



Promoting the protection, conservation and restoration of natural forest ecosystems and their processes on the Olympic Peninsula, including fish and wildlife habitat, and surrounding ecosystems

PO Box 461 • Quilcene, WA 98376-0461
www.olympicforest.org • info@olympicforest.org

To: Naval Facilities Engineering Systems Command, Atlantic.
Attention: Code EV21JB (Growler Project Manager)
6506 Hampton Blvd
Norfolk, Virginia 23508-1278

From: Olympic Forest Coalition
P.O. Box 461, Quilcene, WA 98376-0461

Subject: Draft Amended Analysis to Environmental Impact Statement for EA-18G “Growler” Airfield Operations at Naval Air Station Whidbey Island Complex, Washington

Date: April 25, 2025

Dear Sir or Madam,

Thank you for the opportunity to comment on the Navy’s Amended Environmental Impact Statement (EIS) on its EA-18G Growler jet operations. We appreciate the need for pilot training and are grateful for the sacrifices made by the members of our military and their families. We hope our comments here are taken in the spirit of strengthening the protection for our country, the relationship with communities you sacrifice to protect, and our shared environment.

Introduction:

We strongly believe that this Amended EIS neither addresses nor rectifies significant impacts previously identified on the administrative record, from the continued unprecedented expansion of Navy Growler activities into civilian environments that were previously unaffected. Our comments focus on procedural and substantive problems that must be addressed. The EIS as amended continues to show significant gaps and inaccuracies, and thus it evades, underreports, and still fails to analyze direct, indirect and cumulative impacts to human health, endangered species, land and marine environments, and historic and Tribal sites of importance. With this comment, we seek to point out specific areas that must be addressed, and to provide recommendations to correct the problems we identify.

By way of example of the seriousness of the deficiencies in this chain of National Environmental Policy Act (NEPA) documents, one of the most significant gaps that they neither included nor subsequently addressed is the addition of approximately 40 Growlers that were in the process of purchase and delivery before a NEPA process was initiated. The Amended EIS refers to a “net increase of **36 aircraft**.” The EIS stated in Volume 1, Abstract 1, that the total number of

Growler aircraft at Ault Field would be **117 or 118**. However, a Department of Defense (DOD) report¹ from 2016 stated:

“The procurement profile of the FY 2017 PB adds 7 EA-18G aircraft in FY 2016. The result of this addition will be a FY 2016 FRP contract for Lot **40 EA-18G aircraft**, which increases the total Program of Record (PoR) from **150 to 157**. ... **These aircraft are in the process of delivery ...**”

Of the now-160 jets mentioned in the EIS, not only does it appear that additional jets were retrofitted and their impacts not analyzed, but that the commitment of funds occurred before any NEPA process was started, which is illegal. This has made the 2018 EIS and the current Amended EIS into a retrofit for decisions already made. The Court also found it unlawful. A NEPA public process is not window-dressing. As found by the Court, the Navy is in violation of law under NEPA on several counts. The Navy has also violated the Administrative Procedure Act. While exceptions to the latter for “good cause” exist where notice and public procedure are found to be impracticable, unnecessary, or contrary to the public interest, the Navy has neither publicly availed itself of such remedies, or referenced the legal authority for them, or even mentioned it.²

In addition, Council on Environmental Quality (CEQ) Regulation 1502.9 states:

(c) Agencies: (1) Shall prepare supplements to either draft or final environmental impact statements if: (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

With the impacts from only 36 out of 118 working jets under current NEPA consideration, out of the total of 160 Growlers that the Navy now says includes 42 in “non-operational” or “preservation status,” it would appear that less than 25% of potential impacts have been analyzed via an EIS. While we understand that some earlier Growler acquisitions were covered in multiple previous NEPA processes that used the abbreviated Environmental Assessment route and claimed no significant impacts, there has been no way to understand the full scope and size of impacts without going back and adding up emissions, noise statistics, and training timetables listed in disparate documents across thousands of pages. This is unlawful segmentation. As a result, the full force of impacts from all of these jets remains largely unknown.

Little has changed with the Amended EIS to rectify this problem, despite a lawsuit by the State of Washington³ and findings by the U.S. District Court for the Western District of Washington that the Navy’s 2018 Final EIS and Record of Decision “violated NEPA by failing to disclose the

¹ Selected Acquisition Report (SAR), RCS: DD-A&T (Q&A) 823-378, EA-18G Growler Aircraft (EA 18G), As of FY 2017 President's Budget, March 17, 2016, pg. 7. <https://goo.gl/IQrY4K>

² Judicial Review Under the Administrative Procedure Act (APA). Congressional Research Service.

³ Washington v. U.S. Department of the Navy, 446 F. Supp. 3d 20, Case 2:19-cv-01059 Document 1 Filed 07/09/19. https://agportal-s3bucket.s3.amazonaws.com/uploadedfiles/Another/News/Press_Releases/Wa%20v%20Navy%20complaint.pdf

basis for greenhouse gas emissions, failing to quantify the impact of increased operations on classroom learning, failing to take a hard look at species-specific impacts on birds, and failing to give detailed consideration to the El Centro, California alternative.”

These are serious findings. However, to cite just one example, the Navy’s answer to the Court in Section 2.4.1 is a flat rejection of El Centro for reasons it chose to not discuss at sufficient length to justify the alternative’s rejection. The Navy’s statement eliminating the El Centro alternative “from detailed consideration” was followed by a long explanation on all the great things about Naval Air Station Whidbey Island (NASWI) and why the Navy prefers it. This did not constitute a site rejection; it was merely a stated preference. The Navy also chose to not consider any other alternative siting locations, such as NAS Lemoore, Naval Air Weapons Station China Lake, NAS Oceana, and Marine Corps Air Station Cherry Point, using the rationale that it had not been specifically ordered to do so by the Court. This does not meet the criteria for consideration of eliminating El Centro for siting, as ruled by the Court. Contempt of court refers to any behavior that disrupts or disrespects the court’s proceedings or authority. This can include acts of disobedience, disrespect, or interference with the court’s operations. Contempt can be either civil or criminal, with different penalties and purposes. It would be up to the Court to determine exactly what form of contempt the Navy’s behavior amounts to, but in the eyes of the public, contempt is contempt.

The inconvenience of having to share facilities with other branches of the armed services at other less-densely populated sitings does not outweigh the catastrophic potential for an air crash into a densely populated area with a hospital, schools, and residential area. All of these structures are located in such close proximity to low-altitude flight paths and the too-short runway, that the Navy is considering designating some of these areas as crash zones. Effects on property values of such designations are not considered in the Amended EIS, or anywhere else, for that matter.

So, neither the public nor the Court has been given a proper explanation of why the unsuitability of other named siting locations outweighs the exceptional risks to civilian life and property at Whidbey Island.

An agency must revise an EIS if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.⁴ The Amended EIS is incomplete and insufficient in multiple arenas. The repeated segmentation of Growler aircraft impacts has diminished the public’s ability to assess significant new information relevant to the environmental effects that have bearing on the proposed action and its impacts. A revised EIS must also include adequate public access to information and opportunity to comment. This has not consistently happened.

Therefore, the proposed action still represents an inappropriate and unlawful expansion regardless of any recent rollbacks to the law via executive order. Rollbacks are not retroactive, and the Navy cannot rewrite history. Recent executive orders directing the “review and repeal of unlawful regulations” and challenging ten Supreme Court decisions are themselves unlawful. An executive order cannot override existing federal laws and statutes or be used to bypass judicial

⁴ CEQ NEPA Regulations, 40 C.F.R. § 1502.9(c).

and legislative branches of government, which have equal power. The president cannot overrule the Supreme Court's interpretation of the law and cannot single-handedly change laws that have been passed by Congress. The Navy must therefore obey the law.

Neither the Draft, nor the Final, nor the Amended EIS have fulfilled the Navy's obligation to "evaluate the potential environmental impacts ... as well as the cumulative impacts of the Proposed Action and other local projects." How would that be possible when the documents don't even correctly state the full size and scope of impacts?

Public access to information and the opportunity to comment was also inappropriately limited in the procedure followed by the Navy. The comment period for the DEIS that ended on February 24, 2017, was the last chance the public had before this, to comment on the matter under the auspices of NEPA. Yet the jets have been flying anyway. The Navy itself stated, on page ES-2, "The Navy did not identify a Preferred Alternative prior to publication of the Draft EIS in November 2016 because it was evaluating operational and environmental considerations necessary to make that determination." Instead, it announced the Preferred Alternative on June 25, 2018, nearly three months prior to release of the Final EIS.⁵ Despite regulations, no public comment was allowed on the Final EIS after this new development. Instead, it was a "30-day waiting period" which did not allow comment. This violated the Council on Environmental Quality (CEQ) Regulation 1502.9. Limiting access to information and limiting the public's ability to comment has helped to hide the full scope of direct, indirect and cumulative impacts, most of which the Navy has minimized or ignored throughout the administrative process.

On February 24, 2017, the Washington Department of Health provided feedback⁶ to the Navy on noise levels around the Whidbey Island airfields. The feedback outlined how exposure to noise levels similar to those at the naval air station could cause negative health impacts, including sleep disturbance, cognitive impairment and cardiovascular disease. Try as it might, the Amended EIS cannot rationalize away impacts to children who are trying to learn in schools beneath the flight paths, by claiming that enough evidence does not exist. It most certainly does exist. Yet the Navy arbitrarily continues to dismiss impacts to human health and child learning from increased noise, despite a Court ruling and many peer-reviewed studies showing that exposure to noise⁷ can lead to adverse health and educational outcomes.

In April 2017, the Navy sent a letter to the U.S. Fish and Wildlife Service requesting informal consultation under Section 7 of the Endangered Species Act (ESA), stating that the Navy had concluded that its expansion of Growler operations "may affect, but is not likely to adversely affect the marbled murrelet." The Service responded that it did not concur with the Navy's determination that its proposed expansion of Growler operations was not likely to adversely affect the marbled murrelet, and recommended that the Navy request formal consultation under the ESA. The Navy then requested formal consultation. Despite finding adverse impacts to

⁵ US Navy. "Environmental Impact Statement for EA-18G "Growler" Airfield Operations at Naval Air Station Whidbey Island Complex, WA," September 2018. [https://media.defense.gov/2019/Feb/01/2002085201/-1/-1/EXECUTIVE%20SUMMARY%20AND%20FRONT%20MATTER%20\(1\).PDF](https://media.defense.gov/2019/Feb/01/2002085201/-1/-1/EXECUTIVE%20SUMMARY%20AND%20FRONT%20MATTER%20(1).PDF)

⁶ Washington State Department of Health. "Noise and Your Health." Includes letter with comments sent to the Navy. <https://doh.wa.gov/community-and-environment/noise>

⁷ Hill, I. E. J. (2012). Not Quite Bleeding from the Ears: Amplifying Sonic Torture. *Western Journal of Communication*, 76(3), 217–235. <https://doi.org/10.1080/10570314.2011.652287>

murrelets at all life stages, the Fish and Wildlife Service inappropriately concluded that Growler expansion would not “appreciably reduce marbled murrelet numbers” or jeopardize their continued existence” and, without sufficient justification, it approved incidental take, which is defined to mean harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in such conduct.⁸ The Service also did not define “appreciably.” Like all federal agencies charged with protecting the environment, the Fish and Wildlife Service was under tremendous pressure during the first Trump administration to reduce staff and expedite findings on timelines that were too short to allow sufficient analysis.

On March 12, 2019, the Navy issued a Record of Decision (ROD) authorizing an increase in Growler aircraft operations on Whidbey Island and in the Puget Sound region by 33 percent with an annual total of more than 97,500 Growler aircraft operations. Growler operations will occur year round, any day of the week, and at any time of day or night. The Navy anticipates that the expansion of its Growler operations will cover a period of 30 years from its 2018 EIS, or until 2048.

Despite this, in its November 2019 Biological Opinion (on the Marbled Murrelet, Long-Term Conservation Strategy Amendment to the 1997 Habitat Conservation Plan), the U.S. Fish and Wildlife Service stated, “If this rate of loss [of suitable habitat as well as birds] continues, the conservation of the murrelet may not be possible...” and predicted extirpation from the state by mid-century. The holes in these dueling documents are big enough to drive a truck through. In the State of Washington’s lawsuit,⁹ filed on July 9, 2019, Attorney General (now Governor) Robert Ferguson successfully argued, among other things, that the Navy adopted and relied on a “legally deficient EIS.” The Court vacated the Navy’s Record of Decision, its “arbitrary and capricious” Section 106 decision under the National Historic Preservation Act, and ruled that the Navy failed “...to make a reasonable and good faith effort to avoid or mitigate these adverse effects.”

How much plainer must it be? Yet this Amended EIS has rectified none of these problems and appears to defy the Court’s judgement. Thus, we cannot support the Navy’s proposed actions because they continue to be based on incomplete and/or misleading information, lack of public participation at crucial stages where changes were made, and continued reliance on outdated science.

The remainder of our comments on the Growler Amended EIS will include in detail the following deficiencies:

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⁸ 16 U.S.C. § 1532(19)

⁹ Washington v. U.S. Department of the Navy, 446 F. Supp. 3d 20, Case 2:19-cv-01059 Document 1 Filed 07/09/19. https://agportal-s3bucket.s3.amazonaws.com/uploadedfiles/Another/News/Press_Releases/Wa%20v%20Navy%20complaint.pdf

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1. Claiming a categorical exclusion for air quality neither solves emissions problems nor addresses the Court’s ruling:

The Navy’s climate change and air quality analyses remain piecemealed and inadequate. The EIS attempted to assess Growler operations at the NAS Whidbey Island complex, and analyzed aircraft operations conducted only in the vicinity of Ault Field and OLF Coupeville. Among the items that fell within this impermissibly narrow scope were climate change and greenhouse gas emissions (GHG). How does it remain possible to say to the public that flight operations between takeoffs and landings don’t count in the Navy’s emissions, especially when afterburner use has been exponentially increased? Afterburners use up to ten times the normal amount of fuel.

It is institutional dishonesty to measure GHG effects only for takeoffs and landings (as defined by the 2018 EIS and its Amendment). The Navy neither assessed the total GHGs emitted, nor did it admit to the total amount of impacts. These GHGs affect not only the wider surrounding area, but contribute to climate change regionwide and worldwide.

So now, in defiance of the Court’s finding, the Navy is further narrowing the scope of impacts by claiming an exemption, or categorical exclusion under NEPA, for greenhouse gas (GHG) emissions above 3000 feet. This is based on faulty assumptions and 25-year-old research.¹⁰ While commercial aircraft emissions above 3000 feet are indeed often excluded from certain calculations, like those related to local air quality, EA-18G Growler jets are neither commercial aircraft, nor are the fuel they use and their emissions comparable.

