Logan Aluminum, Inc.

Biodiversity and Ecosystem Management Plan

6920 Lewisburg Rd, Russellville, Ky 42276

1-8-2024

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Purpose & Scope

Logan Aluminum, Inc. is committed to environmental stewardship and recognizes the importance of preserving and enhancing biodiversity. As a secondary aluminum processor and integrated aluminum rolling mill, we acknowledge that our operations have the potential to impact the environment and biodiversity. Therefore, we are dedicated to minimizing these impacts and ultimately preserving or adding to the value of our local biodiversity and habitats.

This plan considers impacts caused directly by the Russellville facility and does not extend the scope of consideration to any indirect consumption of material or upstream and downstream processes.

Biodiversity and Ecosystems Services

The Aluminum Stewardship Initiative (ASI) Performance Standard Guidance Document provides the following background on Biodiversity and Ecosystem Services:

Biodiversity is the variability among living organisms from all sources including, among others, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. This includes diversity within species, between species and among ecosystems.

Maintaining biological diversity within ecosystems is vital for their health and functionality. Functioning ecosystems maintain essential services for sustaining life, such as recycling and purification of water and air, soil generation and the pollination of crops. Maintaining biological diversity within populations of species is also important, as it ensures that genetic diversity of a species is preserved. Reducing population sizes and ranges of species distributions – through direct or indirect impacts reduces the genetic diversity and therefore the resilience of species.

Logan Aluminum is committed to alliance with ASI, and as such is committed to specific goals surrounding Biodiversity and Ecosystem Services (Section 8 of ASI). This Biodiversity and Ecosystem Management Plan documents how the Russellville Facility shall assess the impact potential surrounding the facility to better address the needs of the local ecosystem and community. This plan is integrated to encompass all aspects of Section 8 addressing risk and impact assessment, biodiversity management, management of priority ecosystem services, alien species, and protected areas.

In addition to the ASI, the following standards and methodologies were reviewed when developing this plan:

- The Convention on Biological Diversity (CBD)
- The Integrated Biodiversity Assessment Tool (IBAT)
- IUCN Guideline for Planning and Monitoring Corporate Biodiversity Performance

Our Policy Overview

This Biodiversity Policy reflects our dedication to preserving and enhancing biodiversity while conducting our aluminum processing operations. We will work diligently to minimize our environmental impact and contribute positively to the communities in which we operate and the broader ecosystem.

Compliance with Laws, Regulations, and Standards

We will comply with all applicable laws, regulations, and industry standards related to biodiversity conservation and environmental protection. In creating our own metrics and procedures around habitat protection, we will consult standards built and endorsed by credible bodies including the Environmental Protection Agency, the Kentucky Department of Fish and Wildlife Resources, The Kentucky Natural Resources Conservation Service (NRCS), International Union for Conservation of Nature and Natural Resources (IUCN), and the National Wildlife Federation (NWF).

Biodiversity Assessment

We will review this integrated plan annually and update assessments when material operation changes occur that potentially impact local biodiversity and ecosystems. Through continual assessment and species identification, any changes in animal or plant populations throughout our property will be investigated and remediated when necessary.

Sustainable Sourcing and Disposal

We will strive to source materials within our control from suppliers who demonstrate a commitment to responsible practices. Products which are associated with high environmental cost will be evaluated for alternatives and their usage minimized where possible.

We also commit to assessment and informed selection of disposal routes for all waste. This includes performing periodic inspections of disposal facilities and continual efforts to minimize landfill contribution through valorization routes such as recycling and waste-to-energy processes.

Habitat Protection and Restoration

We will identify and protect critical habitats on our premises and in our operating areas. We will also engage in habitat restoration efforts if necessary to mitigate any negative impacts on local ecosystems.

Alien Species

We will proactively prevent any introduction of Alien or Invasive Species that could have impacts on biodiversity or ecosystem services. In addition, we will aim to limit or eliminate any invasive species that are currently in greenspace at the plant site to the best of our ability.

Pollution Prevention

We will implement and improve existing pollution prevention measures to minimize emissions, spills, and other environmental releases that could harm biodiversity. This includes the proper handling and disposal of hazardous materials.

Energy and Resource Efficiency

We will strive to improve energy and resource efficiency in our processes to reduce our overall environmental footprint and minimize land and resource use.

Employee Training and Engagement

We will provide our employees with training and awareness programs on biodiversity conservation and encourage their active participation in our efforts to protect and enhance biodiversity, including within their own communities.

Collaboration and Partnerships

We will actively seek collaboration with environmental organizations, government agencies, and local communities to support and participate in biodiversity conservation initiatives.

Monitoring and Reporting

We will establish monitoring and reporting mechanisms to track our progress in implementing this policy and report on our biodiversity performance to stakeholders.

Continuous Improvement

We are committed to a process of continuous improvement in our biodiversity efforts. We will regularly review and update our policies, procedures, and practices to reflect the latest scientific knowledge and best practices in biodiversity conservation.

Communication

Logan Aluminum will communicate our commitment to biodiversity conservation to our stakeholders, including employees, customers, suppliers, affected populations, and the public.

Accountability

All employees, from top management to front-line workers, are responsible for upholding this Biodiversity Policy. We will hold ourselves accountable for our actions and strive to meet our biodiversity goals.

