



ANGLERS OF THE AU SABLE

An affiliated member of the Federation of Fly Fishers

Organization Headquarters
PO Box 200
Grayling, MI 49738
Telephone: (989) 348-8462
Fax: (989) 348-2541
www.AuSableAnglers.org

National Guard Bureau
Attn: Ms. Kristi Kucharek
3501 Fetchet Ave.
Joint Base Andrews, MD 20762-5157
NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil

April 1, 2024

VIA EMAIL AND FIRST CLASS MAIL

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

Dear Ms. Kucharek:

Anglers of the Au Sable hereby submits an administrative appeal of the Finding of No Significant Impact and Final Environmental Assessment, dated February 2, 2024, prepared by the Michigan Air National Guard relating to a proposed massive expansion of vertical and horizontal airspace for low-altitude training over the eastern half of Michigan's lower peninsula.

Anglers of the Au Sable also requests an administrative stay of the decision, until this appeal is addressed.

Anglers of the Au Sable (Anglers), with 1,200 members spread throughout Michigan and the Midwest, has a 35-year history of defending the watershed of the Au Sable River, one of the finest trout streams east of the Mississippi River, as well as being a powerful economic engine for the state of Michigan.

The purpose of the proposal is to allow the National Guard to fly jets in low-altitude training over the eastern half of the lower peninsula of Michigan, including the Au Sable River watershed.

The EA fails to comply with Air Force, FAA, and CEQ regulations requiring compliance with the National Environmental Policy Act (NEPA). The proposal is incompatible with recreational values, the outdoor economy, and real estate values of these areas for the reasons set forth below.

As explained herein, this project will cause irreparable harm, and therefore, a stay of the decision is warranted until the agency decides this administrative appeal. A stay is appropriate where irreparable harm is likely in the absence of preliminary relief, the balance of equities tips in the appellant's favor, and an injunction is in the public interest. *Winter v. NRDC*, 129 S. Ct. 365, 374, 555 U.S. 7 (2008).

OVERVIEW

The Draft Environmental Assessment (EA) for the proposed expansion fails to provide a complete assessment of the potential impacts for both individual and cumulative effects within the military operations area. Direct and indirect ecological effects will result from the continued concentrated

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

activities including elevated sound, increased atmospheric shockwaves, discharge of chaff, discharge of flares, discharge of munitions, and electronic measures/countermeasures. Taken together, these activities will, or are very likely to, result in significant negative effects on both terrestrial and aquatic ecosystems.

As set out in detail below, this FONSI and EA are insufficient under NEPA and other applicable laws for the following reasons:

Flawed modeling and analysis – The EA uses a flawed population model relying on what it claims to be a decreasing and aging population of the affected area. The EA fails to account for tens of thousands of seasonal residents, hikers, bikers, hunters, fishers, and outdoor lovers who support the local economies whose lives, outdoor experience, and property values would be adversely affected by the proposal.

Noise – The proposal will result in a dramatic increase in noise. The tables contained in the proposal show up to a tenfold increase in flights. The EA justifies this increase in noise by use of a flawed statistical method of averaging the peak noise to achieve what appears to be a slight increase average noise; noise that will shatter the solitude of the population noted above with constant low overflights of ear-splitting jets.

Pollution. The proposal will result in an increase of various pollutants. This increase will be a rain of pollution on the headwaters of one of the most famous and most-loved trout streams in the United States, as well on the lands and waters of permanent residents, seasonal residents, and participants in outdoor activities for which the area is justly famous and desired. The EA contains no discussion of the magnitude or effect on land and water of this increased pollution. The EA relies on generic studies that do not relate to eastern northern Michigan.

Collection and Disposal of Waste. There is no process in the Draft EA as to how, or in what manner, waste will be disposed with the increased airspace.

Cumulative Effects. The EA ignores the cumulative effects of the proposal. For instance, the EA throughout its discussion of cumulative impact defers any effort to deal with the problem by saying that cumulative impacts will be discussed in further NEPA documentation. And the EA throughout minimizes impacts of increased noise and pollution on all flora, fauna, and humans in the affected area. Though the National Guard proclaims the proposed land expansion by the Army National Guard and the proposed air expansion by the Air National Guard to be two separate processes, when it comes to the environment, and the cumulative effects of both proposed expansions, this is one enormous, proposed expansion that is terribly detrimental to the environment.

