment to air quality would result from implementation of this alternative.

3.3. Impacts on Geology and Soils

Methodology

To analyze the impacts on geology and soils, all available information on geological resources in the park was compiled including: research, previous plans of operations, and the parks Oil and Gas Management Plan.

The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:**—an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.
- Minor:**—an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.
- Moderate:**—an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.
- Major:**—an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment

Padre Island consists of Pleistocene and Holocene sands, silts, clays, and shell fragments, which were transported by wind and water (PAIS FEIS, 2001). According to the U.S. Department of Agriculture (1965), soil pH generally ranges from 5.5 to 8.0, with higher pH occurrences nearer the Gulf side of the island. Soils are comprised of the Galveston and Mustang series on the majority of the barrier island. Soil types in the project area consist of Padre series on sand hummocks and Mustang series on lower poorly drained swales. The Padre series is characterized as being well-drained, moderately deep sandy soil with depth to water at around 80 inches. Mustang series is characterized as being poorly drained shallow soils with depth to water at around 30 inches. A soil survey is being conducted park wide by the Natural Resources Conservation Service (NRCS) and is expected to be completed by 2003.

To establish baseline conditions of hydrocarbon and organic levels, BNP would sample soils immediately prior to the start of construction. Soils would be collected and tested according to the sampling protocol prescribed by the NPS (see Appendix F in Oil and Gas Management Plan/Final Environmental Impact Statement, PAIS 2000).

Methodology for Assessing Impacts

To analyze the impacts on geology and soils, all available information on geological resources in the park was compiled including: research, previous plans of operations, and the parks Oil and Gas Management Plan.

The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** an action that could result in a change to geologic resources or soils that would be so small that it would not be of any measurable or perceptible consequence.
- Minor:** an action that could result in a change to geologic resources or soils that would be small and detectable but of little consequence.
- Moderate:** an action that could result in a change to geologic resources or soils that would be measurable, readily apparent, and of consequence.

Major: an action that would result in a noticeable change to geologic resources or soils that would be measurable and result in a severe adverse or major beneficial impact.

Impacts of Alternative A, No Action, on Geology and Soils

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on geology and soils. However, impacts on geology and soils in the analysis area would continue as the result of vehicle use along the 12.5 mile segment of Gulf beach, visitor-uses-on-the-beach, and the continuing operation of 2 gas pipelines.

Park staff, 13 oil and gas operators, and an estimated 527,800 visitors annually use the 12.5-mile segment of Gulf beach for vehicular access. Vehicles on the Gulf beach would include 2- and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. Four-wheel drive vehicles are recommended for travel below the 5-mile marker. Vehicles would compact and rut the beach sand. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the visitor use period from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs. An estimated 527,800 visitors annually use the Gulf beach. Vehicle traffic associated with oil and gas operations normally uses 4-wheel drive trucks, however, a large vehicle like a pumper-truck, would travel the beach corridor approximately every 10 days or so.

Visitor-uses-on-the-beach include camping, fishing, swimming, wading, picnicking, nature-viewing, and beachcombing.

Existing operation of the two gas pipelines located to the west of the proposed wellsites would continue to impact geology and soils within the analysis area. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on an annual basis to excavate small sections of the lines to visually inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating soil. Impacts from spills could be serious on a very local level localized, with minor to major, short-term adverse impacts on geology and soils; however, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts would be reduced.

Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, visitor-uses-on-the-beach, and continuing operation of the two pipelines, would result in localized, long-term, negligible to minor, adverse impacts on geology and soils within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on geology and soils throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including oil tanker traffic and potential spills of hazardous and other contaminating substances in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be plugged,

abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting geology and soils parkwide include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities. Leaks and spills from oil and gas operations could be serious, with result in localized minor to major, impacts on geology and soils. Spills from oil and gas operations and tankers in the Laguna Madre or Gulf of Mexico could be transported by water into the park and cause widespread impacts that would require and result in long-term clean-up and remediation. Park and commercial vehicle use along the beach and offroad within the park, and recreational vehicle use along the beach would continue to compact and rut soils. Dredging and maintenance of the Intracoastal Waterway and other channels near the park could increase sedimentation within the Laguna Madre in the park. Cumulative impacts on geology and soils throughout the park are expected to be localized near developments, with short- to long-term, negligible to minor, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on park geology and soils, primarily along park shorelines.

Conclusion

Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, and continuing operation of the two pipelines, would result in localized, long-term, negligible to minor, adverse impacts on geology and soils within the analysis area. Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled; however, existing vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines would result in localized, long-term, negligible to minor, adverse impacts on geology and soils within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short- to long-term, negligible to minor adverse impacts, localized near developments throughout the park; however, in the event of spill from offshore oil and gas operations or oil tankers in the gulf of Mexico, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to geology and soils would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Geology and Soils

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and produced, resulting in the short-term disturbance to geology and soils on up to 9 acres, and if completed to produce hydrocarbons, the long-term occupancy of 2.16 acres.