Background

Site Location and Features

Logan Aluminum Inc. (Logan) owns and operates an aluminum remelt and rolling facility located at 6920 Lewisburg Road in Russellville, Kentucky (Russellville facility). The Russellville facility is located on Highway 431 north of Russellville, Kentucky (Logan County) on approximately 1,000 acres of land, with an adjoining property purchased in 2024 including an additional 89.5 acres. The facility is bordered by Highway 431 to the west and rural undeveloped tracts of land in all other directions.

The total site property contains streams, ponds, wetlands (both with surface water connections and without), wooded area, and managed fields. The total property can be separated into developed and undeveloped areas, where our developed property is primarily encompassed in the “secured perimeter.” The secured perimeter surrounds the majority of our land dedicated to process function including manufacturing space, storage, traffic movement, and other tertiary processes key to our operation. This perimeter is defined by 6ft tall chain link fencing, which leads to fragmentation of egress access for wildlife. While this impact is present, egress can be found around several other areas of the plant site. Outside of the secure perimeter, there are only a few areas which are developed, including parking lots, storage/ laydown areas, and recreational areas. Figure 1 in the Appendix can show this in greater detail.

The undeveloped area, which is considered all other land on the total property, includes the majority of wooded area, the additional property across Edwards Rd. (which contains streams, ponds, and isolated wetland features), Arrowhead Lake and its adjoining wetland, and managed fields. Logan also manages a recreational pond called the “front pond” which is also outside of the secured perimeter.

The area of influence is expanded beyond Logan’s property to include waterbodies directly utilized or impacted by Logan Aluminum’s activities. This includes withdrawal from Spa Lake and potentially Lake Herndon, as well as discharge into Austin Creek. Austin Creek is listed on the 303d list as impaired for a 1-mile default to the Logan Aluminum Outfall (Austin Creek 2.6 to 3.6). For more detailed evaluation and goals regarding water stewardship as it relates to this plan, as well as delineation of the property, reference the Water Resource Plan.

Risk Assessment

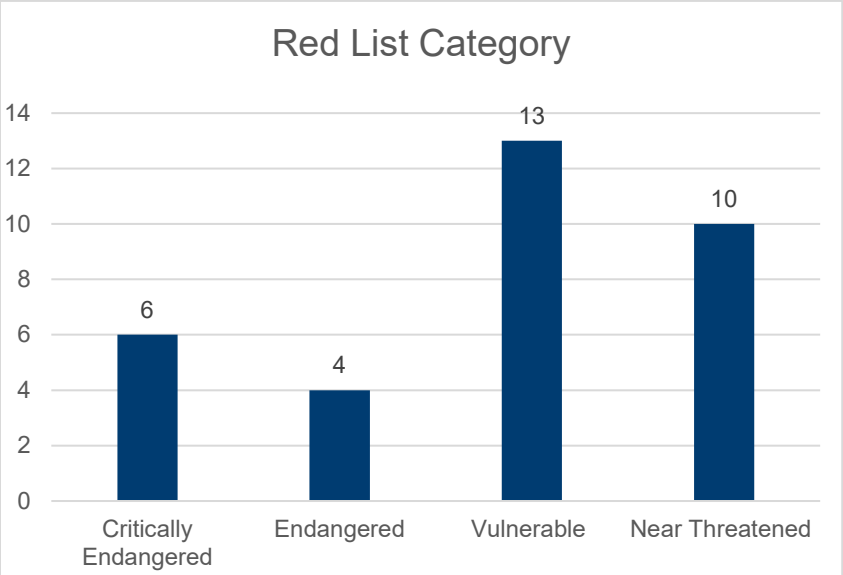
Threatened and Endangered Species Assessment

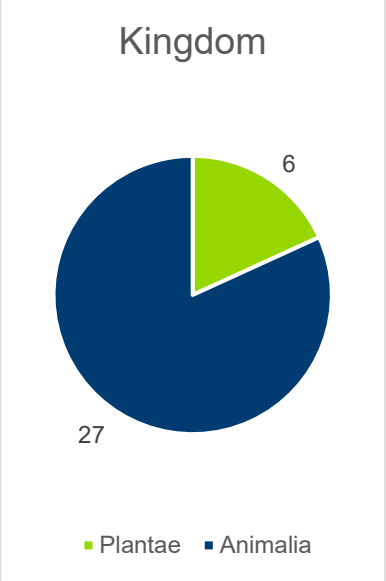
This section serves to provide a general understanding of sensitive species in Logan County with habitat and ecology that could coincide with the known features described above. This assessment does not include any definitive occurrence or probability of presence of these species within Logan’s area of influence. When projects are projected that could materially alter delineated features and wooded areas, additional assessment will be done to ensure any impacts are mitigated.

