

NEW FLIGHT PATHS: POTENTIALLY SIGNIFICANT IMPACTS ON WILDLIFE OF THE GREATER BLUE MOUNTAINS AREA



Blue Mountains World Heritage Institute Position Statement re. Draft Environmental Impact Statement (EIS) for the Western Sydney International Airport (WSI) preliminary flight paths

The Institute believes there may be significant impacts on the GBMWhA's biodiversity integrity and cultural values.

The Greater Blue Mountains World Heritage Area (GBMWhA) stands as a globally recognised natural asset, serving as a vital resource of biodiversity, clean air, and water resources for Greater Sydney. Covering 1.03 million hectares and comprising eight protected areas, the GBMWhA is one of the largest continuous natural areas in NSW, Australia. Designated as a "Matter of National Environmental Significance" by the federal government, this environmentally sensitive region holds immense ecological and cultural importance.

Enshrined on the World Heritage List in 2000 for its outstanding universal value, the area is recognised for its abundance and distinctive evolution of its eucalypt species (meeting World Heritage criterion (ix)), the diversity of habitats and plant communities, as well as the presence of endemic and threatened animal species and their habitats (satisfying criterion (x)). To ensure the overall integrity of the GBMWhA, encapsulating its entirety and completeness, our obligation for effective management and safeguards to preserve and enhance these natural assets are essential.

Following an extensive review of the Environmental Impact Statement on the Flight Paths, we believe there may be significant impacts on the GBMWhA's biodiversity, Integrity and cultural values.

We note that the proposed flight paths are expected to impact the Traditional Custodian land-sky connectivity by introducing aircraft and associated noise over important Aboriginal cultural areas. In light of these considerations, we express our support for and alignment with the voices and positions of First Nations People.

An Obligation to Protect

Safeguarding the Greater Blue Mountains World Heritage Area (GBMWhA) is a legal imperative under the World Heritage Convention and the Environment Protection and Biodiversity Conservation Act (1999) (EPBC) Regulations. Despite assurances in the Draft Environmental Impact Statement, there is a notable concern about potential impacts on the World Heritage Area's Integrity and fauna values, prompting questions about our commitment to national and international obligations, specifically under the Rio Declaration (1992) and the NSW Wilderness Act (1987).

In accordance with our responsibilities outlined in the Rio Declaration and the Environment and Biodiversity Protection Act (EPBC), the planning and implementation of the proposed airport development and flight paths must adhere to the Precautionary Principle. The Precautionary Principle requires that in cases of scientific uncertainty or inadequate environmental information, assessors should not assume negative impacts will not occur. However, we see little evidence of precaution being exercised with the Draft Flight Paths EIS. This is especially the case where the significance of the impact of flight paths noise on GBMWhA biodiversity is determined.

The principle of Intergenerational Equity is also included in the Rio Declaration, this environmental principle embodies care for future generations through allowing them equitable enjoyment of the natural resources present-day generations have had access to. The introduction of permanent, curfew free, 24 hour flight paths over the GBMWhA fails to comply with our obligation to Intergenerational Equity.

Under the NSW Wilderness Act (1987), authorities have an obligation to ensure wilderness areas are managed so that they remain free from development and disturbance, preserving the unmodified state of the environment. Additionally, the public have access to wilderness places of inspiration that offer solitude, spiritual significance as well as opportunities for self-reliant recreation activities. We note contrary to this obligation that large areas of Declared Wilderness may be subject to 24 hour intermittent aircraft noise of between approximately 50 to 65 decibels.

Risk of Significant Impact

Our analysis is that there is the potential for irreversible impact on endangered species due to ongoing and increasing aircraft noise in the Greater Blue Mountains Area (GBMWhA). Using the Federal Government's Protected Matters Tool, we identified several critically endangered, endangered, and vulnerable GBMWhA species under the 60-75 decibel noise contours. These species include microbats, endangered songbirds, and frogs.

Bats

The Large-eared Pied Bat (*Chalinolobus dwyeri*), listed as a threatened species, may experience disruptions in foraging and communication activities due to 24-hour intermittent aircraft noise ranging from 75 to 65 decibels in GBMWhA habitats. Despite using ultra-high frequency sound for echo-locating, microbat calls are significantly impacted by lower frequency anthropogenic noise, including aircraft noise, affecting the range and acoustic frequency of their calls and, consequently, their foraging behaviour (Klett-Mingo et al. 2016).

We know that for microbats, the intensity and duration of calls are influenced by aircraft noise. The feeding "buzzes" of microbats decline with increasing aircraft loudness, especially when bats are overflown (Wang et al. 2022). Persistent anthropogenic noise is

known to reduce foraging bouts duration, hunting success, and increase foraging time in similar microbat species (Bunkley et al. 2015; Bunkley and Barber 2015; Simers and Schaub 2010). Call loudness and complexity also decrease when exposed to interfering noises, akin to aircraft noise, in other bat species (Jiang et al. 2019).