The commercial jet exemption granted by FAA is because their emissions are released at higher altitudes where they mix less with ground-level air and have a smaller impact on local concentrations. However, commercial jets tend to fly in straight lines from A to B at high altitude and without special maneuvers, and they don’t have afterburners for dogfighting, which uses up to ten times more fuel. Nor does the fuel carried by commercial jets contain the additives used in fighter jet fuel. Emissions released above the mixing height (assumed to be around 3000 feet) supposedly don’t mix with ground-level air as much, and are therefore said to have a “negligible effect” on ground-level pollutant concentrations in some areas. This may be true in commercial jet high-altitude flyover areas where upper troposphere wind belts at 30,000 to 43,000 feet can carry pollutants away.

¹⁰ Wayson, Roger L. and Fleming, Gregg G. “Consideration of Air Quality Impacts By Airplane Operations at or Above 3000 feet AGL,” Federal Aviation Administration, September 2000.

However, three things become problematic in relying on 25-year-old research¹¹ to assume that this many Growlers operating in the concentrated airspace above Whidbey Island Naval Air Station and its surrounding environs do not significantly impact regional air quality, public health, and the climate.

First, pollutants above 3000 feet don't just magically disappear. When injected at higher altitudes they tend to be carried further afield, but also, pollutants can gather in higher concentrations at the base of mountains. The Cascade Range just to the west of the naval air station is over 14,000 feet high and creates a barrier and a "mountain valley chimney" effect. This means that mountain-valley breezes can trap and concentrate pollutants in valleys, creating a second layer of pollution that can return to the surface and affect residents. None of this was analyzed in the EIS or its Amendment.

Second, comparing emissions from an EA-18G Growler to those from a commercial aircraft is inaccurate, because as previously stated, commercial aircraft lack afterburners. Growlers use 1,304 gallons of JP-8 fuel per hour, and ten times that much with afterburners. JP-8 fuel contains additives that are not found in commercial jet fuel. These chemicals include corrosion inhibition and lubricity improvers, fuel system icing inhibitors, static dissipator additives, anti-oxidants, metal deactivators, and thermal stabilizers. Workers have complained of smelling and tasting JP-8 for hours after exposure. As JP-8 is less volatile than standard fuel, it remains on the contaminated surfaces for a longer time, increasing the risk of exposure.¹² JP-8 exposure has been linked to hearing problems, but rather than being unable to hear sounds, the brain has a hard time deciphering the message. This central auditory processing disorder has been compared to dyslexia for the ears.¹³ Direct exposure to JP-8 can cause adverse effects that include skin and eye irritation, headaches, dizziness, difficulty breathing, general weakness, trouble concentrating, forgetfulness, trouble gripping things, potential reproductive and developmental toxicity, possible kidney damage, inflammation, and cardiovascular disease. Chronic exposure effects from air polluted by JP-8 either as post-combustion exhaust or raw fuel dumped are not sufficiently analyzed in the EIS or its Amendment. Post-combustion exhaust from jet engines is capable of acute and chronic toxicity to animals, plant and aquatic life, and soil. In a region known for its clean air, it is reasonable to assume that the probability of harm from the breathing of these hugely increased emissions constitutes a threat to public health. **Thus, the volume of use and nature of JP-8 fuel combined with the functional inability to exclude impacts of flight operations from takeoffs and landings disqualifies the Navy from being lumped into a categorical exclusion using commercial jet standards.**

Third, with regard to the 3,000-foot limit, mixing heights for these emissions are typically determined by analyzing vertical temperature profiles, which are unfortunately not routinely measured. They also vary with latitude, wind speed, wind direction, temperature, humidity, rainfall, and by season. Lower latitudes nearer the Equator receive more solar energy, leading to stronger convection and a deeper mixed layer, which means pollutants can be dispersed to greater heights, resulting in higher mixing heights. Conversely, higher latitudes or those where

¹¹ Ibid.

¹² Day, Dwayne A. "[Aviation Fuel](#)". U.S. Centennial of Flight Commission.

¹³ "[Exposure to jet fuel, not just noise, contributes to hearing problems](#)". *United States Department of Veterans Affairs*. March 20, 2014. [Archived](#).

cloud cover predominates, like the Pacific Northwest, receive less solar energy, resulting in weaker convection and a shallower mixed layer, which leads to lower mixing heights and a greater potential for pollutants to accumulate near the surface.¹⁴ **This alone should disqualify the Navy from a categorical exclusion.** During spring and summer, it is possible for more heating and thus more active convection to distribute pollutants throughout a deeper mixed layer. But during winter, with a cooler surface, mixing heights are lower, and thus more pollutants accumulate at or near the surface. The Navy is relying for its categorical exclusion on an FAA document that claims, “If NO_x [Nitrous Oxide] emissions are unimportant, mixing height will have little effect on the results, and the default value of 3000 feet can be used for more generalized results.” These are not generalized results, and the Navy should not be implying that NO_x isn’t relevant because the mixing altitude isn’t, and therefore significant impacts don’t exist. The effects of NO_x can be visible as an orange haze when Navy jets fly in cooler weather. The Navy’s attempt to justify this lacks both scientific and ethical bases.

Failure to analyze or even count greenhouse gas emissions above 3,000 feet, despite the FAA regulations that the Navy is trying to inappropriately bend to apply to itself, does not mean those emissions cease to exist, or can be functionally separated, or don’t contribute to a future non-attainment status for our air quality standards. Reasoning that El Centro’s current non-attainment status is justification for keeping the Growlers on Whidbey Island because their air is already filled and our air is cleaner, is flawed and unconscionable.

Based on data in the “Selected Acquisition Report for the EA-18G,”¹⁵ **one** Growler flying for **one hour**:

- uses 1,304 gallons of jet fuel (and up to ten times that much with afterburners);
- produces 12.5 metric tons of CO₂ (not counting afterburner use).

The per capita annual emissions in Washington State in 2011 were 10.8 metric tons per person (including all residential, commercial and industrial activities.) Therefore, **one hour** of Growler flight¹⁶ produces:

- 23% more than the CO₂ emissions than a typical Washington state citizen in residential, commercial and industrial activities emits in one year.

Put another way, **one hour** of Growler flying without afterburners produces:

- as much CO₂ as a typical car produces driving 29,500 miles;
- as much CO₂ as 656 cars driving 45 miles per hour;
- more CO₂ than 12.7 round trips from Anacortes to New York in a Toyota Prius;
- more CO₂ than an hour of operation by the entire ferry fleet of four vessels serving the San Juan Islands;
- more CO₂ than that emitted by the generation of electricity sufficient for 7 average hours of electricity consumption to meet the needs of all of San Juan County.

¹⁴ Roy, Surendra et al. “Studies on Meteorological Parameters and Mixing Height in Gold Mining Area,” Scientific and Academic Publishing, 2012.

¹⁵ Selected Acquisition Report for the EA-18G. File no longer available.

¹⁶ Calculations courtesy of C. Greacen, retired physicist at UC Berkeley.

The Navy's EIS projects 114,000 total annual flight operations at the NAS Whidbey Island complex, 89 percent of which (101,460) are to be flown by Growler aircraft,¹⁷ plus there will be an additional 29,600 Fleet Carrier Landing Practice (FCLP) operations at OLF Coupeville, **totaling 131,060 Growler flights**. Growlers use 1,304 gallons per hour (gph) in non-afterburner flight, so a quick calculation estimates that over a year, these 131,060 Growler flights alone would use roughly 170,902,240 gallons of fuel per hour—not counting afterburners. A gallon of JP-8 jet fuel produces approximately 21.5 pounds of CO₂. Thus, 131,060 Growler flights could emit nearly 3.7 billion pounds, or 1.6 billion metric tons, of CO₂ per hour of flight per year.

The Navy calculates impacts from its emissions for takeoffs and landings only, yet as the above calculations show, **significant emissions are expected to occur from flight operations. Why are these not included?** For example, the October 2015 Northwest Training and Testing EIS said that **air combat (dogfighting) operations, which employ heavy use of afterburners, would increase to 550 hours. This was a 244 percent increase. Yet emissions from 550 hours of dogfighting are not analyzed for Growlers in any NEPA document**, including the October 2015 EIS, which oddly enough, substituted for Growlers the no-longer-flown Prowler as the dogfighting aircraft in its air quality emissions Table D-3—**despite the fact that Prowlers didn't have afterburners**. Since Prowlers were retired by the Navy many years ago, and since they could only fly at about half the speed of a Growler, then listing Prowler emissions instead of Growlers discarded all information about **the additional 7.2 million gallons of fuel used for dogfighting with afterburners. This alone translates to more than 154 million pounds of CO₂ unaccounted for by any analysis**. It is the equivalent in emissions of around 360,000 average-sized cars driving 45 miles per hour for a year. In other words, with the projected frequency and duration of flight times, the Navy could produce each year as much as 51,000 times the average annual per capita emissions in Washington State and not have analyzed it. This represents a significant impact on the environment. Emissions at this immense scale contribute hugely to the greenhouse effect, leading to rising global temperatures, and can also cause ocean acidification, plus human health effects.

According to a Navy pilot we spoke with, the rule of thumb for bypass turbofan engines is that an afterburner nets about a 50 percent increase in thrust with at least a 500 percent to ten times increase in fuel consumption. So, **eliminating afterburner use from air emissions calculations by analyzing an aircraft that doesn't even have afterburners dishonestly hid a significant amount of exhaust emissions that subsequent NEPA documents have not corrected. A categorical exclusion does not remotely begin to solve this.**

As previously stated, it is not possible to separate the contributions to climate change and greenhouse gases resulting from takeoffs, landings, and local operations from the emissions of flight operations that occur beyond a 10 to 15-mile radius of NASWI runways. **To state the obvious under the law, flight operations are functionally connected to takeoffs and landings.** Their impacts cannot be ignored in a NEPA analysis. The recent diminution of NEPA's reach by presidential executive order does not negate NEPA's historical reach or the Navy's responsibilities. An executive order that exceeds its authority is not a "get out of jail free" card.

¹⁷ 2018 Final EIS Appendix A.

A categorical exclusion (CATEX) under NEPA is defined as a pre-determined category of actions that, based on past experience and knowledge, are deemed unlikely to cause significant environmental impacts, either individually or cumulatively. We have shown in this comment letter that impacts from Growler GHG emissions are significant and unaccounted for. So, cherry-picking the parts of the law, such as a CATEX, that the Navy wishes to apply to itself is unbecoming at best. Even if the Navy separates functionally related activities on the ground into different public processes, it is a fundamental fact that neither the air that swirls around the planet nor the greenhouse gas load it carries can be segmented. The idea that civilians have to point this out to the United States Navy is Kafka-esque.

We therefore ask once again that emissions from Growler activities that include flight operations beyond takeoffs and landings at NASWI be included in a revised EIS with NO categorical exclusion and an adequate comment period.

Regarding air quality standards: The Navy has admitted throughout its NEPA process that increases in flight operations "...are not covered by the NAS Whidbey Island AOP (Air Observation Post); however, these emissions contribute to regional emission totals and can affect compliance with NAAQS" (National Ambient Air Quality Standards). **This was new information; the public was not aware that air quality in this region could potentially be downgraded to EPA non-attainment status. How is that not a significant impact?**

EPA-designated non-attainment areas for air quality include nine large cities: Atlanta, Boston, Chicago, Houston, Philadelphia, Phoenix, New York, Los Angeles, and Washington, DC. If this region also becomes a non-attainment area due to the contribution of Navy emissions, and these emissions have not been wholly evaluated for direct, indirect and cumulative impacts from all aspects of flight operations, as it appears they have not, then those who are harmed from breathing this large increase in air pollution should rightfully have legal standing to pursue remedies in court. **The Navy must address this extraordinary shortcoming in a revised EIS that includes all relevant emissions information, all impacts, and that does not try to segment the air, or avoid cumulative analysis, or ignore the contribution of such emissions to climate change. Moreover, it must take immediate steps to prevent further significant degradation of air, water and soil by reconsidering alternate homeporting locations for the Growler fleet.**

The Navy has stated: "Maximum transit distance from the home field is 50 nautical miles, which is the distance a Growler can travel on a fuel load in order to conduct eight to ten FCLP (Fleet Carrier Landing Practice) passes with sufficient fuel to return to its home field." Eight to ten touch-and-go passes per plane requires a lot of afterburner use. But the Navy revised significantly downward its estimates of afterburner use, from 30 minutes to 20 seconds. It did not say whether this was 20 seconds per takeoff and landing, and did not supply the total amount of afterburner use.

This was still an enormous revision, and it was also new information. The Navy further stated: "The Aircraft Environmental Support Office estimates a 30-minute maximum setting (with afterburner) time-in-mode for Growler take off; however, emission factors have been adjusted to account for a more accurate estimate at NAS Whidbey Island of 20 seconds at this setting (NAS

Whidbey Island Operations Command, 2016)." From 30 minutes to 20 seconds? If this was not a typographical error, the Navy has yet to explain the rationale for such a drastic reduction, despite requests in the administrative record. It also appears to conflict with a previous statement saying afterburner maintenance events would last for 5 minutes per day. And during touch-and-go operations, afterburners are used heavily and intermittently, for hours at a time. So, which use level is it? Such afterburner use is not overtly stated in any tables or calculations.

Regardless, revising afterburner use time downward from 30 minutes to 20 seconds is significant in the calculation of emissions, because fuel use is so much greater with afterburners than without; simple calculations show 30 minutes use at a rate of up to 10,000 gph per jet nets orders of magnitude greater fuel use than does 20 seconds. If, say, four jets practicing 8-10 touch-and-go's at the OLF runway used their afterburners for 30 minutes, they would use 20,000 gallons of fuel, but a 20-second limit would use a fraction of that. We suspect that this was not fully explained in the EIS and its Amendment, and was thus meant to confuse, because emissions for 20,000 gallons of fuel used by only four jets during just one FCLP practice session would alone emit nearly half a million pounds of CO₂.

Therefore, we again ask that the Navy **please explain in a revised EIS how Growlers are projected to use only 20 seconds of afterburner, when 30 minutes of afterburner was quoted in the DEIS as the guidance issued by the Aircraft Environmental Support Office.**

The up to 160 Growlers at NASWI can fly 8 to 16 hours per day, including on weekends. If each Growler has a planned service life of 10,000 hours,¹⁸ then we are looking at a conservative cumulative estimate over the life of up to 160 aircraft, of about 21 billion metric tons of CO₂, not counting afterburner use. This also does not count emissions from any other aircraft at NASWI, such as P-8A Poseidons. They are considered a "separate, ongoing action" and are not adequately analyzed for noise, either. In fact, emissions are also not addressed for the squadrons of P-8A, H-60, C-40, and transient aircraft in any cumulative fashion. The Navy is one of the largest air polluters, not just on the Olympic Peninsula, but in the Pacific Northwest. We are looking at a grim future picture of chronic air and noise pollution, habitat and public health degradation, and major contributions to climate change, from an area that is globally renowned for its World Heritage, Biosphere Reserve, Marine Sanctuary and wilderness values, and its vibrant culture and tourism economy.