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

Insufficient alternatives analysis. The proposed airspace expansion and modifications contained in the Draft EA occur over the entire Au Sable watershed and are therefore of primary importance to the Anglers. Various alternatives in the Draft EA are discussed; alternatives A, B, C, and D. Alternatives A, B and C are wholly rejected by Anglers for the reasons discussed below. The EA glosses over the no-action alternative, alternative D. The EA does not discuss alternatives of using other airspace in the United States already in use for these training missions that involve less sensitive environments.

Inadequate notice and process. As far as Anglers can tell, the Guard sought no input from The Michigan Department of Environment, Great Lakes, and Energy (EGLE). This despite the fact that action to dramatically increase the airspace in northern Michigan will most assuredly impact the public and private land and waters of northern Michigan over which EGLE has jurisdiction.

Inadequate analysis of:

- Flight floor
- Proposed sorties
- Unmanned aircraft
- Electromagnetic warfare
- Chaff
- Flare
- Munitions
- Aircraft flight operation
- Endangered/protected species
- Wildlife response to aircraft operations
- Wetlands/surface waters
- Economic impact
- Additional unanswered questions

FACTUAL OVERVIEW

*The Michigan Air National Guard (ANG) proposes adding an additional 1,633 nautical square miles to its current 11,042 square nautical mile Alpena Special Use Airspace Complex.

*This expansion would stretch from east of I-75 near Grayling up to Huron Beach, through the thumb of Port Sanilac, and into Lake Huron.

*This expansion also includes more extensive use of current and new airspace.

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

*Somewhat simultaneously, the Michigan National Guard proposed a doubling in size of its current Camp Grayling. This proposal was rejected and is currently presented as an MOU between the state and the Michigan National Guard for 52,000 additional acres of land available for use by Use Permit Application. No applications have been approved as part of the MOU and Anglers of the Au Sable is in FOIA litigation with the state.

*Near Grayling, the expansion would create a new permanent airspace of 918 square miles with major increases in the number of flights and the amount of time planes spend flying there. Some planes would fly as low as 500 feet. This permanent airspace would replace an 869 square mile temporary airspace that does not allow flights under 5000 feet.

*Another flight path between the Grayling Air Gunnery Range and the Alpena Combat Readiness Center would allow planes to fly as low as 300 feet.

*In Michigan's Thumb area, three new low-altitude training areas would allow planes to fly at 500 feet, instead of the 6,000 feet limit currently in place.

*The ANG contends that increases in noise, emissions and chaff and flare would have minimal impact on the environment, residents and visitors.

*Residents received far less time to comment than the military contends that they did, with public knowledge really not existing to 2022 in the Grayling area, despite the military's claims that it held "a number of public meetings." The draft EA featured only a 30-day comment period.

*The ANG contends that this proposal would update the airspace to satisfy training requirements for modern, 5th generation aircraft like the F-22 and F-35.

*Anglers of the Au Sable responded to the Draft EA on 1/13/2023 asking for sound evaluations, which requests have not been received.

* Chaff cartridges typically contain approximately 5.46 mill aluminum foil particle or aluminum coated glass fibers. The EA indicates that a total of 6,103 chaff cartridges will be discharged annually for training purposes primarily within the R-4201 and the Pike West MOA. This is approximately a 20% increase over previous expenditures. This means that a total of 33,306,000,000 micro-glass/aluminum coated fibers will be discharged annually into the atmosphere primarily over the two training areas. This is likely to result in human exposure to glass fibers (or silica dust) which may lead to a well-recognized occupational hazard termed silicosis. Silicosis is a group of conditions that includes asbestos-related respiratory diseases.

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

*Flares are discharged as a countermeasure to evade various types of missiles. The flare identified for use in the EA appears to be the M206 which has a MTV (magnesium-Teflon-Viton A) formulation. MTV combustion produces a variety of particles that can be composed of MgF_2 and MgO among other compounds. The particles are generally in the range of 1 micron to 100 microns in size, well within a size range that may be inhaled. The safety data sheet (SDS) for MgF_2 references the OSHA 29 CFR 1910.1200 (hazard communication) Hazard Statement and indicates this compound can cause skin irritation, serious eye irritation and may cause respiratory irritation. It also identifies this compound as a category 3 compound, exhibiting specific target organ acute toxicity. Thus, a person experiencing a single exposure to flare combustion products such as MgF_2 may suffer altered function of their respiratory system. The risk of serious respiratory effects is compounded if humans are exposed to both MgF_2 and micro-glass fibers. Similar effects may occur in wildlife exposed to both flare combustion products and chaff.

