MEMORANDUM

To: Liz Fancher, Hearings Officer - #T3-2022-16220

Date: 16 May 2025

From: Steven P. Smith, Wildlife Biologist

RE: Response to N.56 and S.32: *Wildlife Habitat Impact Analysis,* by Environmental Science Associates for Winterbrook

<u>Introduction</u>

Environmental Science Associates provided responses to my submittal (5-1-2025, N.56). This submittal examines the science and assumptions related to those comments.

The LUBA remand focused on a single question. D**oes the proposed land use change and conditional use have adverse impacts on natural resources.**

My hearing testimony and subsequent written response addressed the wildlife and wildlife habitat values associated with the lands impacted by the land use change. I stand by my assessment that the Habitat Evaluation Procedures (HEP) and Habitat Suitability Index (HSI) used by ESA lack the scientific validity to support conclusions made by the applicant (USFWS 1996).

The use of wildlife mitigation has been defined by the Oregon Department of Fish & Wildlife and the US Fish and Wildlife Service as "actions taken to reduce eliminate or offset negative impacts on wildlife and their habitats, often resulting from human activities such as development, infrastructure projects or land use changes." (USFWS 2013).

Nearly all of the responses to date by the PWB and their consultants concentrate on mitigation. The applicant and their consultants state that the mitigation plan is designed to offset adverse impacts to wildlife and improve overall habitat availability and quality.

Environmental Services Associates maintain that construction activities are outside the scope of the remand by LUBA. Had the land use changes been implemented after the approval of the application this may have been accurate. Now that the damage to wildlife and wildlife habitat has been done, the applicant is arguing that they can create better habitat than was present before adverse impact occurred.

Big leaf maple has a sustained growth of 1-2 feet per year and reach a mature height of about 100 feet (Niemie et.al. 1995). The authors note that tree diameter continues to increase over time and big leaf maple can live up to 300 years. For planted trees to reach the diameter of the big leaf maple that were removed will take 30-80 years (also evidenced by the number of rings present on the stumps).

Mature big leaf maple support the most wildlife species of all the trees present before construction. They are second only to mature Oregon white oak in their value for ecosystem functions in the Pacific Northwest Washington State Extension (2004). Wildlife habitat values include nesting, cavities, seeds, insects and shelter from adverse weather conditions.

The sequoia that was removed may have been non-native. Wildlife generally do not respond to whether a tree is native or not. Wildlife responds to food, cover, location and water. The removed sequoia was densely foliated and > 60' tall even though they had been topped. Sequoia of this size provide excellent protection from heat and cold. They have a shaggy bark which supports many insects used by birds as a food resource throughout the year. Species such as great horned owls and red-tailed hawks use taller trees for perches when hunting and resting.

ESA stated that the numerous species associated with big leaf maple and conifers (sequoia in this case) will have the resilience to respond in 30-80 years once the planted trees mature and the mitigation site begins to function as suitable habitat for the suite of wildlife species impacted. I could not find any scientific published information that supports this conclusion.

ESA assumes that the impacted species can just move offsite to utilize adjacent private lands until the mitigation site provides functional habitat. This statement is misleading at best. First there is no evidence to support their claim that birds witnessed on the property edges were displaced birds rather than birds using the habitat within their own territories. Second, no wildlife that were using the habitat could so easily relocate. Some mortality likely occurred within the small mammal, reptile, amphibian and pollinator communities. Nearly all wildlife species have territories, especially during the breeding season. Occupied territories are defended and those newcomers could find themselves displaced again and again throughout the year. This increases risk of mortality through predation, lack of reliable food and cover resources and roadway mortality. Mortality often occurs within wildlife populations when they are pushed from place to place looking for unoccupied habitat. In addition, some species could be considered damage agents to local agricultural crops and be removed by the landowner.(s). There is no evidence to suggest affected wildlife populations can find or have found a place using adjacent habitat suitable to meet their life history requirements.

Habitat Evaluation (HEP) and Habitat Suitability Index(HSI)

ESA biologist responded to my written and oral testimony by stating they stand by their species assessments and Habitat Suitability modeling based on their habitat and species inventories, review of existing data bases for species presence in the area, and their expert" opinions.