2. Growler noise effects on children dismissed:

An important study cited by the Navy says: "There is sufficient evidence for a negative effect of aircraft noise exposure on children's cognitive skills such as reading and memory, as well as on standardized academic test scores. Evidence is also emerging to support the insulation of schools that may be exposed to high levels of aircraft noise."¹⁹

¹⁸ Congressional Research Service. Navy F/A-18E/F and EA-18G Aircraft Procurement and Strike Fighter Shortfall: Background and Issues for Congress.

¹⁹ Aviation Noise Impacts - State of the Science. Basner, Mathias; Clark, Charlotte; Hansell, Anna; Hileman, James I; Janssen, Sabine; Shepherd, Kevin; Sparrow, Victor.

The Navy flies its Growlers at low altitude right over schools. Has the Navy offered to pay for insulation or other recommended structural improvements that might help shield schools under or near its flight paths from Growler noise?

The Navy's EIS acknowledged the above quoted statement from a prominent study, plus numerous others that have examined the effects of aircraft noise on children. Notably, it also cited a report that concluded, "Children demonstrate annoyance responses to noise, and noise is also related to lower well-being and stress responses, such as increased levels of adrenaline and noradrenaline. Noise does not cause more serious mental health problems, but there is growing evidence for an association with increased hyperactivity symptoms. Studies also suggest that noise might cause changes in cardiovascular functioning, and there is some limited evidence for an effect on low birth weight."²⁰

It should also be noted that other studies (not cited) show that some noise is widely recognized as a form of torture, fear, and non-lethal weaponry that has been aimed at civilians.^{21 22}

There is robust evidence, in the quoted study, for an effect of school noise exposure on children's cognitive skills such as reading and memory, as well as on standardized academic test scores.²³ In fact, the Amended EIS agrees that several schools under or near the flight paths "could" experience "negative impacts to long-term memory, reading comprehension, mathematics test scores, and failure rates." However, the Navy claims that test scores for children in impacted schools differ in only a percentage point from State scores and led to only a one-month delay attaining grade-level reading comprehension on standardized tests—a curious use of data to refute truckloads of scientific studies whose data the Navy calls "incomplete." It further says these impacts to children would be "partially mitigated" by the Navy's "efforts" to reduce operations during what it calls "key academic testing periods." **Is the Navy actually going to coordinate with schools when their testing occurs, and what defines "key academic testing periods?" Is it only for federally required tests?**

Responsible decision-making incorporates elements of the Precautionary Principle²⁴ and uses the Best Available Science. After so many years of unsuccessfully urging the Navy to use Best Available Science, we feel compelled to define it: While basic definitions can be found in laws, court rulings and other sources, there is general agreement in agencies, the courts, and scientists that it must be reliable, unbiased, objective and value-neutral, meaning it is not influenced by personal views. It is the result of the scientific process and hypothesis testing by scientists. And it is based on current knowledge from relevant technical expertise, and must be credible. According to the Union of Concerned Science, it is also "...dynamic and constantly evolving, meaning that the best available science builds on this on-going cycle of scientific inquiry as well

²⁰ Stansfeld S, Clark C. Health Effects of Noise Exposure in Children. *Curr Environ Health Rep.* 2015 Jun;2(2):171-8. doi: 10.1007/s40572-015-0044-1. PMID: 26231366.

²¹ Hill, I. E. J. (2012). Not Quite Bleeding from the Ears: Amplifying Sonic Torture. *Western Journal of Communication*, 76(3), 217–235. <https://doi.org/10.1080/10570314.2011.652287>

²² Acoustic Noise as a Non-Lethal Weapon - Roman Vinokur, Wieland Associates, California

²³ Stansfeld, S., Clark, C. Health Effects of Noise Exposure in Children. *Curr Envir Health Rpt* 2, 171–178 (2015). <https://doi.org/10.1007/s40572-015-0044-1>

²⁴ The Precautionary Principle will be discussed in more detail in Section 3, but applies here, too.

as data and evidence from a range of sources. Inherently, best available science also relies on peer review, and draws on experts across disciplines.” **Best Available Science is not limited to what the Navy thinks will benefit itself.**

Despite all that, the Navy goes on to say in Section 2.3.1, “Although evidence has begun to show a stronger link between aircraft noise exposure and cognitive effects in children, the ongoing need for further research and the adjustment for confounding factors means that the existing data remains incomplete and does not support a firm causal connection.” The Navy has been saying this for years, as evidence to the contrary continues to accumulate—that it does not use. The Navy knows full well that Growler noise is harming children, yet it continues to prevaricate. How many scientific studies will be enough? What standard of proof does the Navy require? It has never clarified. The Navy calls this uncertainty a “limitation,” but the only people being limited are the children its noise is harming. The Navy is not just pitting its own in-house “analytical approaches and available research methods” against overwhelming evidence from the entire scientific community, it has appointed itself judge, jury, prosecutor, castigator and punisher, all in one. The public, normally generous, is weighing the Navy’s reckless cruelty against the lives and futures of their children in schools, who cannot escape the noise.

So, the Navy deserves to be asked the same question an Army lawyer once asked a cruel, willfully ignorant United States Senator: “Have you no sense of decency?”



3. Impacts to threatened and endangered species still inadequately analyzed.

Despite the Court’s finding that the Navy’s 2018 Final EIS and Record of Decision “violated [the National Environmental Policy Act (NEPA)] by failing to ... take a hard look at species-specific impacts on birds,” the Navy states in its Amended EIS: “These three species (marbled murrelet, spotted owl, and streaked horned lark) were analyzed in the 2018 Final EIS (Section 3.8.2.2.1) and did not require an amended analysis. Therefore, they are not addressed further in this analysis.” The Navy neither justifies this lapse nor states upon what authority it rests. Given its attention from the Court, the 2018 analysis of marbled murrelets failed, at two pages long, to be not only *not* a hard look but completely at odds with the extant science. Boilerplate language about species does not make a meaningful analysis. The unlawful dismissal of impacts to endangered species is unacceptable. The Navy’s legally required annual monitoring reports for recent years are also not publicly available, if they even exist.

These comments therefore apply to all seven threatened and endangered bird species listed in Table 2-3 on page 7 of the Amended EIS. The EIS concluded that there will be no significant or population-level impacts to threatened or endangered species or other wildlife, yet acknowledged in section A.3.12, “The relationships between potential auditory/physiological effects and species interactions with their environments are not well understood. Mancini et al. (1988), assert that the consequences that physiological effects may have on behavioral patterns are vital to understanding the long-term effects of noise on wildlife. Questions regarding the effects (if any) on predator-prey interactions, reproductive success, and intra-inter specific behavior patterns remain.”

By using a 35-year-old report, the addition of “if any” regarding the justification of these impacts, is an egregious lapse of not only science, but judgment. We have been pointing out to the Navy in comments over many years, the existence of newer studies.

The Navy’s presumption that federally-listed species such as the marbled murrelet are habituated to the high noise levels caused by Growler takeoffs and landings, and thus will not be significantly impacted by the addition of 36 Growlers (not to mention by the full fleet of them) relies on an unrelatable 2004 study in Juneau, Alaska, about boat noise, which cannot compare to Growler noise in either frequency or volume. It also continues to ignore the following series of significant problems which were identified in previous comments for the administrative record:

- a.) The EIS considers only chronic noise in areas near the runways, and fails to consider intermittent noise disturbance events in areas where murrelets may not be habituated; for example, these birds range from coastal marine waters, where they forage for food, to forested areas up to 55 km inland. To consider only one occupied foraging area near the runways out of many throughout Puget Sound and the Strait of Juan de Fuca, (Raphael et al. 2015) and to not consider effects of flight operations on the terrestrial mature forest habitat that these birds return to each night, renders the analysis grossly incomplete.
- b.) A 2009 study concluded that the probability of nest site usage was greater with increasing distance from roads that produced man-made noise.²⁵ The alteration of habitat by noise renders it less usable.
- c.) The Navy continues to ignore nearly three decades of more recent research, and still does not use the Best Available Science.
- d.) It fails to acknowledge the unlawful segmentation resulting in omission of the cumulative impacts of up to 160 Growlers, which were analyzed separately in smaller batches. Adverse impacts from an increase this large would be significant, were they evaluated together.
- e.) The cumulative impacts from a further increase in flights named in previous NEPA documents, starting with 130,000 flights that included 79,000 Growler flights and lots of low-altitude flying, and now states an additional 97,500 Growler flights, and have not been considered. This many flights could easily and cumulatively impact not only murrelets but also large numbers of migratory birds along the coast each spring and fall. The section on the Migratory Bird Treaty Act was dismissed with woefully insufficient analysis.

²⁵ Golightly, Richard, et al. Characteristics of Marbled Murrelet (*Brachyramphus marmoratus*) Habitat in Northern California, Humboldt State University, February 2009. <http://humboldt-dspace.calstate.edu/bitstream/handle/2148/823/Characteristics%20of%20Marbled%20Murrelet%20habitat%20in%20Northern%20California%20Feb%202009%20locked.pdf?sequence=1>

The Precautionary Principle has been widely incorporated, in various forms, in international environmental and public health agreements and declarations, and further developed in a number of national laws. An element common to the various formulations of the Precautionary Principle is the recognition that lack of certainty regarding the threat of environmental harm should not be used as an excuse for not taking action to avert that threat. It recognizes that delaying action until there is compelling evidence of harm will often mean that it is then too costly or impossible to avert the threat—in this case, of functional extirpation of a federally-listed species (marbled murrelet) whose Washington population has been declining at rates between 4.4 and 7 percent per year and is now more than 44% smaller than it was in 2001 (Lance and Pearson 2016). Use of the Precautionary Principle promotes action to avert risks of serious or irreversible harm in such cases. The Principle is based on the recognition that a false prediction that a human activity *will not* result in significant environmental harm will typically be more harmful to society than a false prediction that it *will* result in significant environmental harm. It therefore provides a fundamental policy basis to anticipate, avoid and mitigate threats to the environment. Integral to decision-making that incorporates elements of the Precautionary Principle is the use of Best Available Science.

While the term “Best Available Science” is a moving target in time, the Navy continues to rely on the aforementioned 35-year-old literature review (Manci et al. 1988) that is widely quoted in numerous DOD documents, to support the claim that enough questions remain about effects of jet noise on wildlife to warrant doing nothing about it. Does the Navy honestly believe that there has been no research addressing these questions in 35 years? Why does it not properly use and cite the considerable volume of that research?

Besides promoting a baseless claim, the Navy has failed to disclose that the Manci review discussed many studies that actually did conclude the opposite: for example, one study concluded that wild ungulates appear to be much more sensitive to aircraft noise disturbance than domestic livestock, yet the latter, while more adaptable to it, were still documented to have primary and secondary effects that included reduced milk production, increased glucose concentrations, decreased hemoglobin levels, increased heart rate, and reduction in thyroid activity. Further, a 1983 study suggested that 2 of 10 cows in late pregnancy aborted after showing rising estrogen and falling progesterone levels. These increased hormonal levels were reported as being linked to just 59 aircraft overflights. A similar study reported abortions occurred in three out of five pregnant cattle after exposing them to flyovers by six different aircraft (U.S. Air Force 1994b). Another study suggested that feedlot cattle could stampede and injure themselves when exposed to low-level overflights (U.S. Air Force 1994b). How does the Navy continue to justify that extremely sensitive marbled murrelets can habituate to Growler noise that reaches documented injurious levels in large domestic livestock and in humans? The answer is it cannot.

Studies of terrestrial mammals have shown that noise levels of 120 dBA can damage mammals’ ears, and levels at 95 dBA can cause temporary loss of hearing. High-noise events (like a low-altitude aircraft overflight) may cause birds to engage in escape or avoidance behaviors, such as flushing from perches or nests (Ellis, et al. 1991). These activities impose an energy cost on the birds that, over the long term, may affect survival or population growth. The Navy obliquely

acknowledges this but still claims impacts are not significant, which leads one to wonder if the only impact the Navy might consider significant is death.

In addition, the Navy superficially acknowledges that birds may spend less time engaged in necessary activities like feeding, preening, or caring for their young because they spend time in noise-avoidance activities, resulting in lower reproductive success and population fecundity. So, even if one or more of the studies in that literature review concluded that physiological/auditory effects were not well understood, the Navy should not be implying that they are just as poorly understood 35 years later.

The Fish and Wildlife Service's July 2016 Biological Opinion (BiOp) said, "The decline in murrelet populations from 2001 to 2013 is weakly correlated with the decline in nesting habitat, with the greatest declines in Washington, and the smallest declines in California, indicating that when nesting habitat decreases, murrelet abundance in adjacent marine waters may also decrease." The BiOp acknowledges that current estimates for reproductive success are well below the levels needed "...to maintain or increase the murrelet population" in all areas of the Pacific Northwest where the murrelet is found. Multiple studies have shown that noise makes habitat unusable for species like the marbled murrelet.

In a curious omission, the list of threats to murrelet survival and recovery includes habitat destruction and modification of the terrestrial environment from timber harvest and human development, but among the other threats, the BiOp does not list military jet noise or sonar. Yet while the highest conservation priority is reestablishment of abundant supply of high-quality nesting habitat, and while it acknowledges that murrelet populations in the areas where the Navy will most frequently be operating have "lost resistance to deleterious population-level effects and are at risk of continual declines," it all but admits outright that the marbled murrelet population in these areas is headed toward extirpation, because "activities which degrade the existing conditions of occupied nest habitat or reduce adult survivorship and/or nest success will be of greatest consequence to the species, reinforcing the current marbled murrelet population decline throughout the coterminous United States." To have such egregious omissions and conflicting statements in a document that allegedly supports the Navy's proposed activities is concerning, especially when one considers the Navy's influence on the Fish and Wildlife Service's actions as revealed in correspondence from a Navy whistleblower (discussed below).