*An F-16 operating for 1 hour burns approximately 8,000 to 10,000 lbs of fuel. Assuming the F-16 and F-15 produce similar quantities of combustion products, the F-16 would produce approximately 270 lbs of NO_x compounds per hour of flight. If this aircraft conducts 1100 sorties per year (assuming 1 hour each) we estimate the total NO_x emission would be 297,000 lbs/year. Jet fuel combustion produces CO_2 , CO, C, NO_x , SO_x , metals, polycyclic aromatic hydrocarbons (PAH), and toxic and carcinogenic compounds.

*Particulate matter (PM) produced by combustion is classified by size and is characterized by ultra-fine particles (UFP) that are <100 nm. The risk of exposure (humans and wildlife) would be exacerbated if training is conducted at lower altitudes. Exposure to many of the combustion products have been shown to have negative health effects. For example, PM typically falls within a size range that is easily inhaled and can travel deep into the respiratory system.

*Unburned jet engine lubrication oil was recently found to be a significant fraction of jet emissions. Among them are organophosphate esters (OPE) which is a large class of chemicals with toxic properties. A study conducted in New York found that OPEs were present in air, soil, dust, river water and pine needles at varying distances from airports.

*The scientific wildlife literature clearly indicates that flight operations can and do have impacts on wildlife. Both visible and audible encounters between aircraft and wildlife have resulted in animals exhibiting stress responses. Spring and fall bird migrations are likely to coincide with training activities conducted by the MIAANG. Data show that birds migrating over Michigan often fly between 50 and 1400 feet above ground level.

*Finally, it has been well documented that a number of threatened species and species of special concern are present in the counties within the training area and are known to inhabit areas directly used for training.

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

DETAILED COMMENTS AS TO THE MYRIAD OF PROBLEMS AND FLAWS CONTAINED WITHIN THE DRAFT EA

Flight Floors

The flight floors stated for the proposed new Grayling West (500 feet) and VRs 1601/1602 (300 feet) are extremely low. It is inconceivable that aircraft flying at these levels would not interfere with quiet enjoyment and pursuit of fishing and any other recreational activities on the state land and waters located beneath these areas.

Proposed Sorties

The number of sorties proposed in Grayling East and Grayling West is over **10 times** the number of sorties stated to have taken place in the Temporary Grayling MOA. This extreme escalation in the number of flights, especially in the Grayling West MOA with its proposed 500-foot floor, would shatter the peace and solitude of the area, intruding on and curtailing recreational activities, including fishing.

Any branch of the military, including as well various military airfields located throughout the region, may request to train at the Alpena CRTC. Therefore, how was the number of proposed sorties arrived at, when it cannot be known at this time how many squadrons would request to train or what kind of aircraft they may be flying in the future? The ANG has not stated that the number of sorties or the type of aircraft stated in the Draft EA would be the maximum number of sorties allowed or limited to the aircraft listed: it can therefore be concluded that the projections contained in the Draft EA cannot be factual.

There is no definition contained in this Draft EA which sets forth what events or occurrences would necessitate an additional environmental assessment being required-i.e. how many more flights, how many additional makes of aircraft could be introduced before a new EA was required?

Noise

The EA fails to discuss that peak noise will shatter the solitude of the populations noted above with constant low overflights of ear-splitting jets. The EA justifies this increased noise by a flawed statistical method of averaging the peak noise to achieve what appears to be a slight increase in average noise.

There are 5 sorties stated for the EA-18G aircraft in the Grayling West MOA, an aircraft stated not to have been used in this airspace previously. This aircraft is exceedingly loud. The decibel level change stated in the EA for the areas where the EA18G is to operate does not appear to reflect an overall high increase in noise levels. It is impossible to believe this could be true, in view of the

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

level of sound generated by this aircraft, especially when combined with the presence of both the F-16 and A-10 aircraft in the same MOA.

The FAA expressly instructs that the military utilize the NOISEMAP system to evaluate noise impact, yet there is no mention whatsoever of this system or its use or its findings in this Draft EA.

It is unclear to Anglers how the ambient sound levels were determined as presented in the Draft EA, or for what period of time or at what time of day obtained. They appear to be averages (i.e.DNL) but averages of what? How many samples? With aircraft or without? If with, how far away from the ground and for which aircraft? None of this raw data is presented in the Draft EA. Even if it was, utilizing an “average” level of sound over 24 hours does not demonstrate what the impact of single event sound would be on the ground. For example, if someone started a jackhammer outside your home, ran it for an hour, and then averaged the decibel level experienced during that hour over the next 23 hours, the “average” would not begin to accurately describe the sound level of the jackhammer experienced during the hour it was running. That is the same flawed reasoning utilized in the Draft EA.

