2022 Delta Electronics Biodiversity Risk Assessment Report

Biodiversity Risk Identification and Procedure

- Biodiversity loss has accelerated due to the impact of climate change. Humans' overconsumption of natural resources has also created systemic risks of the collapse of the ecosystem. Delta Electronics incorporated biodiversity into its sustainability strategy in 2022.
- As a member of the TNFD Forum and in echo to the Kunming-Montreal Global Biodiversity Framework (GBF), Delta Electronics adopted the Taskforce on Nature-related Financial Disclosures (TNFD) framework to disclose nature-related risks and management. This is the first time Delta has conducted a biodiversity risk assessment based on the LEAP (Locate, Evaluate, Assess, and Prepare) assessment process to identify the nature-related dependencies, impacts, and risks to our whole value chain. The biodiversity risk identification and procedure is as below:

Scope of the assessment

Locate	Evaluate	Assess	Prepare
• Identify the business footprint and the biodiversity sensitive areas • Identify the biodiversity sensitive areas • Find out the relationship between the sites and the biodiversity	• Identify the dependencies and impacts	• Risk and opportunity assessment	• Strategy and resource allocation • Performance measurement • Reporting

Note: There may be some limitations, such as the precision of coordinate information, the completeness of biodiversity sensitive area maps and the methodology for dependency and impact analysis. We will continue to develop assessment methodologies to support our biodiversity targets by taking real actions.

Scope

The scope of Delta's biodiversity risk assessment encompasses our own operations, adjacent areas to our own operations, as well as upstream and downstream activities.

I. Spatial Analysis

We used IUCN World Database on Protected Areas (WDPA) data and Taiwan local data (open data such as protected areas, major habitats and biodiversity hotspots from the Construction and Planning Agency Ministry of the Interior, ROC and Forestry Bureau, ROC) to identify the spatial relationships between our global operation sites, suppliers and the ecosystem.

Delta Global Operation Sites

Production plants

Offices
(including data centers)

Top 100 Suppliers

The top 100 suppliers by procurement amount in 2022, with complete spatial information.

II. Dependency-related & Impact-related Biodiversity Risks Assessment

We conducted a questionnaire survey based on the LEAP (Locate, Evaluate, Assess, and Prepare) assessment process to identify the nature-related dependencies, impacts, and risks to our own operations, as well as upstream and downstream value chains.

Value chain	Valid questionnaires
Upstream activities	605
Own operations	10
Downstream activities	12

Methodology

I. Spatial Analysis

1 Biodiversity Spatial Data Collection

We have collected WDPA and Taiwan local data as reference for determining biodiversity sensitive areas.

IUCN World Database on Protected Areas (WDPA)

Ia – strict nature reserve
Ib – wilderness area
II – national park
III – natural monument or feature
IV – habitat or species management area
V – protected landscape or seascape
VI – protected area with sustainable use of natural resources
Not Reported/ Not applicable/Not Assigned

Taiwan local data

Wetlands of Importance	National Parks
Coastal Conservation Zones	Natural Reserves
Major Wildlife Habitats	Nature Reserves
Wildlife Refuges for Major Wildlife Habitats	

2 Site Distribution Analysis

We have collected the location information of Delta's global operation sites and some suppliers in 2022 to conduct a 2-km buffer analysis.

Site Address → Site Coordinate → 2-km Buffer analysis

3 Overlay Analysis

We use the biodiversity spatial data and site coordinates we collected to identify the spatial relationships between the sites and the ecosystem. The definitions are as below:

- **Biodiversity sensitive areas:** areas with IUCN management categories Ia to IV and confirmed through internal discussions.
- **Other protected areas:** areas with IUCN management categories V, VI and others (Not Reported/ Not applicable/Not Assigned).