Response: The assessment lacks the scientific rigor to be reliable or accurate. The conclusions presented are based on poorly designed inventory techniques and flawed application of two models developed by the USFWS (HEP and HSI). The applicant did not address the limitations of how these models were used (Smith N56) nor the fact that use of these models has been largely discontinued by the agencies responsible for managing wildlife populations. I have identified several flaws in the inventories (or lack thereof), assessment of existing conditions, and mitigation design.

Inventory Assessment Defects

Both HEP and HSI models were designed as models which used a team approach to assessing field data and selecting focal species. The manuals published to guide application of both models do not recommend they are to be used by a single "expert" to determine the adequacy of data collection, species selected for analysis and used as "focal" species. The HSI manual explicitly points out that there is a high risk of bias and HSI result manipulation. This is the primary reason for using multiple agency experts and stakeholders when the modeling and monitoring long term mitigation effectiveness in replacing the ecosystem functions.

As I cited in my written response (N56), HEP and HSI are designed to be used by a team of qualified biologists representing the organizations involved with wildlife management. This should have included ODFW, USFWS, NRCS, Xerces, American Bird Conservancy, and Multnomah SWCD staff as well as area landowners familiar with wildlife use of the area. As a team working with the biologists from Winterbrook and ESA, the HEP and HSI evaluations would have had broader review and support for model assumptions, species selection, and review of model outputs. Neither ESA or Winterbrook have provided any evidence that any level of peer review or stakeholder involvement was used to guide their procedures.

No inventories were not conducted for small mammals, reptiles, amphibians or pollinators. Results of bird inventories serve only to determine a potential list of impacted species. No population data and nesting information was apparently collected for avian populations. ESA states that they would buffer around nest sites, yet the entire site has been impacted. Does this indicate that no nesting is occurring within the mature trees, shrubs fields or hedgerows? This is a highly unlikely scenario considering the habitat condition was stable and had not changed (other than within the agricultural field) for many years.

In addition, the dates of some avian inventories appear to have occurred after construction was already started (Ciecko, N48 and Winterbrook, S32.) This could result in fewer species being identified as disturbance activities were already initiated. The inventories do offer an insight to functional habitat attributes provided by the pre-construction condition. The avian species list shows a good suite of migratory and resident wildlife present.

I found no evidence that quantitative vegetation sampling was conducted to determine habitat structure, vegetation composition, down wood, or ground cover. This habitat data is essential for replicating habitat values for mitigation. ESA initially discounted the values of habitat present by claiming the presence of non-native species reduced habitat quality. Their limited inventories do not support this conclusion. Wildlife respond to food, cover and water more than whether their habitat consists of native or non-native vegetation. There are several species of invertebrate pollinators tied specifically to host plants, but none were identified in this case.

Mitigation Design Defects

Wildlife selected as representative focal species were Roosevelt elk, bobcat, red-tailed hawk, little brown bat northern red legged frog, white crowned sparrow and western bumble bee. These species were used in HSI modeling to determine mitigation plan components to be implemented. All these species are habitat generalists. They **do not** accurately represent the community of wildlife affected. HSI relies on selecting focal species that represent habitat requirements of most wildlife species using similar habitat.

Focal species is a broad term used in conservation that refers to choosing a species for special attention. They are selected when their collective needs represent the full range of critical ecosystem functions or habitats in a region (Chase and Geupel 2005). The authors describe five classes of Focal Species:

Flagship: Often referred to a charismatic species because they may draw public support for conservation.

Keystone: Species whose presence is critical to maintaining ecological diversity.

Special Status: Imperiled species given special status by by federal state, or local governments. Threatened and endangered species are usually Special Status.

Indicator: Organisms used as an index for attributes to difficult or expensive to measure for other species or habitat conditions.

Umbrella: Usually, species requiring large habitat areas which may provide for the needs of a larger suite of species using the same habitat. Northern spotted owl, and grizzly bear for example.

ESA also used the term indicator species. Like focal species, indicator species are sensitive to environmental change. Selected species are usually those that have limited ability to respond quickly to habitat loss and climate change. Thus, they are likely impacted the most and respond to habitat conditions only when the habitat structure and composition provides food, and cover. Monitoring is a key element when mitigation intends replaces lost ecological functions and life history needs of the impacted wildlife community.