Similarly, it is absolutely nonsensical that introducing 10 times the number of flights in Grayling West MOA or adding aircraft at 300 feet in VR-1601 and 1602, would create only a negligible increase in noise, due to the sheer volume of sorties and the low flight floors proposed in those areas. One only needs to rely on one’s common sense to reach this conclusion.

Furthermore, it is military practice that military planes travel in pairs, or in a formation larger than two. However, nowhere in the Draft EA is the noise level from 2 or more aircraft stated or evaluated.

Unmanned Aircraft

Remotely piloted aircraft (RPA) are not addressed in the Draft EA, despite the fact that the prior EA published for the Grayling Temporary MOA stipulated their use. It is reasonable to assume that the operation of RPAs and the training of National Guard RPA operators will be an integral mission of the Guard.

Electromagnetic Warfare

There are no specifications for the EA-18 G aircraft, which is equipped for electronic attack included in the Draft EA. Additionally, tasking events for the F-16 and A-10 aircraft contained in Table H-2 of the Appendices includes “military activities that use electromagnetic energy to control the electromagnetic spectrum (“the spectrum”) and attack an enemy”. Yet there is no discussion whatsoever of possible effects of such warfare on humans or any other life form in the Draft EA or the FONSI. This is a glaring omission of a possible source of harm from the activities to be undertaken.

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

Listing the EA-18G aircraft in the EA indicates that there will likely be training that includes the use of electronic warfare (EW) elements. EW includes an array of tools that function across the electromagnetic spectrum. For example, Active Denial Systems were developed for crowd control and operate at 95 GHz.

Although the exact electromagnetic wavelengths utilized for this type of training are for some reason omitted, it is reasonable to assume that this training will utilize a range of electromagnetic frequencies. For example, we have found documents noting the military typically uses frequency bands L, S, and C. The L-band frequencies are in the ultra-high frequencies and fall into the 1 and 2 GHz range. The S- and C-band frequencies are in the microwave band, S falling between 2 and 4 GHz and C falling between 4 and 8 GHz. Additional electronic warfare activities have been noted as part of ground operations training and R&D (perhaps by independent contractors), but full details are not available.

However, we assume that these training and research/development activities will employ a range of electromagnetic frequencies, potentially in the Q, V, W bands, and higher.

In addition to frequency, other factors related to the use of electromagnetic radiation are duration of transmission, how often transmissions occur, and power density. These three factors combined will determine the amount of electromagnetic radiation that is transmitted into the environment.

The significance of effects of electromagnetic radiation (EMR) on flora and fauna is often minimized due to a perceived lack of evidence such as quantified mortality rates due to EMR exposure. Establishing impact using this type of metric essentially requires direct observations of animals dying instantaneously following EMR exposure. However, accepting the fact that effects of EMR may be expressed in ways other than direct mortality, then there is growing evidence that EMR can have a negative impact on flora and fauna.

An area of research that has received relatively little public attention is the impact of electromagnetic fields (ELF) on behavior (Burda et al. 2009, Shepard et al. 2018), physiological function (Goodman and Blake 1998), and DNA (Blank and Goodman 1999). The lack of consideration regarding these impacts is likely due to the fact that they are difficult to measure and are not immediately visible to the public.

None the less, these kinds of effects may have long-term negative impacts on organisms, populations, and communities. For example, heat shock proteins (e.g., hsp70) are produced by animals during periods of stress. Typically, the animal will experience a stress, produce hsps to protect various physiological elements, and then the hsps decrease as the stress factor subsides. However, in the case of ELF generated by aircraft during training, an animal may be exposed to the stress factor several times in a day, or several times over a longer period of time (e.g., a week).

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

Thus, animals living within or adjacent to electronic warfare training areas may be regularly placed in a state of stress, which could result in reduced fitness or ultimately, mortality.

The risk may be greatest to threatened or endangered species due to the already low number of individuals across their range. For example, bats are generally considered to be capable of evading physical structures due to their echo location. But there is significant evidence that bats may and do collide with fixed structures. Similarly, the general assumption has been that bats will not be impacted by the expanded/reconfigured training area and operations, including the use of EMW. The popular theory is that EMR does not interfere with a bat's echo location system and consequently, may lead some to the conclusion that EMR has no negative impacts on bats. However, there is evidence that bats do avoid radar specifically used at airports, including military facilities. Thus, there may be impacts to bat populations not related to disruption of the echo location system, but due to their avoidance of an area with EMR. Joint Threat Emitters (JTE) which generate a "high-density radio frequency environment" may create just such a scenario.

