

Okinawa Cellular
TNFD Report
- 2024 -

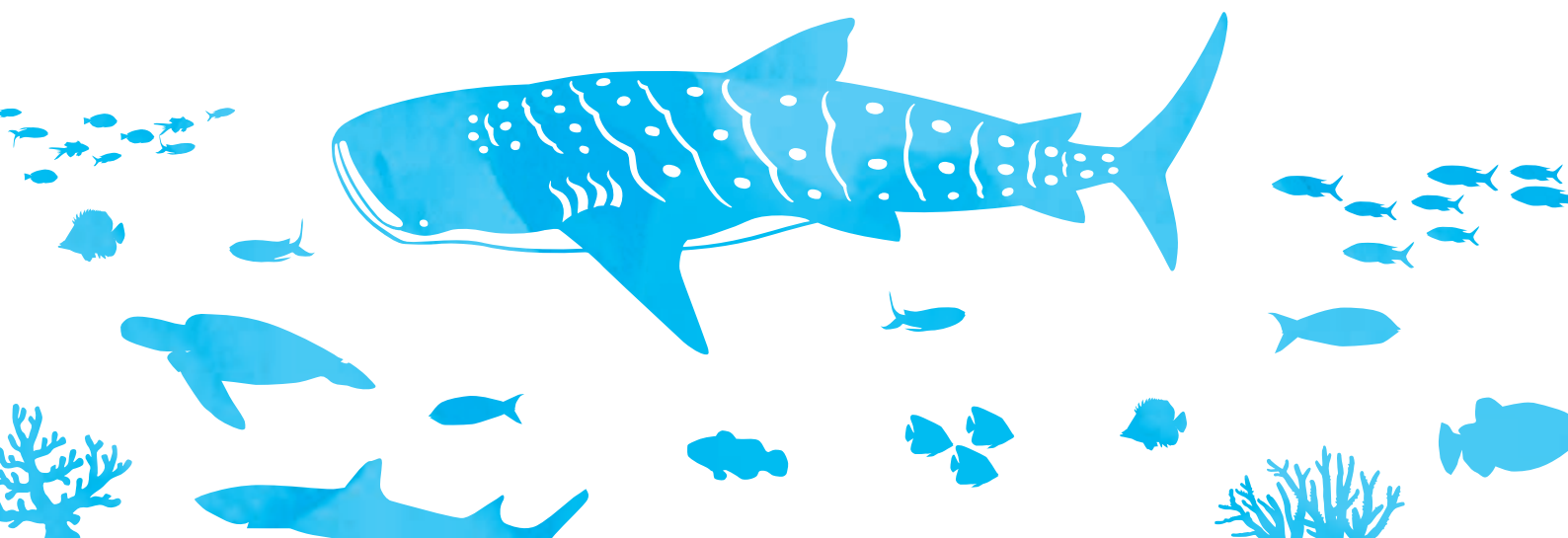


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Okinawa Cellular's approach to natural capital

Since our establishment in 1991, Okinawa Cellular, with our corporate philosophy has been of "contributing to the development of Okinawa's economy through our business ", has worked to build a strong, high-quality network as a comprehensive telecommunications carrier in Okinawa, and has grown with the support of various local companies and partners. We believe that nature is the foundation of corporate growth and economic development, and that natural capital is extremely important for sustainable economic activities.

We agreed with the philosophy of the Taskforce on Nature-related Financial Disclosures (TNFD) and participated in the TNFD Forum, an organization supporting its activities. In addition, we have joined the "30by30" Alliance led by the Ministry of the Environment, which aims to establish a system to achieve the goal of conserving or protecting at least 30% of the land and sea areas as healthy ecosystems by 2030. And now, we have prepared a TNFD report based on the TNFD v1.0 disclosure framework, analyzing the risks and opportunities related to natural capital in our business activities.

We will continue to contribute to "Nature Positive" by assessing our impacts and dependencies on natural capital and risks, and by developing our business activities as we work together with our stakeholders to achieve sustainable societal growth and enhance our corporate value.

1. General requirements

The TNFD recommends disclosure according to six general requirements. We will continue to disclose in accordance with these general requirements.

1.1 Approach to materiality

We go through the following steps to select the materiality issues related to sustainability.

Step 1: Extracting issues

Based on the regional characteristics of Okinawa, we extract candidate issues that we should address in a manner consistent with the KDDI Group.

Step 2: Identifying key issues

Among the candidate issues related to our business activities, we identify six materialities that we will prioritize, based on a review of our efforts from two perspectives: “Impact on stakeholder’s evaluation and decision-making” and “Impact of our company on society, the environment, and the economy of Okinawa”.

Step 3: Verifying and deciding on key issues

The Sustainability Committee and the Board of Directors deliberate on appropriateness and make decisions.

1.2 Scope of disclosure

The report focuses on the telecommunications business identified in the medium-term management strategy, considering the business scale, its impacts, and its dependencies on nature. In addition, we have performed a more detailed evaluation of base stations, sales outlets (sales offices for example au Style/au shops), and submarine cable in the telecommunications business, where specific locations of operations are known. In the future, we will gradually expand the scope of disclosure to include assessments of businesses other than the telecommunications, as well as conduct detailed assessments linked to upstream and downstream processes in the value chain.

1.3 Location of nature-related issues

Since location is extremely important information for the evaluation of nature and biodiversity, which vary greatly from place to place, we will promote location-based evaluations and disclosure as much as possible. In this report, we evaluated and understood the importance and intactness of biodiversity in our operating areas and identified priority areas, targeting base stations, sales outlets (sales offices for example au Style/au shops), and submarine cables for which location information is known.

1.4 Integration with other sustainability-related disclosures

We disclose information on our sustainability management initiatives in our Sustainability Report. The report focuses on our efforts to address social issues in Okinawa through its business activities and initiatives for materiality and includes disclosures in response to the Task Force on Climate-related Financial Disclosure (TCFD). In the future, we will also integrate disclosure on nature and biodiversity into our Sustainability Report and include the information in our Securities Report.

1.5 Timeframe

Regarding the assessment of dependencies, impacts, risks, and opportunities related to biodiversity and natural capital, as well as the implementation of various measures, we set the short term as the period from now to 2027, the medium term as 2028 to 2030 (the period covered by the SDGs), and the long term as 2031 to around 2050 (the period for achieving the 2050 vision and goals adopted in the Kunming-Montreal Biodiversity Framework).

1.6 Engagement with local communities and stakeholders

When nature and biodiversity are lost, it is the local communities living with nature that are most affected, and the cooperation of local communities where nature exists is essential for the conservation of nature and biodiversity, which support businesses.

We promote initiatives to respect human rights in accordance with “Guiding Principles on Business and Human Rights” by the United Nations, and actively engage in dialogue with relevant stakeholders on nature and biodiversity to avoiding or reducing negative impacts and to maximize positive impacts on the local environment and communities.

2. Governance

2.1 Management structure for biodiversity and natural capital

The company has the Sustainability Committee, headed by the Representative Director and President. The committee consists of full-time board members, full-time corporate auditors, the General Manager of the Sustainability and the General Manager of the General Affairs Dept. and works on sustainability as a pillar of the company's corporate strategy.

Agenda items relating to biodiversity and natural capital (targets and progress in addressing dependency on, the impact of, and related risks and opportunities for natural capital) are mainly discussed by the Sustainability Committee, which reports its findings quarterly to the Board of Directors, which monitors them. The Board of Directors monitors them by reporting the results of these discussions on a quarterly basis.

The Sustainability Committee leads discussions on biodiversity and natural capital issues (targets and progress in addressing dependency and impacts on natural capital and related risks and opportunities), and the committee reports its findings to the Board of Directors on a quarterly basis for the Board to monitor.

In addition, we established a new Environment Subcommittee as a sub-section of the Sustainability Committee in April 2024, merging the existing Carbon Neutrality Subcommittee, to strengthen and accelerate our efforts in assessing dependencies, impacts, risks, and opportunities related to biodiversity and natural capital, and to implement and support various measures. Through this, we will promote the consideration of initiatives that integrate climate change, biodiversity, and natural capital (Climate-Nature Nexus).

The Deputy Executive Officer is responsible for policies, commitments and targets related to related to nature-related risks, etc.