4 Results Output


生物多樣性評估分析報告

分析對象名稱：自有自用-33

分析對象所在地：114501 台灣台北市內湖區瑞光路186號

(緯度： 25.07425 ,經度： 121.57789)

一、是否坐落生物多樣性影響範圍

IUCN分類	名稱	法規範圍 生物多樣性圖資	是否坐落
Ia	嚴格自然保留區	自然保留區	否
Ib	荒野地	-	否
II	國家公園	國家公園	否
III	自然紀念物或現象	自然保護區	否
IV	棲地/物種管理區	重要濕地	否
		野生動物保護區	否
		野生動植物重要棲息環境	否
V	地景/海景保護區	沿海保護區	否
VI	自然資源永續利用區	-	否
-	其他	-	否


二、據點坐落位置

Methodology

II. Dependency-related & Impact-related Biodiversity Risks Assessment

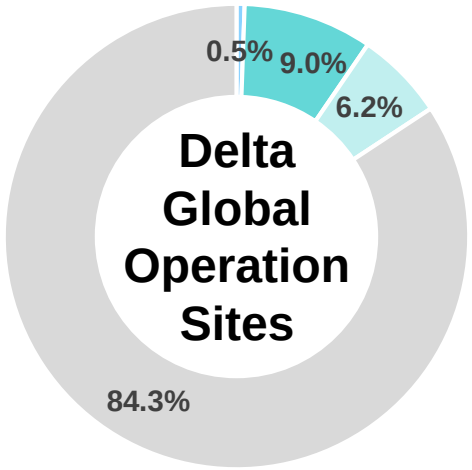
		Dependency	Impact
1	Identification	We refer to the System of Environmental-Economic Accounting—Ecosystem Accounting (SEEA EA) to categorize ecosystem services into two major categories: Provisioning services Regulating services In the dependency questionnaire, we attempted to help respondents understand the concept of dependency through a reverse approach. For example, regarding the temperature regulating service, the questionnaire presents the scenario of "extreme high temperatures," which signifies whether the respondents would be affected when the temperature regulating service is disrupted. If they are impacted, it indicates their dependency on this ecosystem service.	We refer to the TNFD to categorize impact drivers into 5 major categories: Land/ocean/freshwater use change Climate change Resource use Pollution Invasive alien species introduction
2	Risk Assessment	Delta evaluates risks based on the exposure, degree of risk impact and risk preparedness.	
3	Risk Response	Delta implements managing the items with high biodiversity risks based on the overall risk rating.	

Biodiversity Risk Assessment Results

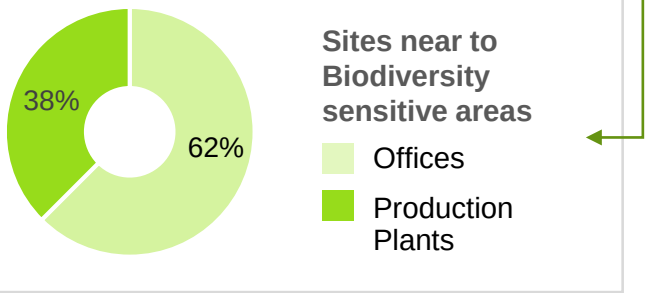
I. Spatial Analysis

Results

I. Spatial Analysis - Delta Global Operation Sites



Biodiversity sensitive areas (%)	Locate in	Near to
	0.0	9.0
Other protected areas (%)	Locate in	Near to
	0.5	6.2
No biodiversity risk (%)	84.3	



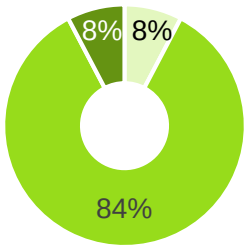
Regarding the Delta global operational sites, the spatial analysis results are shown in the figure:

- 0% sites are located in biodiversity sensitive areas.
- 9.0% sites are near to biodiversity sensitive areas.
  - These sites are mainly distributed in Asia and Europe. Most of these locations serve as offices, while some have production lines or data centers.
- 0.6% sites are located in other protected areas.
  - The site is located in Yunnan Province, China. It is an office without any production activities, approved by the Kunming Municipal Government as commercial real estate with development permits. The site is situated within the Dianchi Lake, designated as Scenic Area at National level in 1981 and covering an area of 2,290 km^2. The primary objective of this protected area is to prevent and control water pollution and improve the ecological environment of the watershed. It is classified as a Class VI area in the IUCN grading, designated for sustainable utilization of natural resources.
  - Delta has conducted water risk assessments and water resource management for all its global operational sites (ESG report section 5.4). In the future, we will further investigate the relationship between this specific site and the environment and formulate an action plan to align with the core principle of improving the ecological environment of the watershed within the protected area.
- 6.2% sites are near to other protected areas.
  - These sites are mainly distributed in South America and Europe. Most of these locations serve as offices, while one of them have production lines.
- 84.3% sites have no biodiversity related risk (not located in or near to biodiversity sensitive areas and other protected areas).
- In the future, we will continue to deepen our understanding of the relationships between each site and nearby ecological sensitive areas to establish relevant strategies.