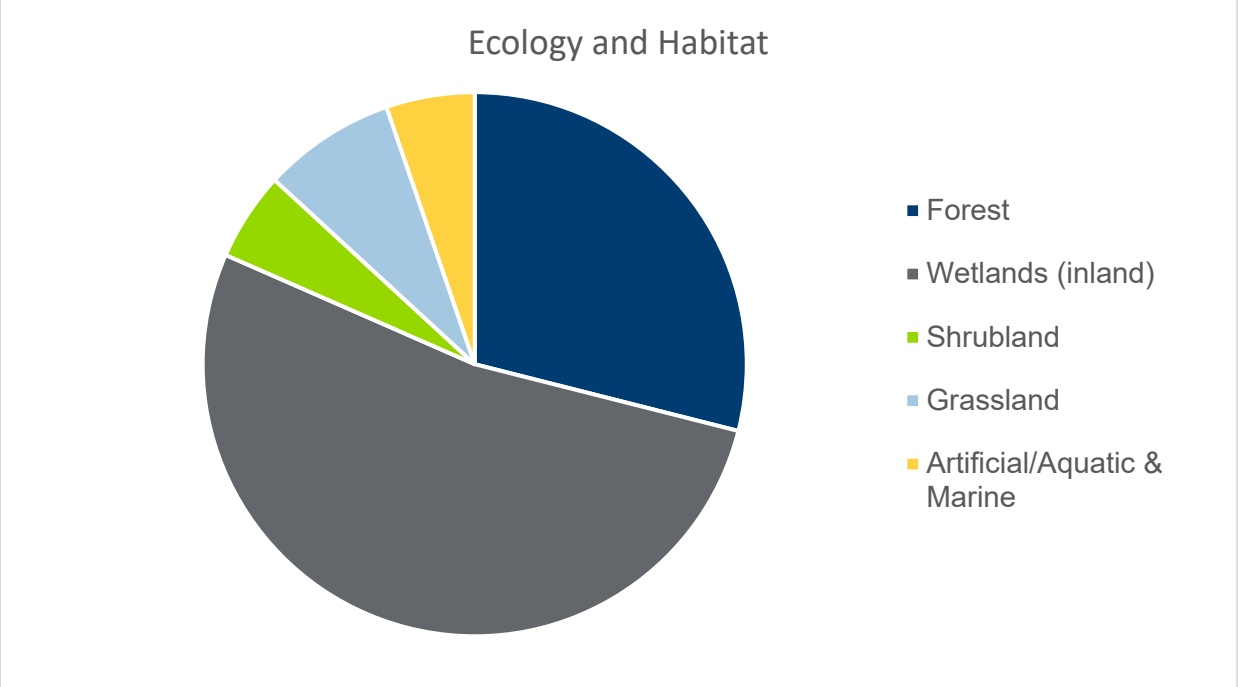
IUCN Red List

After a query of the IUCN Red List, an initial list of 882 species were identified in a 50 km radius of the Logan Property as at risk (6 critically endangered, 15 endangered, 33 vulnerable, 39 near threatened, 772 least concern, and 17 data deficient). Using best judgement regarding each species' range, ecology, and habitat, this was further limited to 33 species (including those near threatened – critically endangered).

The results left a list which provides a more manageable understanding of the risk factors in our area. The below figures provide some insight into the range of species in this list. This entire list can be referenced in Appendix B: Table 1.







*This graphic only contains the ecology and habitats that are present in the area of influence of Logan.

State/ Provincial Status

Data based on state/provincial status was queried through NatureServe for Logan County and provided additional insight. These results were observed wholistically for Logan County, 112 species were identified, where none of the public observations present in the query were found in Logan County directly. Of these, 9 were listed as Endangered or Proposed Endangered, 1 was threatened, 1 was Delisted, and 1 is under review by the U.S. Endangered Species Act. This data can be additionally referenced at the Kentucky Department of Fish and Wildlife Resources. See table 2 in the Appendix for details.

This data also coincides with previous assessments conducted along with projects. In previous assessments, which were not total site inclusive, no species were listed to be high in probability, however, those found to have moderate probability included: Indiana bat, Northern-long ear bat, and a Cave Obligate Beetle.

Protected Areas Assessment

The IUNC defines a protected area as:

"A protected area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values." – IUCN 2008

After initial IBAT assessment there were 32 Protected Areas (PAs), and 0 Key Biodiversity Areas (KBAs) identified in a 50 km radius from the Logan site. Additionally, per the U.S. Census Bureau Master Adress file/ TIGER 2020 American Indian Lands, there are no Native lands within the impact area of Logan Aluminum. Further inquiry was completed through Kentucky EEC data relating to natural preserves, wild rivers, and heritage lands. Additionally, the Kentucky Biological Assessment tool and the USGS PAD-US overview were used to identify local reserve programs and non-public protected areas.

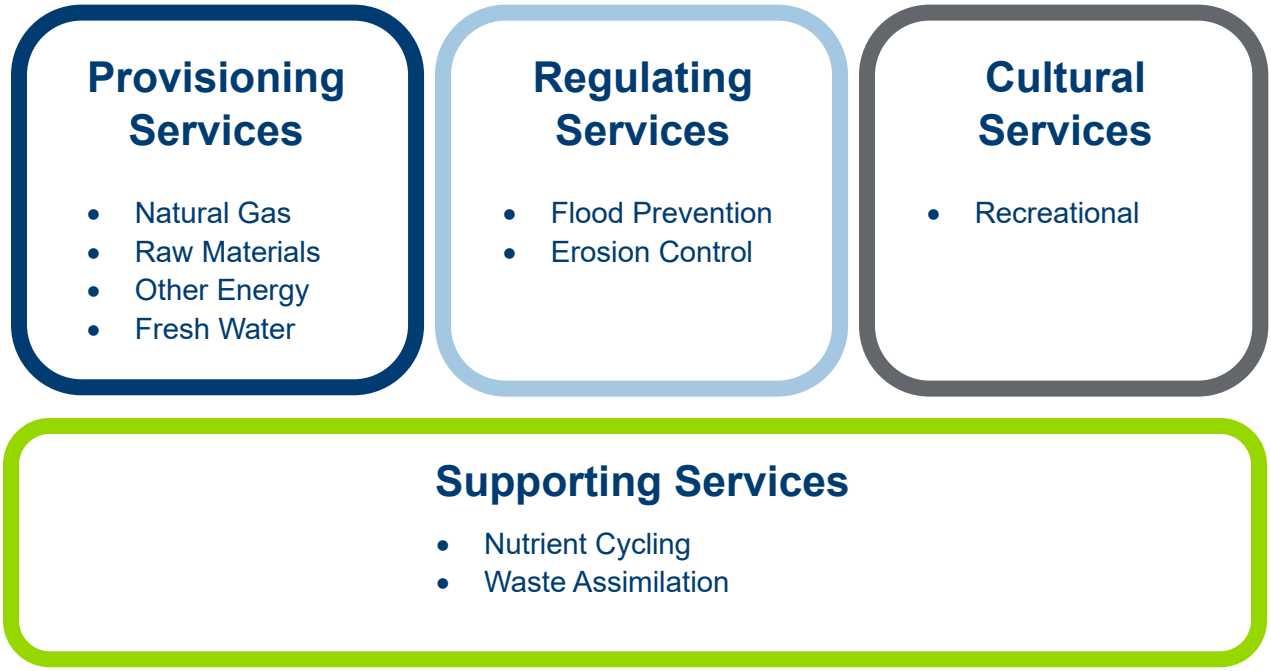
PAs which were in "close" proximity and those with large ranges were assessed. "Close" proximity was determined by the reasonableness to be affected by the plant's activity. For aquatic or wetland features, this was determined by their surface connections to our withdrawal or discharge locations. The land assessed can be seen in Appendix B Table 2.

