



November 1, 2021

Ms. Stacey Zee
SpaceX PEA, c/o ICF
9300 Lee Highway
Fairfax, VA 22031

Transmitted via electronic mail to SpaceXBocaChica@icf.com

RE: Comments on SPACEX Draft Programmatic Environmental Assessment for Starship/Super Heavy Program

Dear Ms. Zee,

On behalf of the undersigned organizations, Defenders of Wildlife, Surfrider Foundation, American Bird Conservancy, Center for Biological Diversity, Coastal Bend Audubon Society, Environment Texas, the Endangered Species Coalition, Friends of the Wildlife Corridor, Save RGV, Sierra Club Lone Star Chapter, and Texas Campaign for the Environment, please accept these comments on the Draft Programmatic Environmental Assessment ("Draft PEA") for the Starship / Super Heavy Program ("project") by SpaceX, which consists of constructing and operating new testing and launch infrastructure and engaging in associated activities. Agencies, including the Federal Aviation Administration ("FAA"), must comply with the National Environmental Policy Act ("NEPA") during the planning stages of federal agency actions. NEPA is intended to ensure that "unquantified environmental amenities and values may be given appropriate consideration in [federal] decision-making."¹ Under this landmark environmental statute, a federal agency must take a "hard look" at the environmental impacts of its proposed action. The statute is therefore crucial because, when properly executed, it allows federal agencies and members of the public to weigh the environmental consequences of proposed federal actions before agencies reach a final decision regarding the best path forward.

¹ 42 U.S.C. § 4332(B).

We have serious concerns with the Draft PEA that can only be resolved by the FAA developing an Environmental Impact Statement (“EIS”). The project requires an EIS because its impacts on surrounding habitat, listed species, and the neighboring community will be significant. Moreover, the Draft PEA fails to consider dozens of environmental impacts and does not contain sufficient evidence to justify any potential decision to not prepare an EIS. Thus, to comply with NEPA, the FAA must prepare an EIS.

I. The FAA Must Prepare an Environmental Impact Statement

Under NEPA, an agency must prepare a detailed statement, referred to as an EIS, if it plans to undergo a “major Federal action[] significantly affecting the quality of the human environment.”² NEPA regulations include guidance for determining the significance of a project’s impacts, requiring agencies to consider “the potentially affected environment and degree of the effects of the action.”³ The potentially affected environment includes “the affected area (national, regional, or local) and its resources, such as listed species and designated critical habitat under the Endangered Species Act.”⁴ When analyzing the degree of an action’s effect, agencies must consider, among other factors, adverse effects and effects that would violate other laws.⁵ Among other harms, SpaceX’s activities are likely to adversely affect the surrounding area, at least ten listed species, designated critical habitat, and the neighboring community. Moreover, the project’s effects will result in multiple legal violations. Thus, the SpaceX project is likely to have significant environmental impacts, and the FAA must prepare an EIS before moving forward with any approvals.

A. Impacts to the Surrounding Area

The SpaceX launch site is adjacent to and surrounded by national wildlife refuge land, state park land, tidal flats that host many wading bird species, and beaches used by nesting sea turtles. The site is situated near the Lower Rio Grande Valley National Wildlife Refuge (“LRGVNWR”), Boca Chica State Park, Boca Chica Beach, the South Bay Coastal Preserve, Brazos Island State Park, Isla Blanca Park, Las Palomas Wildlife Management Area, and Palmito Ranch Battlefield National Historic Landmark.⁶ This is an ecologically diverse area with a remarkable community of wildlife unlike any other place in the United States. The site is located in a hemispheric meeting place of tropical and subtropical species on a unique matrix of terrestrial, coastal, and marine environments, representing one of the greatest diversity of plants and animals found in one place in North America. This area is a unique flyway for western hemisphere avian species, and more than 250 different bird species have been identified in the area. The ecological sensitivity and vulnerability of this area cannot be overstated, and activities in this area must be carefully managed to reduce, avoid, and mitigate impacts to resident and migrant wildlife.

² *Id.* § 4332(C).

³ 40 C.F.R. § 1501.3(b).

⁴ *Id.* § 1501.3(b)(1).

⁵ *Id.* § 1501.3(b)(2), (b)(2)(ii), (b)(2)(iv).

⁶ Federal Aviation Administration, *Draft Programmatic Environmental Assessment for the SpaceX Starship/Super Heavy Launch Vehicle Program at the SpaceX Boca Chica Launch Site in Cameron County, Texas* at 121 (Sept. 2021) (“Draft PEA”).

SpaceX's operations have seriously harmed nearby areas and will almost certainly continue to do so. Impacts from testing, launches, and failures include, but are not limited to: explosions, sonic booms, bright lights, debris fields, debris left in the ocean, fire, smoke, and release of hazardous fuels and vapors. In the last two years, SpaceX operations have caused repeated explosions, including—among other dates—on November 20, 2019,⁷ May 29, 2020,⁸ June 23, 2020,⁹ December 9, 2020,¹⁰ and March 30, 2021.¹¹ When explosions occur, the debris field can span for miles, which has happened as recently as this year.¹² Exploded rocket debris, along with its removal operations involving heavy machinery such as high-capacity tow trucks and construction dump trucks, have been known to damage sensitive habitat in the area.¹³ Moreover, these explosions can and indeed have caused wildfires, such as two 2019 incidents that “resulted in wildfires of 130-acres and 10-acres respectively burned through coastal prairie and dune habitats on [national wildlife] refuge managed land.”¹⁴ SpaceX's proposed activities, therefore, threaten to disturb, burn, and damage ecologically critical state, federal and privately-owned lands. These are significant, adverse impacts that the FAA cannot overlook.¹⁵ Instead, it must address these in an EIS.

B. Impacts to Listed Species and Critical Habitat

The proposed expansion of SpaceX activities at this site would adversely affect at least ten federally listed species and designated critical habitat for one or two listed species.¹⁶ In its Biological Assessment (“BA”), the FAA admitted that the project is likely to adversely affect three listed species of birds in the area: the threatened red knot (*Calidris canutus rufa*), the threatened piping plover (*Charadrius melodus*), and the endangered northern aplomado falcon (*Falco femoralis*).¹⁷ According to the BA, the area contains potential foraging habitat for all

⁷ Mike Wall, *SpaceX's 1st Full-Size Starship Prototype Suffers Anomaly in Pressure Test* Space.com (Nov. 20, 2019), <https://www.space.com/spacex-starship-prototype-anomaly-pressure-test.html?jwsourc=cl>.

⁸ Tariq Malik, *SpaceX's Starship SN4 Prototype Explodes After Rocket Engine Test* Space.com (May 29, 2020), <https://www.space.com/spacex-starship-sn4-prototype-explodes.html>.