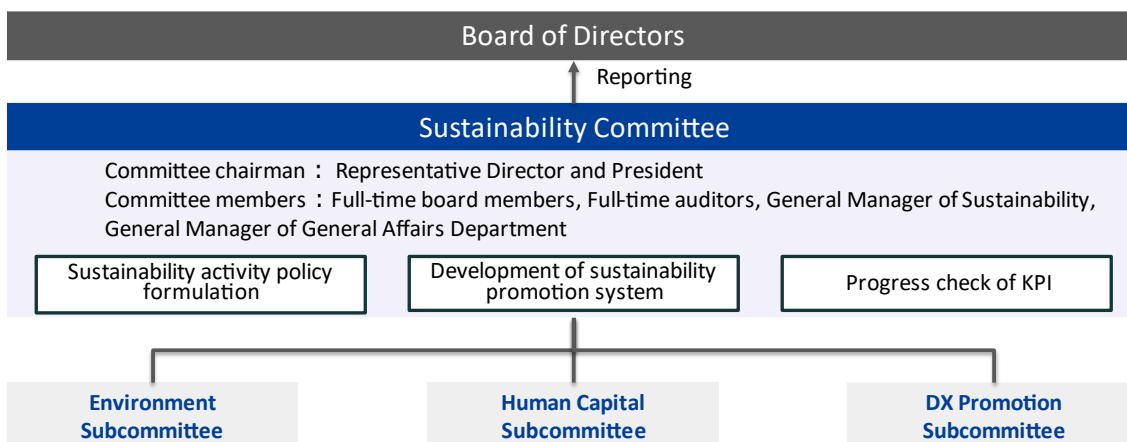


Figure 1 Governance structure for biodiversity and natural capital

	Role and Authority	Member	Frequency
Board of Directors	<ul style="list-style-type: none"> Supervision of environmental operations Resolutions on environmental policies, medium- and long-term strategies, and annual plans Resolution of key non-financial goals and KPIs, including environmental Monitoring dependency and impact on natural capital, environmental risks and opportunities 	<ul style="list-style-type: none"> Chairman: President and Representative Director Directors: 9 (including 3 outside) Corporate Auditors: 4 (including 3 outside) 	<p>8 times a year</p> <p>*Actual results for FY2023</p>
Sustainability Committee	<ul style="list-style-type: none"> Discussion of sustainability policies, strategies, goals, KPIs, and materialities, including environmental issues 	<ul style="list-style-type: none"> Committee Chairman: President and Representative Director Committee members: full-time board members, full-time auditors, General Manager of Sustainability, General Manager of General Affairs Dept. 	4 times a year
Environment Subcommittee	<ul style="list-style-type: none"> Discussion of annual policy for nature-related risk management and key risks Monitoring of risk cases and response to incidents 	<ul style="list-style-type: none"> Department Chairman: Deputy General Manager of Corporate Management Division Members: 7 	4 times a year

Figure 2 Structure for supervision, execution, and deliberation on biodiversity and natural capital

2.2 Engagement with stakeholders related to biodiversity and nature

We have formulated the “Okinawa Cellular Group Human Rights Policy” in accordance with “Guiding Principles on Business and Human Rights” by the United Nations and promote initiatives to respect human rights.

The policy states that we support and respect international norms on human rights, such as “the International Bill of Human Rights”, the International Labor Organization’s “Declaration on Fundamental Principles and Rights at Work” and “the Children's Rights and Business Principles” and comply with the laws and regulations applicable in each country and region where we conduct business activities.

The Sustainability Committee, chaired by the Representative Director and President, formulates human rights-related action policies, reviews promotion systems, and verifies progress toward targets. For important matters, the committee reports to and supervises the Board of Directors through the Full-time Executive Committee.

Regarding responses to negative impacts on human rights, we strive to improve and enhance our efforts to respect human rights through dialogue and consultation with relevant stakeholders, including local authorities, local communities, suppliers and experts. In addition, based on the results of dialogue and consultation, we regularly consider ways to revise our human rights policy, including important human rights issues.

As a member of the KDDI Group, we have established the following items for sustainable and responsible procurement.

- The KDDI Group Sustainable Responsible Procurement Policy and Multilingual Support
- Selection of Customer (We use external research organizations and other means to conduct risk assessments on environmental and social issues. We carefully evaluate the scale, history, creditworthiness, operating conditions and financial position of our suppliers, and only do business with them if they meet certain criteria)
- Formulation and publication of guidelines that address human rights and the environment
- Promotion of sustainable procurement
- Declaration on partnership building
- Consultation and reporting desk for suppliers (grievance mechanism)

We recognize that changes in biodiversity and natural capital can have a significant impact on local communities, and we are committed to fulfilling our responsibility through active dialogue with stakeholders with whom we have relationships in the value chain. We have currently signed cooperation agreements with 16 municipalities in Okinawa and will work with local authorities to promote biodiversity conservation actions in their respective areas.

3. Strategy

In identifying nature-related dependencies/impacts and risks/opportunities associated with business activities, we have selected business areas that should be a priority based on the importance of the business and its relationship with nature (A. Scoping), after subdividing the selected businesses, identified their impact and dependencies on nature (B. Overview of dependencies and impacts of telecommunications business on nature), conducted location-based assessments in the areas of activity where location information is available (C. Location assessment, D. Impacts and dependencies evaluation), and organized the relevant risks and opportunities.

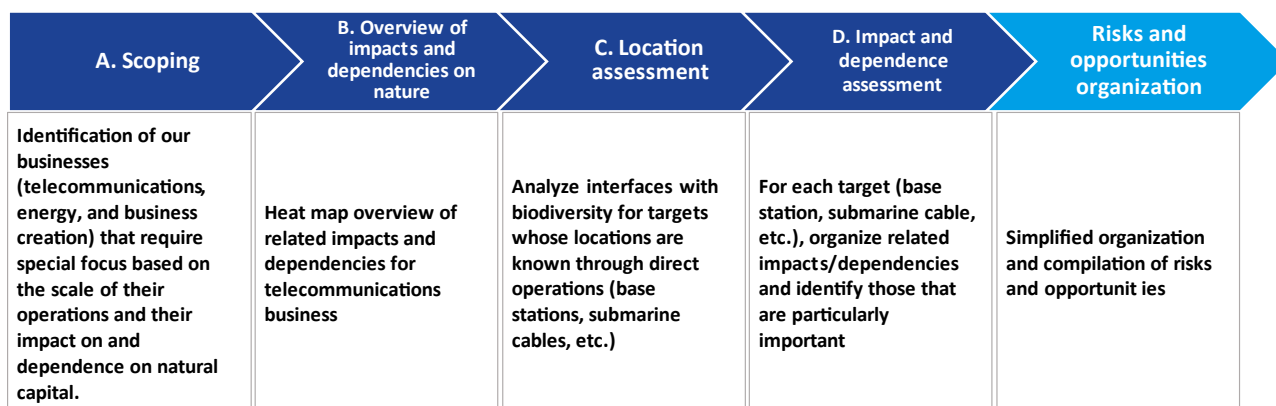


Figure 3 Approach to understand nature-related impacts/dependencies and risks/opportunities

This assessment was conducted in accordance with the LEAP approach¹ recommended by the TNFD, with a particular focus on the "L (Locate: Discover)" phase, which identifies areas of operations that are important from a natural capital perspective.

1 LEAP approach is a process for systematically assessing nature-related risks and opportunities. It consists of four phases: discovering the interface with nature (Locate); diagnosing dependencies and impacts (Evaluate); assessing risks and opportunities (Assess); preparing to address nature-related risks and opportunities and reporting to investors (Prepare).