The species selected by ESA for tracking recovery of ecosystem function and for implementation of mitigation measures do not meet criteria for focal or indicator species when such an approach is in my experience the customary way to predict mitigation outcomes.

There are about 47 wildlife species directly linked to hedgerow habitat (Cafforetta and Woodward 2015) (Grand 2020). White crowned sparrows, American robins, and red-breasted sapsuckers do not represent the range of habitat requirements needed to support the full suite of hedgerow and forest edge species using this habitat. Red legged frogs are more closely associated with wetlands and adjacent cover areas, not the impacted habitats. Roosevelt elk and bocats are not species representing habitat components lost in the fields or hedgerows.

Following are examples of the limitations the ESA elected focal species have as a means of predicting adequacy of the proposed habitat mitigation.

- The downy woodpecker is a primary cavity excavator (woodpeckers). It uses the smallest diameter trees (6”) of the woodpecker group for cavity excavation. Downy woodpeckers feed on insects found in bark and small fruit (like cherry trees). They also use cavities that have developed naturally in mature hardwoods such as big leaf maple (all mature big leaf maple were cut down). The pileated woodpecker is the most commonly used indicator species for wildlife dependent on dead and down wood because they produce large cavities in large, dead trees (>18” conifers)) that last several decades and are used by numerous species referred to as secondary cavity nesters. The pileated woodpecker is a mature forest associated species and is not a suitable selection for a focal species in this case. An example of a more suitable choice would have been the northern flicker which uses trees generally larger than 12” in diameter, excavates numerous cavities per year most of which are used by secondary cavity nesters such as chickadees, owls, kestrels, chipmunks, squirrels and nuthatches. Flickers also use open fields and forest edge habitat and they forage on the ground and on trees.

- I did find it puzzling that the downy woodpecker was chosen to model habitat characteristics since they use small diameter fruit trees, like cherry, extensively yet the value of naturalized cherry trees was dismissed as non-native in original HEP analysis.

- White crowned sparrow habitat is accurately described but this species does not accurately represent habitat requirements lost due to construction. The white crowned sparrow is a migratory bird common to grass and shrub dominated habitat. It also adapts well to disturbance and is often found in urban settings. The white crowned sparrow is not a species whose presence indicates that specific habitat mitigation components are providing ecological function to the suite of migratory birds found using the sites during the inventory process. That is the role of focal or indicator species. There are other migratory and resident birds, small mammals, reptiles and amphibians which are more closely associated with the impacted habitats (wetland, hedgerows, agricultural fields, forest edge). These include the western flycatcher, spotted towhee, three toed salamander, rubber boa and yellow warbler to name a few examples. Had a team approach to HEP and HSI been used to select species, as outlined in published manuals, a consensus could have likely been reached on which species to use, what habitat structure is needed to mitigate impacts and to determine the long term (10-40 years) maintenance and monitoring needs. ESA's use of HEP and HSI models is inconsistent with customary and accepted practices as it creates a high likelihood of bias.

- ESA's biologist states that the species selection and habitat components driving the HSI were completed by one individual based on their expertise. This is contrary to published guidelines for using HEP and HSI to evaluate and mitigate wildlife impacts.

- Western bumble bees have the largest range of the pollinator group. They have the ability to travel up to 5 miles to find food. Most pollinators live their lives within a much smaller range, and many have very specific host plant or ground nesting requirements. As stated by ESA, the bumble bee nests in abandoned burrows created by small mammals, or yellow jackets. They are closely associated with open grassland habitat and bare ground that is not tilled annually. Bumble bees do not represent the habitat used by most pollinators, particularly those found in wetlands, hedgerows or forests.

ESA responded to landowners' numerous concerns over the loss of wildlife in and around the project area. Their response was "*Construction of the project is outside the scope of this proceeding and irrelevant to compliance with MCC 39.7515(B). Therefore, the* *comments claiming wildlife and habitat impacts during construction activity are not relevant to the only approval criterion at issue in this remand proceeding.*

Response: The assessment, planning and mitigation processes used by the PWB should have predicted these impacts. The fact that work started before receiving final approval or mitigation plans finalized or approved makes construction impacts relevant to all people and wildlife affected by PWB actions. The community has raised these concerns throughout the process.