There are several indirect impacts that may be realized by a threatened/endangered bat species. First, it may cause bats to vacate a preferred roosting site for a lower quality, less preferred roosting location. Second, bats may be forced from a high-quality feeding location (e.g., within a river corridor like the North Branch Au Sable River) to a low-quality feeding area due to their response to EMR. Feeding in lower quality areas will result in a reduction in fitness and a loss in body condition that may manifest in mortality during the winter hibernation period.

Although some effects of EMR are difficult to quantify, others are easier to measure. Soft tissues directly exposed to EMR such as the eye, can be damaged by EMR exposure. Studies have shown that exposure to 40, 75, and 95 GHz will cause damage to parts of the eye (Kojima et al. 2018).

Exposure to EMR has also been linked to various human conditions such as the Havana Syndrome. In this case, a National Academy of Sciences report concluded that the symptoms exhibited by those exposed were consistent with individuals that had been exposed to "directed, pulsed radio frequency (RF) energy". It should be noted that EMR and acoustic energy can impact auditory function even at relatively low power densities.

Even exposure to EMR from a mobile phone is listed as a potential health risk. Each mobile phone provides a statement of risk due to the EMR exposure an individual will experience during mobile phone use. Health organizations recommend that there should be a 5 mm gap between the phone and user to avoid EMR exposure.

The fact that EMR has been shown to have impacts on plants, birds, insects, livestock, rodents, and amphibians supports the hypothesis that training activities that employ ELF will likely cause significant negative impacts to wildlife.

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

Add to this, exposure to EMR in use during ground operations and the prospect that outside contractors may be developing and testing new EMR warfare components, and it is reasonable to conclude that these activities will have a negative impact on wildlife.

Although we do not have access to the specific frequencies that will be used within the training complex, there is sufficient evidence to suggest that there will be impacts due to EMW. The EA wrongfully dismisses the risk of exposure to EMR used during training activities and the potential risks and impacts of electromagnetic activity noted above.

Chaff

The deployment of chaff by military aircraft is one of several countermeasures used to evade radar detection. There are several types of chaff cartridges, but the chaff is typically composed of either aluminum foil or aluminum coated glass fibers. The chaff cartridge that will be used in the operations area as identified in the EA is the RR-188.

The RR-188 is an 8x1x1 rectangular tube that contains 1.0 mil diameter (25 micron) (<https://www.globalsecurity.org/military/systems/aircraft/systems/chaff.htm>) micro-glass fibers coated with a very thin layer of aluminum. Available information notes that the total number of fibers (dipoles) per cartridge is approximately 5.46 million. The EA indicates that a total of 6,103 chaff cartridges will be used for training purposes primarily within the R-4201 and the Pike West MOA per year, which is approximately a 20% increase over previous expenditures. This means that every year a total of **33,306,000,000** micro-glass/aluminum coated fibers will be released into the atmosphere primarily over the two training areas (EA pg. 27).

There is an important inconsistency (among others) in the information presented on the altitudes of these operations. Designated Altitudes for Pike West MOA (Appendix G) is 6,000 feet to 17,999 feet MSL. However, Table 2-17 notes that chaff/flare training is generally 2,000 feet AGL (above ground level) or higher. If training occurs at 2,000 feet AGL and average elevation for the Pike West MOA is 1,020 feet MSL (mean sea level) (e.g., Mio MI), then flights could potentially occur at approximately 3,000 feet MSL which differs from the altitudes noted in Appendix G. So apparently, these operations will be at much lower elevations than indicated in the EA. Training flights occurring at lower altitudes will increase visual and auditory disturbance of species in the area. In addition, deployment of chaff cartridges at lower altitudes will likely result in a much higher concentration of micro-glass fibers accumulating in areas used for this type of training since they will have less time to drift after discharge.

The EA fails to accurately depict the altitude(s) chaff will be released from in each of the designated areas.

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

Although the EA concludes, based on previous government reports, that chaff is non-toxic at typical exposure levels, toxicity is not the only potential health or ecological harm. The fact that the chaff is composed of aluminum coated micro-glass fibers is a particular threat in terms of ecological and human exposure. Glass fibers that are 25 microns in size (noted above) would easily be inhaled and passed into the lungs. Exposure to glass fibers (or silica dust) leads to a well-recognized occupational hazard termed silicosis. Silicosis is a group of conditions that includes asbestos-related respiratory diseases. Typical symptoms of silicosis are coughing, inflammation and fibrosis of the respiratory system. Silicosis can be chronic, subacute or acute. Consequently, inhalation of micro-glass fibers generated by chaff discharge has the potential to cause serious health risks, including death, in both animals and humans.