We question the Navy's continued reliance on the 1988 Mancini literature review, not because its research is at least 35 years old, but because when used as a sole reference despite the existence of newer research, it enables the Navy to claim that too many questions abound for scientific certainty. A much more recent synthesis of two decades of scientific literature on noise effects on wildlife was published in 2016, *before* the DEIS was released. Yet despite the Court's findings, the Navy is still using the 35-year-old study and has not corrected its uncertainty statements. If not availing itself of the individual studies produced over the last 35 years, then why does the Navy not at least acknowledge that more recent research exists? Claims of using the Best Available Science are therefore specious. When a federal agency cites the absence of evidence while failing to use the large volume of it that actually exists, it is not just disingenuous, it is illegal. It is also objectively wrong and unethical for a federal agency to cherry-pick a single

statement of doubt from an old review of scientific literature in which not all of the studies it referenced reached that conclusion.²⁶

The Amended EIS therefore continues to fail in this aspect, too. Science is a process. It is not a product or the outcome of deliberations. In that light, the Best Available Science directive rightfully references not science, but “scientific data,” meaning an element or product of the scientific process or a synthesis of the most reliable knowledge at a point in time. While the 1988 Mancini literature review marked an appropriate point in time on which to base data-driven decisions, much has been learned since then, about physiological effects of noise on animals, that would help to mitigate the EIS’s continuing failure to use the Best Available Science. For example, the 2016 synthesis of two decades of research on effects of noise on wildlife concludes that while “taxonomic groups vary in auditory capabilities,” the “...majority of studies documented effects from noise, including altered vocal behavior to mitigate masking, reduced abundance in noisy habitats, changes in vigilance and foraging behavior, and impacts on individual fitness and the structure of ecological communities.” Also, “This literature survey shows that terrestrial wildlife responses begin at noise levels of approximately 40 dBA, and 20% of papers documented impacts below 50 dBA.”²⁷

The Navy has drawn a clear but inappropriate line between permanent and temporary threshold shift (TTS), which is a term for hearing loss. The Navy’s long-held position is that temporary threshold shift does not result in tissue damage including hair cell loss, and is therefore temporary and non-injurious; the Navy considers TTS to be “auditory fatigue.” During negotiations with the Navy on the Biological Opinion, the Fish and Wildlife Service maintained that TTS does indeed result in hair cell loss, and is thus considered an injury. Internal Navy emails obtained from a whistleblower²⁸ sneeringly stated that FWS biologists had “a fundamental lack of understanding about acoustics,” said, “we gave them a brief tutorial on Sonar 101,” and described bringing the Deputy Assistant Secretary of the Navy onto a conference call, evidently for its intimidation value to the FWS biologists.

The Navy also expressed concern that the Fish and Wildlife Service was not separating harassment from harm. “We [Navy] explained that the Navy’s proposed criteria would allow for them [FWS] to separate harassment from harm. This is biologically significant from an animal’s perspective, as well as significant from a public perception stand point (behavioral harassments should not be quantified as harm).”²⁹ The law does not agree with the Navy’s assessment. The definition of harm under the Endangered Species Act does not accommodate separation of temporary from permanent threshold shift, nor does it allow “auditory fatigue” or harassment to be excluded from its definition of harm.

During these negotiations, the Navy also said: “There is a physics constant called “impedance” and they [FWS] disagree with that value. If they change to the actual physics constant (as Navy

²⁶ <http://www.noisequest.psu.edu/noiseeffects-domesticanimals.html>

²⁷ Shannon, Graeme et al. A synthesis of two decades of research documenting the effects of noise on wildlife. *Biol. Rev.* (2016), 91, pp. 982–1005. doi: 10.1111/brv.12207

²⁸ Internal email, “USFWS Call Recap 9/9/15 regarding marbled murrelet criteria,” from the Navy’s Andrea Balla-Holden to Navy staff, September 10, 2015.

²⁹ *Ibid.*

suggests) then their criteria change from phase I to phase II jumps up almost 30 dB. This causes them concern that it's too great a change and that the Navy is "not being conservative enough" in our proposal. However, criteria does not "conserve a species" it only allows for an evaluation of effects.”³⁰

The exclusion of auditory fatigue or harassment is the crux of the matter: of two federal agencies in consultation under Section 7 of the Endangered Species Act, only one, the Fish and Wildlife Service, was pursuing the conservation of the species. The Fish and Wildlife Service was seriously hampered in its duty to protect species and the environment. The Navy cannot ignore its own duty to uphold the law – including the Endangered Species Act and NEPA. Thus, the Navy has failed to carry out its mission within existing legal parameters.

Because of the Navy’s failure to provide the FWS with information it needed, the FWS had to make assumptions. To wit, the BiOp said: “For scenarios pertaining to marbled murrelets, we also had to make assumptions about where and when the Navy would conduct the proposed activities. For example, hypothetically, if the Navy stated that a given activity would occur year-round at distances greater than three nm [nautical miles] from shore in the W-237 area, we would need to form assumptions about how much of the activity would be done during the summer and how much during the winter, as well as how much of the activity would be carried out between three and 12 nm [nautical miles] from shore, and how much of the activity would be carried out less than 50 nm from shore.”³¹

In other words, the FWS was not given enough information about when and where the bulk of Navy training and testing activities would be occurring in the seasonal presence or absence of listed species at different times of the year, in order to be specific rather than generic about impacts to these species. Table 4 in the BiOp reveals that FWS had to make such assumptions for torpedo testing, underwater unmanned vessel testing events, and gunnery, bombing, and missile exercises (both surface to air and air to surface) plus maritime patrol aircraft exercises. The total number of Navy operational “events” that FWS had to make assumptions about exceeded 450. Yet the Navy did not provide a definition of an “event”, which could last from a few minutes to several days.

The Navy internal email also said, “They [FWS] asked if we could limit our actions to 5 years and we said no.” The normal duration of a Biological Opinion’s validity before it expires has traditionally been 5 years. Despite acknowledging that vital population trend information for the marbled murrelet population was missing, the FWS made the duration of its Biological Opinion good for 20 years.

As previously documented, noise degrades habitat as well as a species’ ability to carry out its daily activities. In the marbled murrelet Long Term Conservation Strategy, daily timing restrictions on forest practice activities apply only during the birds’ daily peak activity periods (one hour before official sunrise to two hours after official sunrise and from one hour before official sunset to one hour after official sunset) during the nesting season. Unfortunately, after the chick hatches, adults must make visits to and from the nest throughout the day and are

³⁰ Ibid.

³¹ Personal communication, US Navy.

subject to disturbances throughout the day (USFWS 2012). Murrelets spend 0.3 to 3.5 hours per day (mean 1.2 ± 0.7 hours per day) commuting to nests during the breeding season (Hull et al. 2001). USFWS (2012) reports “Based on a compilation of radio-telemetry data (Golightly, R., in litt. 2010), we estimate that up to 10 feedings could occur during the mid-day portion of the nestling phase (Livezey, K., in litt. 2012).”

Despite this, there are no time restrictions on military activities regarding low flights over the Washington outer coast, where the murrelet’s decline is most serious. Noise and visual disturbances throughout the day can cause an adult murrelet to abort one or more prey deliveries to the nestling, which increases the energy cost per food delivery attempt and increases the risk of predation of the adult (Hull et al. 2001, Kuletz 2005). Such disturbances are considered significant because they have the potential to reduce hatching success, fitness, or survival of juveniles and adults (Hébert and Golightly 2006, USFWS 2012). The above are mostly from the Fish and Wildlife Service’s own research, yet effects from low-flying Navy jets were not adequately considered. We have also discussed elsewhere in this comment letter the lack of accuracy with regard to measuring or modeling real noise levels produced by Growlers.

In a November 2015 letter to the Superintendent of the Olympic Coast National Marine Sanctuary,³² the Navy stated that, “...permanent threshold shifts (Level A harassment) involve some tissue damage and a permanent reduction in hearing sensitivity and [Navy] agrees that these effects should be considered injurious to an individual marine mammal. However, the Navy’s position remains that Level B harassment takes should not be characterized as an injury to sanctuary resources as they do not constitute physical injury to the species.” This argument simply does not apply to marbled murrelets, tufted puffins, and northern spotted owls, in part because the unnamed surrogate species that were used to quantify the amount or extent of anticipated take do not appear to have been adequately analyzed, and because injuries and behavioral disturbances were being considered by the Navy in the context of the Marine Mammal Protection Act, not the Endangered Species Act under which these birds are protected. As previously stated, the ESA definition of harm does not allow for segmentation of impacts.

How do you know what damage is permanent and what’s temporary, in a rare, tiny and secretive marbled murrelet, or a slightly more robust tufted puffin or spotted owl? More fundamentally, where do you draw the line on hearing loss for species that depend on hearing for survival? What do the species that depend upon hearing do for protection from predators while recovering from not being able to hear properly? Recovery can take hours, days or weeks, and may or may not be a full recovery. **How is it possible to say with any degree of certainty that recovery from a temporary threshold shift has taken place in a wild bird, when the surrogate species being tested is a parakeet?**

What is the contribution of Growler jet noise to habitat loss in formerly quiet areas? Why is this not addressed in the Biological Opinion or in the Amended EIS? And what about repeated noise or explosive events as opposed to one or two? In the case of marbled murrelets, which spend 90% of their lives on or in the water from along the coast to 50 and even 250 miles offshore, it’s not so easy to establish what is temporary and what is permanent harm, when it comes to exposure to undersea and in-air explosions, plus sonar, plus jet overflights. **How is it also**

³² http://www.nmfs.noaa.gov/pr/permits/incidental/military/navynwtt_2015loa_ocnms_letter.pdf

possible to document or establish accurate thresholds of temporary versus permanent tissue injury by relying on a 1974 military study on domestic chickens, ducks and geese to calculate “probabilities”?³³ **Weight differences alone, never mind the wildness factor, render such measures wild guesses at best. Because the Navy continues to fail to supply the Fish and Wildlife Service with sufficient information to make such a judgment, the FWS was forced to improvise in its Biological Opinion. How is it possible for this to be valid for the next 20 years?**

With regard to the Navy’s influence over the FWS on mitigation, the Navy said in internal communications:

*“USFWS discussed with the Navy a couple of mitigation proposals during this [September 3, 2015] meeting. They requested that the Navy consider adding the following two mitigation items to our proposed action to help reduce effects which they claim will help expedite their analysis. The mitigation items were as follows: 1) Carry into NWTT [Northwest Training and Testing EIS] the marbled murrelet monitoring the Navy currently does in the inland waters for UNDETS [Undersecretary of Defense] under NWTRC [Northwest Training Range Complex, from a 2010 EIS]. However, add the requirement that instead of generic observers and shutting down in the presence of any bird that we use certified marbled murrelet observers that have taken USFWS's training class. We indicated that we didn't think it would be feasible to have certified observers. We also asked for clarification on how it would expedite the analysis if we added this mitigation measure. They wouldn't have to do as much analysis on the overlap since the monitoring would help preclude most take. They weren't willing to say that adding this mitigation measure would put us in a no jeopardy situation. They felt it was too pre-decisional since they don't know/have the criteria or zones of effect. We indicated that we would consider this but that we preferred to do the analysis without any mitigation, make their determination of take, and then show (quantitatively) how any mitigation measure they propose actually reduces this take. We felt it was more transparent to the public and would show a clear nexus between any mitigation and reduction of impacts.”*³⁴

The Navy continued with:

“2) In the offshore area, any activities that we use marine mammal observers to ensure a mitigation zone is clear to also have them look for an ensure the zone is clear of albatross. We clarified that we don't use MMOs but our Navy personnel that are lookouts receive training in sighting/identifying marine mammals. We told them that not all activities have marine mammal observers because some activities are events in which an object is fired several 10s of km away from a ship and it isn't practical for them to observe that far. We indicated for some activities that have air support that the pilots sometimes serve as lookouts to clear a target area, but that clearing an area for marine

³³ Damon, Edward G, et al. The Tolerance of Birds to Airblast. Lovelace Foundation for Medical Education Research. Prepared for the Defense Nuclear Agency, 23 July 1974.
<http://www.dtic.mil/dtic/tr/fulltext/u2/785259.pdf>

³⁴ Personal communication, US Navy.

mammals would be different than albatross because the much smaller size of albatross.”³⁵

So, if the Navy won’t accept mitigation measures such as using certified observers trained by the FWS, without demanding quantification of reductions in take or a no-jeopardy assurance, for which they refuse to provide accurate operational information, and if they fire into an area without clearing it first, then the Navy’s ability to document actual takes continues to remain suspect.

As early as August 2015, the Navy was pressuring the FWS and attempting to steer the process. A Navy official said, “I would like to explore the possibility of getting ASN [Assistant Secretary of the Navy] (EI&E) approval to release the Final [Northwest Training and Testing] EIS even without having a Draft Biological Opinion from FWS. We did not discuss it with FWS today, but maybe we could request assurances from FWS that we would not have any jeopardy conclusions in advance of a Draft BO to support this COA [course of action] (there certainly have not been any indications that we might be anywhere close to a jeopardy call)?”³⁶

The Navy released its NWTT Final EIS in October 2015 without a public comment period and without completing any of the required federal and state consultations. It abruptly terminated consultation with the State of Washington a month later, over the State’s objections, and it did not receive the Biological Opinions from NOAA and the Fish and Wildlife Service until November 6, 2015, and July 21, 2016, respectively. The Biological Opinion is good for 20 years, and the Navy then announced another EIS for/and another increase in activity in the Northwest Training and Testing Range for summer 2017. This segmentation and avoidance of legal requirements is unacceptable and illegal; the cumulative impacts on endangered and other species will continue to be significant and undocumented.

A study that ended in 2015 estimated only 7500 marbled murrelets remaining in Washington, but with declines of at least 4 percent per year, the population continues to plummet in the decade since. A population viability analysis showed it is more likely than not that the state population will be between a quarter to half of its current size after 50 years, meaning, between 2,077 and 2,182 birds. Given that the Navy observes guidance from the Aircraft Environmental Support Office, which directs Navy aircraft to fly “over sparsely populated areas, [where] aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure,” then the levels of noise are likely to degrade or render uninhabitable even more marbled murrelet habitat, especially along the outer Washington coast where population declines are most severe.

In its letter to the Olympic Coast National Marine Sanctuary staff, the Navy wrote, “There is no science to support Navy activities have been detrimental to any Sanctuary resources.” It went on to caution Sanctuary staff about drawing conclusions of some areas being biodiversity “hot spots” and making “assumptions of importance,” because such studies were “limited and focused” without “review of best available science.” Irony aside, the Navy added that it was familiar with these studies used by Sanctuary staff, because most were conducted under Navy

³⁵ Personal communication, US Navy.

³⁶ Personal communication, US Navy.

funding. If this was not an implied threat to Sanctuary funding for these studies, we question why the Navy felt compelled to write it.

If the Navy wishes to caution agencies about the use of Best Available Science, then it is entirely appropriate for agencies and the public to question which standards the Navy is using.

A 2011 study on acute and chronic impacts of long-term vehicle noise exposure to the reproductive success of northern spotted owls concludes, "...populations can compensate for perturbations up to a threshold, beyond which disturbance impacts may be greatly magnified—and even cause system collapse."³⁷ It also concluded that northern spotted owls (NSO) "...close to noisy roads fledged significantly fewer young than NSO near quiet roads, indicating that routine traffic exposure may decrease NSO reproductive success over time." And this was vehicle noise - there are likely to be far more strong negative results from jet noise, especially in quiet areas that the Navy's EIS dismisses.

The marbled murrelet has been experiencing drastic declines in Washington and has declined at least 44% in population size since 2001 (Lance and Pearson 2016). So significant is this decline that the State of Washington up-listed them from state-threatened to state-endangered in December 2016, stating "it is likely the Marbled Murrelet could become functionally extirpated in Washington within the next several decades" (Desimone 2016). Noise alters habitat and can make good habitat unusable.