An additional consideration involves the vulnerable Grey-headed Flying-foxes (*Pteropus poliocephalus*) residing in and using GBMWA habitats within the 75 decibel, 70–65 decibel, and 65 decibel noise contours. Flying-foxes travel in large groups over substantial distances to access nectar and fruit resources (Parsons et al. 2008) in both the GBMWA and residential areas in the Blue Mountains LGA. When undertaking their nightly commutes, Flying-fox species sometimes “thermal”, reaching high altitudes (Richmond et al. 1998). The significant altitude of their flight poses a potential threat, as Grey-headed Flying-foxes are at risk of direct strikes by aircraft flying over the GBMWA. While acknowledging the remote nature of this risk, the Institute asserts that it is a possible known risk.

Frogs

The vulnerable Giant Burrowing Frog (*Heleioporus australiacus*) and four other endangered or vulnerable frog species, including the Booroolong Frog (*Litoria booroolongensis*), could face impacts from noise contours ranging from 60 to 75 decibels. The Green and Golden Bell Frog (*Litoria aurea*), listed as Endangered under the NSW Threatened Species Conservation Act (1995), is one of five threatened frog species under the 60 decibel contour. Frog breeding behavior is highly sensitive to sound (Roca et al. 2016), and disturbances caused by aircraft noise could interfere with their communication, especially during night-time breeding activities. Given that frogs' ability to adapt and disperse is limited by access to healthy waterways and their small size (Wollenberg et al. 2011), and with no research suggesting otherwise, we are concerned that frogs affected by the aircraft noise may not be able to move or adapt, putting them at risk of significant impact.

Birds

Several bird species, including the critically endangered Regent Honeyeater (*Anthochaera phrygia*) and Swift Parrot (*Lathamus discolor*), are confirmed or likely to inhabit areas under all three noise contours. Scientific evidence indicates that persistent, intermittent anthropogenic noise can significantly alter the behavior of bats and birds, affecting their calling patterns and increasing vigilance time (Hart 2022; Klett-Mingo et al. 2016).

The Regent Honeyeater, already facing habitat reduction due to land clearing, may risk abandoning noise-impacted habitats for foraging, potentially finding no other suitable habitat nearby.

Many threatened birds, gliders, and frogs listed in Appendix 1 engage in complex social behavior with mates and chicks (Tobias et al. 2019), including territorial calling. Parrot species like the critically endangered Swift Parrot, the vulnerable Glossy Black Cockatoo (*Calyptorhynchus lathami lathami*), and the endangered Gang-gang Cockatoo (*Callocephalon fimbriatum*) exhibit intricate social lives. Research suggests that persistent anthropogenic noise weakens the integrity of bird vocalisations, disrupting communications, including about territory (Kleist et al. 2016). These risks, relevant to birds, are also applicable to calling endangered Greater Gliders (*Petauroides volans*), vulnerable Yellow-bellied Gliders (*Petaurus australis australis*), and all frog species within the GBMWA listed in Appendix 1.

Given that the aircraft noise introduction to GBMWA habitats will be permanent and irreversible (unless the airport closes) and given that the intensity of the noise will increase over time, the potential impact of the flight paths should be assessed as significant.

The Flight Paths Environmental Impact Statement Falls Short

Inadequate Criteria for "Significant" Impact Definition in Draft EIS

The current Draft Flight Paths Environmental Impact Statement (EIS) falls short in establishing adequate criteria for defining a "significant" impact. Notably, it neglects the proper inclusion of potential negative impacts on biodiversity values, diverging from the guidelines outlined in the EPBC Act, particularly those highlighted by guidelines 1.1 and 1.2 and the application of the Precautionary Principle.

Insufficient Consideration of International Conventions and Legislation

The assessment of proposed flight paths on the Greater Blue Mountains World Heritage Area (GBMWH) lacks thorough consideration of key international conventions and NSW legislation. The Rio Declaration, Agenda 21, the Integrity concept of the GBMWH World Heritage Listing, and the NSW Wilderness Act (1987) have not been sufficiently addressed concerning potential impacts. While the Draft EIS acknowledges minimal impact on flora, we assert that flight path operations adversely affect the "Integrity" of the GBMWH and fauna values, potentially breaching responsibilities under the World Heritage Convention (1972) and the EPBC Regulations. Ongoing review is necessary regarding the Wilderness Act obligations on aircraft and noise in protected areas.