Results

I. Spatial Analysis - Top 100 Suppliers

Biodiversity sensitive areas (%)	Locate in	Near to
	0	13
Other protected areas (%)	Locate in	Near to
	0	1
No biodiversity risk (%)	86	



Sites near to Biodiversity sensitive areas

- Japan
- Taiwan
- Korea

Regarding the top 100 suppliers, the spatial analysis results are shown in the figure:

- 0% suppliers are located in biodiversity sensitive areas.
- 13% suppliers are near to biodiversity sensitive areas.
- 0% suppliers are located in other protected areas.
- 1% suppliers are near to other protected areas.
- 86% suppliers have no biodiversity related risk (not located in or near to biodiversity sensitive areas and other protected areas).

- Due to the large number of suppliers and the incomplete coordinate information, for this analysis, we have only focused on suppliers with complete coordinate information. We have conducted preliminary analysis on the top 100 suppliers based on procurement amounts. In the future, we will not only continue to improve the completeness and accuracy of coordinate information but also consider other factors such as industry categories and geographical regions to ensure that Delta can identify suppliers with significant environmental impacts and strengthen relevant management actions.
- The Delta Group Supplier Code of Conduct has already incorporated content related to biodiversity: ”suppliers should pay attention to the dependence and impact on biodiversity in the process of site setting, material choosing, production and transportation, including avoiding operations locate in or near the sites internationally or nationally recognized Ecologically sensitive areas, and preventing any damage to virgin forests, etc.”
- Regarding suppliers identified as near to biodiversity sensitive areas, we will further investigate the on-site situation and seek opportunities for collaboration with these suppliers. Through mutual cooperation, we aim to reduce the negative environmental impacts collectively.