Neither the Navy nor the Fish and Wildlife Service fully considered the significant physiological effect that noise-related elevated stress levels have to immune response or other essential life functions; rather, the agencies claimed there is insufficient evidence to show that noise-induced stress threatens survival and reproductive success. The maintenance of existing murrelet habitat is considered integral to stabilizing the population, especially on non-federal lands in the near-term.³⁸

We again note, again with irony, that while the Navy expressed concern about a potential jeopardy call by the Fish and Wildlife Service, military jet noise is not listed as a threat in the Service's July 21, 2016 Biological Opinion.

This again violates the Precautionary Principle. In the 2016 Biological Opinion, the study cited (Busch and Hayward, 2009) actually highlights this lack of acknowledgement. There the researchers state that suppression of the immune system, severe protein loss, deposition of fat and atherosclerotic plaques, hypertension and other effects were possible, especially when noise is sporadic and the species could not acclimate to it. **It is thus irresponsible, scientifically invalid, and patently ridiculous to conclude without corroborating scientific evidence that adverse impacts to all birds, including state endangered marbled murrelets, tufted puffins and spotted owls, and in fact all wildlife in the study area, can be dismissed because they are "presumably habituated to the very high level of noise and visual disturbances at NAS Whidbey Island."**

³⁷ Hayward, Lisa et al. Impacts of acute and long-term vehicle exposure on physiology and reproductive success of the northern spotted owl. *Ecosphere* 2(6):art65. doi:10.1890/ES10-00199.1

³⁸ (Falxa et al. 2016, Lorenz et al. 2016, Raphael et al. 2016, Raphael et al. In Press).

The Strait of Juan de Fuca has recently been identified as one of three regional “hotspots” with an exceptionally high murrelet abundance (the upper 20th percentile with low annual variation), nesting habitat abundance, and nesting habitat cohesion across the species listed range (Raphael et al. 2015). Compared with marine variables, nesting habitat attributes explained more of the variation in murrelet abundance, underscoring its greater importance to murrelet recovery.

According to the Fish and Wildlife Service’s Recovery Plan, the risk of chance events wiping out the species is "exacerbated for the murrelet because populations that have negative long-term growth rates, as does the listed population of the murrelet ...have little or no capacity to overcome catastrophic population losses."

The Endangered Species Act prohibits harm to a listed species. [§ 1538(a)(1)(B)]. The Recovery Plan, created under § 4(f) when a species is listed by the FWS serves as a guidance document in determining what actions are likely to impede recovery. Using the Best Available Science, three biological goals for the marbled murrelet were adopted in 2008:

1. *a stable or increasing population,*
2. *an increasing geographic distribution, and*
3. *a population that is resilient to disturbances. (USFWS 2011, Raphael and others 2008.)*

In order to fully replace the biological value that is taken and to satisfy the jeopardy requirements, an alternative must at a minimum not impair pursuit of any of these three objectives. The consulting agency must use "the best scientific and commercial data available."³⁹ While an agency typically has leeway to identify the Best Available Science, it must address all available scientific information, even if it decides that some of those data are not to be incorporated into the jeopardy analysis. Failure to consider available data undermines the agency's assertion that it met the Best Available Science standard. The Navy offered to help write portions of the Fish and Wildlife Service’s Biological Opinion.⁴⁰ The Growler DEIS cites a 35-year-old literature review and ignores more recent research. How much does bad faith need to be proven?

The State’s Long Term Conservation Strategy DEIS indicated the likelihood of increased extinction risk, and, barring actual extinction, it indicated precipitously low population sizes over many decades under all alternatives described in that document—from activities that did not include any analysis of impacts from jet noise.

Besides making an unproven presumption about habituation of murrelets to noise and visual disturbance, the Navy presents alternatives that are inadequate in that no reduction in noise is offered, and no information exists on impacts from flight operations that could, when added to the impacts presented in the State’s EIS, risk jeopardy to the species by impeding its recovery.

³⁹ 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(g); *San Luis & Delta-Mendota Water Auth. v. Locke*, 776 F.3d 971, 995 (9th Cir. 2014).

⁴⁰ Personal communication, US Navy.

Cumulative impacts include those effects by other actors that are “reasonably certain to occur” and that include past, present and future events and actions.

In a 2014 Biological Opinion issued by the National Marine Fisheries Service on the Federal Columbia River Power System, the agency concluded that a slight increase in abundance over time in the wake of a proposed action indicated that such action would not inhibit recovery; however, the Court rejected this “trending toward recovery” argument because it failed to consider that populations had already been seriously reduced in size. In the case of marbled murrelets, the population has not only been seriously reduced, it is trending toward extinction. The volatility of the situation requires a greater margin of error than has been shown, to ensure that the species is not in jeopardy. Neither the Navy’s EIS nor the Biological Opinion allowed for such a margin of error. Thus, given the serious deficiencies of this Amended EIS, which include the following:

1. failure to evaluate all of the incoming new Growlers together, instead segmenting their impacts,
2. failure to analyze indirect and cumulative impacts to the species from takeoffs, landings and flight operations of 157-160 Growlers, not just the most recent 36,
3. failure to consider noise or emissions of greenhouse gases beyond the immediate vicinity of naval facilities on Whidbey Island,
4. failure to use the new software recommended by a DOD committee, which would have more accurately accounted for noise characteristics of newer aircraft such as Growlers and provided better noise level estimates,
5. failure to back up the presumption with any science, let alone Best Available, that marbled murrelets near runways are habituated to jet noise and visual disturbance,
6. failure to provide the Fish and Wildlife Service with more specific information on the seasonality and timing of training and testing,

and, given the continued steep population decline in marbled murrelets, added to the fact that Growler noise is not listed as a threat to this species in the Fish and Wildlife Service’s July 21, 2016 Biological Opinion, nor is it mentioned as a threat in the State of Washington’s Long Term Conservation Strategy EIS, plus the fact that climate change has not been factored into population projections in the State’s EIS, making them appear too optimistic, **we believe that, combined with all this, the Navy’s EIS presents a scenario that grossly underestimates Growler noise impacts and thus cumulative effects on a listed species whose Washington population is expected to be headed toward extirpation in a few decades if there are no changes in current externalities.** Those externalities are of course changing rapidly, and the combination of impacts to the marbled murrelet promises to accelerate its decline. The ESA does not provide that an agency is only responsible for remediating its share of the harm. Rather, the

ESA mandate is simple and clear -- agencies may not undertake any action that results in jeopardy to the threatened species.⁴¹

We further believe that unless the Navy presents a revised EIS and provides better information to agencies in order to *accurately* evaluate noise and other impacts to listed species, that the likelihood of jeopardy is far higher than has been portrayed. The proposed actions must be delayed and modified in order to reduce further declines.



4. Air crash dangers are underestimated and inadequately considered:

The Growler and Hornet both use the F/A-18 airframe. Military jets as a whole are far more likely to crash than are passenger jets. Freedom of Information Act data from the Department of Defense (DOD)⁴² showed that between 1980 and 2014, the F-18 airframe sustained 39 incidents, while its predecessor, the EA-6B (Prowler), sustained just 7 incidents. According to the Flight Safety Foundation's Aviation Safety Network, worldwide there have been 44 Growler/Hornet emergencies, accidents and crashes since 2002, with seventeen of these occurring in the last five years.⁴³ At one point, nine F/A-18 Hornets were lost over a 6-month period in 2016.⁴⁴ Reasons listed include training accidents, engine and mechanical failures, fires, bird strikes, pilot error, and collisions. Thus, despite the Court's finding in 2019, the Navy's Amended EIS failed to use rigorous reasoning when choosing once again for its takeoff-and-landing training, a densely populated area with virtually no unoccupied buffer zones, instead of a far more lightly populated area with ample buffer zones. Its apparent solution was to suggest establishment of Accident Potential Zones (APZ) near the OLF runway. Not only is this an irresponsible solution to the problem, it raises public concerns about eminent domain.

The most dangerous aspects of flying are the approach, landing and takeoff—in other words, most of the flight paths around the runways at Ault Field and Outlying Landing Field (OLF) Coupeville. These risks are particularly significant at the World War 2-era runway at OLF Coupeville, which is 3,000 feet short of standard for Growlers. Normally, the required unoccupied buffer area for naval airfields is 30,000 to 50,000 acres larger than what the Navy currently has at OLF Coupeville, which is mostly a residential area. Therefore, Growlers must fly at extremely low altitudes—a couple hundred feet above rooftops—over homes and businesses, the Port Townsend-Keystone Ferry, and over a significant portion of Admiralty Inlet that sees heavy shipping traffic in and out of Seattle and Tacoma.

⁴¹ See, e.g., *Pac. Coast Fedn. of Fishermen's Ass'ns v. United States Bureau of Reclamation*, No. C02-2006 SBA, 2006 U.S. Dist. LEXIS 24893 (N.D. Cal. Mar. 27, 2006); *PCFFA v. U.S. Bureau of Reclamation*, 2003 U.S. Dist. LEXIS 13745, No. 02-2006 SBA, slip op. at 16 (N.D. Cal. July 15, 2003) 361.)

⁴² Are Growlers Accident-Prone? <https://citizensofabeysreserve.com/the-issues/other-hazards/#:~:text=Freedom%20of%20Information%20Act%20data,an%20incident%20than%20the%20Prowler.>

⁴³ Flight Safety Foundation, Aviation Safety Network, <https://asn.flightsafety.org/asndb/type/F18S>

⁴⁴ <https://theaviationist.com/2016/12/07/yet-another-u-s-fa-18-has-just-crashed-in-japan-its-the-9th-legacy-hornet-lost-in-6-months-and-the-crash-rate-is-alarming/>

These pilots are mostly students flying the F/A-18 airframe low over civilian homes, small farms, schools, a hospital, and businesses, where there is no room for error.

There have been a substantial number of technical and mechanical problems with this airframe that have not improved public confidence. The House Armed Services Subcommittee on Tactical Air and Land Forces investigated a “rise in physiological episodes” among F/A-18 and EA-18G Growler pilots⁴⁵ after cockpit hypoxia events spiked so sharply in 2017 that flight instructors refused to get into their jets to train new student pilots.⁴⁶ Hypoxia, a state of oxygen deficiency in the blood, tissues and cells sufficient to cause an impairment of body functions, was listed by the Navy as one of the “physiological events” problematic to aircrews flying these planes. Other problems include toxic exposure such as carbon monoxide poisoning, decompression sickness, hyperventilation, spatial disorientation, and loss of consciousness. In 2016, all Growlers and F-18s were grounded due to a mechanical malfunction at NASWI that severely injured two pilots. Another incident in 2018 saw a malfunction drop the cockpit temperature to minus 30 degrees, icing everything and requiring the pilots to fly blind and with severe frostbite. On October 15, 2024 a Growler crashed into Mt. Rainier, killing both pilots. And in February 2025 a Growler crashed into San Diego Bay with both pilots ejecting safely. We mourn these tragic losses and sacrifice, and wish the injured pilots a speedy and full recovery. It is worth repeating that there is no room for error when flying a military jet repeatedly in tight circles at low altitude, over densely populated civilian area and a busy shipping lane. There must be exceptionally compelling reasons not to practice in safer areas. So far, the Navy has demonstrated none that outweigh these risks.

In addition, the Navy announced in 2020 that it had converted EA-18G Growler electronic attack jets into unmanned vehicles. In a test, a manned Growler controlled two unmanned Growlers. According to reports, the test could mean that unmanned Navy warplanes are coming sooner than experts thought.⁴⁷ As previously stated, there will be 114,000 total annual flight operations at the NAS Whidbey Island complex, 89 percent of which are to be flown by Growler aircraft (2018 Final EIS Appendix A), plus there will be an additional 29,600 Fleet Carrier Landing Practice (FCLP) operations at OLF Coupeville, **totaling 131,060 Growler flights. How many of these will be unmanned?**

Because Fleet Carrier Landing Practice (FCLP) “touch and go” occurs at such low altitudes (as low as 150-200 feet) over these residential/business/marine areas and also over exceptionally rich marsh habitat for a large population of birds, including species that are heavy enough to crash through windshields or otherwise disable aircraft, the increased likelihood of bird strikes further increases the risk for accidents and loss of life. NASWI reported that birds comprised 275 of the 279 reported strikes (98.6 percent) from 2005 through 2015. Most occurred between July and October. Bird species found under Navy flight paths include cormorants, mergansers, loons,

⁴⁵ <https://www.defensemianetwork.com/stories/navy-congress-looking-into-fa-18-ea-18g-physiological-episodes/>

⁴⁶ Navy Review: Oxygen Systems Too Complex; Reporting, Investigating Methods ‘Flawed’ - <https://news.usni.org/2017/06/15/navy-review-oxygen-systems-too-complex-reporting-investigating-methods-flawed> and [https://www.secnav.navy.mil/foia/readingroom/HotTopics/T-45%20Aircraft%20Goshawk%20PE%20Report/CRT%20PE%20Report%20%20\(Redacted\).pdf](https://www.secnav.navy.mil/foia/readingroom/HotTopics/T-45%20Aircraft%20Goshawk%20PE%20Report/CRT%20PE%20Report%20%20(Redacted).pdf)

⁴⁷ Mizokami, Kyle. “The Navy’s Surprise Unmanned Fighter Is a Glimpse of War’s Near Future,” Popular Mechanics, February 5, 2020.

grebes, gulls, ducks, guillemots, murrelets, kingfishers, herons, goldeneyes, bufflehead, scaup, eagles, harriers, peregrine falcons, and other species. Most of these are not small birds.

The elevated crash risk and its consequences courts a civilian tragedy that cannot be mitigated in any other way than by moving the FCLPs to a more suitable location, away from densely populated residential areas. These areas do exist; the Navy's repeated statements make it obvious that it does not want to make the effort to utilize them. If the FCLPs are moved only to Ault Field, the residents of San Juan County will be plunged into even more misery than they are already experiencing.

The level of noise during FCLPs is more than 16 times the level to trigger hearing loss. The Growler mission originated at the 30,000-acre Naval Air Station Lemoore in California, the Navy's newest and largest Master Jet Base, which hosts five Carrier Air Wings and 20 F/A-18 Super Hornet squadrons and maintains two 13,500-foot runways. Government Accountability Office (GAO) reports have shown for years that the Department of Defense's utilization of the millions of acres of land it already owns is inefficient. At a public meeting in 2014, Navy representative John Mosher was videotaped saying that "scheduling problems" were a major reason for increasing Growler presence in the Pacific Northwest, yet this was never mentioned as a justifying reason in the 2014 Electronic Warfare EA. Such justification is irrevocably flawed, especially when it puts so many lives at unnecessarily at risk. No logic, and certainly no evidence, supports the Navy's claim that expanding FCLP flights to currently proposed levels will have "no significant impacts."

The risk and impacts of a Growler crash to life and property, and of the aqueous film forming foam that would be used for firefighting that would additionally risk further contaminating the sole-source aquifer at Whidbey Island, have not been addressed. This is unacceptable.