... Main contents of this year's implementation

Locate The interference with nature	Evaluate Dependencies & impacts	Assess Risks & opportunities	Prepare To respond & report
L1 Span of the business model and value chain What are our organisation's activities by sector and value chain? Where are our direct operations?	E1 Identification of environmental assets, ecosystem services and impact drivers What are the sectors, business processes or activities to be analyzed? What environmental assets, ecosystem services and impact drivers are associated with these sectors, business processes, activities and assessment locations?	A1 Risk and opportunity Identification What are the corresponding risks and opportunities for our organisation?	Strategy and Resource Allocation P1 Strategy and resource allocation plans What risk management, strategy and resource allocation decisions should be made as a result of this analysis?
L2 Dependency and impact screening Which of these sectors, value chains and direct operations are associated with potentially moderate and high dependencies and impacts on nature?	E2 Identification of dependencies and impacts What are our dependencies and impacts on nature?	A2 Adjustment of existing risk mitigation and risk and opportunity management What existing risk mitigation and risk and opportunity management processes and elements are we already applying?	Target setting and performance Management How will we set targets and define and measure progress?
L3 Interface with nature Where are the sectors, value chains and direct operations with potentially moderate and high dependencies and impacts located? Which biomes and specific ecosystems do our direct operations, and moderate and high dependency and impact value chains and sectors, interface with?	E3 Dependency and impact Measurement What is the scale and scope of our dependencies on nature? What is the severity of our negative impacts on nature? What is the scale and scope of our positive impacts on nature?	A3 Risk and opportunity measurement and Prioritisation Which risks and opportunities should be prioritised?	Disclosure Action P3 Reporting What will we disclose in line with the TNFD recommended disclosures?
L4 Interface with sensitive locations Which of our organisation's activities in moderate and high dependency and impact value chains and sectors are located in ecologically sensitive locations? And which of our direct operations are in these sensitive locations?	E4 Impact materiality assessment Which of our impacts are material?	A4 Risk and opportunity materiality assessment Which risks and opportunities are material and therefore should be disclosed in line with the TNFD recommended disclosures?	P4 Presentation Where and how do we present our nature-related disclosures?

Figure 4 Contents of implementation in accordance with the LEAP approach

3.1 Narrowing down the business for assessment (scoping)

To organize our impacts, dependencies, risks, and opportunities related to natural capital, we first took an overview of the entire business and identified the businesses that should be assessed. Then, we organized the relationship between the supply chain, ecosystem services, and impact drivers for each business activity to be assessed and identified business activities to explore in depth.

Using ENCORE², we reviewed the impact/dependency relationship between each major business (telecommunications, energy, and business creation) and nature; the results indicated that all businesses may have a high level of impact on nature. In terms of dependency, the results were relatively high in the business creation and social problem-solving (agricultural production). For this time, we focused our assessment on the telecommunications business, which is by far the largest and most impactful business. We have begun to explore the possibility of evaluating businesses beyond the telecommunications business.

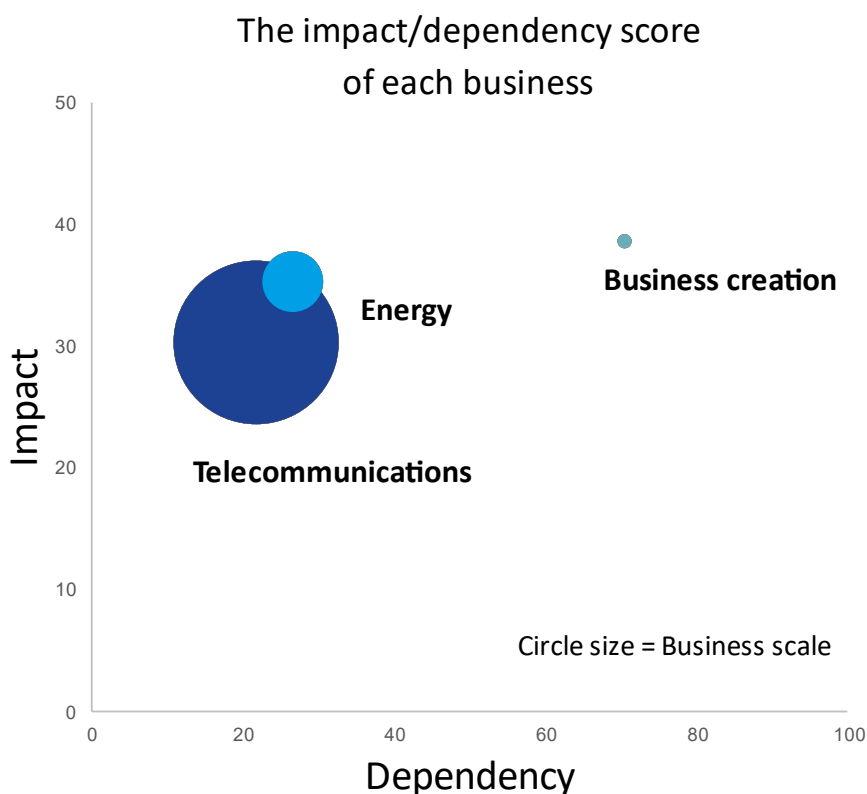


Figure 5 Dependency and impact score for each business

(The scores were calculated with reference to the relevant production process in ENCORE)

² ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) is a free online tool developed jointly by an international network of financial institutions (Natural Capital Finance Alliance: NCFA), the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), and other organizations, to assess the impact of corporate activities and the extent of their dependence on nature (<https://www.encorenature.org/en>)

3.2 Overview of the dependencies and impacts on nature in telecommunications business

For the telecommunications business, we organized related business activity into four categories (base stations installation, handset sales/contracts, cables, and IT solutions) and further classified them into upstream, direct operation, and downstream processes within the value chain. The results of the ENCORE-based assessment of impact drivers on nature on the value chain showed that mineral mining had the highest impact, while direct operations include the terrestrial ecosystems use through the installation and operation of base stations, marine ecosystem use, water pollution, and disturbances on ecosystems through the installation and operation of submarine cable, and water use and water/soil pollution through handset sales (au Style/au shops and other sales offices) were listed as high-impact items³.

Business activity categories	Process	Value chain	Terrestrial ecosystem use	Freshwater ecosystem use	Marine ecosystem use	Water use	Other resource use	GHG emissions	Non-GHG air pollutants	Water pollutants	Soil pollutants	Solid waste	Disturbances
Base station installation	Mineral mining	Upstream	VH	H		VH		H	H	H	H	H	H
	Electronics manufacturing	Upstream								H	H	M	M
	Base station installation /operation	Direct operation	H							L	L	M	
	Base station disposal	Downstream								H	H	M	
Handset sales/ contracts	Mineral mining	Upstream	VH	H		VH		H	H	H	H	H	H
	Electronics manufacturing	Upstream								H	H	M	M
	Handset sales/contracts	Direct operation				H			M	H	H	M	
	Handset disposal	Downstream								H	H	M	
Cable installation	Mineral mining	Upstream	VH	H		VH		H	H	H	H	H	H
	Electronics manufacturing	Upstream								H	H	M	M
	Land cable installation/ operations	Direct operation	L	L									H
	Marine cable installation/ operations	Direct operation			H					H			H
	Cable disposal	Downstream								H	H	M	
IT solutions	IT consulting	Direct operation				H			M	H	H	M	

Figure 6 Impact drivers in the value chain of telecommunications business⁴

The results of the ENCORE-based assessment of dependency on ecosystem services (benefits from nature) on the value chain suggest that the installation and operation of base stations has a high dependence on the flood and storm protection functions.

For the installation and operation of submarine cables, it is suggested that there may be a dependence on buffering and attenuation of mass flow (movement of materials due to wind pressure, water pressure, etc.). Specifically, it is assumed that coastal ecosystems such as coral reefs and mangroves are expected to mitigate the damages to submarine cables and the impact on cable maintenance caused by the movement of sediment, rocks, and drifting debris in coastal areas from shallow waters to landing stations during typhoons.

3 The ENCORE evaluation is only the result of an evaluation at the level of the applicable business process category. The results are for reference use only. The actual impact must be determined based on the company's actual situation

4 Degree of impact, VH: very high, H: high, M: middle, L: low, VL: very low.

Business activity categories	Process	Value chain	Climate regulation	Flood protection	Mass stabilization and erosion control	Buffering and attenuation of mass flows	Soil quality	Water quality	Ground water	Surface water	Water flow maintenance	Dilution by atmosphere and ecosystems	Bio-remediation
Base station installation	Mineral mining	Upstream	H		M				H	H	H		
	Electronics Manufacturing	Upstream							M	M		L	
	Base station installation /operation	Direct operation	M	VH									
	Base station disposal	Downstream			L								VL
Handset sales/ contracts	Mineral Mining	Upstream	H		M				H	H	H		
	Electronics Manufacturing	Upstream							M	M		L	
	Handset sales/contracts	Direct operation			L								VL
	Handset disposal	Downstream			L								VL
Cable installation	Mineral Mining	Upstream	H		M				H	H	H		
	Electronics Manufacturing	Upstream							M	M		L	
	Land Cable installation/ operations	Direct operation	M		M		M						
	Marine Cable installation/ operations	Direct operation	M		M	H		L					
	Cable disposal	Downstream			L								VL
IT solutions	IT consulting	Direct operation			L								VL

Figure 7 Dependency on ecosystem services in the value chain of telecommunications business⁵

5 Degree of dependence, VH: very high, H: high, M: middle, L: low, VL: very low.

3.3 Location-based assessment

Because the characteristics of nature and biodiversity vary greatly from place to place, it is extremely important to conduct location-specific assessments to evaluate dependencies and impacts on nature, as well as relevant risks and opportunities.