The protected areas identified in table 2 are those identified for continuous assessment of impact. Most of these were determined to be "outside of expected impact zone," under existing operations. This considers air, sound, and water impacts, as well as any other direct interaction with our property. The potential for direct impact will be reassessed with any large changes in these aspects.

Additional Protected areas were identified as outside of any reasonable effect range which are not included in this table. This includes 20+ USGS PAD-US properties and one NRCS Farm and Ranch Lands Protection Program south of the city of Russellville. This also includes small preserves and parks east of Auburn. These locations are upstream of any potential water related impacts and far enough physically that no impact is foreseen at this time.

Ecosystem Services

Logan Aluminum recognizes that it benefits both directly and indirectly from multiple ecosystem services. Table 4 in Appendix B shares the assessment of ecosystem services identified by Logan Aluminum. This table separates our services into “Indirect” and “Direct,” where direct services are those which the Logan site utilizes on site, and indirect are those that benefit the business either upstream or downstream of our process. This table also includes any existing policy or plan that exists to conserve and utilize these services responsibly.



Evaluation

In investigating current and historical data around species of concern, protected areas, and the existing risks identified in our region/ basin, a few common denominators highlight the key needs in our area of influence. These can be summarized in the special attention and protection of two key habitats: forested areas and wetlands.

By diligently monitoring water quality and preserving or enhancing existing ecosystems on the plant site, a closer eye can be kept on ecosystem health. The highest priority risks include:

- WRP land identified to be hydrologically connected to both withdrawal and discharge activities. For details refer to Figure 3.
    - One WRP designated area was found to be ~ 15 hydrologic miles downstream of outfall 004. While in normal conditions, pollution is not expected, this should be a consideration for emergency planning in the event of a catastrophic event.
    - Two WRP designated areas were found to be closely hydrologically connected to Spa Lake, Logan’s primary withdrawal location. While Logan has not experienced drought situations historically, this should be a consideration if these conditions become present. Continual withdrawal in drought conditions could lead to water stress for these wetlands.

- Risks around the potential of sensitive bat populations presence is a key risk to be assessed. Both protected area assessment as well as endangered species assessment intersect around this provision.
    - Jurisdictional determination and plant knowledge around wooded areas should be engaged as any planning for expansion occurs.
    - If expansion is occurring that could impact bat habitat, additional impact assessments must be undertaken in addition to any existing legal conditions.
    - The impact of sound on bat populations should be considered with any changes to the footprint of Logan Aluminum's sound pollution.
- Existing habitats under the direct influence of Logan Aluminum, as called out in current Jurisdictional Determination, need to be maintained if not enhanced. No major changes to the ecology of the site should be made without prior approval.

The overall risk created by Logan Aluminum is relatively low; however, there is diligence required to maintain minimal risk. Ultimately, no threat is found as being present, and any potential impact would coincide with a major change to the facility or a catastrophic event which bypasses all other controls. While no impact was determined to be imminently threatening at this time, the following areas should be closely monitored and managed to keep risk low, especially if any future:

- Continued stewardship to limit potential impact to wetland areas in our direct influence.
- Increasing awareness of the ecosystem services at play in Logan Aluminum's process.
- Complete impact assessment of any future work that could impact critical ecosystems with inclusion of any stakeholders.

Internal Management Plan

General Principles

During normal operation the following expectations are present:

- Provisioning services will be managed responsibly by existing plans.
    - Priority should be placed on reducing reliance on the ecosystem services and thereby decreasing their use. This includes energy, raw materials, and water.
    - Where reduction cannot be met, some process should be in place to recycle or valorize these services.
    - If no route of valorization is found, this should be recognized as an opportunity for improvement and reviewed periodically.
- Other ecosystem services (regulating, cultural, and supporting) should be discussed in a sustainability framework with employees. Policies associated with these services should be maintained and reviewed.
- General effort should be made to increase ecosystem health where possible.
    - Finding opportunities for more eco-friendly products.
    - Increasing naturalized area of the plant and decreasing mowed area.
    - Trajectory for undeveloped land should be guided by the principals of the National Wildlife Federation and similar organizations.