The Navy has stated, "The northern Puget Sound region of the Pacific Northwest has uniquely unencumbered SUA [small unmanned aircraft] and military training routes (MTRs) due primarily to the relatively low volume of commercial air traffic. This limited air traffic and clear airspace allows this SUA and MTRs to support Growler training, including the current and future training requirements." But that statement is contradicted by reports of "stratospheric growth" at Sea-Tac airport; in fact the growth rate has been the highest rate in the country. Sea-Tac is categorized in the National Plan of Integrated Airport Systems as a primary commercial service (large hub) airport. Sea-Tac is the largest generator of vehicle trips in the state, and its 13,000-car parking garage is North America's largest parking structure under one roof. Forecasts for passenger traffic as much as 66 million within as little as 10 years. This represents neither low volume nor unencumbered airspace. To dismiss this region's explosive growth and the resulting air collision risks with Navy student pilots is irresponsible. There are millions of acres already in DOD ownership whose airspaces are far more open and unencumbered. So why would the Navy move so many aircraft into one of the fastest growing air traffic regions in the nation?

We recommend that the Navy should move the Growler FCLP flights to Department of Defense property that does not present such elevated risks to surrounding residential and business communities. Move the Growler fleet to where the mission is historically based, and to where concentrations of military and commercial aircraft are not experiencing such

explosive growth. Do not use air quality attainment as rationale for staying in the Pacific Northwest. The Navy's EIS as Amended should have properly incorporated this alternative to mitigate the risks and cumulative impacts of the action. It must therefore be revised to explore this reasonable and prudent alternative.



5. National Historic Preservation Act noncompliance: The Navy's EIS does not comply with the National Historic Preservation Act because it names an Area of Potential Effect that is far too small and too narrowly focused on the immediate environs around the runways at NASWI, and it does not consider harm to historic and cultural properties outside that narrow area. It focuses on takeoffs and landings only, and not on noise from flight operations that cannot be separated from them. It does not take into account the potential effects of chronic low-frequency noise produced by Growlers that can impact historic buildings, including potential structural weakening that could render them and the people who occupy them, more vulnerable to earthquakes. The Navy was made aware of this concern by local and Tribal governments and individuals prior to publication of all NEPA documents, but in ten years, the Navy has still not addressed those concerns. It ignored an August 2016 request for consultation under this federal statute, from the City of Port Townsend, which maintains two Historic Districts whose quiet settings and structural integrities are being directly impacted by Navy jet noise.

A 2024 study⁴⁸ shows that hearing impairment, at 70 decibels or above, is limited to Island County, yet sleeping disturbance and other health problems starting at 40 decibels have been recorded in Skagit and San Juan counties, especially Fidalgo Island and the south end of Lopez Island. The Swinomish Reservation was the most severely impacted region in terms of the percentage of community exposure, at roughly 85% of the reservation population. Growlers, opposed to commercial airlines, emit substantial low frequency energy, the study reports, which propagates further than higher frequency noise. This low frequency energy punctures physical barriers such as walls and windows, causing rattling and vibration. It can even rattle organs inside the body.

Limiting the scope of impacts as the Navy has done is inappropriate and unlawful.

A revised EIS is required, that expands the Area of Potential Effect to include all areas affected by noise from this significant increase in Growler jet activities. The Navy must make actual noise measurements and respond to all requests from local governments for consultation under Section 106 of the National Historic Preservation Act.



⁴⁸ Jacuzzi, G., Kuehne, L.M., Harvey, A. et al. Population health implications of exposure to pervasive military aircraft noise pollution. *J Expo Sci Environ Epidemiol* 35, 91–103 (2025). <https://doi.org/10.1038/s41370-024-00670-1>

6. National Environmental Policy Act (NEPA) continued noncompliance:

As previously stated, the Navy's Growler Draft and Final Environmental Impact Statement do not comply with the National Environmental Policy Act of 1969 (NEPA) on several counts. When an agency intentionally attempts to circumvent NEPA by dividing a federal action into smaller components in order to allow those smaller component pieces to avoid evaluating the overall impacts of the single project, then "improper segmentation" has occurred. It has always been unlawful for agencies to evade their responsibilities under NEPA by artificially dividing a major federal action into smaller components, each without significant impact. Regarding recent rollbacks, an executive order may be able to trigger legal chaos and a false idea that you can pick the parts of the law that satisfy your current needs, but no president can single-handedly change laws that have been passed by Congress or interpreted by the courts. NEPA, the ESA, and other federal laws cannot be "sunsetting" without an act of Congress that specifically repeals them. Thus, the Navy risks further violating laws whose authorities remain, despite illegal orders. Should the Navy decide to more blatantly ignore laws that protect health, safety, and the environment, it is not only to the detriment of its own reputation, but also becomes an integrity problem for naval personnel.

To underreport the number of aircraft being evaluated in an EIS amounts to what case law has labeled a non-comprehensive consideration of a project by dividing it into smaller parts, each of which when taken alone may or may not have a significant impact, but when taken as a whole definitely have significant impact. This is a clear example of noncompliance under NEPA.

A four-factor test developed by the Court and published as a Final Rule on January 13, 2014, determines whether improper segmentation has occurred. These factors include whether the proposed segment:

- (1) has logical termini [rational endpoints];
- (2) has substantial independent utility;
- (3) does not foreclose the opportunity to consider alternatives; and
- (4) does not irretrievably commit federal funds for closely related projects.⁴⁹

By considering only takeoff and landing noise produced immediately adjacent to runways at Ault Field and OLF Coupeville, the EIS continues to violate NEPA §1508.25 by failing to consider the wider area of functionally related impacts caused by naval flight operations. By continually failing to enlarge the scope of its analysis beyond the immediate environs of Naval Air Station Whidbey Island (NASWI), the Navy fails to consider interdependent parts of a larger action that cannot proceed without takeoffs and landings; fails to consider the automatically-triggered additional impacts from takeoffs and landings; and fails to evaluate cumulative effects. In addition, **the annual Day-Night Noise Level (DNL) used to establish projected noise levels does not take into account the low frequency noise that Growlers make. The EIS also averages peak noise events over 365 days of quiet periods to get the 65-dB (decibel) average level, and it holds up as scientifically valid an outdated, misleading and scientifically invalidated DNL threshold for high noise annoyance. This violates NEPA §1508.23, which**

⁴⁹ Veenendaal, Elijah. Avoiding Improper Segmentation and Accounting for Cumulative Impacts During Deployment of a Broadband Infrastructure, July 2012.

says that effects must be meaningfully evaluated. By failing to offer the public a reasonable alternative that would reduce noise levels, the Navy violates NEPA §1506.1.

It is illegal to irretrievably commit funding to a project before completion of the public NEPA process, yet the abovementioned 2016 DOD report clearly demonstrates that funds were committed. The Navy's NEPA representative at a December 2016 open house confirmed to a crowd of people that funding had been committed for the manufacture of these new Growlers prior to initiation of NEPA; she justified it by saying the jets had not yet been *delivered*. This is nonsensical. When funding is committed before the NEPA process is begun, it forecloses public options. Such a delay of NEPA initiation and completion amounts to an inappropriate retrofit of the public process to decisions already made, and it makes proposed alternatives, even if there was one offering a reduction in noise, into mere window dressing. This is in violation of 40 CFR §1506.1, which says:

Limitations on actions during NEPA process. (a) Until an agency issues a record of decision as provided in §1505.2 (except as provided in paragraph (c) of this section), no action concerning the proposal shall be taken which would: (2) Limit the choice of reasonable alternatives.

By failing to consider all of the above, the EIS as Amended does not evaluate all potential direct, indirect, and cumulative environmental impacts under its three action alternatives. The Navy is well aware of written and verbal public concerns about this that have been raised for years, ever since the 2014 scoping process, but has chosen to not address them. In addition, neither the 3 action alternatives nor the no-action alternative offers a reduction in noise, as is required by NEPA.

Navy NEPA regulations as issued in OPNAVINST 5090.1B5 state:

Involve interested and affected agencies, governments, organizations and individuals early in the agency planning and decision making process when significant impacts are or may be expected to the quality of the human environment from implementation of proposed major Federal actions; and

Conduct and document environmental reviews and related decisions appropriately and efficiently.

The Navy does not make it easy to learn about commencement of its NEPA processes in a timely way. Interested parties have tried numerous times to subscribe to the Navy's mailing list that notifies them of NEPA processes that may affect them, only to be dropped again and again. We concluded that the Navy's database for interested parties was meant primarily for Navy supporters. This was borne out when the email list that NASWI used for announcements and press releases was inadvertently made public (by the Navy itself) and included, besides members of the press, a number of civilians known to be enthusiastic and loud in their support for the Navy, but few "opponents."

Regarding “ownership” of the airspace above non-military lands and waters, one could argue, as has the Navy and economist Murray Rothbard at the Cato Institute, that airports which were long ago built “far from any residential areas” enjoy a sort of “homestead principle” which gives them the right to radiate loud sound waves across surrounding vacant or agricultural land. Navy personnel have repeatedly argued that “new” residents have no right to complain about the noise, and that the Navy’s presence since 1941 gives them the right to “trump” the quiet enjoyment of residential properties. Rothbard’s argument continues: “The airport, through homesteading, has earned an easement right to create x decibels of noise. This “homesteaded easement” is an example of the ancient legal concept of “prescription,” in which a certain activity earns a prescriptive property right to the person engaging in the action.” Given this statement, made at a November 19, 2014 Navy public meeting in Pacific Beach, Washington, by Northwest Training and Testing Range Manager Kent Mathes: “We own the airspace and there’s nothing you or anyone else can do about it;” it would appear that the Navy’s assertion of what amounts to an acoustic eminent domain has been based on such arguments.

Where this argument fails, however, is on three points:

First, the land was not vacant; the Ebey family homesteaded the area in the 1850s, and their descendants are still there. Development of the Admiral’s Cove community near OLF-Coupeville started in 1963, with many homes and community infrastructure completed by the early 2000s. As a result, the Navy’s normal buffer of vacant land around this reactivated WW2-era runway does not exist. That is not the fault of the community.

Second, the Navy was considered a good neighbor until the Growlers arrived in the mid-2000s; whatever “homestead easement” may have been theoretically established by the noise levels produced between 1941 and 2005, no longer exists. There is no real or theoretical “easement” for the far louder and expanded noise footprint, no logic for not properly measuring or modeling it, and no justification for the harm to businesses and private individuals.

Third, not even an implied historic “noise easement” would extend all the way to the Olympic National Park or to residential properties and businesses that are across the Sound or Strait, many miles from NASWI. Locations of the Navy’s electronic warfare mobile emitters are right next to Park boundaries, and the jets will be homing in on them. Growlers making low sweeps for many miles up the Hoh River and throughout the West End, diminish public enjoyment of State, Park and private lands. They are loud enough to drown out the sounds made by the Hoh River or ocean surf, even if one is sitting within a few meters of these waters.

The National Park Service, via Soundscape Management Policy 4.9, Cultural Soundscape Management Policy 5.3.1.7, and Director’s Order #47, directs park staff to preserve and restore the soundscape, which is defined as “...all natural sounds occurring in parks, the capacity for transmitting those sounds, and the relationships among natural sounds.” While the Navy enjoys certain exemptions, it is still important to note that the soundscape at Olympic National Park is additionally governed and protected by the following, as well as NEPA: Wilderness Act 36 CFR Section 2.12 Audio Disturbance; and NPS Policy 8.2.3 re: Use of Motorized Equipment.

When noise levels reach the point where park visitors as well as communities for thousands of square miles on both sides of the Strait of Juan de Fuca and throughout Puget Sound are

suffering and complaining about Navy noise, it is incumbent upon the government agencies that are creating or facilitating such noise to first offer solutions that reduce it, and then to present a fair and balanced analysis for an honest dialog with other agencies and the public about mitigating its impacts. The Navy has done neither.

We urge the Navy to comply with the spirit and letter of NEPA requirements by proposing alternatives that reduce the noise, by properly and accurately evaluating noise and other impacts in all affected areas, by making actual noise measurements, (non-aggregated and not averaged) as well as computer modeling throughout the affected areas, and by using scientifically valid standards that measure the more realistic aspects of noise, as previously requested by local governments in surrounding communities. This should be accomplished via preparation of a revised EIS that addresses the full scope of impacts, with a public comment period of adequate length.



7. The Navy has inappropriately segmented the Growler public process:

The public does not view the air, sea and ground components of electronic warfare testing and training with Growlers as separate, yet the Navy so far has piecemealed its aircraft training and testing activities affecting Whidbey Island, the San Juan Islands, and the Olympic Peninsula into multiple separate actions:

- 1. 4 squadrons of P-8A Poseidon Multi-Mission Aircraft began replacing the P3s in the 2010s and were a separate NEPA/emissions track.*
- 2. 2005 EA (57 Growler jets).*
- 3. 2010 EIS (reaffirm/re-do the process for 57 Growlers that replaced Prowlers).*
- 4. 2012 EA (26 Growlers including 5 from a reserve unit).*
- 5. 2014 EA (Growler electronic warfare activity).*
- 6. 2015 EIS (electronic warfare training and testing activity).*
- 7. 2018 EIS (for 36 Growlers).*
- 8. 2025 (Amended EIS after Court ruling, for 36 Growlers).*

It is unlawful to piecemeal related activities and makes it impossible for agencies, elected officials and the public to understand the full scope and cumulative nature of impacts. It is also exhausting for local governments, communities, and residents to try to keep up with all these piecemealed NEPA processes. Avoiding cumulative effects analyses for functionally related activities is unlawful. It has been impossible until recently for the public to know just how many Growlers there would be, or what their impacts would be, or what limits, if any, the Navy intends to establish. In just four documents—the 2014 EA, Forest Service permit Draft Decision, and the 2010 and 2015 EISs, there are more than 6,000 pages of complex technical material. 40 C.F.R. § 1502.4 says NEPA “...does not allow an approach that would permit dividing a project into multiple ‘actions,’ each of which individually has an insignificant environmental impact, but which collectively have a substantial impact.” We are re-stating this concern because the Navy keeps segmenting and separating its impacts.

The EIS continues to fail to discuss, describe or even mention any potential impacts associated with electromagnetic radiation in devices employed by the Growlers in locating and interacting with the ground transmitters. It fails to mention any potential impacts associated with the practice on electromagnetic weaponry that will allow the Navy to make good on its statement that it is “turning out fully trained, combat-ready Electronic Attack crews.”

In another example of improper segmentation, the Navy has stated that the affected noise environment as modeled for Calendar Year 2021 included P-8A Poseidon aircraft but did not “include the additional Growlers associated with the Proposed Action.”