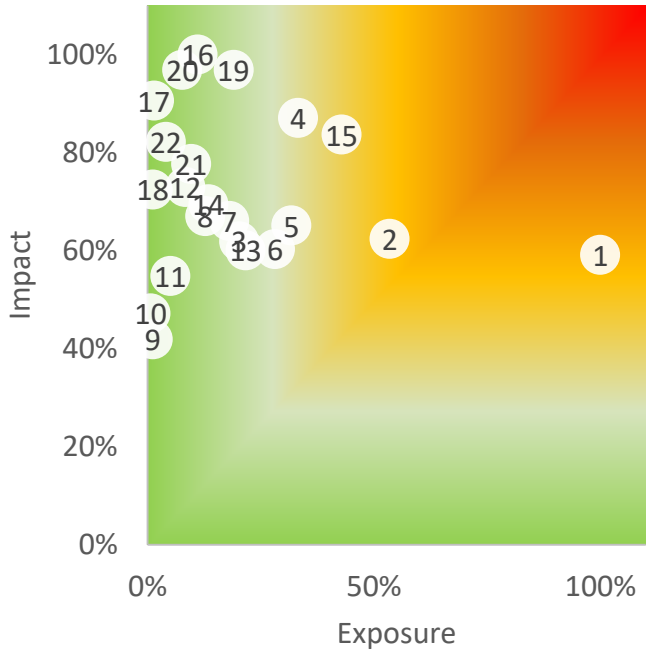
Biodiversity Risk Assessment Results

II. Dependency-related & Impact-related Biodiversity Risks Assessment

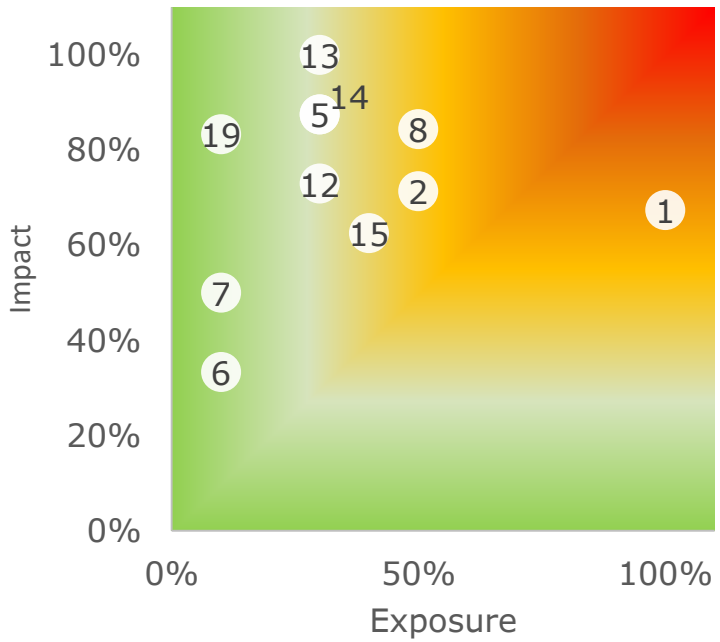
Results

Dependency-related Risk Analysis Matrix

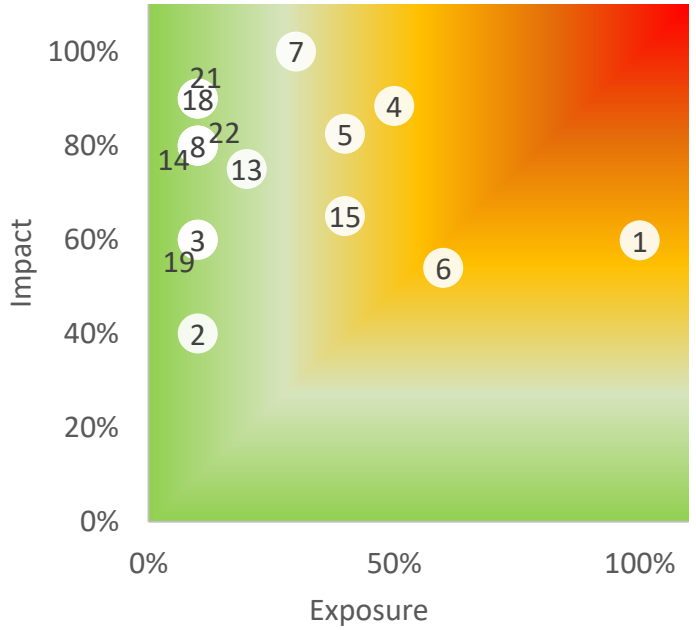
Upstream activities



Own operation



Downstream activities



The impact takes into account both the degree of influence and the implementation of management measures. If the level of management is higher, the degree of impact will be lower.

Provisioning services	Regulating services		
4. Insufficient water resources	1. Extreme heatwaves	8. Floods	13. Stronger wind disasters
16. Shortage of fossil fuel supply	2. Decreased air quality	9. Eutrophication	14. Large-scale occurrence of noise and vibrations
17. Shortage of biological materials	3. Deterioration of water quality	10. Seawater intrusion	15. Large-scale infectious diseases
18. Shortage of biological materials	5. Extreme rainfall	11. Decline in soil productivity	21. Destruction of habitats or decline in biodiversity
19. Shortage of non-biological materials	6. Uneven distribution of rainfall	12. Landslides	22. Insufficient pollination leading to reduced crop yields
20. Shortage of non-biological materials	7. Drought		