The EA suggests that chaff particles are too large to be inhaled and only after some degradation (decrease in size) would this be a potential health risk. The EA fails to accurately assess the potential risks and impacts of chaff deployment noted above.

Other organisms, particularly invertebrates may also be injured or killed by micro-glass fiber exposure due to chaff. For example, a non-chemical insecticide that is formulated from diatomaceous earth has been widely marketed to control pest insects. Diatomaceous earth is formed from microscopic silica cell walls that are produced by marine protozoa. As the organisms die, the silica cell wall settles to the bottom of various marine ecosystems. The remaining silica cell walls range from tens of microns to a few hundred microns in length/diameter. The diatomaceous earth is simply mined, ground and then gardeners sprinkle it on the foliage of plants. As the insect eats the plant leaves it will ingest the silica which slices through the intestine causing mortality. Alternatively, the silica can scratch the cuticle causing the insect to desiccate. Because micro-glass fibers are similar to diatomaceous earth which is used as a broad-spectrum insecticide, micro-glass fibers will impact both common and rare insects.

The EA dismisses the potential risks and fails to accurately assess the potential risks and impacts of chaff deployment noted above.

The sheer number of micro-glass fibers that will be released annually will likely cause significant negative impacts on people, other mammals, and insects that are an important source of food for some threatened and endangered species, and for fish. Indeed, an independent news source has stated that the land use management objectives of environmentally sensitive and pristine areas such as Wilderness Areas, Wild and Scenic Rivers, and National Parks and Monuments, may be compromised by the discharge of chaff cartridges and bundles near or over these areas. This is of particular concern in the carefully balanced system, in the case of this area, that allows the development of a world-class trout fishery highly reliant on insect hatches that already may be diminishing or at least changing due to impacts from global warming and climate change. This fishery is a vital economic asset to the region affected.

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

The EA dismisses the risk of glass-fiber exposure on the basis that glass-fibers are non-toxic, however there are other risk factors. The EA fails to accurately assess the potential risks and impacts of chaff deployment noted above.

Flare

Flares deployed from aircraft are a countermeasure used to evade various types of missiles. The flare identified for use in the EA appears to be the M206 which uses in its formulation Magnesium-Teflon-Viton A (MTV).

(<https://www.globalsecurity.org/military/systems/aircraft/systems/m206.htm>)

Given the temperature at which flares burn, the DNR has previously voiced concern over the risk of fire, particularly in areas with Jack Pine, which proliferate in many of the target areas. An equally important concern, however, may be the risk to animal and human health. This risk would be exacerbated if training is conducted at lower altitudes as noted above.

MTV combustion produces a variety of particles that can be composed of MgF_2 and MgO among other compounds. The particles are generally in the range of 1 micron to 100 microns in size, well within a size range that may be inhaled. The safety data sheet (SDS) for MgF_2 references the OSHA 29 CFR 1910.1200 (hazard communication) Hazard Statement and indicates this compound can cause skin irritation, serious eye irritation and may cause respiratory irritation. It also identifies this compound as a category 3 compound, exhibiting specific target organ acute toxicity. Thus, a person experiencing a single exposure to flare combustion products such as MgF_2 may suffer from adversely altered function of their respiratory system. The risk of serious respiratory effects is compounded if humans suffer exposure to both MgF_2 and micro-glass fibers. Similar effects may occur in wildlife suffering the same exposure to both flare combustion products and chaff.

The EA dismisses the risk of exposure to flare combustion products and fails to accurately assess the potential risks and impacts of flare deployment.

Munitions

In addition to the accumulation of toxic and carcinogenic compounds released into the current and expanded training areas from increased countermeasure use, the increase in the detonation of munitions (ground and aerial training) will add to the array of toxic substances in the environment due to military training. A major concern is that detonation of munitions results in the release of perchlorate into the environment. Perchlorate has been reported in groundwater at other military installations such as Joint Base Cape Cod (Massachusetts) where it is “often found in groundwater with explosives”. In Evart, Michigan, elevated perchlorate concentrations in groundwater were associated with an area used for the annual 4th of July fireworks display. The discovery of elevated levels in the municipal water supply led Nestle to discontinue use of one municipal well as a source of water for bottling.