⁹ Tariq Malik, *Boom! SpaceX Pops Huge Starship SN7 Test Tank on Purpose in Pressure Test (videos)*, Space.com (June 23, 2020), <https://www.space.com/spacex-starship-sn7-test-tank-destroyed-videos.html>.

¹⁰ Mike Wall, *SpaceX's Starship SN8 Prototype Soars on Epic Test Launch, with Explosive Landing*, Space.com (Dec. 9, 2020), <https://www.space.com/spacex-starship-sn8-test-launch-landing-explosion>.

¹¹ Amy Thompson, *SpaceX Launches Starship SN11 Rocket Prototype, but Misses Landing*, Space.com (Mar. 30, 2021), <https://www.space.com/spacex-starship-sn11-rocket-launch-2nd-attempt>.

¹² Email from Bryan Winton (Mar. 30, 2021, 21:25 CST) (Estimating that a March 2021 explosion resulted in a 2-3 mile debris field) (Attachment A).

¹³ See, e.g. Email from Randy Reese (Nov. 23, 2019, 17:09 CST) (Attachment B); see also Email from Bryan Winton (Jan 21, 2021, 10:33 CST) (“April 21,22 -2019 - Space X employee(s) get stuck with 2 vehicles and a forklift in tidal flats. Causes significant damage to tidal flats.”) (Attachment C).

¹⁴ Letter from Manuel “Sonny” Perez III, Complex Refuge Manager, South Texas Refuges Complex, U.S. Fish & Wildlife Serv. & Charles Ardizzone, Project Leader, Texas Coastal Ecological Service Office, U.S. Fish & Wildlife Serv. to Daniel P. Murray, Manager, Safety Division, Federal Aviation Administration at 2 (Jan. 22, 2021) (“FWS January 2021 Letter”) (Attachment D).

¹⁵ 40 C.F.R. § 1501.3(b).

¹⁶ See *id.* § 1501.3(b)(1) (agencies should consider impacts to listed species and designated critical habitat when determining an action's significance).

¹⁷ Federal Aviation Administration, *Biological Assessment: SpaceX Starship/Super Heavy Launch Vehicle Program at the SpaceX Boca Chica Launch Site*, 63-66 (June 2021) (“BA”). We note that the BA is also inadequate and fails to properly consider many harmful impacts that the project will have to listed species and critical habitat. However,

three species, and northern aplomado falcons may also nest in the vicinity. Noise associated with the project, such as from intensified traffic, construction, engine testing, and sonic booms, is likely to disturb or displace these species and to decrease foraging efficiency. All three species of birds, along with any nests or eggs, could also be killed if they appear within the heat plume created by engine ignition during testing and launches.¹⁸ The heat plume generated by launches would be 212 degrees Fahrenheit within a .3 mile radius of the launch area.¹⁹ Moreover, according to the FAA, northern aplomado falcons could be attracted to nest and perch on proposed infrastructure, such as towers. If they flush off their nests during disturbances, it would expose their eggs or small young to inclement weather and predators, destroying the eggs and killing the young. Finally, the area contains piping plover critical habitat and proposed red knot critical habitat, both of which are also likely to be adversely affected by the project.²⁰ There are no plans to adequately mitigate any of these impacts.

The FAA moreover admitted in its BA that the project is likely to adversely affect endangered Gulf Coast jaguarundis (*Herpailurus yagouaroundi cacomitli*) and ocelots (*Leopardus pardalis*).²¹ Texas is home to the only remaining breeding population of ocelots in the United States. This is a very rare species, with only 15 known individuals residing in the area of Laguna Atascosa National Wildlife Refuge, near the SpaceX site. The last verified jaguarundi near Boca Chica was a mortality that occurred on State Hwy 4 (also known as Boca Chica Boulevard)—the road on which SpaceX is located and by which all employees and visitors must travel. The area near the launch site is part of a broader travel corridor connecting suitable habitat for both species, but the proposal will be accompanied by an expansion in the amount of traffic in the area, increasing the likelihood of a deadly vehicle collision.²² The project could also cause Gulf Coast jaguarundis and ocelots to avoid lit areas and seek alternate travel corridors through their native habitat in the lomas of the LRGVNR, causing them to expend more energy and increasing the possibility of a vehicle collision with a member of the species.²³ Finally, the rocket heat plume may injure or kill individual cats exposed to the plume.²⁴ The FAA has not explained how any of these impacts to Gulf Coast jaguarundis and ocelots would be sufficiently mitigated.

Lastly, in its BA the FAA asserted the project is likely to adversely affect endangered Kemp's ridley sea turtles (*Lepidochelys kempii*), endangered hawksbill sea turtles (*Eretmochelys imbricata*), endangered leatherback sea turtles (*Dermochelys coriacea*), threatened loggerhead sea turtles (*Caretta caretta*), and threatened green sea turtles (*Chelonia mydas*).²⁵ Noise and vibrations generated by rocket launches could cause turtles to abandon their nesting attempts by

even the BA's limited analysis demonstrates that the project can cause serious harm to listed species and critical habitat in the area.

¹⁸ *Id.* at 63-66.

¹⁹ *Id.* at 46.

²⁰ *Id.* at 64-66; Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Rufa Red Knot (*Calidris canutus rufa*), 86 Fed. Reg. 37,410, 37,493-94 (July 15, 2021).

²¹ BA at 67-68.

²² *Id.* at 67.

²³ *Id.* at 67-68.

²⁴ *Id.*

²⁵ *Id.* at 69.

frightening them.²⁶ Vibrations from rocket launches could also damage incubating eggs not collected by Sea Turtle Inc. either because they were overlooked during patrols or they were laid during times when public access was prohibited.²⁷ Also, lighting could potentially be visible from the beach and disorient emerging hatchlings. Finally, sea turtles and hatchlings present near the site at the time of engine ignition could be injured or killed by the rocket heat plume.²⁸ There are no plans to adequately mitigate any of these impacts.

Thus, because this project is likely to adversely affect at least ten listed species and designated critical habitat for one or two listed species, its impacts are significant and must be analyzed and mitigated in an EIS.