In this report, based on the overview of the entire business, we considered (1) the location of our business activities is known, (2) the effectiveness of our improvement actions (direct operations), (3) the degree of dependencies and impacts on nature, and (4) the actual state of our business activities. We then assessed the biodiversity importance, ecosystem integrity, and water-related risks of the business locations for the installation and operation of base stations and submarine cables and handset sales and contracts (sales office) and identified priority areas requiring assessment and response. This assessment corresponds to the L-phase of the LEAP approach recommended by the TNFD.

Then, we evaluated the status of relevant impact drivers (e.g., water pollution) and ecosystem services based on the location information and the potential dependencies and impacts relationships. This assessment corresponds to the E phase of the LEAP approach recommended by the TNFD. However, this evaluation was based only on the information surrounding the business locations and did not include an impact assessment reflecting the actual volume of business activities, etc. We will continue to work on a more accurate evaluation in the future.

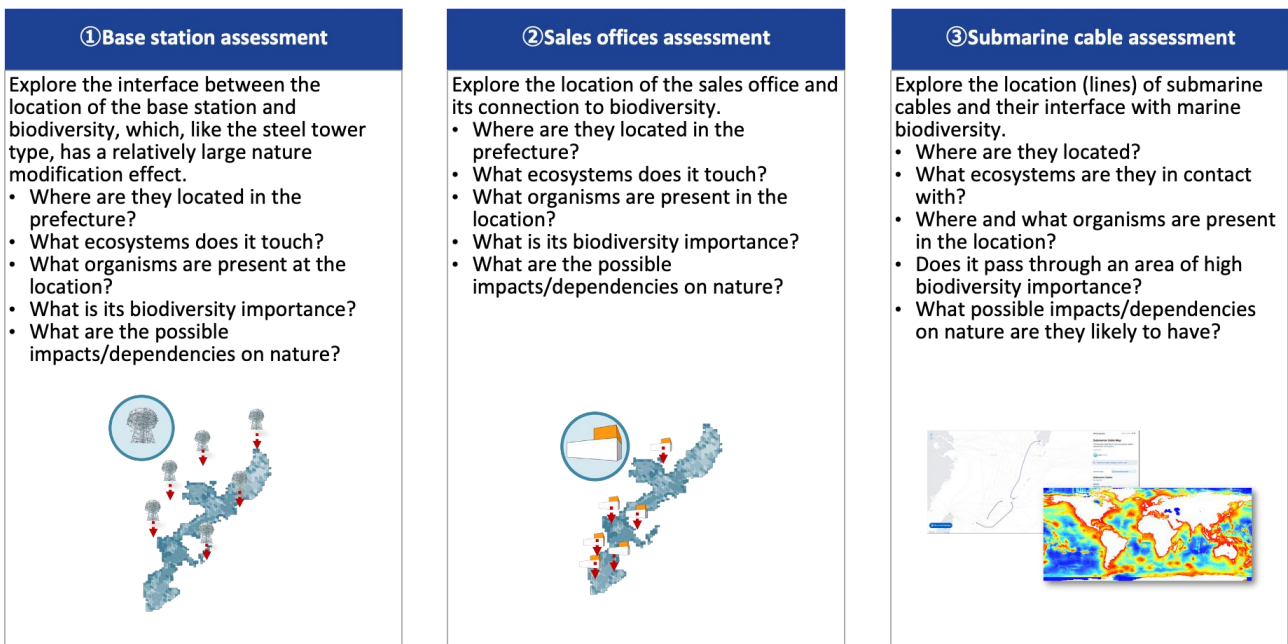


Figure 8 Location-based assessment of the importance of biodiversity and other factors and the evaluation of dependencies and impacts on nature

In evaluating the business locations, we used the following metrics with reference to the TNFD guideline. The overall assessment was conducted using a biodiversity big data from Think Nature Inc.

No	Sensitivity aspect	Metric	Explanation	Year of data
1	Biodiversity importance	Biodiversity importance	An index of biodiversity importance for each site, calculated from vertebrate and tree species richness and rarity (conservation priority)	2023
2	Ecological integrity	Biodiversity intactness	Indicators of the extent of loss of intact natural conditions based on habitat and natural forest distribution	2015
3		Forest area change	Amount of change over the past 20 years in the percentage of each grid (approximately 15 km resolution) occupied by forests	2000-2020
4		Human footprint change	Recent increase or decrease in the environmental impact of various human activities (footprint increase or decrease)	2000-2018
5	Water-related risk	Water pollution	Index calculated based on average water pollution level (BOD) from 1992 to 2010	1992-2010
6		Flood frequency	Frequency of flooding from 1985 to 2019	1985-2019
7		Water scarcity	An index that calculates the balance between the supply and use of water resources on the land from 1960 to 2010 (AWARE Index)	1960-2010

Figure 9 List of metrics used in the location assessment

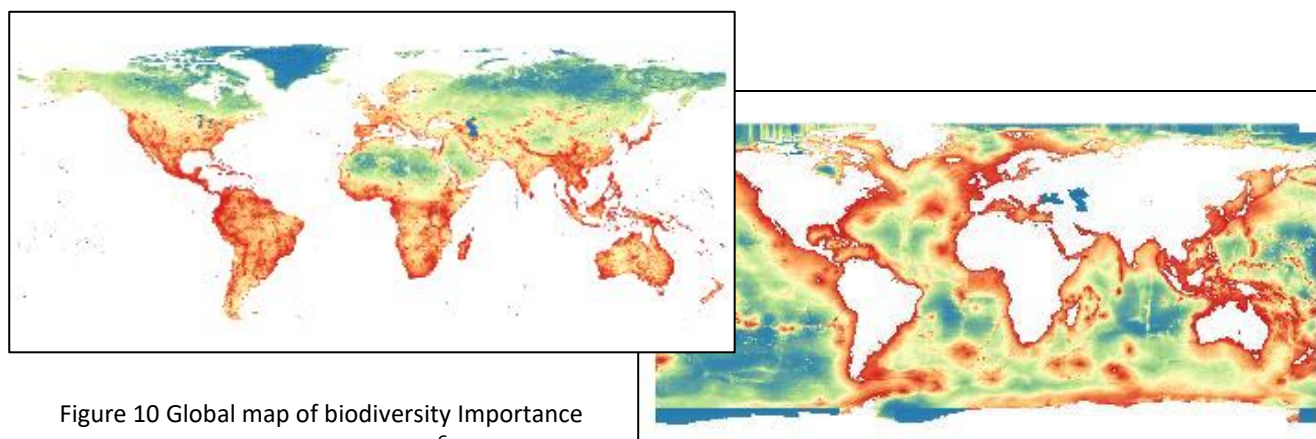


Figure 10 Global map of biodiversity Importance (conservation priority)⁶

⁶ Conservation priority, also known as "irreplaceability," is a ranking of the importance of sites to conservation that is calculated to minimize the aggregated risk of species extinction based on the distribution and rarity of each species (cf. Lehtomäki & Moilanen 2013 doi : 10.1016/j.envsoft.2013.05.001). The map is based on data from the Japan Biodiversity Mapping Project (J-BMP).

A) Results for base station locations

We analyzed 313 base stations (including network centers and submarine cable landing stations) for their interface with nature. The ecological sensitivity of each location was assessed in terms of biodiversity importance, ecosystem integrity⁷, and water-related risk.

The results showed that the importance and intactness of biodiversity are high on remote islands (Yonaguni, Tarama, Kuroshima, etc.) and the northern part of Okinawa Island (Hiji, Taminato, etc.). In addition, a decrease in surrounding forest area was observed at some locations in Miyako Island (Tomori).