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

Perchlorate is of concern because it may impact human health. Perchlorate can disrupt thyroid function, and although negative impacts in adults may be reversible, some studies suggest that long-term exposure may inhibit thyroid function. Perhaps more important are the risks of perchlorate exposure during fetal development and early childhood development. The thyroid plays an important role in early childhood development. Disrupting thyroid function during development may cause irreversible effects. Perchlorate has also been shown to cause lung damage in lab studies.

Monitoring wells located generally to the south and east of the current Grayling practice range were sampled during October 2021. Samples were analyzed for a range of toxic substances, primarily heavy metals, but also perchlorate. The data show that almost all of the groundwater samples had detectable levels of perchlorate. Although the reported concentrations are relatively low, the fact that it is present across much of the practice range is concerning. Obviously, an increase in the amount of munitions expended in the practice area will result in an increase in the concentration of perchlorate in the groundwater.

Given the amount of munitions used for training in a relatively small area, it is reasonable to suggest that the concentration of perchlorate (and other toxins such as lead) could increase. The EA fails to accurately assess the potential risks and environmental impacts of munitions deployment noted above.

Aircraft Flight Operation

Aircraft Fuel Combustion Products

The EA report Appendix I details the amounts of various combustion products resulting from flight activities within the designated flight areas. Aircraft fuel generates a significant quantity of products upon combustion, many of which are known to have negative environmental impacts. For example, an F-15 produces over 35 organic compounds from fuel combustion. In addition, a study that estimated combustion products found that during “military operation engine power” levels, an F-15 generated 3151 g of CO₂ kg⁻¹ fuel and 32 g kg⁻¹ of NO_x (among others).

An F-16 operating for 1 hour burns approximately 8,000 to 10,000 lbs of fuel (up to 60,000 lbs per hour with afterburner). Assuming the F-16 and F-15 produce similar quantities of combustion products, the F-16 would produce approximately 270 lbs of NO_x per hour of flight. If this aircraft conducts 1100 sorties per year we estimate the total NO_x emission would be 297,000 lbs/year. In comparison, it would take 10 semi-trucks driving 835 miles to produce 270 lbs of NO_x. Add to the F-16, numerous other aircraft used during training sorties. Assuming training continues at similar levels for several years, the amounts of combustion products deposited over the training area will be significant and widespread. The risk of exposure would be exacerbated if training is conducted at lower altitudes as noted above.

RE: REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT

Jet fuel combustion produces CO₂, CO, C, NO_x, SO_x, metals, polycyclic aromatic hydrocarbons (PAH) plus toxic and carcinogenic compounds. Particulate matter (PM) produced by combustion is classified by size and is characterized by ultra-fine particles (UFP) that are <100 nm. With incomplete fuel combustion, bi-products include carbon-rich aromatic compounds, including soot and char. In atmospheric science, soot and char are measured as elemental carbon (EC) and as black carbon (BC) in soil science.

Exposure to many of the combustion products have been shown to have negative health effects. For example, PM typically falls within a size range that is easily inhaled and can travel deep into the respiratory system. This PM can cause numerous respiratory issues, similar to those described for inhalation of micro-glass fibers.

Unburned jet engine lubrication oil was recently found to be a significant fraction of jet emissions. Among them are organophosphate esters (OPE) which is a large class of chemicals with toxic properties. A study conducted in New York found that OPEs were present in air, soil, dust, river water and pine needles at varying distances from airports. Low altitude flight operations are very likely to leave OPE residue on vegetation and surface water within and near the training area.

The EA links air quality to regional criteria and dismisses risk to health due to a perceived dilution factor with increased airspace volume. However, a concentration of flights over a particular training area may result in elevated concentrations of pollutants. The EA fails to accurately assess the potential risks and environmental impacts of aircraft flight emissions as noted above.

Endangered/Protected Species

There are endangered and/or threatened species identified under the proposed MOAs including but not limited to the Indiana and Northern long eared bat, Karner blue butterfly, monarch butterfly, Kirkland warbler, bald eagle, Hine's emerald dragon fly, and Hungerfords water beetle. This is acknowledged in the EA. However, it is continually stated that because no construction or ground disturbing activities are proposed, these species will not be affected. The EA completely, and wrongly, ignores the effect that low flying aircraft noise may have on these species or any other wildlife.

An Appendix to the Draft EA sets forth the questions and answers derived from the use of a computer software program (IPaC) through the offices of U.S. Fish and Wildlife. Nowhere therein is the impact of noise, flight level, air pollution from fuel expenditure, or release of chaff or flare material evaluated on endangered or protected species.