- Where wildlife encounters do occur within the secured perimeter or control of Logan, these will be handled properly with the guidance of local Fish and Wildlife.

When a change occurs that could impact ecological health on a small scale, but these impacts are not material enough for full scale impact assessment, the following expectations are present:

- The change will be viewed in the frame of a mitigation hierarchy.
    - The primary objective should be avoidance, we should aim to avoid spreading any impact beyond the already affected area.
        - i.e. explore less invasive options, keep impact within the secured perimeter, etc.
    - Where this cannot be achieved, minimization should occur to reduce the duration and intensity of impacts that cannot be avoided.
        - i.e. design with sound, wildlife egress, etc. in mind.
    - After the change is complete, rehabilitation/ restoration should occur. Return as much of the area back to its original state as possible.
        - i.e. restore the area to proper soil stabilization.
    - Where the area cannot be brought back to its original state, the last measure is to offset and bring those benefits to a different area.
        - i.e. replanting any trees that were removed in a different area of the site.

When a change occurs that could significantly impact the ecological health of the site, the following expectations are present:

- The change will be viewed in the frame of a mitigation hierarchy.
- Any necessary permitting, delineation, etc. will be completed in ample time from the project.
- Complete a Biodiversity and Ecosystem Services Risk and Impact Assessment with the involvement of any identified affected population.
- Follow steps in line with ASI and IUCN guidelines to achieve net-zero impact.

Goals and Targets

In addition to these principles which are key to maintaining current status of minimal impact, Logan will aim to increase biodiversity and ecosystem stewardship. This includes targets that are internal and material to our site along with the goal to increase of logan team members' knowledge of these initiatives.

In addition, Logan Aluminum supports Ducks Unlimited and their initiatives for conservation across the United States, specifically in the Big Rivers Initiative. Logan aims to seek and foster partnerships which positively impact broader biodiversity and the local community.

At this time, Logan would like to increase existing efforts to promote biodiversity in our area and create ways to monitor and track these impacts. This will be guided by the principles set out by the IUCN, WWF, and NWF.

With a re-evaluation date of 2030, the solid targets set out by Logan follow a three-phase plan. This plan is focused on increasing knowledge of sustainable practices, creating sustaining

metrics to track impacts, and implementation of the overall plan. The primary focus of this plan will be to increase the benefits to wildlife in the undeveloped areas of Logan Aluminum.

PHASE 1 - CURRENT

Target 2024-2025

- Complete an internal broad site survey to investigate ecosystem health.
    - Including identification of status of invasive species, keystone species, etc.
    - Including identification of wildlife habitat features in line with the National Wildlife Federation.
- Investigate sustainable ecosystem practices and where they may be implemented in the plant site.
    - Specifically, including the decrease of mowed area and increase of natural seeding practices, forested area, and/or naturalized habitat services.
- Investigate metrics from the above that could track progress toward improved ecosystem health.
- Increase employee understanding of ecosystem services.

PHASE 2

Target 2026-2027

- Create goals in line with findings from survey which are trackable with defined metrics.
    - Opportunities for improvement, eradication plans for invasive plant species, etc.
- Begin implementation of small-scale sustainable ecosystem practices.
- Use employee engagement to further these benefits, at Logan and in the greater community.
- Maintain existing tracking systems.

PHASE 3

Target 2028-2029

- Finalize improvement implementation.
- Report out on metrics of ecosystem health and begin planning for the next 5-year goals.

Maintenance of Plan

This integrated plan and goals will be maintained in ETQ Reliance and reviewed annually or along with any major changes that could impact this plan.

Appendices

Appendix A: Figures

Figure 1: Total Logan Property

Approximate locations of total property and secured perimeter.

Figure 2: 50km Radius from Logan Aluminum

Location of 50 km radius where initial assessments began.