Concerns Regarding Biodiversity Impact Assessment

The federal government's approach to assessing biodiversity impact in the GBMWH, relying on a desktop survey without physical on-site work, raises concerns. The absence of a baseline for ongoing impact assessment neglects the precautionary principle. The Draft EIS employs a restrictive definition of "significant impact" on biodiversity, despite established best practices and clear guidelines. In identified GBMWH areas, inadequate pre-impact survey work was conducted. Additionally, the EIS lacks guidance on future impact monitoring.

Recommendations

1. A Federal Inquiry for Sydney Basin Airspace Redesign:
 - Establish a Federal Inquiry to redesign Sydney Basin Airspace, minimising inequitable impacts on the GBMWH. Redesign to avoid overflight or limit overflights from dusk to dawn, promoting aircraft exposure equity.
2. Application of the Precautionary Principle on Biodiversity Impacts:
 - The Final Flight Paths EIS should undergo a full reassessment of "significant" biodiversity impacts using EPBC Act guidelines and current scientific literature, applying the precautionary principle.
3. Ecological Sustainability Impact Assessment:
 - The Final Flight Paths EIS should comprehensively outline ecological sustainability impacts. Establish an expert Environmental Management Committee to provide advice on environmental issues arising from the development and operation of the airport, following best practices like Vancouver Airport.
4. Baseline and Ongoing Monitoring for Biodiversity:
 - Initiate comprehensive baseline acoustic monitoring along with ongoing biodiversity monitoring, focusing on key EPBC Act-listed threatened species. This monitoring is crucial for understanding behavior and population changes due to flight path-related impacts and informing the 2055 WSI second runway EIS.
5. GBMWH Western Sydney Airport Environmental Impact Offset Compensation Fund:
 - Establish an offset fund, collecting a per-passenger levy from airport users, ensuring consistency with the National Environmental Standard for environmental offsets when established. Invest funds in natural and cultural heritage protection, monitoring, and promotion for the Greater Blue Mountains World Heritage Area, ensuring optimal biodiversity outcomes for the region.

About the Institute

We are an independent, not-for-profit Institute based in the Blue Mountains World Heritage Area of Australia.

We exist to promote understanding and stewardship of the GBMWhA through research and sharing knowledge, robust partnerships and community involvement.

We conduct research, collaborate worldwide and engage with communities to develop innovative strategies for conservation and sustainability.

As a member of the International Union for the Conservation of Nature (IUCN), we are part of a global community working to protect natural areas around the world.

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Appendix 1

Table: Key federally EPBC Act Listed Threatened Species that may or do occur under the 2055 75, 70 to 65 and 60 decibel noise contours (+ 1 km buffer) within the GBMWhA

Scientific name	Common name	Fauna type	Presence	Threat status	Decibel noise contour
<i>Lathamus discolor</i>	Swift Parrot	Bird	Likely	Critically Endangered	75, 70 to 65, 60
<i>Anthochaera phrygia</i>	Regent Honeyeater	Bird	Likely	Critically Endangered	75, 70 to 65, 60
<i>Botaurus poiciloptilus</i>	Australasian Bittern	Bird	May	Endangered	75, 70 to 65, 60
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat, Large Pied Bat	Mammal	Likely	Endangered	75, 70 to 65, 60
<i>Litoria booroolongensis</i>	Booroolong Frog	Frog	May	Endangered	70 to 65, 60
<i>Eulamprus leuraensis</i>	Blue Mountains Water Skink	Reptile	Known	Endangered	70 to 65, 60
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	Bird	Likely	Endangered	75 and 70 to 65
<i>Litoria littlejohni</i>	Littlejohn's Tree Frog, Heath Frog	Frog	Known	Endangered	70 to 65, 60

Appendix 1 - Cont

Table: Key federally EPBC Act Listed Threatened Species that may or do occur under the 2055 75, 70 to 65 and 60 decibel noise contour (+ 1 km buffer) within the GBMA

Scientific name	Common name	Fauna type	Presence	Threat status	Decibel noise contour
<i>Petauroides volans</i>	Greater Glider (southern and central)	Mammal	Known	Endangered	70 to 65
<i>Austrocordulia leonardi</i>	Sydney Hawk Dragonfly	Insect	May	Endangered	60
<i>Petaurus australis australis</i>	Yellow-bellied Glider (south-eastern)	Mammal	Known	Vulnerable	70 to 65, 60
<i>Mixophyes balbus</i>	Stuttering Frog	Frog	Likely	Vulnerable	70 to 65, 60
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	Frog	Known	Vulnerable	70 to 65, 60
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Mammal	Known	Vulnerable	75, 70 to 65, 60
<i>Falco hypoleucos</i>	Grey Falcon	Bird	Likely	Vulnerable	75
<i>Calyptorhynchus lathami lathami</i>	South-eastern Glossy Black-Cockatoo	Bird	Known	Vulnerable	70 to 65, 60
<i>Litoria aurea</i>	Green and Golden Bell Frog	Frog	May	Vulnerable	60

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