C. Impacts to the Neighboring Community and Environmental Justice Concerns

The FAA must also prepare an EIS because the project will likely have significant impacts on the neighboring community, and many of these impacts will be adverse and unduly burdensome. During the NEPA process, “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations...”²⁹ According to the draft PEA, “[i]n 2018, minority representation in Cameron County was 89.8 percent and Willacy County was 88.4 percent,” and the median household income for Cameron and Willacy counties was 50 percent of that reported for Texas for the years 2014–2018.³⁰

One negative impact to environmental justice communities includes the encroachment and frequent closures of the public beach. There is immense value of a free public resource, like Boca Chica Beach, especially to communities who need beneficial open space in which to enjoy recreation and other activities. Brownsville residents have highlighted the cultural and environmental value of Boca Chica Beach and concern for its degradation and closure to the public.³¹ Boca Chica Beach is one of the few, undeveloped, free public beaches in the area. Many residents of Brownsville feel a close connection to Boca Chica as being their beach, because access is free of cost, it is easily accessible, and it is closer than the beaches on South Padre Island. The use of natural and open spaces, especially the beach, help to improve physical and mental health and well-being for all.³² No mitigation of public beach access and environmental justice impacts have been identified.

Furthermore, 13 of 18 local historic resources including national battlefields and local cemeteries have been identified for potential adverse effects by the FAA. These sites hold significant local

²⁶ *Id.* at 68.

²⁷ *Id.*

²⁸ *Id.* at 69.

²⁹ Exec. Order 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994).

³⁰ Draft PEA at 136.

³¹ Nansi Guevara, “When I go to Boca Chica Beach, I see brown joy,” [Letter to the Editor], *MyRGV News*, February 28, 2021, available at <https://myrgv.com/opinion/letters-to-the-editor/2021/02/28/letter-spacex-opposed/>.

³² Significant impacts exist due to the fact that the project will have effects on public health and safety (40 CFR § 1501.3(b)(2)(iii)).

cultural significance and significance for tourism in the area. The proposed mitigation of these impacts is consultation, which assumes that consultation will result in sufficient mitigation measures. Again, no appropriate minimization of and mitigation for the negative effects have been adequately identified.

Environmental harms from this project would disproportionately impact the residents of Cameron County and Brownsville, many of whom are already overburdened by many other sources of pollution. Neighboring communities are already facing structural issues, such as broken windows and disrupted foundations, resulting from the impacts of SpaceX's activities that are already occurring. The proposal will now increase the amount of activity, which would likely be accompanied by increased structural issues, as well as increased air quality concerns, noise impacts, and other environmental degradation described herein.

D. Threatened Legal Violations

The FAA must also prepare an EIS for this project because its effects may violate multiple statutes, including laws that serve to guarantee beach access, govern the National Wildlife Refuge System, and protect other public lands. First, this project greatly affects the ability of the public to access and enjoy the Texas coastline adjacent to the project site, including Boca Chica State Park and Beach, a popular public beach on an 8-mile stretch of sand near the city of Brownsville. This area is enjoyed by coastal enthusiasts, bird watchers, conservationists, and surfers, as well as those who wish to enjoy the beautiful dunes and native plants near the seashore, a pleasant beach walk, search for seashells, and many more coastal activities.

The importance of environmentally responsible beach access, especially to this special place on the South Texas Coast, is guaranteed by local, state and federal law. The Cameron County Beach Access and Dune Protection Plan guarantees beach access in coastal Cameron County and lays out a local plan for accessibility.³³ This includes access to the beautiful coastal prairie and waters of the Gulf of Mexico in Boca Chica Beach. The premier state law on beach access, the Texas Open Beaches Act³⁴, which was passed in 1959 making Texas one of the first states in the nation to have strong beach access protections memorialized in law, states: "It is declared and affirmed to be the public policy of this state that the public, individually and collectively, shall have the *free and unrestricted right of ingress and egress* to and from the state-owned beaches bordering on the seaward shore of the Gulf of Mexico..."³⁵ The 2009 Texas Proposition 9 ("Prop 9"), a legislatively-referred constitutional amendment approved by the Texas electorate, elevated the level of protection of Texas's beaches by making Texas's Open Beaches Act a part of Texas's

³³ State of Texas, County of Cameron, Order No. 2018012017, available at <https://www.glo.texas.gov/coast/coastal-management/forms/files/cameron.pdf> (updated Dec. 11, 2018).

³⁴ Texas Open Beaches Act, Tex. Nat. Res. Code § 61.001-.254.

³⁵ Tex. Nat. Res. Code § 61.011(a)(emphasis added). Additionally, the Texas Open Beaches Act states at § 61.013(a): "It is an offense against the public policy of this state for any person to create, erect, or construct any obstruction, barrier, or restraint that will interfere with the free and unrestricted right of the public, individually and collectively, lawfully and legally to enter or to leave any public beach or to use any public beach or any larger area abutting on or contiguous to a public beach if the public has acquired a right of use or easement to or over the area by prescription, dedication, or has retained a right by virtue of continuous right in the public," and at § 61.022(b): "No local government may regulate vehicular traffic so as to prohibit vehicles from an area of public beach ... "

Constitution.³⁶ Federally, the Coastal Zone Management Act was promulgated into law in 1972 to guide the state implementation of coastal zone management programs. The National Oceanic and Atmospheric Administration, which oversees the state implementation process, requires that coastal management programs include a planning process for protection of and access to state beaches.³⁷ Here, the duty to protect public access is mandated by federal law, incorporated into state and local laws as a priority for the use of coastal resources and activity in the coastal zone.

A conservative estimate of the number of hours that Boca Chica Beach has been closed or inaccessible in 2021 is over 500 hours. According to tracking of Cameron County notices by the Coastal Bend Bays and Estuaries Program, Boca Chica Beach and/or State Highway 4 had been closed for 473 hours from January 2021 to August 2021. These closures occurred on over 100 separate days and created an inaccessible Boca Chica Beach in 2021. These closures have happened in past years, as well. Since 2019, county officials have repeatedly closed off the beach and State Highway 4 (the only road that leads to the beach) for various SpaceX launches, including its Falcon rockets. According to local conservation group Save RGV, the Boca Chica Beach has been closed for SpaceX launches for over 450 hours per year since 2019.

The project's effects will also result in violations of the National Wildlife Refuge System Improvement Act of 1997 ("Refuge Improvement Act").³⁸ For members of the public to use a national wildlife refuge, the U.S. Fish and Wildlife Service ("Service" or "FWS") must engage in a compatibility determination to ensure that activities are compatible with a refuge's purposes.³⁹ It is our understanding that the U.S. Fish and Wildlife Service has no plans to engage in a compatibility determination to authorize SpaceX's use of the Lower Rio Grande Valley National Wildlife Refuge as a debris field and for debris retrieval. However, even if the Service *does* engage in this analysis, there is no possibility that these activities could ever be deemed compatible with the purposes of the refuge. Moreover, whenever a refuge is used for economic purposes, the Service must issue a special use permit for economic activities.⁴⁰ Similarly, we are not aware of any plans to authorize all of SpaceX's current and proposed activities in a special use permit. Moreover, the Refuge Improvement Act requires the Service to administer the System to "ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans."⁴¹ However, largely due to hundreds of hours of forced refuge closures, the Service has explicitly stated that "[d]ue to operations by SpaceX, the FWS's ability to maintain the biological integrity, diversity and environmental health of Refuge resources... has been significantly diminished at the Boca Chica tract."⁴² Finally, the Refuge Improvement Act also requires the Service to "provide for the conservation of fish, wildlife, and plants, and their habitats within the System,"⁴³ and "ensure that the mission of the System... and the purposes of each refuge are carried out,"⁴⁴ The project will impede the Service's ability to do so.

