

**From:** [Perez, Chris](#)  
**To:** [DeLaGarza, Imer](#); [Perez, Sonny](#); [Lueders, Amy L](#); [Reagan, Steve](#); [Gardiner, Dawn](#); [Ardizzone, Chuck CA](#); [Polk, Jonna E](#); [Bossert, Dean](#)  
**Cc:** [Orms, Mary](#); [Bilodeau, Stephanie A](#)  
**Subject:** Re: Bullet points and quick summary of our site assessment of post launch impacts from SpaceX on April 20, 2023.  
**Date:** Monday, April 24, 2023 12:23:49 PM  
**Attachments:** [SpaceX launch sound levels 4-20-23.xlsx](#)

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All:

Attached is the data from our sound meter, which was placed at 25.986023, -97.18476242; approximately 2 miles away from the orbital launch mount. The max reading was 114.9 dBA and the sound level was over 90 dBA for 1 minute and 18 seconds. Sound levels appear to take approximately 8 minutes and 20 seconds from beginning of the launch to get back to “normal” levels. I inserted a graph to visualize the data over a 20 minute period. The maximum of 114.9 dBA matches the sound levels expected from a Starship orbital launch in figures 3 and 4 of Appendix B of the PEA and at figure 13 of the final BCO for A-weighted sound. The location of the device was between the rings of 100 and 110 dBA shown in figures 3 and 4.

Important note: The 144 db reading shown earlier is ***not confirmed and is not our data***. Keep in mind there is a caveat with this data, as there’s always a chance something went wrong with the calibration of the device or there was unexpected interference of some kind on the microphone, and we are not sound engineers.

Thanks.

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**From:** Perez, Chris  
**Sent:** Monday, April 24, 2023 10:23 AM  
**To:** DeLaGarza, Imer <Imer\_DeLaGarza@fws.gov>; Perez, Sonny <sonny\_perez@fws.gov>; Lueders, Amy L <amy\_lueders@fws.gov>; Reagan, Steve <steve\_reagan@fws.gov>; Gardiner, Dawn <dawn\_gardiner@fws.gov>; Ardizzone, Chuck CA <chuck\_ardizzone@fws.gov>; Polk, Jonna E <jonna\_polk@fws.gov>; Bossert, Dean <dean\_bossert@fws.gov>  
**Cc:** Orms, Mary <mary\_orms@fws.gov>; Bilodeau, Stephanie A <stephanie\_bilodeau@fws.gov>  
**Subject:** Bullet points and quick summary of our site assessment of post launch impacts from SpaceX on April 20, 2023.

FWS Wildlife Biologist, Stephanie Bilodeau, and Willy Cupit from TPWD, as well as myself first visited the impacted area on Saturday April 22nd. We were not allowed in for more than 48 hours due to safety concerns from the extensive launch pad impacts. Large concrete chunks hurled thousands of feet away most apparent at first impression overall. One chunk with rebar measuring 47 inches x approximately 12 inches was found in the tidal flats over 1,000 feet away. On the north side a large area of white powdery coating which I believe is pulverized concrete blanketed the tidal flats. This I believe was part of a plume which deposited that powder all the way to Port Isabel. No dead birds were found in any of the areas we searched. Concrete chunks were distributed all over the tidal flats along with impact craters; some of which were more than a foot deep. The furthest concrete chunk was found about 2,680 feet away from the pad site. Concrete chunks and rebar were scattered on

the beach east of the launch pad. One snowy plover actually remained on the nest, even during the launch as captured by our wildlife cam set up the night before. This nest was 4,224 feet from the launch site. Another bobwhite quail nest of 7 eggs was lost in the fire along with several blue land crabs.

- Total areal extent of the debris field was determined to be 385 ac.
- Coordination and cooperation with SpaceX was adequate except that access to the site was delayed by more than 48 hours due to pad safety concerns.
- The debris field exceeded the area delineated on Figure 27 of the May 12, 2022 Biological and Conference Opinion O2ETCC00-2012-F-0186-R001.
- No debris was documented on refuge fee-owned lands. All debris located on SpaceX and Boca Chica State Park lands.
- A 3.85 ac fire started south of the pad site on Boca Chica State Park lands.
- Sound level readings collected by a university researcher measured 144db at 2-miles from the pad site.
- Plume cloud deposited what we believe is pulverized concrete as far away as Port Isabel, 6.5 miles to the NW of the pad site.
- Concrete chunks up to 7-inches in size were found as far as 2,680 feet from the pad site.
- No dead birds were recovered.
- Our 3 temperature loggers did not detect significant changes in ambient temperature during the launch. These sensors are placed between 1,456 feet to 3,050 feet away from pad site.
- We need to have a follow up meeting with FAA to discuss post launch event. One question we had for FAA is what are there licensing requirements for the launch pad and does that undergo consideration to ensure it is adequate to handle the launch vehicle/booster?