There is no evidence to suggest affected populations of pollinators, small mammals, reptiles, amphibians and resident birds can find and use adjacent habitat suitable to meet their life history requirements. The impact to overall populations of individual species could last for the next 10-50 years.

The landowners' concerns refer to resident wildlife including small mammals, songbirds, pollinators, owls and raptors. They also expressed concern about disturbance to elk, deer, bobcat and cougar using adjacent, densely covered areas and along hedgerow corridor habitat. The fact that the habitat was eliminated and most of it will not be replaced on the impacted sites, supports the landowners' concerns. Residents are unlikely to see the same wildlife use of the area in their lifetime.

ESA's responses also assume the species will move to adjacent areas till habitat mitigation is completed and functioning. There is no evidence in the literature that supports this contention. There is rapidly growing evidence that migratory bird and pollinator populations are plummeting from historic levels throughout North America. Loss of existing suitable habitat contributes to this decline.

ESA uses highway crossing information to demonstrate how wildlife return to areas once construction is completed. They cite numerous examples of road crossings around North America. These examples are misleading and do not address the neighborhood concerns or impacts to resident wildlife. All of the examples provided deal with major highway construction on high traffic volume highways that fragmented and bisected primary migratory routes used by deer, elk, cougars and bears. The habitat on either side of the roadways remained intact. This is not the situation at the filtration project site where all the habitat has been destroyed.

The Oregon Department of Transportation (ODOT) maintains a data base of road crossings that have a high degree of motor vehicle/wildlife accidents (Trask 2009). None of those areas are located near the project area. All of the crossing projects described by ESA are located within documented migration corridors that large mammals, and the predators following them, continued to use regardless of the width of roadway or amount of traffic. ODOT is in the process of building overpasses in high impact areas (I-5 & HWY 97) to protect motorists and maintain ecosystem function for migratory mammals.

I found no published studies suggesting that hedgerows that parallel two-lane roads are a mortality sink for wildlife or cause an unusually high degree of nest failure.

The Priority Wildlife Connecting Areas (PWCA) and the PWCA web mapping projects were an effort to identify the areas where connecting corridors could still be established within a landscape that is continuing to be fragmented. The goals included identifying large habitat area where effective linkages could be maintained or created with the least effort and lowest cost. Nearly all mapped habitat corridors crossroads in the Willamette Valley. I participated in those efforts as an ODFW habitat biologist. My staff conducted much of the historic vegetation baseline mapping used in this effort. Mapping of habitat corridors was not intended to be used to address species or discount the values of other habitat corridors. The mapping project refers to steppingstone habitats to ensure biodiversity and genetic interchange between isolated populations. Hedgerows and smaller habitat areas are important components to a landscape strategy. Hedgerows function as steppingstone habitats assist ing wildlife reach priority corridors and larger habitat areas.

ESA has submitted an updated planting plan (Exhibit 1). This plan details a number of planting prescriptions intended to mitigate habitat impacts.

Response: No reference sites were used to design the planting composition or design. Not even the impacted habitat was referenced and no quantitative data was collected. The planting plan should reflect the plant species and vegetation structure to be replaced and an anticipated timeline for when the focal species could be expected to return to the site.

Even though ESA discounted the role non-native vegetation has in providing habitat, they propose to plant several species that are either non-native or not present on the impacted sites. Big leaf maple should have been the dominant tree selected if PWB intends to try and replace impacted species and habitats. As I cited earlier in this report it will take several decades before tree planting even begin to mitigate impacts. Conifers such as Douglas fir will take even longer since they need to mature then die to replace cavity nesting habitat. Grand fir and incense cedar will likely never produce cavity nesting habitat, food resources, or provide wildlife species diversity found in the mature big leaf maple and cherry trees (Washington State Extension 2004) (Niemie et.a. 1995).

Based on my 25 years of experience of conducting and designing habitat restoration on over 16,000 acres within the Willamette Valley, I do not believe the mitigation plan will provide replacement habitat that functions as well as the existing combination of farm field, hedgerows, forest edge and wetlands that were present on the filtration site.