Separate noise metrics are also used for Growlers at Ault Field and OLF – why? What is the advantage of isolating (and thus segmenting) this noise impact from a rapidly growing fleet, especially when noise from these extremely loud jets is not even being considered in areas beyond NASWI’s immediate environs? **To an already confused public, and to the law, this amounts to a segmentation within a segmentation.**

The Navy’s pattern of segmenting and omitting impacts analyses in creeping expansions is widespread, and it is appropriate here to discuss other examples where this practice has taken place to the detriment of local communities, species, and environments. In the Northern Marianas Islands, the Navy’s thousand-page 2010 Final EIS that proposed to turn Pagan Island into a bombing range and Tinian Island into an artillery range overlooked impacts to residents, water supplies, historic sites, and rare species of coral. Human habitation was documented to go back 3,000 years, yet historic site surveys were halted after only a few were documented. No analysis was conducted on how rocket fuel could contaminate the aquifer, and no discussion of cleanup and mitigation for destruction of coral reefs was included. After a Record of Decision confirming the Navy’s choices and dismissing local concerns, the Navy, expanding its activities, cranked out another Final EIS in 2015, a Draft Supplemental EIS in 2019, and a Final Supplemental in 2020. Exhausted islanders could be excused for asking, “When will they stop?” A December 2016 news article about this said, “Federal agencies and other organizations found the Navy’s analysis was plagued with missing information on issues ranging from how the Navy would handle hazardous waste to how noise from Navy training could be worsened by concurrent training activities.”⁵⁰

One of the most astounding examples of NEPA segmentation, mentioned here not because it concerns Growlers, but because it’s so extreme and also perpetrated by the Navy in Puget Sound, is within the geographic area impacted by Growlers. Because we wish to go on the administrative record with our knowledge that minimizing impacts via illegal segmentation is a pernicious pattern with the Navy, the example issue is noise in the water: sonar, pile driving, etc. Noise, whether in the water or in the air, is a sensitive issue with significant potential for serious ecological impacts. Pile-driving noise can carry for 18 miles underwater. In one 4.7-mile stretch of waterfront at Bangor, there were, at one point, 10 separate NEPA processes for driving 2,000 in-water pilings. There was another NEPA process for pile-driving at Keyport, 3 NEPA processes at Everett, 2 at Whidbey, 5 at Bremerton, 2 at Manchester, and 2 at Port Angeles. The total

⁵⁰ “Missing Data Plagues Military Training Plans In The Marianas,” Honolulu Civil Beat, December 2016. <http://www.civilbeat.org/2016/12/what-the-military-isnt-saying-about-its-training-plans-in-the-marianas/>

number of NEPA processes on pile-driving alone between 2012 and 2018 was at least 24, with more than 5,200 pilings being driven in Puget Sound and the Strait of Juan de Fuca.⁵¹ For Fiscal Years 2016 through 2018 according to Navy documents supplied by a whistleblower, at least forty pre-determined Findings of No Significant Impacts and Records of Decision were scheduled by the Navy in the Puget Sound region alone.⁵²

Many of these multiple NEPA processes should have been combined to better reflect impacts, but an EIS rises to higher standards than does an EA. An internal Navy legal memo analyzing several courses of action for multiple functionally-related projects concluded that the risk of legal vulnerability from violating NEPA was worth the segmenting of those projects.⁵³ That memo is attached at the end of this letter. To be quite frank, any attorney advising a client to violate the law should be disbarred.

While pilings may not be directly related to Growlers, **an internal memo obtained from a Navy whistleblower that directs the segmentation of impacts and is attached at the end of this comment letter, is one of the most vivid illustrations of the Navy’s deliberate pattern of avoidance of proper analyses. The Navy has been reminded for years, by citizens, elected officials, and Tribes, that its piecemealing of impacts violates both the law and the public trust, but the Navy continues to ignore their concerns—and now, apparently, even a Court ruling. The Navy is a public agency whose equipment and salaries are funded by taxpayers who clearly see a pattern of separation of impacts and avoidance of analysis that extends to wherever the Navy operates. Its behavior toward its neighbors tarnishes the hard-earned reputation of men and women who serve, and is unbecoming to an American military service.**



8. Using noise modeling software to measure real impacts is still legally questionable:

A study published on May 9, 2024⁵⁴ in the *Journal of Exposure Science and Environmental Epidemiology*, shows **more than 74,000 people**, mostly on Whidbey Island, are at risk of annoyance, sleep disturbance, hindered childhood learning, **and hearing impairment** from Growler noise. Researchers analyzed four weeks of acoustic and flight operations data collected by the Navy in 2020 and 2021, as well as data collected by a private acoustics company and the National Park Service. They then mapped noise exposure across the region to estimate how much noise specific communities were exposed to in an average year. Later, they brought in exposure-response models recommended by the World Health Organization to predict health outcomes.

Yet the Navy, after admitting that there would be “significant impacts on the noise environment” that would increase the number of people exposed to excessive noise, concluded that the

⁵¹ *XL spreadsheet*, attached at end of letter.

⁵² U.S. Navy, NW-NEPA-Report-12-15-2015. *Spreadsheet attached at end of this letter.*

⁵³ US Navy – Internal email - Goodman, Layna. Proposed NEPA Approach for Planned Waterfront Projects Which May Require Environmental Impact Statements, Naval Base Kitsap Bangor. (attached at end of letter.)

⁵⁴ Jacuzzi, G., Kuehne, L.M., Harvey, A. et al. Population health implications of exposure to pervasive military aircraft noise pollution. *J Expo Sci Environ Epidemiol* 35, 91–103 (2025). <https://doi.org/10.1038/s41370-024-00670-1>

likelihood of hearing loss would require someone being “outdoors at one’s residence and exposed to all aircraft events over a 40-year period.” Therefore, it claimed, it is “highly unlikely that an individual would meet these criteria,” and thus, “hearing loss is not expected.”

In the EIS, Section 4.2, the Navy states, “The noise levels analyzed and described within this (Aircraft Noise) study are from computer-modeled noise and not actual, on-site noise measurements at Ault Field or OLF Coupeville.” This despite the fact that the public has been begging the Navy for many years to make actual measurements. A DOD commissioned study found the modeling software used, called NOISEMAP, is not appropriate for Growler engines because it does not measure the low frequency noise they make that is so disturbing. In response to public comments about the inaccuracy of the software, which was developed in the 1970s long before Growlers were built, the Navy “upgraded” it from Version 7.2 to Version 7.3, but **did not confirm that the full spectrum of Growler noise could be modeled. Why?**

Going from a 7.2 to a 7.3 in software is usually considered a minor upgrade. Without confirmation that NOISEMAP measures all Growler frequencies, it appears that the Navy has refuted advice from the Department of Defense Strategic Environmental Research and Development Program, which determined that **new software** was needed “...to provide **legally defensible noise assessments** of current and future aircraft operations.”⁵⁵ The final report found that NOISEMAP’s linear acoustics were **inadequate for modeling the acoustic environments in the vicinity of higher thrust engines used in the Growler**, stating, “Moreover, the segmented flight path modeling approach typical of integrated noise models **do not properly account for the complex operational and noise characteristics of the new aircraft.**” The Navy insists that this has been corrected with the upgrade, but the public smells a rat.

Unfortunately, the only DOD websites containing Operator’s manuals for NOISEMAP are from December 1978 and January 1990, before Growlers were introduced. The NOISEMAP Version 7.2 computer model drew from “a library of actual noise measurements” with no other details provided by the Navy. A list of these sounds would be helpful. Version 7.3 leads you to a Navy NAVFAC Aircraft Sound Monitoring web page⁵⁶ with all links recently removed, that says, “All files on this page have been removed.” This includes information on all data used to measure aircraft noise. The problem with credibility is that ever since the Navy substituted the old, outdated EA-6B Prowlers, which lacked afterburners, on its sound tables instead of Growlers on the DEIS, any close reader is going to feel the need to confirm that what the Navy says is actually true. Thus, it’s impossible to know for sure if Growler sounds on both normal engine thrust and afterburners have been appropriately added to the NOISEMAP library of sounds, and whether the conclusions reached by the Navy reflect this. There are sound reasons for doubt.

⁵⁵ SERDP report was available here, but is no longer available: <https://www.serdp-estcp.org/Program-Areas/Weapons-Systems-and-Platforms/Noise-and-Emissions/Noise/WP-1304> (Third paragraph)

⁵⁶ NAVFAC “Aircraft Sound Monitoring.” Of the immense list of useful files, it says, “Notice: As of 01 October 2024, all files on this page have been removed.” See <https://www.navfac.navy.mil/Directorates/Public-Works/Products-and-Services/Aircraft-Sound-Monitoring/>

The acoustic environments in the vicinity of newer aircraft such as the F-35, F-22, and the F/A-18E/F differ from those of most prior aircraft, with high noise levels associated with higher thrust engines. At those high levels, acoustic propagation cannot be modeled using the same simple linear theories employed in the classic noise models. Furthermore, the F-22 has a rectangular exhaust geometry which changes the sound radiation patterns. Both the F-35 and the F-22 employ engine thrust vectoring which cannot be easily incorporated into classic models. Little reliable data had existed on the noise produced by such jets in the thrust vectoring mode. Moreover, the segmented flight path modeling approach typical of integrated noise models do not properly account for the complex operational and noise characteristics of the new aircraft.

New models, which take advantage of today's computer computational capabilities, were needed to provide legally defensible noise assessments of current and future aircraft operations in protecting bases and airspace for training purposes, and minimizing restrictions based on noise. The objective of this project was to provide environmental specialists with tools, based on the latest technology, for assessing and mitigating the noise impact around bases and on ranges of the new generation of fighter aircraft operating under all possible weather and terrain conditions.

In 2010 a new noise model, the Advanced Acoustic Model (AAM), was developed under DOD contract to address these shortcomings. But the Navy's continued use of the outdated NOISEMAP remains curious, since the software had rendered previous noise analyses scientifically inaccurate and legally indefensible, especially when a better noise model was available. **It does not appear to be an example of Best Available Science**, either. Even if NOISEMAP modeling is now scientifically valid for all frequencies of Growler jets, **the quality of data used as inputs into the model would still be questionable. Did it include afterburners?** It remains unclear what kind of empirical noise data were used as a basis for noise simulation, since all files have been stripped from the Navy's abovementioned website. The doubt is supported by the ridiculous statement that someone would have to stand outside their house under the jets for 40 years to experience hearing loss, while the independent study said it's already happening. Without data transparency, therefore, it is impossible to assess if the empirical noise data used in noise simulation is scientifically defensible. The Navy's long series of apparently predetermined No Significant Impacts does not inspire public trust.

The Naval Research Advisory Committee (NRAC) issued a report on jet noise and found that "...the Air Force maintains the only known acoustic database for tactical aircraft." NRAC's findings highlighted the Navy's lack of empirical jet noise data measurements, lack of consistent measurement methodology and standards, and lack of a jet noise database and its proper maintenance. NRAC's insightful assessments and sensible recommendations have been forwarded to the Navy since April 2009. So, if the Navy has still not yet acted on the NRAC's recommendations, it owes the public an answer.

The Navy should have taken and disclosed actual, not modelled, Growler noise measurements as key inputs for preparing a scientifically and legally defensible revised EIS. Nearby communities did actual noise measurements (including San Juan County) and

shared their data with the Navy. It included more than 6,400 complaints over a 2.5-year period. Unfortunately, the data were not used. **Because use of actual measurements plus computer modeling using the recommendations of the Department of Defense Strategic Environmental Research and Development Program would likely reveal new information not previously available to the public, the Navy should include it in a revised EIS with an adequate comment period.**



9. Water and soil contamination from Growler-related activities not addressed:

Despite claiming to evaluate all potential direct, indirect, and cumulative environmental impacts under its three action alternatives, the EIS did not do this.

The contamination of residential and commercial drinking water from the use of aqueous firefighting foam on runways to protect Growlers and their pilots has been severe, requiring 2,000 people on Whidbey Island to switch to bottled water and avoid using tap water. Many have wondered how long they've been drinking this contaminated well water, but the Navy did not test most residential wells. PFCs and PFOAs are among the most carcinogenic substances known. This situation has had many people whose wells have not been tested wondering if their water is safe to drink, given what is known about the movement of toxic plumes through soils and groundwater from similar situations in other areas.

For example, the Port of San Diego sued the Navy over a toxic plume that contaminated San Diego Bay; in 3 counties in Pennsylvania, drinking water for 70,000 people was contaminated with the same toxic chemicals as on Whidbey, and people have fallen ill. In the latter, the Navy refused to pay for blood tests, which besides being un-neighborly, indicated an uncaring attitude and/or a defensive position on legal culpability. Coupeville is not an isolated example; dozens of areas nationwide where drinking water has become contaminated by PFCs and PFOAs from military firefighting foam have been revealed in news stories. In March 2016 the DOD announced that it was going to examine 664 sites nationwide to determine whether toxic chemicals from firefighting foam have contaminated groundwater and spread to drinking water. More than 700 military bases have been identified as having contaminated drinking water due to AFFF use.

The list of sites being investigated include burn pits, active and old fire training areas, fuel spill areas, research sites, and crash sites. It is sobering to read, and horrifying for people who live near them.

Although in June 2016 the Navy labeled PFC contamination an "emerging" problem, this does not justify the exclusion of such contamination from a Draft EIS published six months later. It was clear that at the November 10 publication date, the Navy was well aware of potential problems with contamination of Whidbey Island's residential drinking water, due to what it called "historic" use of "legacy" fire suppressants for flight operations. The lapse became part of the administrative record.

In May 2016, the USEPA issued drinking water health advisories for two types of PFCs, and the Navy announced in June that it was in the process of “identifying and for removal and destruction all legacy perfluorooctane sulfonate (and PFOA) containing AFFF [aqueous film forming foam].” Yet on page 3-62, the DEIS dismissed all concerns with an incredible statement about actions that took place nearly 20 years ago: “Remediation construction was completed in September 1997, human exposure and contaminated groundwater exposures are under control, and the OUs at Ault Field and the Seaplane Base are ready for anticipated use (USEPA, 2016e).” Incredibly, this misleading statement appears in the Final EIS, too.

That easily misinterpreted sentence was outdated at best, but given the weight of the other deficiencies in the NEPA process and the Navy’s foreknowledge of the problem before publication, it looked, and continues to look, like a deliberate obfuscation. Why would the Navy print such a claim knowing that its interpretation would mislead the public? Three days before that DEIS was published, on November 7, 2016, the Navy sent a letter to more than 100 private and public drinking water well owners expressing concern that perfluoroalkyl substances (PFAS) found beneath the OLF had spread beyond Navy property. The word “perfluoroalkyl” or “PFAS” was not mentioned in the entire 1400-page DEIS, so this likely caused confusion. Hazardous materials discussions in both the 2005 and 2012 EAs on Growlers was perfunctory and brief, and perfluoroalkyl substances were not mentioned in either of those documents. The 2018 EIS sketches a brief history of the problem and says, “Where USEPA lifetime health advisory levels have been exceeded, the Navy has provided alternative drinking water.” An EPA study of the link between groundwater contamination and property values found that up to a 15 percent depreciation can occur.⁵⁷

The runway at OLF has been in use by Growlers since 2005. The EIS refers to use of firefighting foam as “historic” and “legacy.” Webster’s defines the word historic as “significant and consequential; having great and lasting importance,” and “known or established in the past.” The DOD does not define the word historic except in the context of cultural resources management and conserving and restoring historic properties. It also does not define the word legacy except in the context of the Legacy Resource Management Program, which focuses on “stewardship, leadership and partnership” in “safeguarding irreplaceable natural and cultural resources.” Use of those words to help justify excluding this direct impact from more than superficial analysis is unwarranted. The Navy selectively includes “historic” facts and figures elsewhere in the DEIS to track noise complaint data, to study aircraft accidents, and to project runway usage. So, it does not make sense to completely ignore the use of toxic contaminants associated with the Growler jets whose impacts it purports to evaluate and who use the runway at OLF.