No	Sensitivity aspect	Metric	1	2	3	4	5
1	Biodiversity importance	Biodiversity importance	Yonaguni-irimaka	Hiji	Taminato	Yonaguni-Urabu	Kubura
2	Ecological integrity	Biodiversity intactness	Tarama	Motobu-Minnajima	Kuroshima	Taketomijima	Kudakajima
3		Forest Area Change	Tomori	Gusukube-Bora	Gusukube-Boraminami	Gusukube	Bora
4		Human Footprint Change	Tarama-minami	Komi	Iriomote-Toyohara	Moroshi2	Nakijin-nishi
5	Water-related risk	Water pollution	Kumejima-Uezu	Madomari	Kumejima-gushikawa	Kumejima-Nakachi	Kumesjima-Aka
6		Flood Frequency	Irabu-nishi	Hirara-Shimozato	Kugai	Hirara-Nikadori	Hirara
7		Water scarcity	Hioki	-	-	-	-

Figure 11 Location assessment for base stations (Top 5 locations for each metric)

The biodiversity importance of the base station is extremely high (> 0.95) and within the top 5% of the world and of Japan, indicating that Okinawa is one of the most important areas in the world for biodiversity.

By focusing on the ranking of the importance of biodiversity within the prefecture, the northern part of Okinawa Island (Hiji and Taminato) and Yaeyama islands (Yonaguni, Hateruma, and Iriomote) ranked highest. Many rare and endemic species inhabit these areas.

⁷ CISL's Mean Species Abundance was used to assess ecosystem integrity (1 for completely natural conditions and 0 for completely artificial environments) for each location (see CISL 2020 <https://www.cisl.cam.ac.uk/resources/natural-resource-security-publications/measuring-business-impacts-on-nature>)

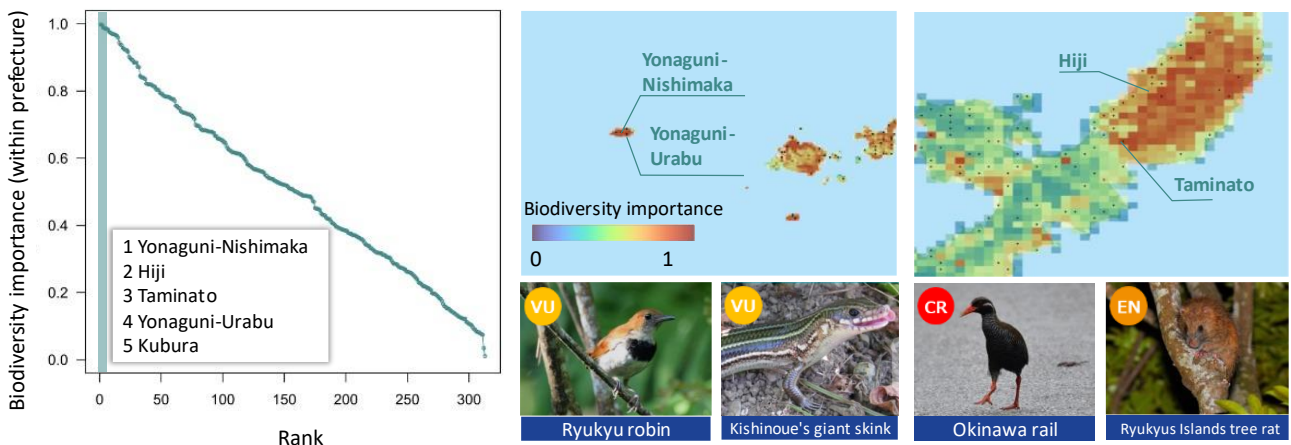


Figure 12 Biodiversity importance (within prefecture) for base station locations and rare and endemic species distributed in these areas⁸

Biodiversity intactness is below 0.5 at most locations, indicating that many locations are strongly affected by ecosystem modification due to human activities. Some locations in the remote islands have relatively high biodiversity intactness.

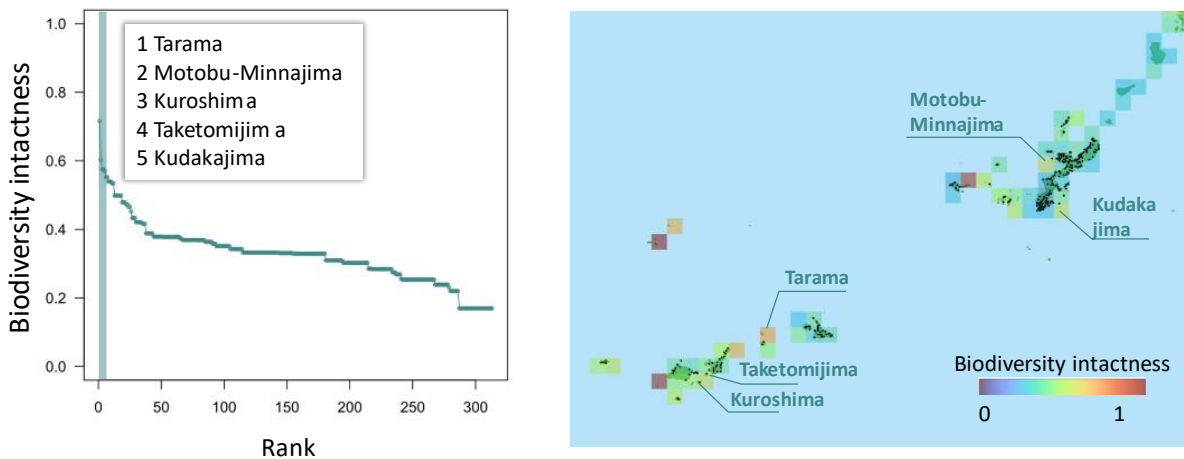


Figure 13 Biodiversity intactness for base station locations

⁸ The categories of endangered species on the Red List are defined as follows:

Endangered I (CR+EN): critically endangered; Endangered IA (CR): very high risk of extinction in the wild in the near future; Endangered IB (EN): not as endangered as IA, but at high risk of extinction in the wild in the near future; Endangered II (VU): increasing risk of extinction, NT: species at low risk of extinction at present, but may move to "endangered" depending on changes in habitat conditions.

(Reference Ministry of the Environment <https://www.env.go.jp/nature/kisho/hozen/redlist/rank.html>)

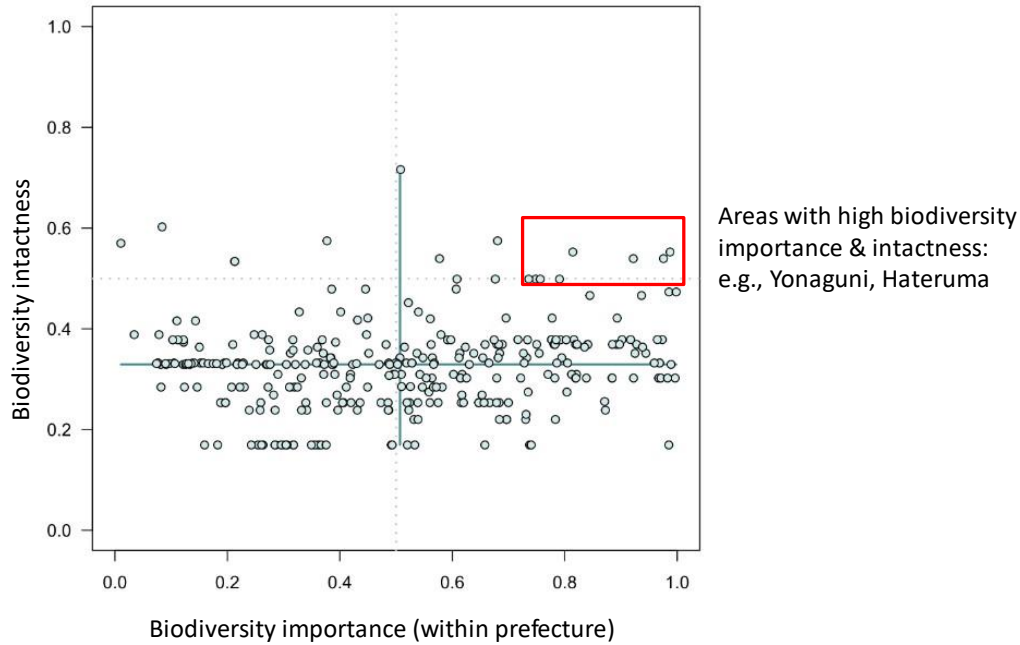


Figure 14 Identification of sensitive locations by biodiversity importance and intactness

As a result of the combined analysis of biodiversity importance and intactness, Yonaguni and Hateruma were identified as sensitive locations (high biodiversity importance and relatively well-maintained natural ecosystems). In these areas, special attention should be paid to the impact of the base station on the ecosystem.

Using the dependency and impact assessment tool (ENCORE), we identified the impact of telecommunications business (base stations) on ecosystems and their dependence on ecosystem services. The results suggest that telecommunication business (base stations) may have a high degree of impact on nature through terrestrial ecosystem use, and high dependency on flood and storm protection by ecosystems.