³⁶ Tex. Const. art. I § 33.

³⁷ 16 USC § 1455(d)(2)(1).

³⁸ *Id.* § 668dd-668ee.

³⁹ *Id.* § 668dd(d)(1)(B).

⁴⁰ 50 C.F.R. § 27.97.

⁴¹ 16 U.S.C. § 668dd(a)(4)(B).

⁴² FWS January 2021 Letter at 2-3.

⁴³ 16 U.S.C. § 668dd(a)(4)(A),

⁴⁴ *Id.* at (a)(4)(D).

This proposal, which would cause significant unmitigated environmental damage to nearby lands, would also result in violations of the use restrictions delineated in Section 4(f) of the U.S. Department of Transportation Act of 1966. Section 4(f) provides that the Secretary of Transportation may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife or waterfowl refuge, only if there is no feasible and prudent alternative to the using that land and the program or project includes all possible planning to minimize harm resulting from the use.⁴⁵ Although SpaceX seeks an exemption to 4(f) requirements by claiming that its “use” is temporary and intermittent, according to the federal judiciary “any park use, regardless of its degree, invokes § 4(f).”⁴⁶ Additionally, under federal regulations a “use” of Section 4(f) property can include a temporary adverse occupancy of land.⁴⁷ SpaceX would engage in temporary adverse occupancy of neighboring Section 4(f) lands because public access to Boca Chica State Park, Brazos Island State Park, the South Bay Coastal Preserve, and major portions of LRGVNR, would be closed during launches. Indeed, even the FWS has highlighted this concern, asserting to the FAA that proposed SpaceX activities will in fact result in a “constructive use” of the Boca Chica tract of the LRGVNR.⁴⁸

Thus, the project will have significant unmitigated impacts on neighboring habitat, listed species, and the surrounding community, and the project’s effects will violate the law in multiple ways. The FAA must prepare an EIS to analyze these significant impacts.

II. The Environmental Assessment is Inadequate

Even if it were not clear that the FAA must develop an EIS for the SpaceX project, it would be indefensible for the FAA to issue a Finding of No Significant Impact (“FONSI”) at this stage, because the agency’s Draft PEA does not meet the requirements of NEPA regulations for issuance of a FONSI or Mitigated FONSI. If it is unknown whether an action will be “significant,” then an agency may prepare an EA. An EA must provide “sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.”⁴⁹ In doing so, the EA must discuss the environmental impacts of and alternatives to the proposed action⁵⁰ and must account for connected actions.⁵¹ The Draft PEA, however, fails to adequately consider this information. Overall, the analysis does not provide sufficient evidence to support a FONSI.

The Draft PEA overlooks scores of crucial factors. There has been insufficient launch failure scenario analysis, including associated risk to public safety and natural resources. This is

⁴⁵ 49 U.S.C. § 303. In the landmark Supreme Court case that still guides implementation of section 4(f) Justice Marshall observed that the “very existence” of Section 4(f) demonstrates “that protection of parkland was to be given paramount importance” in planning the nation’s transportation projects. *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 412 (1971), *overruled on other unrelated grounds*.

⁴⁶ *Louisiana Environmental Society, Inc. v. Coleman*, 537 F.2d 79, 84 (5th Cir.1976) (emphasis added).

⁴⁷ C.F.R. § 774.17.

⁴⁸ FWS January 2021 Letter at 2.

⁴⁹ 40 C.F.R. § 1501.5(c)(1).

⁵⁰ *Id.* § 1501.5(c)(2).

⁵¹ *Id.* § 1501.3(b).

particularly egregious given that failures already are repeatedly occurring yet have never been properly analyzed under NEPA. The Draft PEA should, but did not, adequately consider the impacts that explosion-induced wildfires and debris-removal operations will have on surrounding habitat.

Among other failings, the FAA has not adequately evaluated the infrastructure attached to this project for significant environmental impacts and feasible alternatives. The Draft PEA makes only passing reference to a power plant, without discussing it in any depth and without incorporating it into the site-wide emissions estimate. Moreover, the power plant would require a cooling tower, with additional emissions and/or intake concerns. Other launch-related and power plant operations are estimated to emit 47,522 metric tons of carbon dioxide equivalent per year,⁵² with no mitigation measures attached to this massive greenhouse gas emission, as well as 102 tons of carbon monoxide per year.⁵³ The proposed Liquefied Natural Gas (“LNG”) export terminals and a proposed crude upgrading, processing and export facility that includes marine loading berths 6 miles offshore have not been evaluated for connected water quality and marine life degradation concerns.

Additional connected concerns that have not been addressed, sufficiently characterized, and/or fully evaluated, include but are not limited to:

- Air quality and public health concerns, including those associated with the proposed 250 MW combined-cycle fossil-fuel fired steam electric power plant, which may qualify as a “major emitting facility”⁵⁴ subject to Prevention of Significant Deterioration regulations⁵⁵;
- Water quality impacts associated with development and industrial applications, including the desalination plant;
- Impacts to listed species and critical habitat;
- Growth inducement and development impacts associated with augmented water, power and gas needs to accommodate a large workforce;
- Gas extraction, LNG transportation, and storage;
- Greenhouse gas emissions for auxiliary projects;
- HAZMAT, solid waste, and pollution prevention;
- Land use and other impacts to public lands; and
- Health and safety, particularly as it relates to "anomaly" explosions, sonic booms/overpressure, and high decibel noise in proximity to populated areas and schools.

Looking down the road at the profound impacts this project could have on this geographic area and sensitive coastal resources, the FAA should take into account how to minimize related impacts that are feasibly connected to the SpaceX project if it were to proceed. These effects are reasonably foreseeable given the immense scope and future plans of the project. The effects should be analyzed thoughtfully, controlled, and mitigated at this early date.

⁵² Draft PEA for Starship/Super Heavy at Boca Chica at Table 3-3, p. 47.

⁵³ Draft PEA for Starship/Super Heavy at Boca Chica at Table 3-2, p. 44.

⁵⁴ 42 U.S.C. § 7479 (1).

⁵⁵ 40 C.F.R. § 52.21.