Existing impacts on geology and soils within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, adverse impacts associated with vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines.

Construction of the cut through the foredunes, access road, well/production pad, and flowline for the proposed Lemon/Lemon Seed wells would directly impact up to 9 acres. Existing impacts within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, adverse impacts associated with vehicle access along the 12.5 miles of Gulf beach, visitor use on the beach, and continuing operation of 2 pipelines located west of the proposed well sites, resulting in the long-term loss of soil productivity and localized, short- to long-term, negligible to minor, adverse impacts, on geology and soils in the analysis area.

The construction of the access road and well/production pad would directly impact 4.17 acres of undisturbed soils. The area would be leveled and caliche brought in to build the road and pad.

Mitigation measures to protect soils during the drilling and production phase of operations would include constructing a sloped 8' x 8' corrugated steel well cellar, and lining the pad underneath the caliche with a 20-millimeter thick polyethylene liner that would extend over a 3'-high berm surrounding the perimeter of the pad. These measures are intended to contain any spilled substances and prevent the downward percolation into native soil underlying the caliche pad. If the wells do not go into production, the entire 4.17 acres would be reclaimed, resulting in localized, short-term, minor adverse impacts on geology and soils until the site is satisfactorily reclaimed.

However, if the wells are placed in production, the well pad would be reduced by 2.1 acres in half and a flowline installed to connect with one of the existing pipelines located west of the proposed wells. The imported caliche would be removed, the site recontoured to natural conditions, and native vegetative re-established to meet 70% cover. The continued use of the site for production operations would result in The reduction of the well pad by 2.1 acres would result in a localized, longshort-term, minor adverse impacts on geology and soils. The imported caliche would be removed, the site recontoured to natural conditions, and native vegetative re-established to meet 70% cover.

Flowline construction would disturb an additional 4.88 acres of hummocky uplands, of which 0.032 acres are hydric soils associated with emergent wetlands. A temporary displacement of soils would occur until while the flowline is being buried. Once the flowline is buried, soils would be replaced and the corridor would be revegetated. Adverse impacts on geology and soils from flowline placement would be localized, minor, and short-term (lasting up to one year or more) and minor during construction and revegetation activities.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level localized, with minor to major, short-term adverse impacts on geology and soils; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Construction of the dune cut/access road and well/production pad, and flowline; and drilling and producing the wells would result in the long-term loss of soil productivity on up to 9 acres, and localized, short- to long-term, negligible to minor, adverse impacts, on geology and soils in the analysis area.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on geology and soils throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park, and visitor uses, resulting in short- to long-term, negligible to minor adverse impacts localized near developments; however, in the event of a spill from offshore oil and gas operations or oil tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and could possibly produce hydrocarbons, resulting in the short-term disturbance to on geology and soils on up to 9 acres, and the long-term occupancy of n 2.16 acres. Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short- to long-

term negligible to minor, adverse impacts on geology and soils. Cumulative impacts would be similar to those described under Alternative A, No Action, with short- to long-term, negligible to moderate, adverse impacts on geology and soils throughout the park. No impairment to geology and soils would result from implementation of this alternative.

3.4. Impacts on Water Resources and Floodplains

Methodology

To analyze the impacts on water resources and floodplains, all available information on water resources and floodplains in the park was compiled including: personal observations, consultation with other agencies, the parks approved Oil and Gas Management Plan, other park documents, and landcover classification data.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible:—an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor:—an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate:—an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major:—an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment

Padre Island National Seashore (NS) is located on a largely undeveloped barrier island in southern Texas, on the Gulf of Mexico. The barrier island is a dynamic system subject to many geologic forces and climatic events. The barrier island was formed, and is continually being reshaped, by the actions of wind, gulf currents, and waves. The seashore's landscape changes from broad, white, fine-sand beaches on the Gulf side, to ridges of fore-island sand dunes, to grassy interior upland flats dotted with smaller dunes, ephemeral ponds, and freshwater wetlands. The Laguna Madre and the back-island dunes and wind tidal flats that merge with the waters of the Laguna Madre define the western portion of the Seashore. Two natural and 20 man-made spoil islands in the Laguna also lie within the National Seashore.

The foredunes of the park provide protection from hurricanes and tropical storms for the island's backcountry and the Texas mainland. The dunes are fragile and, once impacted, can easily be destroyed through erosion and wind action. Dunes are created when vegetation stabilizes blowing sands that are moved across the beach. Small coppice dunes form first and become primary dunes as vegetation stabilizes more sand. This results in a line of dunes forming parallel to the beach that varies in height from less than 6 feet to approximately 50 feet above sea level. This primary dune line extends the entire length of Padre Island National Seashore, broken only in a few places where hurricane washover channels have occurred.

Drainage from rainfall events tends to accumulate in lower-lying areas before seeping into the ground water, draining to the Laguna Madre tidal flats, or evaporating. Ground water at the site is approximately 2 to 5 feet deep, depending upon the season.