The mitigation plan also proposes to establish wetland species on this upland site. Species such as Douglas spirea, meadow barley, and tufted hairgrass are wetland associated plants and will likely not establish. If they do they will be short lived on upland soils and provide site for non-native weeds to establish.

Use of red fescue is troubling because it is a non-native, aggressive rhizome producing grass known to outcompete native grasses and wildflowers.

Roemer's fescue is a native upland grass associated with oak savannas. Oak savanna is not and appropriate plant community type in this area because it depends on the ability to use fire to maintain the grassland habitat and create large, open grown trees.

Sword fern and thimbleberry are closely associated with coniferous forests and will not provide the habitat similar to the pre-construction condition.

Conclusion

I do not believe the assessments of wildlife use, habitat composition and structure, and mitigation measures meet the standards outlined in published manuals for HEP and HSI models. Completing reliable evaluations of impacts to wildlife in both the short or long term require a more rigorous analysis than has been provided. Essentially what has been provided is a qualitative analysis and mitigation plan developed by a single group with no peer or stakeholder review.

The risk of manipulating HSI model predictions to provide a desired outcome is a concern expressed by the authors of the HEP and HSI models. They recommend a team approach to identifying focal or indicator species, habitat requirements for focal species and validation of model outputs. Validation includes reference site comparisons for proposed mitigation. This allows a direct comparison of functioning habitat with proposed mitigation measures. None of these recommendations were followed.

The quantitative baseline data on habitat composition and structure was never collected. Establishing an existing habitat baseline is a critical assessment for determining impact to wildlife populations and mitigation needs. ESAs pre-disturbance vegetation inventory relies on qualitative observations of a single biologist.

Based on my professional judgement and experience, I find it unlikely that the mitigation sites will provide habitat suitable to the full suite of species impacted in the short or long term. Some of the proposed mitigation may provide functional habitat conditions in several decades if there is a stewardship commitment that includes implementation, monitoring, adaptive management and funding.

The literature indicates that successful mitigation projects are those that have a stakeholder commitment to developing the habitat, monitoring the wildlife population response over time and assisting with long term maintenance of the site. PWB appears to have developed an adversarial relationship with the residents of the area and has taken few of their concerns seriously. I found no strong evidence that PWB has committed the resources to ensure long term stewardship and mitigation success. Contrary to the opinion of ESA biologists there are no upland mitigation sites in Oregon that provide habitat mature enough to indicate habitat replacement will occur.

<u>Citations</u>

Chase Mary K. and Geoffrey R. Geupel. 2005 The Use of Avian Focal Species for Conservation Planning in California.

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Grand, Lauren. 2020. Enhance Songbird Habitat on Your Forest. EM 9503, Oregon State Extension Service. Oregon State University, Corvallis, Oregon.

Niemie, S.S, G.R. Ahreans, S.Watts, and D.E. Hibbs. Hardwoods of the Pacific Northwest. Research Contribution #8. Oregon State Forest Reseach Laboratory.

Trask, M. 2009. Wildlife Vehicle Collision Hot Spots: All State Highways. Oregon Department of Transportation, Geo-Environmental Section, Salem Oregon.

USFWS. 1996. Habitat Evaluation Procedure Manual. 870 FW1, FWM #241. Office of Environmental Review.

USFWS. 2013. U.S. Fish and Wildlife Service Ecological Services Manual, 5th edition. Standards for the Development of Habitat Suitability Index Models. Division of Ecological Services

Washington State Extension Service. 2004. Wildlife in Broadleaf Woodlands of Oregon and Washington. A Woodland Fish and Wildlife Publication. MISC05034.

Steven P. Smith
Wildlife Biologist
1978-Present

Education:
1970 – Graduate of Geraldine High School, Geraldine, Montana
1978 – Bachelor of Wildlife Science, Oregon State University
1978 – Bachelor of Rangeland Resource Management, Oregon State University

Professional experience
I worked 12 years as a Forest Service biologist responsible for wildlife species inventory and assessing impacts to wildlife associated with forest management activities. I led species inventory efforts for northern spotted owls, marbled murrelets, deer, elk and botanical resources. My tenure with the Forest Service was spent on the Shasta Trinity, Siuslaw and Willamette National Forests.