III. Conclusion

In summary, the Draft PEA is deficient because it does not include a sufficient level of detail about the project or its potential impacts. Notwithstanding, given what is already known and can otherwise reasonably be surmised, the project will result in significant environmental impacts for which proper mitigation has not been proposed. A comprehensive EIS, with full analysis of all components of the project, including its connected actions, is needed to understand the full extent of impacts that this project may cause.

Thank you for your consideration of these comments.

Sincerely,

Lindsay Dubin, Staff Attorney
Defenders of Wildlife

Angela T. Howe, Esq., Legal Director
Surfrider Foundation

Emily Jo Williams, Vice President, South East Region
American Bird Conservancy

Jared Margolis, Senior Attorney
Center for Biological Diversity

Robyn Cobb, President
Coastal Bend Audubon Society

Corry Westbrook, Senior Grassroots and Policy Advisor
Endangered Species Coalition

Seth Billingsley, Conservation Associate
Environment Texas

Jim Chapman, President
Friends of the Wildlife Corridor

Bill Berg, Board Member & Agent
Save RGV

Craig Nazor, Conservation Chair
Sierra Club Lone Star Chapter

Robin Schneider, Executive Director
Texas Campaign for the Environment

Attachment A

From: [Gardiner, Dawn](#)
To: [Winton, Bryan](#); [Orms, Mary](#)
Subject: Re: DRAFT REPORT SN11 Anomaly - Rocket engine explosion @ 0.5-1 mile above the launch site - 3-30-21
Date: Wednesday, March 31, 2021 7:52:27 AM

Mary- in the current BA, we need them to describe their response to anomalies. Clean up and retrieval will be occurring in piping plover habitat, maybe red knot habitat and black rail habitat and aplomado. Maybe pipl critical habitat.

From: Winton, Bryan <bryan_winton@fws.gov>
Sent: Tuesday, March 30, 2021 9:25 PM
To: Gardiner, Dawn <dawn_gardiner@fws.gov>; Orms, Mary <mary_orms@fws.gov>
Subject: Fw: DRAFT REPORT SN11 Anomaly - Rocket engine explosion @ 0.5-1 mile above the launch site - 3-30-21

FYI

The debris field is likely 2-3 miles. Majority is on north side of HW 4. Its the worst "anomaly" we've experienced thus far. There is the Full Moon now so tides are high, site is being inundated, and retrieval will be significantly delayed and or more costly (helicopter).

I'll forward a copy of the Final Report.

bryan

From: Winton, Bryan
Sent: Tuesday, March 30, 2021 9:22 PM
To: Liana.Garcia@tpwd.texas.gov <Liana.Garcia@tpwd.texas.gov>; andres.garcia@tpwd.texas.gov <andres.garcia@tpwd.texas.gov>; Garza, Rolando L <Rolando_Garza@nps.gov>; Stephanie Bilodeau <stephanie@cbbep.org>; Edler, Scot <scot_edler@fws.gov>; Longoria, Gerardo <gerardo_longoria@fws.gov>; David Kroskie <David.Kroskie@tpwd.texas.gov>
Cc: Reagan Faught <Reagan.Faught@tpwd.texas.gov>; Perez, Sonny <sonny_perez@fws.gov>; Fernandez, Oralia Z <Oralia_Fernandez@nps.gov>
Subject: DRAFT REPORT SN11 Anomaly - Rocket engine explosion @ 0.5-1 mile above the launch site - 3-30-21

This is a DRAFT report. I am requesting the TEAM review this summary, and provide feedback by 12pm Wednesday, so that a Complete Recommendation can be reviewed/recommended by TPWD.

Thank you to the staff from TPWD, NPS, CBBEP and FWS for responding to the 7:50am Space X Anomaly/explosion today at Boca Chica.

All staff arrived on-site at or near 1pm today, and stayed until ~6:15pm.

TPWD Biological staff (Liana Garcia and Andres Garcia) were granted the lead on-site to advise me, the POC for the incident, how they recommended Space-X proceed with removal of debris. Leo Alaniz was the Space-X POC.

NPS Cultural Resources Staff (Rolando Garza) and TPWD Cultural Resources Staff (David Kroskie) surveyed the debris field but were not able to access the piling (Historical Features) or the majority of the other cultural resources within the State Park. Coastal Bend Bays and Estuary Biological staff, Stephanie Bilodeau, surveyed the area for nesting birds, evidence of nest initiation, and any evidence of impact from the debris field or Space-X staff which were authorized by myself and the Team to walk the entire debris field in search of the 2nd Flight Termination Device, which is a FAA required safety item.

No GLO representatives were present.

The debris field consists of the entire rocket. Significantly more debris on the Boca Chica State Park, Lower Rio Grande Valley NWR, and, this time, the General Land Office properties, than occurred during the previous 2 Hopper and 3 SN anomalies.

Conditions: Due to Full Moon, and subsequent high tides, the debris field had been or is subject to inundation. From what was reported by Space-X, 90% of the debris is north of the launch site/north of HW4, due to height of rocket upon explosion, and prevailing south winds.

During the afternoon much of the debris was clearly visible partly lodged in or atop the wet/soft alkaline flats.

Staff were on stand-by until 4:45pm when the 2nd Flight Termination Device was located and removed. Upon removal, staff were cleared for access to the alkaline flats to determine substrate firmness and extent of debris field. Staff reported the debris field was much more extensive than when observing from HW4. Lots more large and smaller pieces of debris than previously. Due to height of explosion, much of the materials of larger size are lodged into the alkaline flat. Approximately 20 pieces of debris are of such size that they will require equipment for removal or use of helicopter for removal. The majority of the debris (~50%) appeared to be smaller size pieces that can be removed by hand, by walking on the flats, stockpiling the materials in a particular area onto the edge of 1 of 3 vegetated lomas, where ORV or other small equipment can be used at a later time to load and remove the debris-- minimizing widespread ORV/ATV tracking about the flats in the soft substrate. This was a mutual Team recommendation. The Team determined that the least-damaging approach would be to allow foot access only at this time. POC Leo Alaniz was advised that Space-X could continue GPS location for all materials so that upon my arrival on Wednesday, 9am, Space-X may begin debris capable of being collected on foot for stockpiling. Alaniz stated Space-X would focus on debris removal on HW 4, for which there was substantial materials, including 1 of the 3 raptor engines.

TPWD and the Team did not collectively agree on an approach for future debris retrieval. TPWD recommended mats for accessing the larger items that are 0.3-0.5 miles from HW 4. Some items are well into the South Bay, so during high tide those items can be retrieved by boat ideally.