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According to the Final Oil and Gas Management Plan/Environmental Impact Statement (PAIS 2000), and Federal Emergency Management Agency floodplain maps, most of the park, except for the higher dune areas, lies within the 100-year floodplain. The hurricane season begins June 1 and continues through November 30.

The proposed project would be located entirely within the 100-year floodplain, on foredunes and hummocky uplands.

Methodology for Assessing Impacts

To analyze the impacts on water resources and floodplains, all available information on water resources and floodplains in the park was compiled including: personal observations, consultation with other agencies, the parks approved Oil and Gas Management Plan, other park documents, and landcover classification data.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Impacts of Alternative A, No Action, on Water Resources and Floodplains

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on water resources and floodplains. However, impacts on water resources and floodplains in the analysis area would continue as at the result of park, commercial, and recreational vehicle use along the 12.5-mile segment of Gulf beach, visitor uses on the beach, and the continuing operation of 2 gas pipelines.

Park staff, 13 oil and gas operators, and an estimated 527,800 visitors annually use the 12.5-mile segment of Gulf beach for vehicular access. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. These substances could then be introduced into the Gulf by surface run-off or extremely high tides, resulting in localized, long-term, negligible, adverse impacts on water quality of the Gulf.

Visitor uses on the beach, including camping, fishing, swimming, wading, picnicking, nature-viewing, and beachcombing. The visitor use period extends from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs. ~~An estimated 527,800 visitors annually use the Gulf beach.~~ Visitor uses would result in localized and short-term, negligible, adverse impacts on water quality of the Gulf.

Existing operation of the two pipelines located to the west of the proposed wellsites would continue to impact water resources and floodplains within the analysis area. Because the entire park is located within the 100-year floodplain, with the exception of the foredunes, there was no practicable alternative to siting the pipelines within the 100-year floodplain. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on an annual basis excavating small sections of the lines to visually inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. These activities could cause sedimentation during times when the work area is inundated; however, it is anticipated that work of this nature would be scheduled when the pipeline segment is not covered with water during dry periods (winter months). There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating surface or groundwater. If leaks or spills occur during flood events, contaminants could be transported via surface waters great distances, thereby increasing flood hazards and degrading floodplain values. Impacts from spills could be serious, with affects ranging from be localized to widespread, with minor to major, adverse impacts on water resources and floodplains. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts would be reduced.

Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, visitor uses on the beach, and continuing operation of the two gas pipelines, would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on water resources and floodplains throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including oil-tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park could increase turbidity to Laguna Madre waters inside the park. Other park activities that could contribute to impacting water resources and floodplains parkwide include prescribed fires, routine maintenance of park roads, and park and park, commercial, and recreational visitor vehicle use, and recreational activities.

Existing and future development of oil and gas-related access roads and pads within the park could result in altering surface water flow and locally causing high-rainfall-induced increasing soil erosion potential. Leaks and spills from oil and gas operations could be localized to wildespread serious, with minor to major, impacts on water resources and floodplains. Spills from oil and gas operations and tankers in the Laguna Madre or Gulf of Mexico could be transported by water into the park and cause widespread impacts and result in long-term clean-up and remediation.

Cumulative impacts on water resources and floodplains throughout the park are expected to be localized near developments, with short- to long-term, negligible to minor, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, adverse impacts on the park's water resources and floodplains, primarily along the park's shorelines.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, ~~resulting in no new impacts on water resources;~~ however, ~~e~~Existing park, commercial, and recreational vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and the continuing operation of two gas pipelines would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area.

Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short- to long-term, negligible to minor, adverse impacts localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or oil-tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Water Resources and Floodplains

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and ~~produced,~~ resulting in the short-term occupancy of 100-year floodplains on up to 9 acres, and ~~if completed to produce hydrocarbons,~~ long-term occupancy of ~~n~~ 2.16 acres..

Existing impacts on water resources and floodplains within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, adverse impacts associated with ~~park, commercial, and recreational~~ vehicle use on the 12.5-mile Gulf beach, visitor use on the beach, and the continuing operation of two gas pipelines.

There is no practicable alternative to siting the proposed access road, well/production pad, and flowline within the 100-year floodplain because the entire park, with the exception of the higher dunes, is located within floodplains. Impacts could result from changes in surface and subsurface hydrology, ~~and risk of contamination from hazardous and contaminating substances;~~ and depletion of available water. *(Linda - I deleted this because it is described more fully below).* The application of mitigation measures and conditions of approval in the plan of operations ~~w~~should reduce the potential for these impacts to occur.

The proposed road cut would cause the loss of 20 feet of lower-lying foredunes. If the wells are not placed in production, the foredune would be stabilized and revegetated. If the wells are placed in production, the sides of the pass would be vegetated to prevent additional erosion from wind passing through the break in the dunes. The proposed cut through the foredunes would result in a localized, short- to long-term, negligible, adverse impact on the barrier island's role as a defense to prevent or slow the affects of hurricanes on the Texas mainland.

