

From: [Gardiner, Dawn](#)
To: [Combs, Brett A](#)
Subject: Fw: [EXTERNAL] Some lit on noise pollution and hair cell damage
Date: Tuesday, April 11, 2023 1:46:09 PM
Attachments: [Adler et al 1995.pdf](#)
[Ortega 2012.pdf](#)

From: Bilodeau, Stephanie A <stephanie_bilodeau@fws.gov>
Sent: Friday, February 17, 2023 11:04 AM
To: Perez, Chris <chris_perez@fws.gov>; Gardiner, Dawn <dawn_gardiner@fws.gov>; Reyes, Ernesto <ernesto_reyes@fws.gov>; Orms, Mary <mary_orms@fws.gov>
Subject: FW: [EXTERNAL] Some lit on noise pollution and hair cell damage

Good morning,

Attached are a couple articles about noise pollution in relation to birds. Adler et al refers to birds ability to repair damaged hearing (while mammals cannot) and the Ortega article specifically mentions that physical damage to birds ears occurs at the 140 dBA level. According to the diagram in the PEA for a booster static fire (Appendix B of the PEA, figure 30 on page 39), a dBA level of 140 is expected in approximately a one mile radius from the launch tower and a 150 dBA is expected on the launch pad. If this is true for last week's static fire, then the birds in the video we've all seen, which I believe were in the flooded flats just west of the launch pad, should have experienced 140dBA and would have damage to their hearing.

Thanks,

Stephanie Bilodeau

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From: Karl Berg <karl.berg@utrgv.edu>
Sent: Thursday, February 16, 2023 7:36 PM
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or responding.