Based on these results, we evaluated the magnitude of threats to biodiversity from the terrestrial ecosystem use around the base station, as well as the magnitude of flood and storm protection, using data from Think Nature, Inc.⁹ The results showed that the threats to biodiversity from terrestrial ecosystem use are generally high, especially on Iriomote and Kohama islands.

⁹ The magnitude of threats to biodiversity from terrestrial ecosystem use is scored based on the STAR-Threat index of the concentration of rare species whose survival is threatened by land uses such as resource procurement, road network development, and tourism (see Mair et al. 2021 doi: 10.1038/s41559-021-01432-0). Regarding the magnitude of flood and extra-storm control functions, based on existing studies pointing out that forest and rhizome development and wetland area contribute to flood and storm damage deterrence, rhizome development (Benjamin et al. doi: <https://doi.org/10.1101/2021.09.17.460332>), forest area (Hansen et al. <http://earthenginepartners.appspot.com/science-2013-global-forest>), forest habitat integrity (Grantham et al. 2020 doi: 10.1038/s41467-020-19493-3), and wetland area (ESA CCI Land cover) were evaluated according to the data generated.

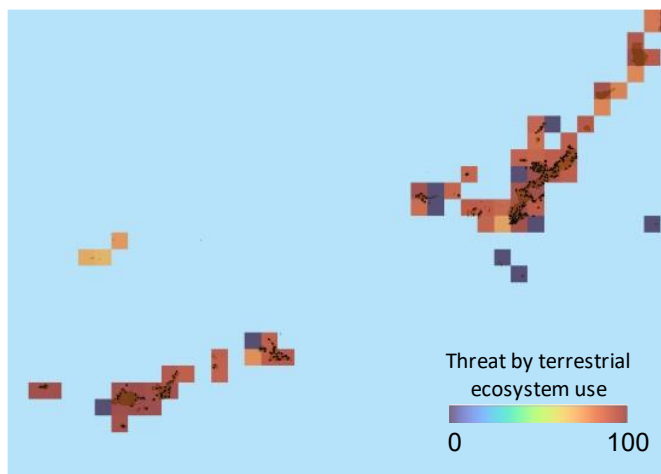
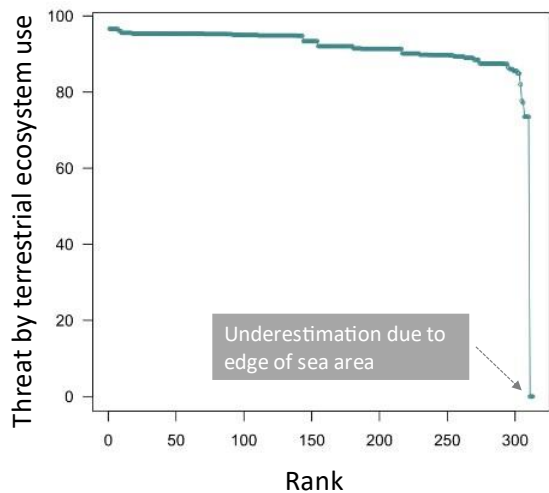


Figure 15 Status of impact driver around base stations: threats from terrestrial ecosystem use

The flood and storm protection scores around the base stations were all below 50, indicating that Okinawa's terrestrial ecosystems have low flood and storm protection function by global standards. The scores were particularly low along the coasts of Tomigusuku City and Itoman City.

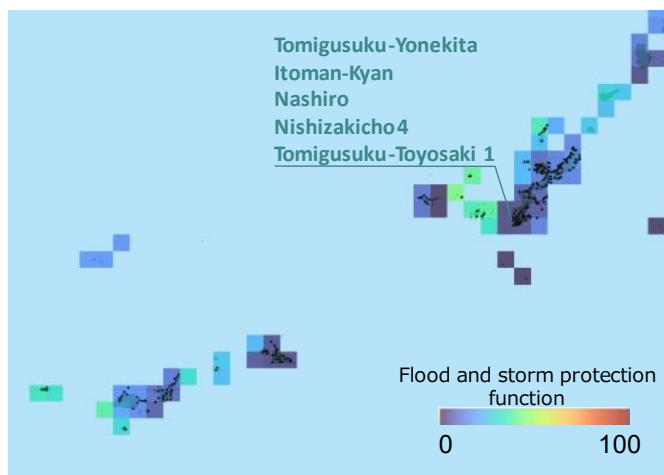
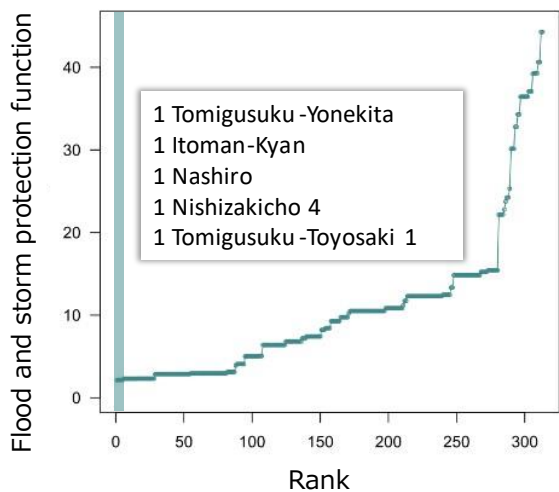


Figure 16 Status of dependency factor around base stations: flood and storm protection function

B) Results for sales office location

We analyzed the interface with nature for 149 sales offices (41 street stores). As with the base stations, the ecological sensitivities of each location were evaluated in terms of biodiversity importance, ecosystem integrity, and water-related risks. The results showed that Ishigaki Island, the southern part of Okinawa Island (Itoman), the northern part of Okinawa Island, and Miyako Island are important in terms of biodiversity importance and ecological integrity.

No	Sensitivity aspect	Metric	1	2	3	4	5
1	Biodiversity importance (within prefecture)	Biodiversity importance	Ishigaki-A	Ishigaki-B	Ishigaki-C	Ishigaki-D	Itoman
2		Biodiversity intactness	Ishigaki-E	Ishigaki-A	Ishigaki-B	Ishigaki-C	Ishigaki-D
3	Ecological integrity	Forest Area Change	Uruma-A	Uruma-B	Uruma-C	Uruma-D	Uruma-E
4		Human Footprint Change	Ishigaki-E	Ishigaki-A	Ishigaki-B	Ishigaki-C	Ishigaki-D
5	Water-related risk	Water pollution	Kumejima	Ishigaki-A	Ishigaki-B	Ishigaki-C	Ishigaki-D
6		Flood Frequency	Miyakojima-A	Miyakojima-B	Miyakojima-C	Miyakojima-D	Miyakojima-E
7		Water scarcity	-	-	-	-	-

Figure 17 Location assessment for sales offices (top 5 locations for each metric)

The ranking of biodiversity importance within the prefecture shows that Ishigaki Island and the southern part of the main island (Itoman) are at the top of the list. Although these areas are urban areas, they are habitats for many plants and animals, including endangered species.

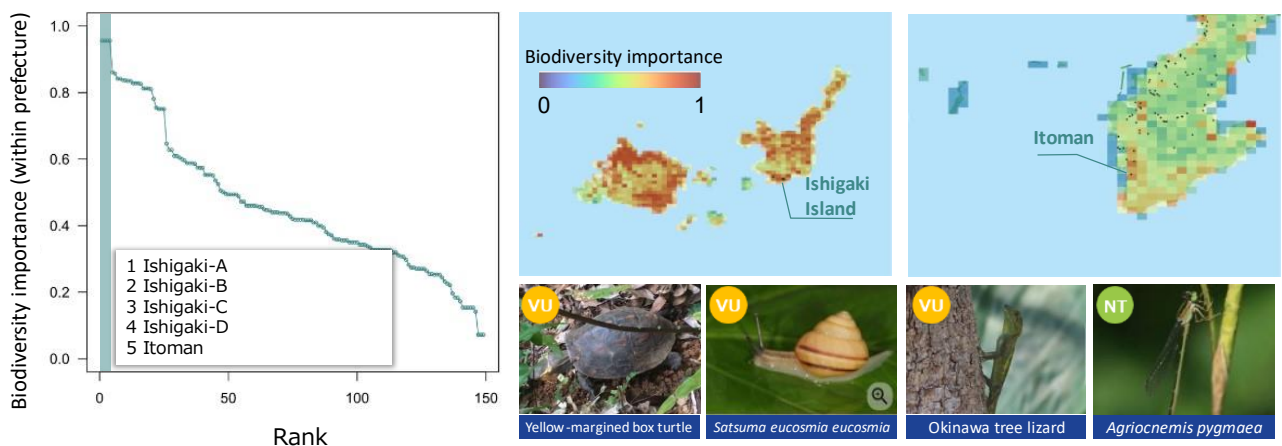


Figure 18 Biodiversity Importance (within prefecture) for sales office locations and rare and endemic species distributed in these areas

Biodiversity intactness was below 0.5 at all sites, indicating that all locations are strongly affected by ecosystem modification by human activities. Among them, the biodiversity intactness in the sales offices on Ishigaki Island are relatively high.