The question for Leadership at this time is can we delay the retrieval due to habitat conditions, and if so, for how long. Best case scenario, the flats will likely not be capable of drying until 3-5 days after Full Moon, and an anticipated northern expected to reach the Valley by Thursday evening. The northern will likely push tidal waters far into the flats up against HW 4. Notwithstanding a significant rain event accompanying the northern, the flats could potentially be in a state they can begin drying by this Friday.

As for removal of the 20+ larger debris items. Either Space-X will need to wait until the flats are dry/firm so equipment can access those items (still high level of expected damage/ruts), and seek assistance via Helicopter so that foot access to debris can be conducted along with slings and hand-carried equipment, and then helicopter removal and drop in a designated area off the State Park/Refuge. The Team did not unanimously agree on the preferred method of retrieval for large debris items, although some participating staff had not responded to any previous Hopper or SN incidents.

US Fish & Wildlife Service will continue to serve as lead for the incident. However, TPWD Leadership, along with FWS Sonny Perez should fine-tune what approach is recommended, so that I can implement the strategy identified.

Bryan Winton
Refuge Manager
Lower Rio Grande Valley National Wildlife Refuge
956-874-4304

Attachment B



Orms, Mary <mary_orms@fws.gov>

Fwd: [EXTERNAL] SpaceX removal of debris North of Hwy 4

1 message

Winton, Bryan <bryan_winton@fws.gov>

Fri, Nov 29, 2019 at 9:32 AM

To: Sonny Perez <sonny_perez@fws.gov>, Scot Edler <scot_edler@fws.gov>, Imer Dela Garza <imer_delagarza@fws.gov>, Chris Perez <chris_perez@fws.gov>, Ernesto Reyes <ernesto_reyes@fws.gov>, Laura <laura_delagarza@fws.gov>, Iriz Elizondo Navarro <iriz_elizondo@fws.gov>, Romeo Garcia <romeo_garcia@fws.gov>, Gerardo Longoria <gerardo_longoria@fws.gov>, Ellissa Martinez <ellissa_martinez@fws.gov>, "Whitehead, Dawn" <dawn_gardiner@fws.gov>, "Orms, Mary" <mary_orms@fws.gov>

For your records. FAA has called for a Dec 5, 2019 meeting to revisit the EA and Biological Opinion that we worked on since April 2011, which did not turn out to accurately reflect what they (Space-X) have been doing. Their action differs significantly from what they proposed. The road closures and interruptions to the refuge/public beach is considerably more than was anticipated, and the action is now testing, rather than launches, which is inherently more inclined to result in a failure and thus damage to the refuge.

Hopefully their explosions will deter the LNG's from developing our area though. The air quality, viewshed impacts, and degradation of the Boca Chica area would be accelerated if one or more of these industrial energy projects ultimately proceeds.

bryan

----- Forwarded message -----

From: **Randy Rees** <Randy.Rees@spacex.com>

Date: Sat, Nov 23, 2019 at 5:09 PM

Subject: [EXTERNAL] SpaceX removal of debris North of Hwy 4

To: Extranet Contact - bryan_winton <bryan_winton@fws.gov>, Scot Edler <Scot_edler@fws.gov>

Cc: Extranet Contact - Stacey.Zee <Stacey.Zee@faa.gov>, Matthew Thompson <Matthew.Thompson@spacex.com>, Katy Groom <Katy.Groom@spacex.com>, Paul Sutter <Paul.Sutter@spacex.com>

Hello Bryan,

For Official Use Only

Per my discussion with Scot, I wanted to send some pictures from the removal operation. The team was able to pull the debris with 2 high capacity tow trucks, over to the ATV Barrier. There the debris was rigged and flown with a crane onto our Construction Dump truck for transport to our build area for inspections.

The ATV Barrier is all there, but one bollard needs to be reset/replaced, and then the cable re-tensioned. I can work with you next week on a plan to accomplish the necessary repair.

We have had crews on foot out yesterday and today using metal detectors to ensure any small pieces aren't missed.

No vehicles or ATVs of any type crossed the ATV barrier location during the operation.

PICTURES

Initial location of debris with arrows showing direction of removal.



After the drag began.



Largest piece almost pulled in.



Final location of the drag removal operation.



Due to the weight of the debris and load bearing limitations of the sand for the crane, they had to drag into the ATV barrier several feet. This is the unset bollard. The cable tension was released at a nearby cable clamp.



If you have any questions or concerns, please call anytime.

Thank You,

Randy Rees

Environmental Health and Safety Manager

Chief of Emergency Operations

Space Exploration Technologies (SpaceX)



[South Texas Physical](#)

1 Rocket Road

Brownsville, TX 78521-0008

☎ W: (956)708-2118 | 📠 M: (515) 943-3924

✉: Randy.Rees@SpaceX.com 🌐: www.spacex.com



MEMBER
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS
www.iafc.org

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Bryan R. Winton, Wildlife Refuge Manager
Lower Rio Grande Valley National Wildlife Refuge
[3325 Green Jay Road, Alamo, Texas 78516](https://www.fws.gov/locations/rlrgv)
(956) 784-7521 office; (956) 874-4304 cell
bryan_winton@fws.gov

Attachment C

From: [Winton, Bryan](#)
To: [Orms, Mary](#)
Cc: [Perez, Sonny](#); [Perez, Chris](#)
Subject: Re: Information for Informal Scoping FWS Response Letter to FAA per proposal to Draft a new EA - due 11am, Jan 21, 21
Date: Thursday, January 21, 2021 12:23:22 PM

Thank you Mary. Your list is more comprehensive than the one I provided. I only list explosions that resulted in major debris scattering, although the additional explosions you listed are equally notable, due to the impacts they likely have on wildlife residing in close proximity during the event. Unfortunately, we are not able to access the area immediately following an event due to safety reasons which does not offer us the ability to investigate true wildlife impacts immediately following a blast, fire, etc. Not sure how we can expect to have access immediately following future similar events, but we need assurance that Space-X employees or the public don't gain access before we have a chance to do our initial investigation after such occurrences in the future.

bryan

From: Orms, Mary <mary_orms@fws.gov>
Sent: Thursday, January 21, 2021 1:07 PM
To: Winton, Bryan <bryan_winton@fws.gov>; Perez, Sonny <sonny_perez@fws.gov>
Cc: Perez, Chris <chris_perez@fws.gov>
Subject: Re: Information for Informal Scoping FWS Response Letter to FAA per proposal to Draft a new EA - due 11am, Jan 21, 21

Bryan,

I looked up dates of SpaceX explosions on news articles and you tube....etc..