The drilling of the wells would require the use of 1.3 million gallons of water. This water could be obtained from either a new water well; connecting a temporary delivery line from an existing water well at the Dunn-Murdock#1 location 1.5 miles north, along the Beach, to the proposed wellsite; or by hauling 155 loads (1300 barrels per load) of water from a park fire hydrant located at the end of Park Road 22 to drill Well No. 1-1000S and 85 loads to drill Well No. 1-1008S. The potential impact associated with drilling a water well includes depletion or contamination of the aquifer in the Goliad formation located between 1400 and 1700 feet. The Texas Natural Resources Conservation Commission has identified useable-quality ground water in this zone; and the Railroad Commission of Texas and NPS have applied mitigation measures to ensure that drilling, production and plugging operations would not impact ground water quality.

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Use of the delivery line and pumps would eliminate the potential for trucks transporting water along the 12.5-mile segment of Gulf beach to leak or spill motor oil, coolant, or other lubricants on the beach, but would cause other issues related to refueling, secondary containment, noise, public safety, and the need for multiple pumps to push the water to the well site. Acquiring water from any of the sources; the park fire hydrant, existing water well, or from a new well, would cause widespread, short-term, negligible, adverse impacts to water resources.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious ~~on a very local level~~ localized, with minor to major, short-term adverse impacts on water resources and floodplains; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells would result in impacts similar to those described under No Action, with localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on water resources and floodplains throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park, park developments and operations, and visitor uses, resulting in short- to long-term, negligible to minor, adverse impacts localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or oil tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and produced, resulting in the short-term occupancy of 100-year floodplains on up to 9 acres, and if produced, result in the the long-term occupancy of ~~on~~ 2.16 acres. Constructing the dune-cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short- to long-term negligible to minor, adverse impacts on water resources and floodplains. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short- to long-term, negligible to minor adverse impacts, localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or oil tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.

3.5. Impacts on Wetlands

Methodology

To analyze the impacts on wetlands, all available information on water resources in the park was compiled including: personal observations, consultation with other agencies and wetland specialist, the parks approved Oil and Gas Management Plan, landcover classification data, and wetland maps.

The thresholds of change for the intensity of an impact are defined as follows:

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Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.



View of wetland area with AEP pipeline marker in the distance.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment

Approximately 60% of the park is wetlands, comprising marine, estuarine, and palustrine wetlands. Marine wetlands include the area below the "wet line" on the Gulf beach. Estuarine wetlands include intertidal aquatic beds such as seagrasses and unconsolidated shores such as wind-tidal flats. Palustrine wetlands include emergent wetlands and freshwater and ephemeral ponds.

On August 24, 2001, BEI, under contract by BNP, and Frontier Surveying Co. performed a site visit and wetland determination of the proposed analysis area. BEI personnel performed another site visit on September 6, 2001, to verify the lack of hydrology and hydric soils along the proposed flowline route after Padre Island National Seashore had received the majority of its 7.46 inches of rain in August 2001. Based on a site survey performed by BEI, the proposed site for the well/production pad and access road were determined to be located in uplands: therefore, a U.S. Army Corps of Engineers Section 404 permit would not be needed for these areas. However, emergent wetlands are located along a 55.3-foot section of the flowline corridor near the AEP's pipeline tie-in point.

Impacts of Alternative A, No Action, on Wetlands

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on wetlands. However, impacts on wetlands in the analysis area would continue as the result of vehicle use along the 12.5-mile segment of Gulf beach, visitor uses on the beach, and the continuing operation of 2 gas pipelines.

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Park staff, 13 oil and gas operators, and an estimated 527,800 visitors annually use the Gulf beach for vehicular access. Vehicle access on the Gulf beach is recommended above the Gulf beach "wet line" to prevent excessive erosion along the beach. Vehicles would compact and rut the beach sand. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Surface run-off or extremely high tides could transport these spilled substances into the wet-zone, resulting in localized, long-term, negligible, indirect adverse impacts on the marine wetlands along the 12.5-mile segment of Gulf beach.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature-viewing, and beachcombing. The visitor use period extends from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs. Visitor uses would result in localized, long-term, negligible, direct and indirect adverse impacts on the marine wetlands along the 12.5-mile segment of Gulf beach.

Two gas pipelines are located west of the proposed wellsites. Both pipelines are operating under approved plans of operations pursuant to the NPS's 36 CFR 9B regulations. Segments of both pipelines are located within the analysis area for the proposed Lemon/Lemon Seed Unit wells, and within emergent wetlands. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on an annual basis excavating small sections of the lines to visually inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. If trucks accessed pipeline in emergent wetlands areas when the soils were saturated, vehicles could cause rutting or compaction of soils, and damage or kill vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment located within emergent wetlands is not covered with water. Removal of vegetation and excavation of segments of pipeline for inspection and/or replacement, would directly impact a small area of wetlands within the immediate area of work. If there is standing water, sedimentation could indirectly impact a larger area around the worksite. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating emergent wetlands. If leaks or spills occur during periods of high water, contaminants could be transported via surface waters great distances, thereby increasing the potential for impacting wetlands beyond the immediate area and degrading wetlands values. Impacts from spills could be serious, with affects ranging from localized to widespread, with minor to major, adverse impacts on wetlands. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced.