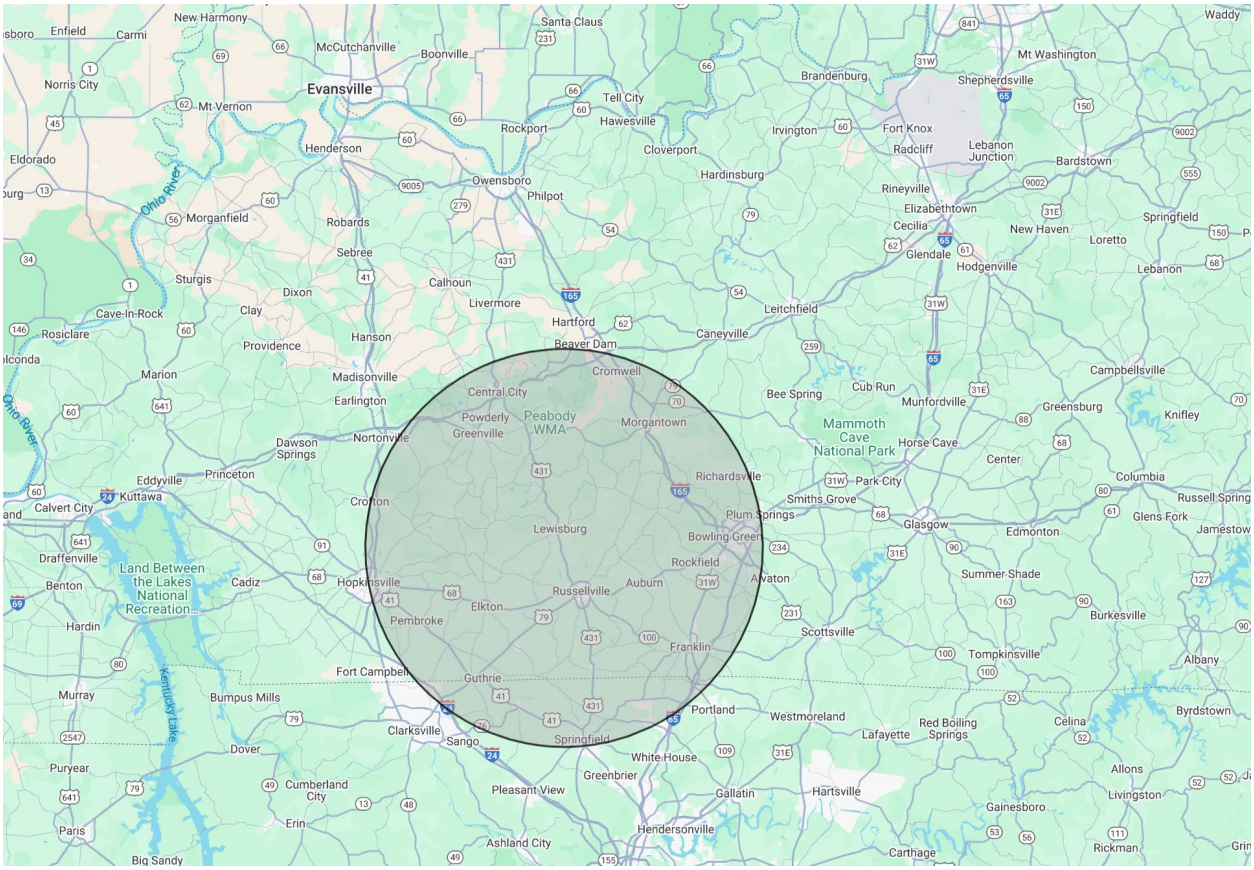
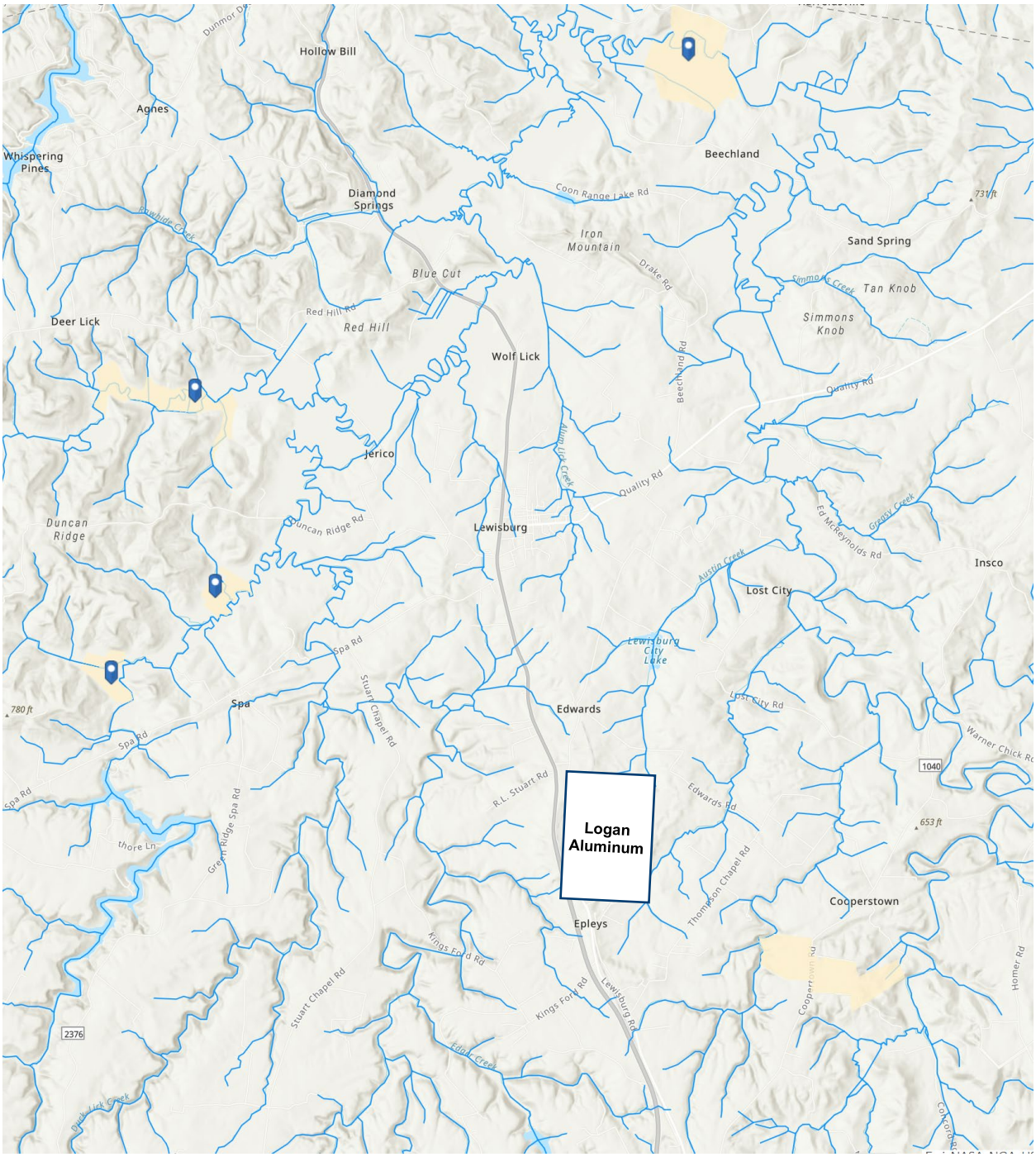