Results

Dependency-related Risk Analysis Results

- The top six dependency-related risks for activities upstream, midstream, and downstream from Delta are shown in the table below. Both extreme heatwaves and extreme rainfall are tied for being among the top six risks, indicating that Delta is highly dependent on stable temperature and rainfall patterns.
- At a global scale, temperature variations are primarily regulated by global climate regulating services. Global climate regulating services are the ecosystem contributions to the regulating of the chemical composition of the atmosphere and oceans that affect global climate through the accumulation and retention of GHG in ecosystems and the ability of ecosystems to remove (sequester) carbon from the atmosphere. If the service is disrupted, it may lead to extreme heatwaves, with potential impacts including increased energy consumption and greenhouse gas emissions due to air conditioning usage, higher costs, and potential health effects on employees. Delta has set GHG management goals and strategies, and through supply chain management and providing efficient products, we are committed to greenhouse gas reduction efforts with both upstream and downstream partners to mitigate the impact of global warming.
- Rainfall pattern regulating services are the ecosystem contributions of vegetation, in particular forests, in maintaining rainfall patterns through evapotranspiration at the sub-continental scale. When extreme rainfall occurs, potential impacts may include work stoppages and property losses due to flooding. We will focus on locations at high risk of flooding, assess the measures to increase biodiversity to promote the stability of rainfall pattern regulating services.

Rank	Upstream activities
1	Extreme heatwaves
2	Large-scale infectious diseases
3	Decreased air quality
4	Insufficient water resources
5	Extreme rainfall
6	Shortage of non-biological materials

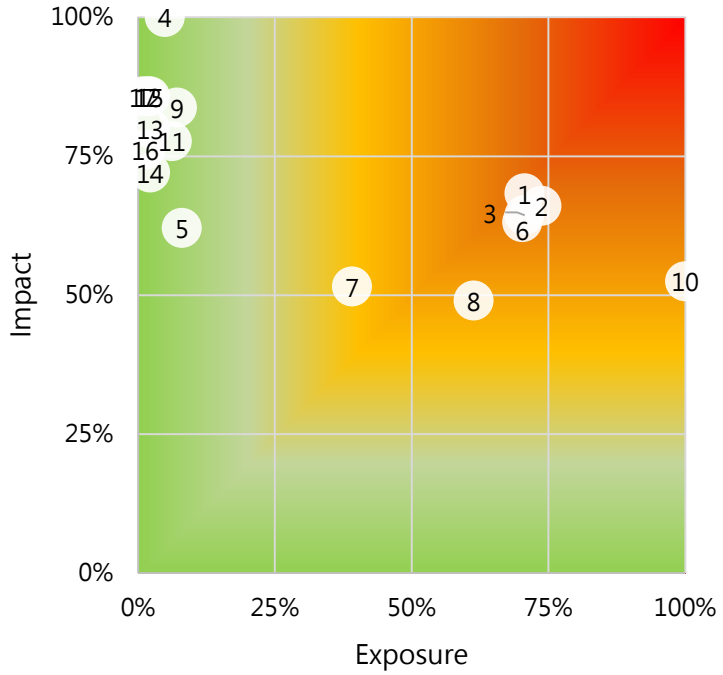
Rank	Own operation
1	Extreme heatwaves
2	Floods
3	Decreased air quality
4	Stronger wind disasters
5	Large-scale occurrence of noise and vibrations
6	Extreme rainfall

Rank	Downstream activities
1	Extreme heatwaves
2	Insufficient water resources
3	Extreme rainfall
4	Uneven distribution of rainfall
5	Drought
6	Large-scale infectious diseases