Existing uses, including vehicle access along the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines, would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on wetlands throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including oil tanker traffic in the Gulf of Mexico. Dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park could increase sedimentation in the Laguna Madre waters

inside the park, resulting in covering of seagrasses. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting wetlands parkwide include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities.

Existing and future development of oil and gas-related roads, pads and flowlines within the park could directly and indirectly impact wetlands. Leaks and spills from oil and gas operations could be serious, with minor to major, impacts on wetlands. Spills from oil and gas operations in the Laguna Madre or Gulf of Mexico could be transported by water onto the park's shorelines, comprised of marine wetlands on the Gulf shore and wind-tidal flats on the Laguna Madre shore, causing widespread impacts and resulting in long-term clean-up and remediation.

Cumulative impacts on wetlands throughout the park are expected to result in short- to long-term, minor, direct and indirect, adverse impacts localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled; however, existing vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines, would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short- to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Wetlands

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and produced, and if completed to produce hydrocarbons would resulting in short-term, direct impacts on 0.032 acres of emergent wetlands associated with the placement of the flowline, until the surface of the flowline corridor is reclaimed.

Existing impacts on wetlands within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands associated with vehicle access along the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines.

Project design would minimize impacting park wetlands. There is no practicable alternative to siting a segment of the proposed flowline within emergent wetlands, or for using the Gulf beach as an access corridor.

BNP would use a 12.5-mile segment of Gulf beach to access its proposed cut/access road through the foredunes to access the proposed site for the well/production pad and flowline. BNP would be required to confine vehicle use above the "wet-line" (see Table 5 for mitigation measures applied by the NPS as conditions of approval). As described above under No Action, poorly

maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. These substances could then be introduced into the Gulf by surface run-off or extremely high tides, resulting in localized, long-term, negligible, indirect adverse impacts on the marine wetlands along the 12.5-mile segment of Gulf beach.

Emergent wetlands are located along a 55.3-foot section of the proposed flowline corridor near the AEP's pipeline tie-in point. Construction and maintenance of the flowline would impact emergent wetlands. To minimize impacts, the NPS would require that the standard 50-foot wide construction corridor be reduced to 25-foot in the wetlands, resulting in reducing impacts to emergent wetlands to 1,382.5 square feet (0.032 acres). The flowline would be connected to the existing AEP/HPL pipeline using a procedure known as a "hot tap". This method allows pipelines that are in service to be connected without the contents being released. A 15-foot by 15-foot (225 square foot) area would be excavated to make the tie-in. Any ground water that seeps into the excavation would be pumped out using PVC well points and diaphragm pumps. The liquids would be diverted and filtered through a silt screen and native hay bales. Any contaminated liquids or soils would be removed and disposed at a State-approved disposal facility outside the park, while the remaining collected water would be released onto the surrounding area.

The NPS adheres to the administration's principle of "no-net loss of wetlands." The area that would be directly impacted would comprise less than one tenth of an acre. No indirect wetlands impacts from the construction of the flowline is anticipated; however, the NPS's Director's Order 77.1 gives the Superintendent the option to waive compensation of wetlands impacts when wetlands do not exceed 1/10 acre. In this specific case, the Superintendent has determined that compensation for direct/indirect impacts on wetlands would not be required.

Vehicle access above the "wet-line" along the 12.5-mile segment of Gulf beach, and construction and maintenance of the flowline within 0.032 acre of emergent wetlands would result in localized, short- to long-term, negligible to minor, direct and indirect adverse impacts on wetlands.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on wetlands throughout the park would be similar to those described under No Action, with short- to long-term, minor, direct and indirect, adverse impacts localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. If the well is placed in not production, there would be resulting in short-term, direct impacts on 0.032 acres of emergent wetlands associated with the placement of the flowline, until the surface of the flowline corridor is reclaimed. Vehicle access above the "wet-line" along the 12.5-mile segment of Gulf beach, and construction and maintenance of the flowline within 0.032 acre of emergent wetlands, in addition to existing activities within the analysis area, would result in localized, short- to long-term, negligible to minor, direct and indirect adverse impacts on wetlands. Cumulative impacts would be similar to those described under Alternative A, No Action, with short- to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to

moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.

3.6. Impacts on Vegetation

Methodology

To analyze the impacts on vegetation, the park utilized research, other park plans, the parks approved Oil and Gas Management Plan, personal observations, and consultation with other permitting agencies.