1978: I conducted rangeland vegetation and condition surveys for the Shasta Trinity National Forest. My responsibilities included wild land firefighting and assessment of vegetation on the McCloud District.

1979 -1989: My professional career continued with the US Forest Service as a wildlands firefighter and Rangeland biologist. On the Siuslaw National Forest (SNF). As a District biologist and Range Conservationist, I developed grazing and vegetation management programs used as an alternative management technique to the use of herbicides and to enhance Roosevelt elk habitat. I participated in interdisciplinary planning and implementation of forest harvest including wildlife inventory and mitigation. I led inventory crews surveying forest stands for northern spotted owls and marbled murrelets throughout the Siuslaw NF.

1989-1991: I was the wildlife biologist for the Willamette National Forest. My responsibilities included identifying and mapping habitat requirements for wildlife indicator species including the northern spotted owl, pileated woodpecker, pine marten and Roosevelt elk. As a tenured Forest Service wildlife biologist, I was selected to attend graduate level continuing education classes. I attended Yale University to study federal compliance with Clean Water Act, National Environments Policy Act and Endangered Species Act. I also completed wildlife habitat classes. at Utah State and West Virginia University. This program was initiated by the US Forest Service to ensure professional biologists kept current of legal requirements pertaining to federal actions and habitat restoration techniques.

1991-2002: I began working for the Oregon Department of Fish &Wildlife (ODFW) as a supervisory fish and wildlife biologist for the Northwest Region. My responsibilities included assessing impacts to wildlife from land use involving rural residential and urban development land use. I managed ODFW's wildlife habitat inventory and restoration efforts for eight counties in NW Oregon. I also managed and supervised operations for the EE Wilson and Fern Ridge

Wildlife Area. My notable accomplishments included developing ODFW's Geographic Information System (GIS) habitat maps for analysis of current conditions in the Willamette Valley, and comparing those results to the Nature Conservancy's efforts to map historic habitat composition and its distribution. Distribution and composition played a key role in developing a private landowner assistance program for restoring and managing wetlands, grasslands, oak woodlands, oak savanna and riparian habitats. I also developed ODFW's private lands habitat programs focused on wetland, grassland and elk habitat. I received ODFW's Employee of the Year award in 1999. I served one year as the Willamette Valley District Supervisor and liaison for ODFW to the Oregon State Legislature.

2002 -2012: The U.S. Fish and Wildlife Service (USFWS) recruited me to work for the Willamette Valley Refuge Complex in 2001. My assignment was to develop a Partners for Fish & Wildlife Program focused on protecting and restoring rare and declining habitats on private lands in the Willamette Valley. Our partnership efforts led to over 16,000 acres of voluntary habitat restoration. The Partners for Fish and Wildlife Program contributed to Federal down-listing or de-listing of several species including the Nelson's checkermallow, Bradshaw's lomatium, Fender's blue butterfly, Kincaid's lupine and Oregon chub. The Willamette Valley Partners Program has been nationally recognized as an example of effective partnerships leading to significant conservation effects on private land. I led initial planning efforts to develop a land acquisition program for the Willamette Valley Wildlife Refuge Complex (WVRC). In 2024 the WVRC was granted authorization to acquire 10,000 acres of imperiled habitat for recovery of Federal species of concern.

2013 – Present: Following retirement, I continue my work in habitat/wildlife conservation as a private consultant. I work with private landowners and conservation organizations. My projects have included restoring oak woodlands, hedgerows, native prairie, floodplains, riparian habitat and wetlands.

LUP Hearings <lup-hearings@multco.us>

#T3-2022-16220: Response to S.32

1 message

Cottrell CPO <cottrellcpo@gmail.com> Mon, May 19, 2025 at 10:24 AM
To: LUP Hearings <LUP-hearings@multco.us>

External Sender - Be Suspicious of Attachments, Links, and Requests for Payment or Login Information.

LUP,

With regards to the remand of T3-2022-16220, attached is our response to S.32.

Please acknowledge receipt of this email.

Thank you,
Cottrell CPO

Smith-CPO-PHCA Response to S.32.pdf
375K