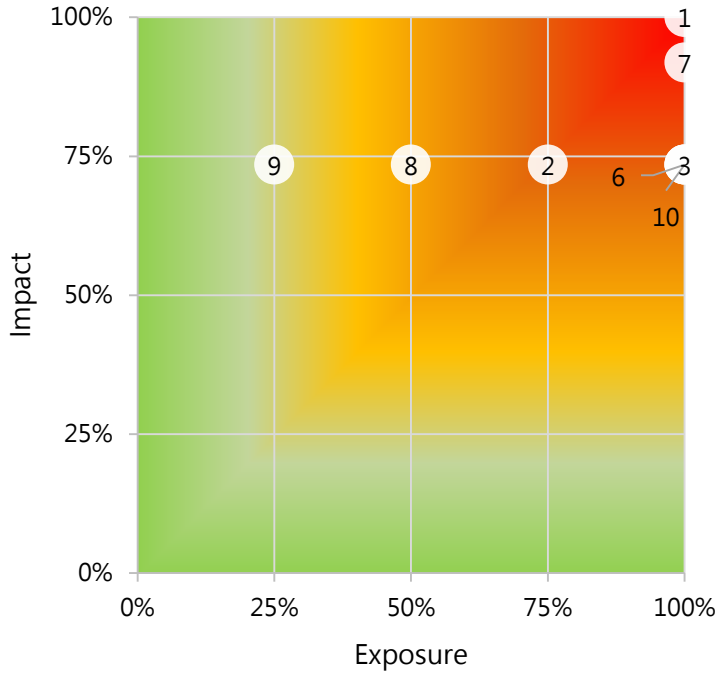
Results

Impact-related Risk Analysis Matrix

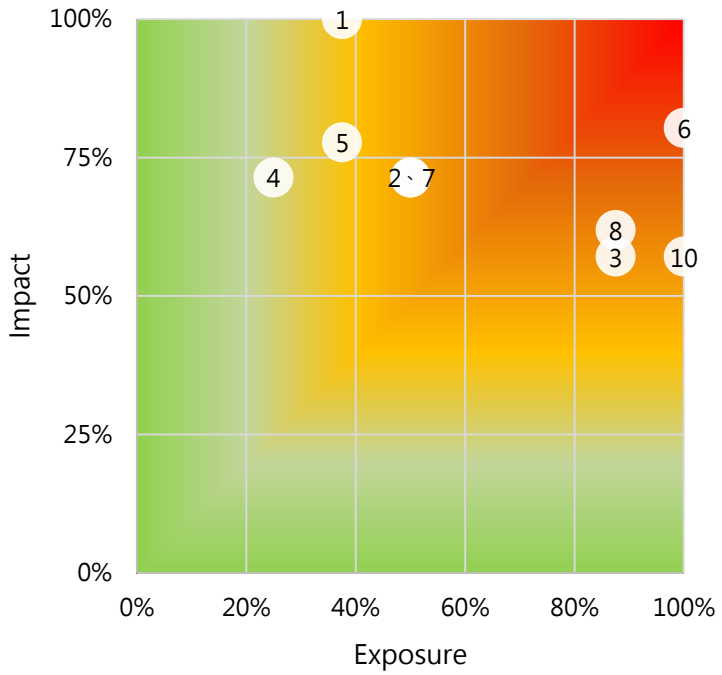
Upstream activities



Own operation



Downstream activities



The impact includes consideration of whether management measures, objectives, and monitoring are implemented. If the level of management is higher, the degree of impact will be lower.

Land/ocean/freshwater use change	Climate change	Resource use	Pollution	Invasive alien species introduction
14. Alteration of land topography and type 15. Changes to freshwater ecosystems 16. Changes to marine ecosystems	6. Greenhouse gas emissions	1. Freshwater resource usage 2. Mineral resource usage 3. Fossil fuel and electricity usage 4. Biological resource usage 5. Critical commodities usage 17. Use of genetic materials related to biodiversity	7. Air pollution emissions 8. Generation of process wastewater 9. Discharge of wastewater into surrounding natural water bodies 10. Generation of waste 11. Waste affecting surrounding natural or agricultural land	12. Introduction of invasive alien species 13. Operational disruption to local wildlife and plants

Impact-related Risk Analysis Results

- The top six dependency-related risks for own operation upstream and downstream activities on Delta are shown in the table below. Among them, Freshwater resource usage, Fossil fuel and electricity usage, Greenhouse gas emissions, Generation of waste, and Mineral resource usage are all tied for being among the top six impacts, making them the most significant impact categories for Delta.
- Regarding the issues mentioned above, Delta has already implemented relevant management measures, set management goals, and continues to monitor progress internally and with some of its suppliers. For more details, please refer to our 2022 ESG report. The corresponding chapters are as follows:
  - 4.5 Supplier Sustainability Management
  - 5.2 Climate Strategy
  - 5.3 Energy Management
  - 5.4 Water Resource Management
  - 5.5 Resources Management
  - 5.6 Green Products
- In the future, we will continue to deepen these efforts and actively collaborate with upstream and downstream stakeholders to reduce impacts and risks on biodiversity.