The thresholds of change for the intensity of an impact are defined as follows:

- Negligible:** an action that could result in a change to a population or individuals of a species or a resource, but the change would be so small that it would not be of any measurable or perceptible consequence.
- Minor:** an action that could result in a change to a population or individuals of a species or a resource. The change would be small and of little consequence.
- Moderate:** an action that could result in a change to a population or individuals of a species or a resource. The change would be measurable and of consequence to the species or resource.
- Major:** an action that would have a noticeable change to a population or individuals of a species or a resource. The change would be measurable and result in a severely adverse or major beneficial impact, or possible permanent consequence, upon the species or resource.

Affected Environment

Drawe (1992) provides a detailed characterization of species composition and abundance in the various vegetation types on Padre Island. He found 140 species of plants, including 27 grasses, 92 forbs, 3 cacti, 3 wood species, and 15 other species.

The analysis area (i.e. within 1,500 feet of the well/production pad) is comprised of a diverse group of habitats. Higher elevations near the Gulf beach are made up of two rows of foredunes adjacent to the Gulf beach and high dune fields with scattered upland swales. The two rows of foredunes are typically dominated by silver-leaf croton gulf croton (*Croton punctatus*), beach morning-glory (*Ipomea imperati*), goatfoot morning-glory (*Ipomea pre-caprae*), camphorweed (*Heterotheca subaxillaris*), prairie clover (*Dalea sp.*), western ragweed (*Ambrosia psilostachya*), and seaoats (*Uniola paniculata*) with associated species. The foredunes typically have vegetation coverage of 60%-90%.

The high dune fields are dominated by camphorweed, prairie clover, seaoats, seacoast bluestem (*Schizachyrium littorale*), western ragweed, and some tropic croton (*Croton glandulosus* var. *lindheimeri*).

The majority of the proposed well/production pad area is comprised of hummocky uplands. Hummocky uplands are typically dominated by gulfdune paspalum (*Paspalum monostachyum*), and seacoast bluestem. Slim-leaf panicum (*Dichanthelium linearifolium*) tends to dominate the lower areas. Other species inhabiting the hummocky uplands include bulrush (*Schoenoplectus pungens* var. *pungens*), seaside (Marsh) large leaf pennywort (*Hydrocotyle bonariensis*), blue mist flower (*Conoclinium coelestinum*), narrow-leaf sumpweed (*Iva angustifolia*), bushy bluestem (*Andropogon*

glomeratus), prairie clover, partridge pea (*Chamaecrista fasciculata* var. *fasciculata*), camphorweed, and American snoutbean (*Rhynchosia americana*). High hummock ridges typically have vegetation coverage of 75%-90%, comprised of prairie clover, partridge pea, gulfdune paspalum, and camphorweed, with Eastern prickly pear (*Opuntia ficus-indica*), sea oats, white-stem wild indigo (*Baptisia bracteata* var. *leucophaea*), and narrow-leaf sumpweed.

Lower lying areas are comprised of transitional areas and sparsely vegetated to unvegetated sand flats. The transitional areas are typically dominated by marshhay cordgrass (*Spartina patens*), bulrush, and gulfdune paspalum, with sea ox-eye daisy (*Borrchia frutescens*), narrow-leaf sumpweed, bushy bluestem, sea lavender (*Limonium carolinianum*), blue mist flower, largeleaf pennywort, frog fruit (*Phyla nodiflora*), and slim-leaf dichanthelium. Transitional areas are usually 60%-85% covered with vegetation.

The sparsely vegetated to unvegetated sand flats are dominated by marshhay cordgrass and sea oxeye daisy. Vegetation coverage ranges from 0%-60%. These flats are non-tidal.

There are no state or federally listed threatened or endangered plant species known to occur in the project area (NPS 2001).

Impacts of Alternative A, No Action, on Vegetation

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on vegetation. However, impacts on vegetation in the analysis area would continue as the result of the continuing operation of 2 gas pipelines.

Two gas pipelines are located west of the proposed wellsites. Both pipelines are operating under approved plans of operations pursuant to the NPS's 36 CFR 9B regulations. Segments of both pipelines are located within the analysis area for the proposed Lemon/Lemon Seed Unit wells. Vegetation covers the pipeline corridors. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on an annual basis excavating small sections of the lines to visually inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. If trucks accessed pipeline in areas when the soils were saturated, vehicles could cause rutting or compaction of soils, and damage or kill vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment is not covered with water. Removal of vegetation and excavation of segments of pipeline for inspection and/or replacement, would directly impact a small area of vegetation within the immediate area of work.

There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and damaging or killing vegetation. Impacts from spills could be serious, with affects ranging from localized to widespread, with minor to major, adverse impacts on vegetation. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced.

Existing uses, including the continuing operation of two gas pipelines, would result in localized, short- to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on vegetation throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting vegetation parkwide include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities.

Existing and future development of oil and gas-related roads, pads and flowlines within the park could directly and indirectly impact vegetation. Leaks and spills from oil and gas operations could be serious, with minor to major, impacts on vegetation; however, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced.