Since the Navy did not publicly recognize the danger associated with these contaminants until 2016, it is reasonable to assume that these hazardous materials have been in use at least between 2005, when the Growlers first arrived, and the present time. The firefighting foam is for protecting the Growlers, as well as other aircraft that came before them, so use of the adjective “legacy” to imply that application of these firefighting chemicals to runways in previous decades was their only application, is misleading. It is impossible to either disassociate this impact from

⁵⁷ The Property Value Impacts of Groundwater Contamination: Agricultural Runoff and Private Wells. Dennis Guignet*, Rachel Northcutt, and Patrick Walsh. National Center for Environmental Economics, US Environmental Protection Agency. Last Revised: November 16, 2015

Growler operations, or to separate out how much PFC contamination occurred prior to 2005, and what has occurred since 2005.

The honest thing to do would be fully disclose the use of these chemicals in amount and time, admit culpability, and find ways to help these people beyond a simple delivery of bottled water. The Navy caused the problem and the Navy must fix it.

The Precautionary Principle applies not only to climate change but also to public health, especially when unintended negative consequences like this occur. The 1989 Rio Declaration said: “Nations shall use the precautionary approach to protect the environment. Where there are threats of serious or irreversible damage, scientific uncertainty shall not be used to postpone cost-effective measures to prevent environmental degradation.” It is surprising and disappointing, therefore, to have heard a Navy spokesman reassure the public that the Navy would remove the contamination, when in fact the Navy knew full well that this could not be done. A highly misleading statement by NASWI Public Affairs Officer Mike Welding sought to reassure the public: “The Navy is going to provide those people with safe drinking water until we can figure out how to remove the contaminant from the water well, filter it out or something like that. It’s something that still needs to be worked out.”⁵⁸

Unfortunately, a statement from the Department of Defense’s own “MERIT” program contradicted Mr. Welding: “Currently, there are no in situ technologies and very limited ex situ options to treat soil or groundwater contaminated with PFCs.” This came from a bulletin that was long published and distributed to federal and state agencies.⁵⁹ This is included in our letter to illustrate that the public has a long memory.

⁵⁸ <http://www.kiro7.com/news/local/navy-finds-toxic-contaminants-in-whidbey-island-water/476220156>

⁵⁹ Department of Defense Materials of Evolving Regulatory Interest Team. Chemical & Material Emerging Alert: Aqueous Film Forming Foam (AFFF). View at: <https://dec.alaska.gov/spar/ppr/hazmat/Chemical-&-Material-Emerging-Risk-Alert-for-AFFF.pdf>

If records indicate your facility may have experienced AFFF leaks, spills or releases to the environment, refer to DoD Instruction 4517.18 for principles to follow in determining what site specific characterization, assessment, and risk management actions you should take.⁷

Currently, there are no *in situ* technologies and very limited *ex situ* options to treat soil or groundwater contaminated with PFCs. Thermal treatment is typically used for contaminated solids while granular activated carbon is the most effective water treatment method.⁸ The DoD Strategic Environmental Research and Development Program is funding research to develop innovative treatment technologies for PFCs.⁹

Screen shot from <https://dec.alaska.gov/spar/ppr/hazmat/Chemical-&-Material-Emerging-Risk-Alert-for-AFFF.pdf>

If the Navy is willing to pay farmers for easements to keep their land near runways in agricultural use, then it should be equally willing to pay the costs of finding a permanent water source for people whose drinking water it has poisoned. Extensive evaluations for a variety of hazardous materials were included in the Northwest Training and Testing EIS, so it does not make sense that the Navy would leave contaminants such as firefighting foam out of more recent NEPA documents. These are functionally related activities; without the Growlers to worry about, you don't need firefighting foam.

The post-combustion exhaust from jet engines contains carcinogenic pollutants of air, water and soil that are capable of acute and chronic toxicity to animals as well as plant and aquatic life. The cumulative impacts discussion does not adequately address this and constitutes a major deficiency.

The practice of fuel dumping is supposedly rare, but an active-duty Navy pilot said it happens about once a month.⁶⁰ The EIS dismisses it with a statement that plays down public concerns raised during the scoping process. As a result, there are “no impacts” from it.

Reports from residents living well downwind of NASWI have reported smelling raw jet fuel that can be overpowering when FCLP touch-and-go practice occurs. There have also been eyewitness reports of fuel dumping from observers in boats near Smith and Minor Islands, a national wildlife refuge in the eastern Strait of Juan de Fuca. Common sense says if you can see fuel

⁶⁰ Personal communication, US Navy.

being dumped or the smell is strong, and if there are Navy jets flying overhead, it's probably being dumped at altitudes lower than 6,000 feet.

The jet fuel used by Growlers is refined kerosene that contains a mixture of volatile organic compounds (VOCs), some of which are known carcinogens as well as being liver, kidney and immune system toxins. The EIS glossed over jet fuel spills, yet a quick Google search reveals that they are not that uncommon. A storage tank in Hawaii spilled 27,000 gallons, a ship in Bremerton spilled 500 gallons, a helicopter spilled 100 gallons into a public reservoir, Boeing spilled 300 gallons into the Duwamish waterway, and a leaky tank spilled 112,000 gallons into a mangrove forest in Puerto Rico, which flowed into a harbor. Where larger amounts of jet fuel soak into wetland soils, expect high mortality of animals and plants. Fuel that has penetrated to 1 ft in sandy soils can take more than 18 months to degrade. Biodegradation of jet fuel in seawater is very slow without significant nutrients, and is considerably slowed by cold temperatures such as what we have in local waters.⁶¹



Conclusion:

Ever since the Navy established an Electronic Warfare Range over much of Washington's North Olympic Peninsula in 2014 without proper public notifications, which resulted in not a single public comment from agencies, Tribes, or citizens, it has unfortunately continued to erode the trust of its neighbors that it will behave responsibly and with respect.

The Navy's continuing pattern of actions and behavior imply that abusing its neighbors is not only a cost of doing business, but that our objections are considered trivial, misinformed, and easily dismissed. We therefore continue to implore the Navy, as we have been imploring for more than ten years, to take the following actions:

- 1.) Stop segmenting large projects into numerous smaller ones and analyze the cumulative impacts of the full scope of functionally and geographically related activities;
- 2.) Take better care to provide any and all information and materials requested by state and federal agencies to undertake the reviews and consultations required of them. Do not limit their analyses by withholding needed information that forces them to make less accurate assumptions.
- 3.) Stop making information so hard to find for the public. For example, **the link for Volume 2 of the FEIS for Growlers leads to a blank page that says "404".⁶² Half of that EIS document is unavailable to the public, and thus we cannot use it for reference in our comments. This should be reason enough to extend the comment period.**

⁶¹ Kerosene/Jet Fuel Category Assessment Document, American Petroleum Institute, submitted to USEPA.

⁶² See: https://media.defense.gov/2019/Feb/04/2002085726/-1/-1/1/GROWLER%20FINAL%20EIS_VOLUME_2.PDF

- 4.) Hold and properly advertise public meetings and hearings instead of Open Houses. In most cases of the latter, visitors are sent from table to table without getting answers to their questions, and their concerns and comments are rarely documented. As a result, many people stopped attending them because more detailed answers to questions beyond the “party line” were not available. A proper public Q&A as standard practice where everyone can hear the Navy’s responses would greatly improve the public’s understanding of proposed activities and provide information upon which the public may evaluate and propose alternatives that would meet the Navy’s needs as well as the public’s. Further, the Navy must continue to advertise prominently in media of record in affected communities, and to not assume that a small ad in the Seattle Times will be read by people living a three-hour drive away.
- 5.) Incorporate and grant mitigation requests and proposals by wildlife, historic preservation, Tribal, and public health agencies; so far, mitigation proposals have been reasonable. Yet the Navy as a matter of course refuses to grant some of the most basic mitigation requests, which then throws shade on its own conclusions. For example, refusing to allow Fish and Wildlife Service experts to train Navy personnel on spotting marbled murrelets is unwarranted, unreasonable and unjustified.
- 6.) Respond to requests from local governments for consultation under Section 106 of the National Historic Preservation Act; expand the Area of Potential Effect and initiate these requested consultations in order to assess impacts to these areas.
- 7.) Reinstate public comment periods instead of “30 day wait periods” on Final Navy EISs, especially when new information has come available, such as choosing a Preferred Alternative.
- 8.) Ensure that the substantive and procedural inaccuracies in the 2014 Pacific Northwest Electronic Warfare EA are corrected and published to standards that Forest Service and Fish and Wildlife Service biologists can support, and allow the public to read it and comment. “Significance” in the NEPA context of impacts is triggered when there is substantial public controversy on environmental grounds. It persists to this day. This procedure was so flawed as to be invalid, and the public still burns from it.
- 9.) Ensure that a process for establishing threshold hearing impacts to birds for which inappropriate surrogate species have been used is scientifically valid and follows applicable laws. Stop the illegal use of MMPA harm/impact standards for ESA actions.
- 10.) Fulfill the DOD-USDA 1988 Master Agreement requirements to fully substantiate the need for Defense Department use of non-military lands for electronic warfare training and military operations, by proving in a report to the public that DOD-owned lands are either unsuitable or unavailable. Despite ten-year-old requests this has never been done, and it should include the continued rejection of El Centro as an alternative training site. The public should not be involuntarily exposed to military training as unwitting participants, as Navy reps told us at an open house in February 2018.
- 11.) Despite the current unlawful diminishment of NEPA and other laws by executive order, the Navy still has a responsibility to employ more rigorous analyses, including evaluations of effects

on climate change and air, (as ordered by the Court) plus public health, and soil and water quality. The U.S. military is the world's largest single user of fossil fuels, and the Navy's Growler exhaust emissions and noise beyond the narrowly defined 65 dB DNL-affected areas near runways that are not being analyzed nevertheless continues to add to air pollution, climate change, and illness loads. Account for this.

12.) Clarify basic terms such as "event." It should be defined in each context, so that the public can understand the duration and significance. Some events last for seconds and involve one or two aircraft; others last for hours and involve multiple aircraft, and still others last for days and involve multiple aircraft, ships and submarines; the Navy must clarify the term "event" each time it is used.

13.) Provide a detailed, specific answer on whether and how the additional Navy stressors on Endangered Species Act (ESA) listed species as described in the Growler EIS, particularly to marbled murrelets, comports with ESA Section 4F recovery, given that the acknowledged lack of scientific information on noise impacts affects the ability to determine harm and cumulative effects. This in light of continued precipitous declines. The information in the Amended EIS does not adequately address ESA issues or Court findings.

14.) Prepare a Supplemental EIS to address ALL Growlers stationed at Naval Air Station Whidbey Island, as well as additional flying on weekends, which the public was not aware of during the DEIS stage, and allow further opportunity for public comment.

15.) Comply with the spirit and letter of the law and the Court ruling by proposing alternatives that reduce the noise. Stop actively refuting the Precautionary Principle. Properly and accurately evaluate noise and other impacts as requested, in all affected areas, by making accurate actual noise measurements as well as computer modeling, and by using scientifically valid standards that measure the more realistic aspects of noise that current models don't address. This has been repeatedly requested by local governments in surrounding communities.

Thank you for the opportunity to comment on this Amended EIS.

Please also know that that Navy neighbors like us who care enough to keep writing letters like this do not lack pragmatism; we are well aware that the Navy could again ignore our concerns and issue a new Record of Decision that is hardly different from the old one vacated by the Court.

We fear the Navy may never stop ignoring legitimate public concerns about health, safety, and the environment. Thus, we write this letter as more a matter of principle and citizenship than hope. For too many of its neighbors, the Navy has become an agency that appears to consider itself above the law. That is to say, we whose family members once served with honor in combat overseas no longer feel the pride for our modern Navy that we once felt. We are sorry to say that over time, the Navy's perceived arrogance and real public harm will probably result in less future civic pride in our armed forces, and less interest in serving in them—or paying for them. We grew up in patriotic households where this was never, ever the case.

Sincerely yours,



Karen Sullivan
Olympic Forest Coalition



Connie Gallant
President, Olympic Forest Coalition

Contact Address: c/o Olympic Forest Coalition
P.O. Box 461
Quilcene, WA 98376-0461

Attachments: Documents from a Navy whistleblower.

cc:

The Honorable Patty Murray
The Honorable Maria Cantwell
The Honorable Bernie Sanders
The Honorable Emily Randall
The Honorable Rick Larsen
The Honorable Robert Ferguson, Governor of the State of Washington
The Honorable Nicholas W. Brown, Attorney General of the State of Washington
The Honorable Elizabeth May, Member of Parliament, Saanich-Gulf Islands, British Columbia, Canada
24th Legislative District, State of Washington: Mike Chapman, Senator; Steve Tharinger and Adam Bernbaum, Representatives
Mayor David Faber, Port Townsend, Washington
Mayor Brandon Janisse, Sequim, Washington
Mayor Kate Dexter, Port Angeles, Washington
Board of County Commissioners, Jefferson County, Washington
Board of County Commissioners, Clallam County, Washington
Advisory Council on Historic Preservation
Washington State Historic Preservation Officer
Hoh Tribe/ Chalá·at: People of the Hoh River
Makah Tribe/ qwidičča?a·tǵ
Quileute Tribe/ K^wo?lí·yot
Quinault Indian Nation
Kelly Susewind, Director, Washington State Department of Fish and Wildlife
Laura Watson, Washington State Department of Ecology
USEPA Air Quality Division, Region 10
Hugh Morrison, Regional Director, U.S. Fish and Wildlife Service, Portland, OR
Sula Jacobs Superintendent, Olympic National Park
Kelly Lawrence, Supervisor, Olympic National Forest
Editor, Port Townsend Leader
Editor, Peninsula Daily News

Greg Hanscom, Joe Copeland, Drew Atkins, Editors, Cascade Public Broadcast System News
Editor, National Public Radio
Mike Sato, Salish Sea News
Al Bergstein, Olympic Peninsula Environmental News
Craig Whitlock, The Washington Post
Lynda Mapes, Seattle Times
National Parks Conservation Association
Earthjustice
Natural Resources Defense Council
Earthrise Law Center
Western Forest Law Center
Citizens of the Ebey's Reserve
Whidbey Environmental Action Network
Sound Defense Alliance
Quiet Skies Over San Juan County
Center for Biological Diversity
Greta Thunberg Foundation