11/18/2019 - Space Ship MK1 Pressure Test explosion

2/28/2020 - Starship SN1 pressure Test explosion

4/2/2020 - Starship SN3 pressure test explosion

5/29/2020 - Starship SN4 explosion

12/9/2020 - Starship SN8 explosion

From: Winton, Bryan <bryan_winton@fws.gov>

Sent: Thursday, January 21, 2021 10:33 AM

To: Perez, Sonny <sonny_perez@fws.gov>

Cc: Perez, Chris <chris_perez@fws.gov>; Orms, Mary <mary_orms@fws.gov>

Subject: Information for Informal Scoping FWS Response Letter to FAA per proposal to Draft a new EA - due 11am, Jan 21, 21

Example of damages by/from Space-X:

Traffic volume, road closures, wildlife mortality

Impacts to habitat: tidal flats, dunes, coastal prairie - debris, fires, rutting, wetland filling

Fires - 2 fires in 2019

Explosions (Debris scattered) - several since 2019

Development - conversion to industrial development/testing area

Residential Eviction - Kopernik Shores

Loss of public access to refuge, state park, beach and no reliable access for land management

Important Dates:

Nov 2018 - during Federal Government Shutdown/Furlough - Space X announces they will change activity from launch facility to a testing facility

April 21,22 -2019 - Space X employee(s) get stuck with 2 vehicles and a forklift in tidal flats. Causes significant damage to tidal flats. Space X employees did not have permission to be on the refuge.

July 25, 2019 - 130-acre fire caused from Space-X test that sent

fire/embers into the coastal prairie

August 2019 - second 15-acre fire, mostly in the dunes

November 20, 2019 - MK 1 explosion; Nose cone north of HW 4; cable fence damaged (never fixed)

February 28, 2020 - explosion - SN1 - Big debris north of HW4

Dec 9, 2020 - explosion of SN8 - Big debris (LE managed); Space-X still dragged/damaged flats

Attachment D



United States Department of the Interior

FISH AND WILDLIFE SERVICE

South Texas Refuge Complex

Lower Rio Grande Valley National Wildlife Refuge

3325 Green Jay Road

Alamo, Texas 78516

(956) 784-7500



January 22, 2021

Daniel P. Murray
Manager, Safety Division
Federal Aviation Administration
800 Independence Ave., SW
Washington, D.C. 20591

Dear Mr. Murray:

It is our understanding that SpaceX is working with the Federal Aviation Administration (FAA) to prepare a draft Environmental Assessment (EA) for a Starship/Super Heavy launch program near Boca Chica, Cameron County, Texas. This program is occurring on land surrounded by the Lower Rio Grande Valley National Wildlife Refuge (Refuge). The FAA is holding a public scoping period to assist in determining the scope of issues for analysis in the draft EA. The following are U.S. Fish and Wildlife Service's (FWS) comments for consideration in your analysis:

National Environmental Policy Act (NEPA)

NEPA emphasizes cooperative consultation among agencies. 50 C.F.R. 1501.2(3) requires agencies to “...*study, develop, and describe appropriate alternatives to recommend courses of action in any proposal which involves unresolved conflicts...*” The process is intended to help public officials make decisions that are based on an understanding of the environmental consequences of federal agency actions and to protect the quality of the human environment, which includes ecological systems. In order to conduct a meaningful analysis consistent with the spirit and intent of NEPA, adequate and clear information regarding the proposed SpaceX activities is critical in developing informed analysis. 40 C.F.R. 1501.5(a) states that an agency shall prepare an EA for an action that is “...*not likely to have significant effects or when the significance of the effects is unknown...*” An environmental impact statement (EIS) may be the more appropriate NEPA pathway for this proposed action if significant effects cannot be avoided.

As stated in our previous correspondence dated October 7, 2020, and December 14, 2020 (attached); and reiterated here, the FWS does not concur with the FAA's determination that the action will not result in a "*constructive use*" of the Boca Chica Tract of the Lower Rio Grande Valley National Wildlife Refuge (Refuge). The FAA is subject to Section 4(f) regulations which "*require rigorous exploration and objective evaluation of alternative actions that would avoid all use of Section 4(f) properties...that would avoid some or all adverse effects*" (OEPC Section 4(f) Handbook, per 23 CFR § 774). Furthermore, 23 U.S.C. § 138 precludes the Secretary of Transportation from approving a program or project unless "*such program includes all possible planning to minimize harm*" to wildlife refuges. It is the FWS's opinion that FAA has failed to comply with its own regulations in this regard. Based on the Section 4(f) definitions, a "*constructive use*" occurs when there is "*a temporary occupancy of land that is adverse in terms of the statute's preservation purpose*" or when "*a project's proximity impacts are so severe that the protected activities, features, or attributes of a property are substantially impaired.*" The level, nature, and extent to which an area is constructively used is subject to the expertise and determination of the agency responsible for management and administration of the 4(f) lands impacted by the constructive use, in this case, the FWS. Frequent closures of the Refuge caused by SpaceX activities are already substantially impairing both the Refuge's ability to adequately manage the Refuge and the public's enjoyment of the Boca Chica Beach area for wildlife-dependent recreation. There are both "*adverse*" and "*severe*" impacts to Refuge public use, management, wildlife, and habitat from the SpaceX activities. The protected public activities on the Refuge that are being substantially impaired include fishing, wildlife observation, photography, environmental education, and interpretation. Annually an estimated 110,000 visitors access the Refuge for these uses. The majority are beachgoers or anglers visiting the Boca Chica tract and these activities occur throughout the year.

Since 2014, SpaceX has undertaken activities not covered in FAA's 2014 EIS which addressed only 12 launches per year, not continual experimentation related to the Starship/Super Heavy proposal as is currently being carried out. SpaceX activities not covered include a higher frequency of road closures extending well beyond 180 hours, large explosions from reported anomalies, the appearance of significantly large staffing, 24/7 operations, traffic, and construction activities not analyzed in the 2014 EIS. In addition, SpaceX rocket debris falling onto the Refuge has damaged the sensitive wind tidal flats. And, the vehicles or machinery used to retrieve rocket debris have created ruts and caused other damage that interrupts water sheet flow across these flats. Two SpaceX incidents on July 25, 2019 and again in August 2019 resulted in wildfires of 130-acres and 10-acres respectively burned through coastal prairie and dune habitats on refuge managed land. Anomalies resulting in explosions on November 20, 2019, February 28, 2020, and December 9, 2020 resulted in debris scattered onto refuge managed lands. Retrieval methods damaged the sensitive alkaline flat and refuge cable fencing installed to protect the area from disturbance.