It has been well documented that a number of threatened species and species of special concern are present in the counties within the training area and are known to inhabit areas directly used for training. All of the activities and potential impacts described in the EA will have an even greater negative effect on the species, which by law the Guard is supposed to protect.

RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

Wildlife Response to Aircraft Operations

The scientific wildlife literature clearly indicates that flight operations can and do have impacts on wildlife. Both visible and audible encounters between aircraft and wildlife have resulted in animals exhibiting stress responses. For example, several studies have noted that eagles are disturbed while on the ground, on a perch, or on a nest due to aircraft operations. It is very likely that other species of wildlife exhibit similar negative reactions.

Spring and fall bird migrations are likely to coincide with training activities conducted by the MIANG. Data show that birds migrating over Michigan often fly between 50 and 1400 feet above ground level. This is well within the proposed training flight altitudes note in the EA.

Wetlands/Surface Waters

Similarly, the Draft EA concludes there will be no significant impact to wetlands or to surface waters simply because no construction activities are proposed. It is patently ridiculous to conclude, without any apparent investigation, that air pollution from fuel expenditure and/or the release of chaff and flare material cannot have any effect on wetlands or surface waters or the organisms that inhabit them.

Economic Impact

The prior Environmental Impact Statement prepared the Air National Guard for the Beddown of a Foreign Military Sales Pilot Training Center states a “Potential decrease in property values could occur (.2 to 1.2% per dB increase)...”. However, this factor is completely ignored in the Draft EA for this proposal.

Additional Unanswered Questions

Anglers has submitted additional questions in connection with this proposal and Draft EA, which remain unanswered as of the date hereof (See attached). These comments are therefore limited to the information we possess at the time the public comment is closing.

It should be noted that Anglers requested additional time so that this information could be obtained. That request was denied by MIANG.

Anglers requests that additional information be developed that would show the impact of the planned activities on the ground and in the air on the overall ecology of the Au Sable watershed and related waters. The economic success of this region depends on the hunting, hiking, biking and especially the fishing activities that are reliant on its special environment. It is important that those deciding whether to allow this expansion/reconfiguration to understand, and will be able to

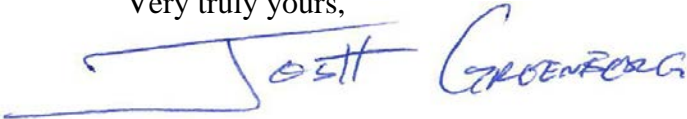
RE: **REQUEST FOR STAY and ADMINISTRATIVE APPEAL OF FONSI and FINAL ENVIRONMENTAL ASSESSMENT FOR MODIFICATION AND ADDITION OF AIRSPACE AT THE ALPENA SPECIAL USE AIRSPACE COMPLEX and FINDING OF NO SIGNIFICANT IMPACT**

communicate to the community, whether additional Guard and Air Force activities will endanger the insects, birds, mammals, fish and humans in the affected region. That cannot be done with the Draft EA.

The process to date has not been a transparent process, but rather an opaque process. It is impossible to know given this proposal what will be the environmental impact without knowing exactly what is going to happen. There has been insufficient data presented. There has been an insufficient analysis conducted. NEPA requires a full disclosure.

It is Anglers' contention that the proposed expansion/modification of the Alpena SUA would have significant impact and that much more rigorous analysis and documentation—a hard look—is needed in the form of a full Environmental Impact Statement, which fully and accurately addresses the complete and cumulative environmental effects of this proposed action. This special and valuable region of northern Michigan demands nothing less than such a hard look.

Very truly yours,

A handwritten signature in blue ink that reads "Josh Greenberg". The signature is written in a cursive style and is positioned above a horizontal line that spans the width of the signature.

Josh Greenberg, President

cc: Gov. Gretchen Whitmer
Federal Aviation Administration
U.S. Fish and Wildlife Service
Phil Roos, Dir., MI Dept. of Environment, Great Lakes & Energy
M. Scott Bowen, Dir., MI Dept. of Natural Resources
Hon. Pete Buttigieg, Secretary of Transportation
Representative Jack Bergman
Senator Debbie Stabenow
Senator Gary Peters
Representative Joe Tate (Via Email Only to joetate@house.mi.gov)
Senator Winnie Brinks (Via Email Only to senwbrinks@senate.michigan.gov)
Senator Sue Shink (Via Email Only to sensshink@senate.michigan.gov)