Cumulative impacts on vegetation throughout the park are expected to result in short- to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled; however, existing uses, including the continuing operation of two gas pipelines, would result in localized, short- to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short- to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's vegetation, primarily along the park's shorelines. No impairment to vegetation would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Vegetation

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and produced, resulting in the short-term loss of vegetative cover on up to 9 acres. If the well is completed to produce hydrocarbons there would be, and the long-term surface occupancy of 2.16 acres.

Existing impacts on vegetation within the analysis area would be similar to Alternative A, No Action, with localized, short- to long-term, negligible to minor, direct and indirect, adverse impacts associated with the continuing operation of two gas pipelines located west of the proposed wellsites.

Construction of the cut through the foredunes, access road and well/production pad would result in the direct loss of approximately 4.17 acres of hummocky uplands vegetation. If the wells do not go into production, the entire 4.17 acres would be reclaimed, resulting in localized, short-term, minor, adverse impacts on vegetation until the site is satisfactorily reclaimed. If the well is placed in production, the well pad would be reduced by 2.1 acres; and a flowline would be installed to connect with one of the existing pipelines located west of the proposed wells. The reduction of the well pad by 2.1 acres would result in a localized, short-term, minor, adverse impact on vegetation until the site is revegetated to 70% native cover.

The flowline would temporarily disturb an additional 4.88 acres of hummocky uplands, of which 0.032 acres are emergent wetlands, while the flowline is being buried, and until the flowline corridor is revegetated. Over the long-term operation of the flowline, occasional disturbance to vegetation within the flowline corridor could occur as a result of routine maintenance, including access over the corridor by truck or ATV to inspect surface equipment, and on occasion excavating a section of the flowline to visually inspect the integrity of the line.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on vegetation; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced. Mitigation measures include constructing a sloped 8' x 8' corrugated steel well cellar, and lining the pad underneath the caliche with a 20-millimeter thick polyethylene liner that would extend over a 3'-high berm surrounding the perimeter of the pad. These measures are intended to contain any spilled substances and prevent the downward percolation.

Direct and indirect impacts on vegetation could occur as a result of the introduction of exotic vegetation resulting from the placement of fill material or the use of construction equipment. However, with the mitigation measures included with this alternative, the potential and intensity of impacts would be reduced.

Upon plug and abandonment of the wells, the imported caliche would be removed, the site recontoured to natural conditions, and native vegetation re-established to 70% cover. Plugging and reclamation activities would result in a localized, short-term, minor, adverse impact on vegetation.

Construction of the dune cut/access road and well/production pad, and flowline; and drilling and producing the wells would result in the long-term loss of vegetation on up to 9 acres, and localized, short- to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation in the analysis area.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts would be similar to those described under No Action, with impacts from existing and future oil and gas operations in the park, park developments and operations, and visitor uses, resulting in short- to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and produced, resulting in the short-term loss of vegetative cover on up to 9 acres, and the long-term occupancy on 2.16 acres. Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short- to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation. Cumulative impacts would be similar to those described under Alternative A, No Action, with short- to long-term, minor, direct and indirect, adverse impacts on vegetation throughout the park. No impairment to vegetation would result from implementation of this alternative.

3.7. Impacts on Natural Soundscapes

and from new drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario. As some operations are developed, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to natural soundscapes include routine maintenance of park roads, park and visitor vehicle use, and public recreational activities such as motor boating and playing radios at a high volume. On occasional, military overflights over the park introduces noise and super-sonic booms audible in the park. As a result of these activities, cumulative impacts on natural soundscapes throughout the park is expected to result in short- to long-term, negligible to moderate, adverse impacts, localized near sources.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled; however, existing vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines would result in localized, short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area. Cumulative impacts from existing and future oil and gas operations in the park, routine park operations, and visitor uses are expected to result in short- to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized near sources throughout the park. No impairment to natural soundscapes would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Natural Soundscapes

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be completed to produce hydrocarbons produced.

Existing impacts on natural soundscapes within the analysis area would be similar to Alternative A, No Action, with localized, short-term, negligible to minor, adverse impacts associated with vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines.

Construction of the dune cut/access road, well/production pad and flowline, and routine maintenance activities during production would result in localized and short-term increases in noise associated with vehicle traffic, heavy equipment and ground-disturbing activities. Elevated noise would be greatest during the short-term drilling of the wells. Sound levels could reach 90 decibels on the drill rig. At 1,500 feet from the drill rig, sound levels would approach background levels ranging from 30 to 45 decibels. Elevated noise during the drilling phase would result in localized, short-term, minor to moderate, adverse impacts on natural soundscapes within 1,500 feet of the wellpad. During the long-term production life of the wells, occasional workover operations could occur at 5 to 10-year intervals and take one to two weeks to complete. Workovers would increase noise levels, but at much lowest intensity and duration of drilling a well. Production operations would result in localized, long-term, negligible to minor, adverse impacts from routine daily pickup truck traffic, periodic larger truck traffic necessary to remove produced liquids, and the use of a compressor to remove gas if necessary.