Due to operations by SpaceX, the FWS's ability to maintain the biological integrity, diversity and environmental health of Refuge resources, as well as our ability to ensure the viability of the six wildlife-dependent recreational uses, has been significantly diminished at the Boca Chica tract. This occurs by preventing or constraining public access year-round, hampering biological and monitoring studies including sea turtle patrols, sea turtle cold-stunning responses, hampering refuge management and law enforcement patrol, increased observations of road mortality of wildlife at all hours of daytime and nighttime, damage to sensitive habitats such as the wind tidal flats and to the salt prairie from explosions and fires, as well as adversely impacting nesting

habitat for sensitive species. According to the Coastal Bend Bays and Estuaries Program, Wilson's and Snowy Plovers, have essentially stopped nesting near the SpaceX site in the last two years.

Currently, the FAA is requesting to increase the number of Refuge closure hours from 180 to 300 per year. The FWS believes the FAA/SpaceX closure reporting computation needs to be revised to consider the accounting of the extended closures occurring for anomalies or delays that are deterrents for public access to the Boca Chica tract and the beaches for the duration of all published closure timeframes. In 2019, the FWS recorded over 1,000 closure hours and SpaceX reported a total of 158 hours. When closures occur, all aforementioned wildlife-dependent recreational uses are substantially impaired because they are not available to the public. These features and attributes will be substantially impaired by increased closures.

The FAA has previously stated the road closures comprise only 2.1 percent of the total annual Refuge closure hours they calculated, which would appear to be minimal. However, the FAA's decision omitted the recreational hours lost to Refuge visitors. The Refuge is visited by approximately 110,000 visitors annually with 50% or more visiting the Boca Chica tract. Therefore, approximately 55,000 people visit the Boca Chica tract each year. Assuming each visitor to the Boca Chica tract spends only one hour there, closing access to the tract for 180 hours per year (the current closure rate) will result in a loss of 9,900,000 recreational hours per year. Increasing the number of closure hours to 300 per year will result in 16,500,000 recreational hours lost per year. This loss of public recreational hours is significant. Therefore, we reiterate that the impacts of the increased road closures are significant as that term is defined by NEPA and rise to the level of a substantial impairment and thus constitute a "*constructive use*," as defined under Section 4(f). We recommend FAA's NEPA analysis include adequate consideration of these unresolved issues.

Endangered Species Act (ESA)

The FWS is concerned about effects of SpaceX experimental rocket development activities and testing on endangered species. On three separate occasions in 2020, rocket launch failures resulted in explosions and the spread of debris on and off Refuge lands. Videos of these events show evidence of different species of birds being impacted by the blast. However, it is difficult to ascertain what species of migratory birds and/or birds listed as threatened or endangered under the ESA were harmed or harassed. We cannot determine if the blasts and fires resulted in harm (death or injury) to some of the birds or just harassed them. It is unknown if terrestrial species were killed or injured. There is documented evidence that the debris and its removal has impacted and scarred various habitats in the area, including tidal flats which are foraging habitat for the threatened piping plover and red knot. It is unclear how far vibration and noise resulting from the explosions and cleanup have impacted listed species, such as the ocelot, jaguarundi, and northern aplomado falcon. The FWS's inability to enter the action area immediately to survey the area hinders efforts to document these types of impacts before evidence is compromised or lost entirely.

The ESA prohibits the taking of endangered species except as provided for in sections 7 or 10. Since there is no way to promptly assess damages or collect injured or dead animal species, there is no mechanism to document whether SpaceX has exceeded the incidental take for individual species or habitat (sea turtles, ocelots, jaguarundi, piping plover, red knot, northern aplomado

falcon) issued in the original project biological opinion. We believe SpaceX's increase in construction, traffic, personnel levels, closures, lighting, noise and vibration, has exceeded what was evaluated in the biological opinion SUMMARY OF THE FINAL BIOLOGICAL AND CONFERENCE OPINION ON THE EFFECTS TO THE ENDANGERED OCELOT (*Leopardus pardalis*), ENDANGERED GULF COAST JAGUARUNDI (*Herpailurus yagouaroundi cacomitli*), ENDANGERED NORTHERN APLOMADO FALCON (*Falco femoralis septentrionalis*), ENDANGERED KEMP'S RIDLEY SEA TURTLE (*Lepidochelys kempii*), ENDANGERED HAWKSBILL SEA TURTLE (*Eretmochelys imbricata*), ENDANGERED LEATHERBACK SEA TURTLE (*Dermochelys coriacea*), THREATENED GREEN SEA TURTLE (*Chelonia mydas*), THREATENED LOGGERHEAD SEA TURTLE (*Caretta caretta*), THREATENED PIPING PLOVER (*Charadrius melodus*) AND ITS CRITICAL HABITAT, AND PROPOSED TO BE LISTED AS THREATENED RED KNOT (*Calidris canutus rufa*) FROM THE PROPOSED ISSUANCE OF FEDERAL AVIATION ADMINISTRATION LAUNCH LICENSE AUTHORIZING SPACEX TO LAUNCH FALCON 9 AND FALCON HEAVY ORBITAL VERTICAL LAUNCH VEHICLES AND A VARIETY OF REUSABLE SUBORBITAL LAUNCH VEHICLES FROM PRIVATE PROPERTY, BOCA CHICA, CAMERON COUNTY, TEXAS; December 18, 2013; Consultation No. 02ETCC00-2012-F-0186, and the FWS has informed SpaceX and FAA they are not in compliance with the current biological opinion numerous times. The FWS is available to assist SpaceX in reducing its risk by avoiding or minimizing impacts and potential take of threatened or endangered species in future activities. The FWS believes reinitiation of section 7 consultation on the aforementioned biological opinion is warranted. We are aware that the FAA is working on a new Biological Assessment and SpaceX is in favor of reinitiation. To date we have not received the document.

Another option to obtain ESA compliance for SpaceX would be to seek a section 10(a)(1)(B) permit that authorizes take of endangered species that is incidental to "otherwise lawful activities."

The FWS believes that an EIS may be the more appropriate NEPA pathway for this proposed action if significant effects cannot be avoided. The FWS requests that you give adequate consideration to and objective analysis of our NEPA concerns; that you adequately comply with the ESA; and, that you conduct an alternative action analysis per Section 4(f) of the Transportation Act of 1966. We appreciate your consideration of our concerns. You may contact me via email at sonny_perez@fws.gov.

Sincerely,

Manuel Perez III

Manuel "Sonny" Perez III
Complex Refuge Manager
South Texas Refuges Complex

Charles Ardizzone

Charles Ardizzone
Project Leader
Texas Coastal Ecological Services Office

Enclosures (2)

cc:

Stacey Zee, Federal Aviation Administration, Washington, DC.

Bryan R. Winton, Refuge Manager, Lower Rio Grande Valley NWR

Kelly McDowell, Refuge Supervisor, TX Gulf Coast Refuges

Dawn Gardiner, Assistant Field Supervisor, Texas Coastal ES Field Office

Stacey Dwyer, EPA Compliance Assurance and Enforcement Division