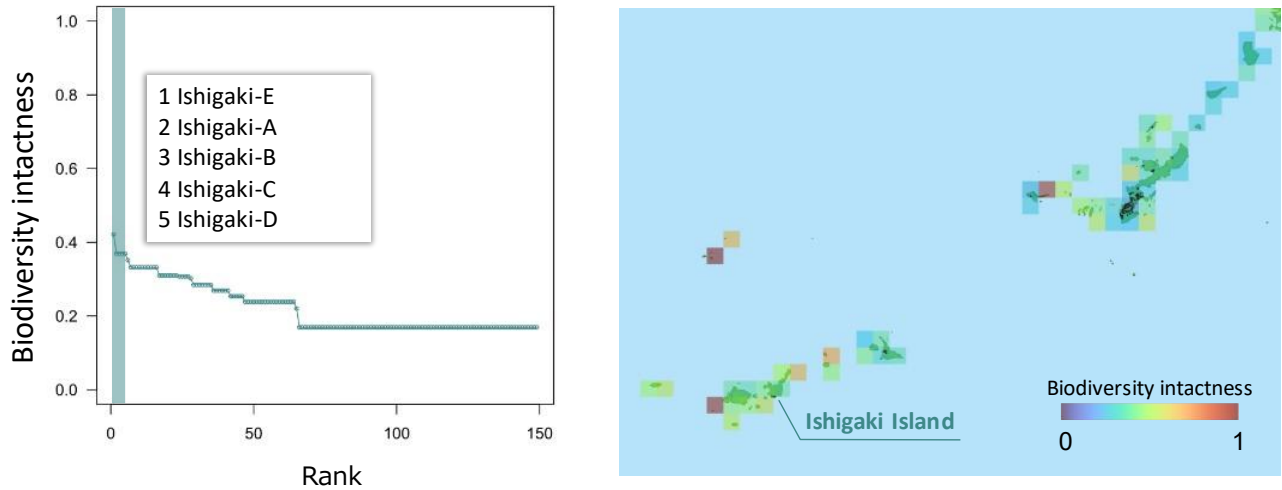


Figure 19 Biodiversity intactness for sales offices

For street stores, in the ranking of biodiversity importance within the prefecture, Nago and Miyako Island ranked high, in addition to Ishigaki Island and the southern part of Okinawa Island (Itoman). These areas are habitats to many rare and endemic species.

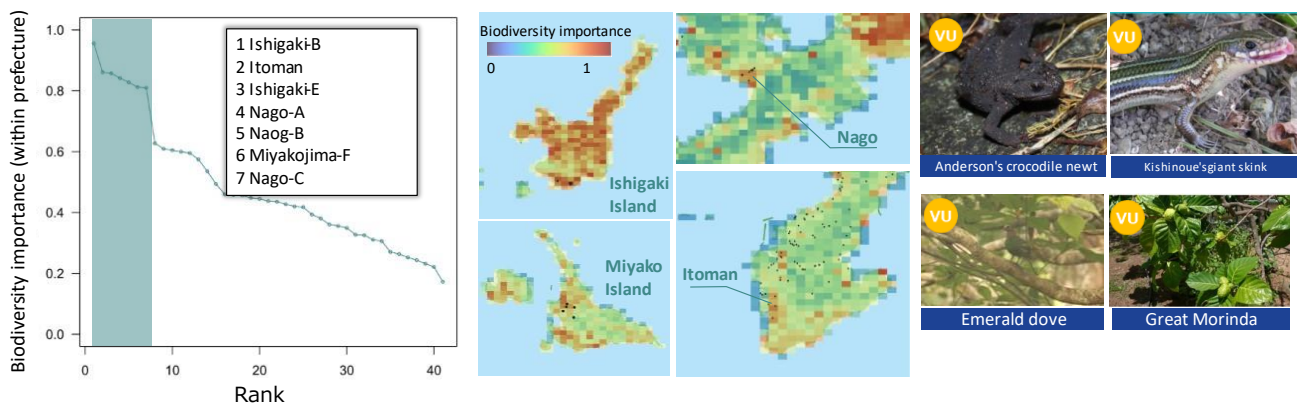


Figure 20 Biodiversity importance (within prefecture) for sales offices (street stores)

Using ENCORE as a reference, we estimated the impacts of sales offices on nature and their dependence on ecosystem services, and then assessed the status of each impact driver and dependent ecosystem service surrounding the sales offices. The results showed that many of the sales offices are located areas with high biodiversity impacts due to water use, soil and water pollution, and terrestrial ecosystem use.

Although the contribution of sales offices to water use and soil and water pollution is limited and the impact is considered small, it was suggested that the ecological impact of habitat modification should be considered for street stores (especially those with large areas).

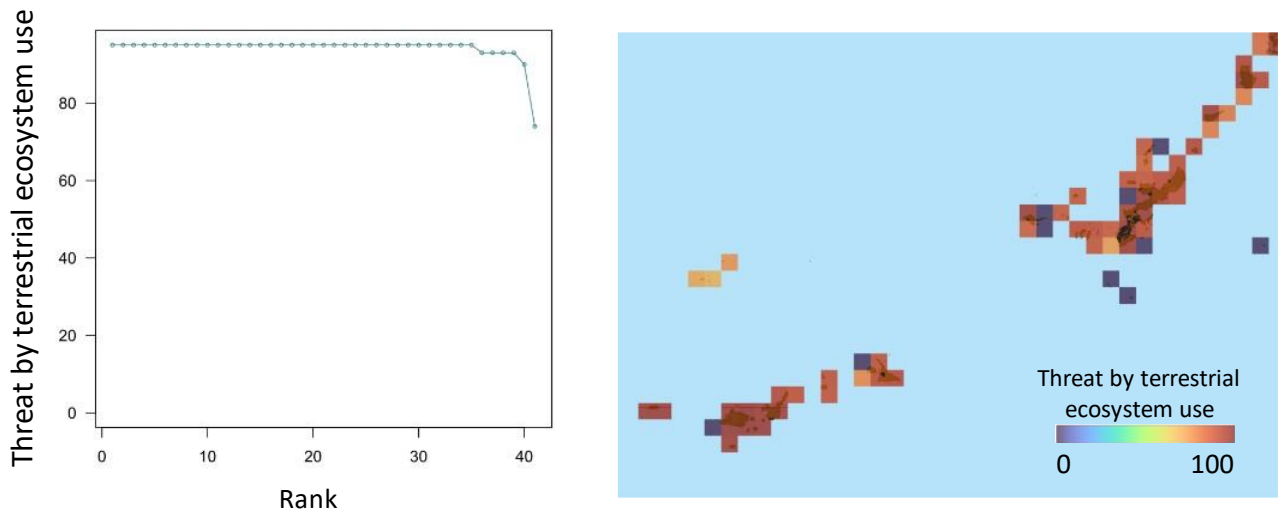


Figure 21 Status of impact driver around sales office: terrestrial ecosystem use

While the impact is likely to be large, street stores with large areas and high biodiversity importance (e.g. Nago) may be able to achieve the positive effect of biodiversity restoration through greening.

C) Results for submarine cable location

Ecologically sensitive locations were identified for three of our submarine cables (Kagoshima-Okinawa Island, Okinawa Island-Ishigaki Island, and Kume Island-Miyako Island). As a result, we found that the sea area from southern Kyushu to the Ryukyu Archipelago is an area of very high global biodiversity importance, especially in the shallow-water areas around the six landing stations.