Rank	Upstream activities
1	Generation of waste
2	Mineral resource usage
3	Freshwater resource usage
4	Fossil fuel and electricity usage
5	Greenhouse gas emissions
6	Generation of process wastewater

Rank	Own operation
1	Freshwater resource usage
2	Air pollution emissions
3	Fossil fuel and electricity usage
4	Greenhouse gas emissions
5	Generation of waste
6	Mineral resource usage

Rank	Downstream activities
1	Greenhouse gas emissions
2	Generation of waste
3	Generation of process wastewater
4	Fossil fuel and electricity usage
5	Freshwater resource usage
6	Mineral resource usage

Conclusion

- Delta Electronics has completed its first comprehensive biodiversity risk assessment along the entire value chain, gaining initial insights into the dependency-related and impact-related risks on biodiversity associated with our own operations and upstream and downstream activities.

- Regarding the identified risks, we have already taken relevant management measures for most of them and set goals while continuously monitoring progress.

- In the future, we will continue to improve our methodologies to fulfill our biodiversity policy commitments and work towards our ultimate goal of Net Positive Impact (NPI).

Smarter. Greener. Together.

Appendix: Biodiversity-sensitive Areas and Other Protected Areas Delta Located in or Near to

Own operations

Country	Name of the biodiversity-sensitive areas and other protected areas
Canada	• II-Shirleys Bay
China	• VI-Dianchi
Czech Republic	• III -Meandr Botiče
Finland	• Not Assigned-Mätäoja
France	• IV-Adour Et Affluent • Not Reported-Valle de l'Adour
Germany	• IV -Rumpenheimer und Bürgeler Kiesgruben • V -LSG-Landschaftsschutzgebiet im Kreis Soest • V -Grüngürtel und Grünzüge in der Stadt Frankfurt am Main • V -Hessische Mainaue • Not Reported-Vogelschutzgebiet Hellwegbörde • Not Reported-Schwarzwald-Westrand von Herbolzheim bis Hohberg
Italy	• Not Reported -Villa Borghese e Villa Pamphili
Japan	• IV-Tokyoko
Mexico	• Not Reported-Tlanepantla • Not Reported-Barranca Río La Pastora, R. La Loma y R. San Joaquín • Not Reported-Bosques de las Lomas
Netherlands	• Not Assigned-NNN-NB
Slovakia	• IV-Hradocke arboretum • V-Nizke Tatry • Not Assigned-Nizke Tatry- OP • Not Reported-Nizke Tatry
Spain	• Not Reported -Zadorra ibaia / Río Zadorra
Sweden	• III -2002584 Dragsåsen • IV -2002392 Araby • IV -2050380 Hovshaga • IV -2022049 Södra Törnskogen • V-2000140 Hansta • Not Assigned -2003106 Ravalen
Taiwan	• IV-Taoyuan Gaorong • IV-Taipei City Zhongxing and Yungfu Bridges Waterbird • Danshuei River Important Wetland • Taipei City Waterbird Refuge • Taipei City Zhongxing and Yungfu Bridges Waterbird Major Wildlife Habitat • Taoyuan's Reservoir and Canal Important Wetland
United Kingdom	• IV -Alkrington Woods • IV -Boggart Hole Clough • IV -Rochdale Canal
United States of America	• IV-Don Edwards San Francisco Bay National Wildlife Refuge • IV-Don Edwards San Francisco Bay • V-Bluegrass Park and • V-Canterbury • V-Oakwood Arbors • V-Round Rock City Of • V-Town Center • Not Reported -Hansta“

Suppliers

Country	Name of the biodiversity-sensitive areas and other protected areas
Taiwan	• IV-Taipei City Zhongxing and Yungfu Bridges Waterbird • IV-Taoyuan Gaorong • Danshuei River Important Wetland • Nangang 202 Arsenal and Periphery Important Wetland • Taoyuan's Reservoir and Canal Important Wetland. • Taipei City Waterbird Refuge • Taipei City Zhongxing and Yungfu Bridges Waterbird Major Wildlife Habitat • Xucuogang Important Wetland
Korea	• IV-Fossil Site of Dinosaur Eggs in Gojeong-ri, Hwaseong
Hongkong	• Not Reported-Ma On Shan