Figure 3: Location of Logan Wetland Reserve Program Sites



Appendix B: Tables

Table 1: IUCN Red List

Kingdom	Class	Common Name (if given)	Red List Category	Habitat and Ecology
Animalia	Mammalia	Indiana Bat	NT	Forest, Caves, and Subterranean Habitats (non-aquatic)
Animalia	Bivalvia	Black Sandshell	NT	Wetlands (inland)
Animalia	Reptilia	Eastern Box Turtle	VU	Forest, Shrubland, Wetlands (inland), Artificial/Terrestrial
Animalia	Insecta	Yellow Bumblebee	VU	Forest, Shrubland, Grassland, Artificial/Terrestrial
Animalia	Bivalvia	*Epioblasma triquetra*	EN	Wetlands (inland)
Animalia	Amphibia	Hellbender	VU	Wetlands (inland)
Animalia	Bivalvia	*Pegias fabula*	CR	Wetlands (inland)
Animalia	Mollusca	Onyx Rocksnail	VU	Unspecified
Animalia	Bivalvia	*Therliderma cylindrica*	NT	Wetlands (inland)
Animalia	Mollusca	*Quadrula fragosa*	CR	Unspecified
Animalia	Mollusca	Carved Elima	NT	Unspecified
Animalia	Actinopterygll	Paddlefish	VU	Wetlands (inland), Artificial/Aquatic & Marine
Animalia	Mammalia	Northern Mytosis	NT	Forest, Caves and Subterranean Habitats (non-aquatic), Artificial/Terrestrial
Animalia	Bivalvia	Kidneyshell	NT	Wetlands (inland)
Animalia	Bivalvia	Salamander Mussel	VU	Wetlands (inland)
Animalia	Gastropoda	Ornate Rock Snail	NT	Unspecified
Animalia	Bivalvia	Sheepnose	EN	Wetlands (inland), Artificial/Aquatic & Marine
Animalia	Insecta	American Bumblebee	VU	Grassland, Artificial/Terrestrial
Animalia	Insecta	Cobblestone Tiger Beetle	VU	Wetlands (inland)
Animalia	Mammalia	*Mytosis leibii*	EN	Forest, Rocky areas (eg. inland cliffs, mountain peaks), Caves and Subterranean Habitats (non-aquatic), Artificial/Terrestrial
Animalia	Bivalvia	Bean Mussel	EN	Wetlands (inland)
Animalia	Mollusca	Pink Mucket	VU	Wetlands (inland)
Animalia	Mollusca	*Venustaconcha trabalis*	CR	Wetlands (inland)
Animalia	Bivalvia	Longsolid	VU	Wetlands (inland)
Animalia	Actinopterygll	Southern Cavefish	NT	Wetlands (inland)
Animalia	Bivalvia	Purple Wartyback	NT	Wetlands (inland)

Animalia	Bivalvia	Round Hickorynut	EN	Wetlands (inland)
Plantae	Magnoliopsida	Goldenseal	VU	Forest
Plantae	Liliopsida	Kentucky Lady's Slipper	VU	Forest, Wetlands (inland), Artificial/ Terrestrial)
Plantae	Liliopsida	White Lady's Slipper	VU	Forest, Grassland, Wetlands (inland)
Plantae	Pinopsida	Eastern Hemlock	NT	Forest
Plantae	Magnoliopsida	American Chestnut	CR	Forest
Plantae	Magnoliopsida	American Elm	EN	Forest

Table 2: NatureServe Query U.S. Endangered Species Act for Logan Co. Ky

Common Name	Scientific Name	Species Group (Broad)	Species Group (Fine)	NatureServe Rounded Global Rank	U.S. Endangered Species Act Status
Eastern Hellbender	*Cryptobranchus alleganiensis alleganiensis*	Vertebrates	Amphibians	T2 (Imperiled Infraspecific Taxon)	Proposed endangered
Bald Eagle	*Haliaeetus leucocephalus*	Vertebrates	Birds	G5 (Secure)	Delisted
Gray Myotis	*Myotis grisescens*	Vertebrates	Mammals	G3 (Vulnerable)	Endangered
Northern Myotis	*Myotis septentrionalis*	Vertebrates	Mammals	G2 (Imperiled)	Endangered
Tricolored Bat	*Perimyotis subflavus*	Vertebrates	Mammals	G3 (Vulnerable)	Proposed endangered
Northern Rifflefshell	*Epioblasma rangiana*	Mussels, Snails, & Other Molluscs	Freshwater Mussels	G1 (Critically Imperiled)	Endangered
Kentucky Creekshell	*Leaunio ortmanni*	Mussels, Snails, & Other Molluscs	Freshwater Mussels	G2 (Imperiled)	Proposed endangered
Cumberland Moccasinshell	*Medionidus conradicus*	Mussels, Snails, & Other Molluscs	Freshwater Mussels	G3 (Vulnerable)	Proposed endangered
Littlewing Pearlymussel	*Pegias fabula*	Mussels, Snails, & Other Molluscs	Freshwater Mussels	G1 (Critically Imperiled)	Endangered
Clubshell	*Pleurobema clava*	Mussels, Snails, & Other Molluscs	Freshwater Mussels	G1 (Critically Imperiled)	Endangered; Experimental population, non-essential
Tennessee Clubshell	*Pleurobema oviforme*	Mussels, Snails, & Other Molluscs	Freshwater Mussels	G2 (Imperiled)	Proposed endangered
Rabbitsfoot	*Theliderma cylindrica cylindrica*	Mussels, Snails, & Other Molluscs	Freshwater Mussels	T3 (Vulnerable Intraspecific Taxon)	Threatened