Construction of the dune cut/access road and well/production pad and flowline, and drilling and producing the wells would result in short- to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized near sources in the analysis area.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on natural soundscapes throughout the park would be similar to those described under No Action, with existing and future oil and gas operations in the park, routine park operations, visitor uses, and occasional military

Methodology

To analyze the impacts on natural soundscapes, the park utilized personal observation, research, and the parks approved Oil and Gas Management Plan.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: the impact is barely detectable.

Minor: the impact is slight but detectable.

Moderate: the impact is readily apparent.

Major: the impact is severely adverse.

Affected Environment

The natural quiet of Padre Island National Seashore contributes heavily to a positive visitor experience. Surveys in 1987 (Ditton and Gramann) and 1989 (Gramann and Ruddell) examined visitor motive for coming to Padre Island. The top motives include "to get away," "be outdoors," and "for rest and relaxation." In 1998, the NPS contracted Dr. Jim Foch of Livermore Laboratory to record background sound measurements at various locations in the park. A useful measure of background sounds is the sound level observed 90 percent of the time, abbreviated L90. Although measurements were not recorded at the exact location of the project area, the relatively constant sound level of the surf (about 62 decibels at 60 yards from the water) is considered the "background" noise level along the Gulf shoreline. The L90 levels inland fall off in a systematic manner with distance from the surf (Foch, 1998). Behind the foredunes, background sound measurements taken at other park locations that could be applied to the proposed Lemon/Lemon Seed Unit wellsite range between 30 and 45 decibels.

Impacts of Alternative A, No Action, on Natural Soundscapes

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on natural soundscapes. However, impacts on natural soundscapes in the analysis area would continue as the result of vehicle use along the 12.5 mile segment of Gulf beach, visitor uses on the beach, and the continuing operation of 2 gas pipelines.

Vehicle use and visitor uses on the 12.5-mile segment of Gulf beach could occasionally result in sounds that exceed the 60-decibel background sound levels when drivers honk horns, and radios are very loud.

Existing operation of the 2 pipelines located to the west of the proposed wellsites could impact natural soundscapes more readily due to the background sound measurements being very low, in the 30 to 45 decibel range. Routine maintenance of the pipeline from using a backhoe/front loader would be heard several hundred feet away, but backcountry visitor use is not common, and visitors recreating on the Gulf beach would not hear these activities.

Existing uses, including vehicle access along the Gulf beach, visitor uses on the beach, and continuing operation of the two pipelines, would result in short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area.

Cumulative Impacts

Under Alternative A, cumulative impacts on natural soundscapes throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park;

natural causes or displace other wildlife. There is a remote possibility for the incidental take of wildlife during the course of operations from vehicle use, construction activities, or from ingesting leaked or spilled hydrocarbons and contaminating or hazardous substances. Leaks and spills from oil and gas operations could be serious, with minor to major, impacts on wildlife. Spills from oil and gas operations in the Laguna Madre or Gulf of Mexico could be transported by water onto the Gulf or Laguna Madre shores, causing widespread impacts and resulting in long-term clean-up and remediation. Elevated noise levels, particularly during drilling operations, could displace wildlife, but most wildlife are expected to return after becoming acclimated to some noise disturbance. Mitigation measures, including use of diesel electric drilling rig and hospital mufflers and compressors to reduce noise levels, fencing the operations area to exclude wildlife, using primary and secondary containment to prevent leaks and spills from being released into the environment, preventing birds and bats from entering open-vent exhaust stacks, covering all open-topped tanks to minimize accidental injury or death of migratory birds, planting native willow shrubs or trees around production facilities to provide and perpetuate migratory bird habitat, preventing the introduction of exotic species, careful use of NPS-approved herbicides, good housekeeping, and routine monitoring and inspection of operations, are expected to substantially reduce the impacts to wildlife to short- to long-term, negligible to minor, adverse impacts, localized around developments throughout the park.

Cumulative impacts on wildlife throughout the park are expected to result in short- to long-term, negligible to minor, direct and indirect, adverse impacts localized near developments and activities throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wildlife, primarily along the park's shorelines.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on wildlife; however, existing vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines would result in short- to long-term, negligible to minor, direct and indirect, adverse impacts on wildlife, localized near developments and activities within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short- to long-term, negligible to minor, adverse impacts, localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or oil tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to wildlife would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Wildlife

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and produced, resulting in the short-term loss of wildlife habitat on up to 9 acres, and if the well is completed to produce hydrocarbons, the long-term occupancy of 2.16 acres.

Existing impacts on wildlife within the analysis area would be similar to Alternative A, No Action, with localized, short- to long-term, negligible to minor, direct and indirect, adverse impacts associated with vehicle access along the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines.

BNP would use a 12.5-mile segment of Gulf beach to access its proposed wellpad. BNP would be required to confine vehicle use above the "wet-line" (see Table 5 for mitigation measures applied by the NPS as conditions of approval). As described above under No Action, vehicles