



United States Department of the Interior



FISH AND WILDLIFE SERVICE
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In Reply Refer To:
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May 5, 2023

Ms. Stacey Zee
Office of Commercial Space Transportation
Federal Aviation Administration
800 Independence Ave SW
Washington, DC 20591

Subject: SpaceX Starship/SuperHeavy Launch Vehicle Program at the SpaceX Boca Chica Launch Site, Cameron County, Texas

Dear Ms. Zee:

On May 12, 2022, the U.S. Fish and Wildlife Service (Service) issued a final biological and conference opinion (BCO) to the Federal Aviation Administration (FAA). The BCO addressed potential effects to the endangered northern aplomado falcon (*Falco femoralis septentrionalis*), Gulf Coast jaguarundi (*Herpailurus yagouaroundi cacomitli*), ocelot (*Leopardus pardalis*), Kemp's ridley sea turtle (*Lepidochelys kempii*), hawksbill sea turtle (*Eretmochelys imbricata*), leatherback sea turtle (*Dermochelys coriacea*); and threatened loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), piping plover (*Charadrius melodus*) and piping plover critical habitat, red knot (*Calidris canutus rufa*) and proposed red knot critical habitat; from the issuance of an experimental permit and/or a vehicle operator license to SpaceX to launch Starship/Super Heavy at the Boca Chica Launch site, Cameron County, Texas.

On April 20, 2023, SpaceX launched its first Starship SuperHeavy rocket from its facility in Boca Chica, Texas. An anomaly occurred resulting in the destruction of the rocket and launch pad. Staff from the Service and the Texas Parks and Wildlife Department (TPWD) participated in a site visit 48 hours after the incident. Initial surveys revealed debris consisting of chunks of concrete (large and small in size) had fallen on SpaceX private holdings and Boca Chica State Park. Debris also included a white powdery dust that settled onto the tidal mudflats just northwest of the launch site, which we believe was pulverized concrete material from the launch pad. The debris was distributed across the tidal flats, beach, and waters of the Gulf of Mexico. Debris was not documented on Refuge owned property at the time of the survey. Pulverized concrete was deposited as far away as Port Isabel, 6.5 miles to the northwest of the pad site.

Additionally, as a result of the launch, a 3.5-acre fire started south of the pad. Sound levels and ambient temperature during the launch appeared to be within predicted levels; however, this still needs to be confirmed. No dead birds were reported during the site visit.

In reviewing the preliminary TPWD data, it appears debris may have gone outside the northern and southern 700-acre debris field boundary depicted on Figure 27 of the BCO. There were at least four concrete chunks from 7-inches up to 2-3 feet in length documented to the south and the pulverized concrete to the north. Impacts to listed species and their habitat and/or designated critical habitat outside the debris field boundary have not been analyzed and nor has incidental take been issued.

The Service would like to meet with FAA to discuss noise, temperature, and vibration levels associated with the launch, anticipated alterations to facilities and launch operations, and the potential to reduce the number of launches in the future thereby reducing the number of potential mishaps or anomalies. We would also like to discuss any new activities or infrastructure (additional night lighting, launch pad redesign) that could result from this launch that might not have been covered under the original BCO. The Service would also like work to work with FAA and SpaceX to identify the least damaging cleanup methods.

We are aware FAA has opened a “mishap” investigation. It is our understanding that this type of investigation is designed to further enhance public safety. The investigation is intended to determine the cause of the event and identify corrective actions the operator must implement to avoid a recurrence of the event. We have the following questions:

- Following the mishap SpaceX is charged with preserving data and physical evidence for a later investigation and must file a preliminary written report to the FAA’s Office of Commercial Space Transportation within five (5) days of the event. Has that report been filed, and may the Service receive a copy of it once completed?
- FAA may choose to conduct the investigation or authorize the operator to perform the investigation under FAA’s oversight in accordance with an approved mishap plan or anomaly plan as described in the BCO. Is the FAA conducting the investigation or has it been delegated to SpaceX?
- The investigation may be completed in a few weeks, or it may take months. What type of activity is SpaceX allowed to proceed with during this time? Will SpaceX be allowed to proceed with repairs to the launch site during the investigation or attempt another launch or test prior to the completion of that investigation?
- Should cleanup efforts be delayed until FAA completes that investigation?

After the investigation is complete and recommendations are made, if there are any changes that fall outside of the current BCO, reinitiation of the consultation may be warranted. As provided in 50 CFR § 402.16, reinitiation of consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not

considered in the opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in the BCO or written concurrence; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The Service has been coordinating with FAA and SpaceX and would like to continue that effort. If you have any questions, please contact Mary Orms at 281-271-2162 or via email at mary_orms@fws.gov. You may also contact Dawn Gardiner at 261-533-6765 or dawn_gardiner@fws.gov.

Sincerely,

Charles Ardizzone
Field Supervisor

Ms. Stacey Zee

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cc: Matthew Thompson, SpaceX
Chris Perez, LRGVNR