Shortspire Hornsnail	*Pleurocera picta*	Mussels, Snails, & Other Molluscs	Freshwater Snails	G2 (Imperiled)	Under Review

Table 3: Protected Areas Assessed

Protected Area	State Classification	Approximate Distance from Logan	Potential for Direct Impact?	Reasoning
Mammoth Cave National Park	National Park	71.6 km	No	Outside of expected impact zone.
Indiana Bat Habitat	Critical Habitat	25.8 km	Yes	While we are outside of the critical habitat, the proximity and awareness of this species is something that requires further assessment.
Peabody WMA	Wildlife Management Area	28.0 km	No	Outside of expected impact zone.
Baker Natural Area	Heritage Land	11.8 km	No	Outside of expected impact zone.
Logan County Glade State Nature Preserve	Hiking Trails	13.5 km	No	Outside of expected impact zone.
Highview Hill	Heritage Land	42.6 km	No	Outside of expected impact zone.
Logan County Wetland Reserve Program	Reserve Land	See Figure 3	Yes	There are 4 total WRP zones in Logan County. One of these is hydrologically connected downstream of our outfall, and two are hydrologically connected upstream to our withdrawal location.
PAD-US-PACE 00054 - SDNR	Protected Area	5.0 km	Yes	Close proximity to plant site. No water related impacts expected, no sound or air impacts foreseen.
Lake Malone State Park	State Park	15.7 km	No	Outside of expected impact zone.
Russellville Park	City Park	10.8 km	No	Outside of expected impact zone.
Logan County Sports Complex	City Park	12.3 km	No	Outside of expected impact zone.
Hampton Park	City Park	12.4 km	No	Outside of expected impact zone.
Raymond Athey Barrens State Nature Preserve	Nature Preserve	16.8 km	No	Outside of expected impact zone.
Rabbitsfoot Habitat	Critical Habitat	30.6 km	No	Outside of expected impact zone.
Hall's Prairie OTHS	OTHS	22.3 km	No	Outside of expected impact zone.
Flat Rock Glade State Nature Preserve	Nature Preserve	29.1 km	No	Outside of expected impact zone.

Table 4: Ecosystem Services

Service Type	Service	Scope	Use	Basis for Conservation
Provisioning Services	Natural Gas	Indirect	Heating Processes	Logan Aluminum Energy Policy
Provisioning Services	Raw Materials	Indirect	Those services which make up the products used for our production. (ex: wood, oil, metals, calcium carbonate, other chemicals, etc.)	Responsible Sourcing Policy
Provisioning Services	Other Energy	Indirect	Electricity usage	Logan Aluminum Energy Policy
Provisioning Services	Fresh Water	Direct	Cooling, casting, rolling, and coating processes	Water Resources Plan
Regulating Services	Flood Prevention	Direct	Stormwater control	Stormwater Pollution Prevention
Regulating Services	Erosion Control	Direct	Limitation of TSS	Stormwater Pollution Prevention
Cultural Services	Recreational	Direct	Front Pond	
Supporting Services	Nutrient Cycling	Direct	Wetland Wastewater Buffering System	Water Resources Plan
Supporting Services	Waste Assimilation	Indirect & Direct	Waste disposal routes	Waste Minimization Plan

Table 5: WWF Risk Assessment Results

Risk Category/ Indicator Name	Key	Risk
Scape Physical Risk	SPH	2.9
1. Provisioning Services	SRC1	2.9
1.1 Water Availability	S1_1	3.3
1.2 Forest Productivity and Distance to Markets	S1_2	2.5
1.3 Limited Wild Flora & Fauna Availability	S1_3	No dependency or impact
1.4 Limited Marine Fish Availability	S1_4	NA
2. Regulating & Supporting Services - Enabling	SRC2	2.5
2.1 Soil Condition	S2_1	No dependency or impact
2.2 Water Condition	S2_2	3
2.3 Air Condition	S2_3	2.5
2.4 Ecosystem Condition	S2_4	No dependency or impact
2.5 Pollination	S2_5	No dependency or impact
3. Regulating Services - Mitigating	SRC3	2.88
3.1 Landslides	S3_1	2.5
3.2 Wildfire Hazard	S3_2	3
3.3 Plant/Forest/Aquatic Pests and Diseases	S3_3	No dependency or impact
3.4 Herbicide Resistance	S3_4	No dependency or impact
3.5 Extreme Heat	S3_5	4
3.6 Tropical Cyclones	S3_6	2.5

1.0 <= x <= 1.8 Very low risk
1.8 < x <= 2.6 Low risk
2.6 < x <= 3.4 Medium risk
3.4 < x <= 4.2 High risk
4.2 < x <= 5.0 Very high risk

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4. Cultural Services	**SRC4**	No dependency or impact
4.1 Natural & Cultural Resources	**S4_1**	No dependency or impact
5. Pressures on Biodiversity	**SRC5**	4.19
5.1 Land, Freshwater and Sea Use Change	**S5_1**	4.75
5.2 Forest Canopy Loss	**S5_2**	4
5.3 Invasives	**S5_3**	3.5
5.4 Pollution	**S5_4**	3.75