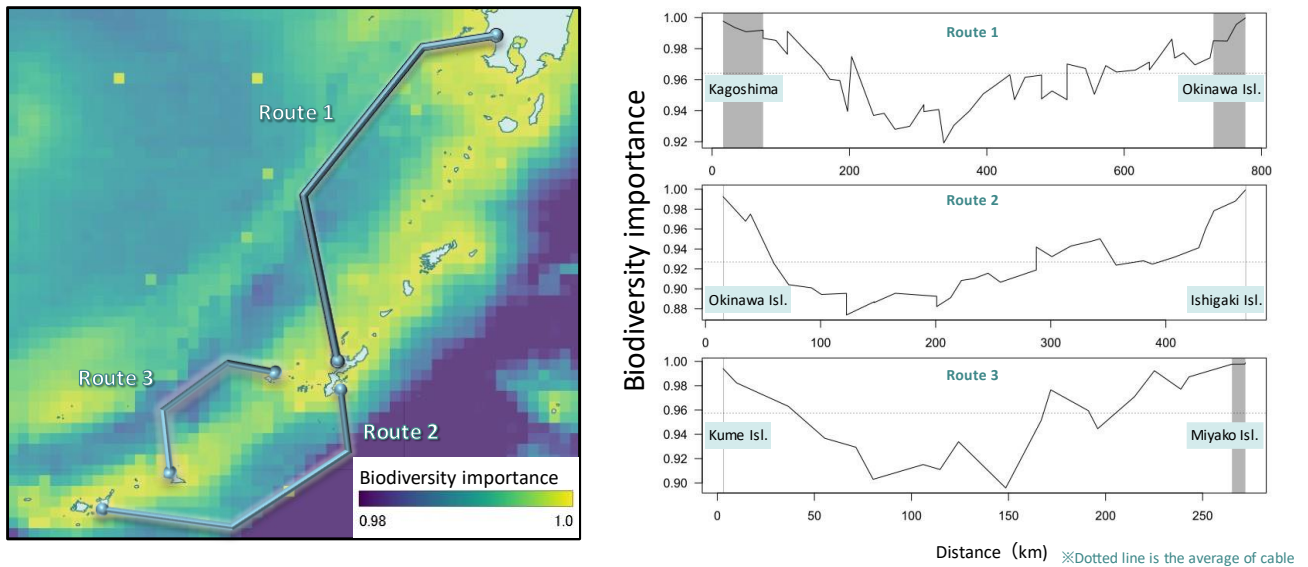


Figure 22 Biodiversity importance for submarine cable routes
(The routes on the map are for illustrative purposes only)

We visualized and evaluated the importance of biodiversity in the sea areas around Okinawa at 1 km mesh resolution and found that the coastal areas around the landing stations are particularly important within the prefecture, with many organisms, including endangered species. We need to ensure that the installation and operation of submarine cables is carried out in a way that does not adversely affect this rich biodiversity.

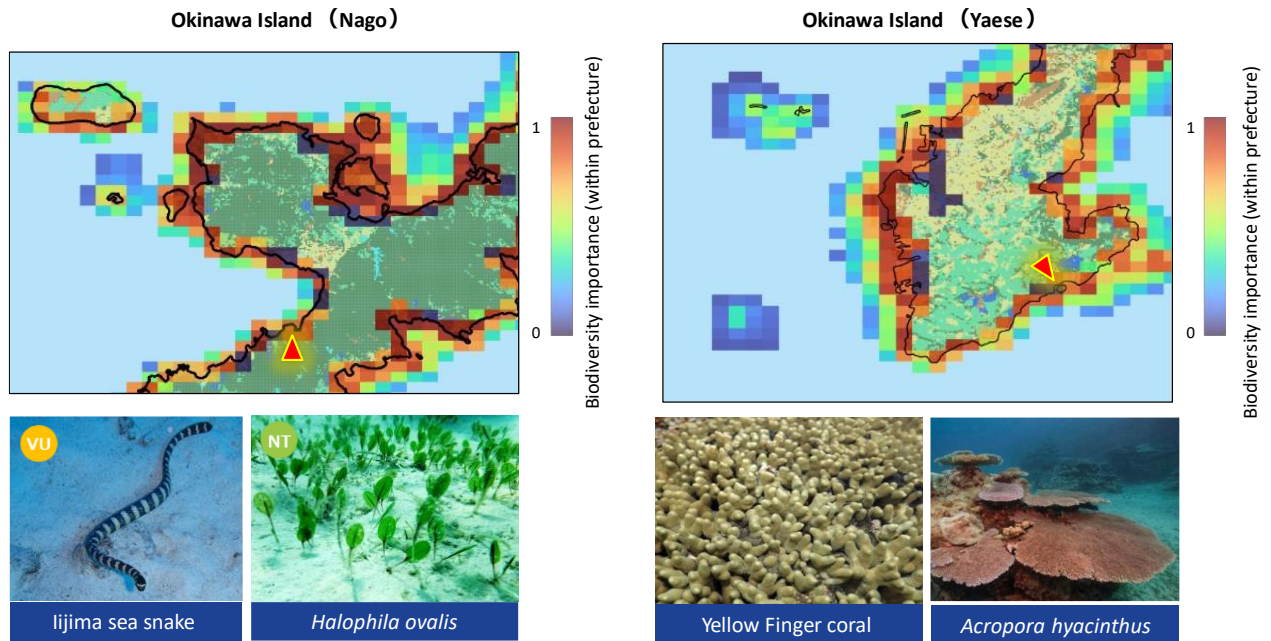


Figure 23 Biodiversity importance of coastal areas: Okinawa Island

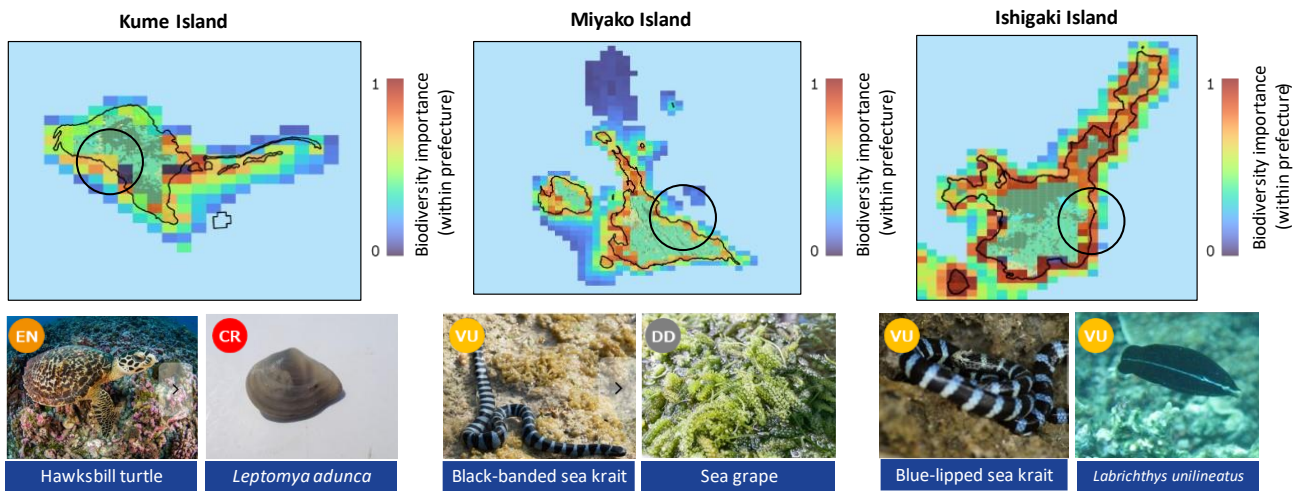


Figure 24 Biodiversity importance of coastal areas: remote islands

Through a literature review, we identified potential impact drivers on biodiversity associated with the submarine cable installation and analyzed them using marine biodiversity data to evaluate and organize potential impacts by taxonomic group. The results revealed, for example, that there is a risk of negative impacts on benthic organisms (corals, crustaceans, shellfish, etc.) through habitat destruction during submarine cable installation in shallow water areas. On the other hand, it was also revealed that positive effects may have occurred, such as artificial reef effect and the reserve effect by restricting fishing activities in the vicinity¹⁰. As scientific knowledge of the ecological impacts of submarine cable is still limited, we will continue to gather latest information and carefully monitor the impacts.

Comments by Yasuhiro KUBOTA, CEO of Think Nature Inc./ Professor, Faculty of Science, University of the Ryukyus

CEO, Think Nature Inc.
Professor, Faculty of Science, University of the Ryukyus

Yasuhiro KUBOTA



Companies related to global biodiversity hotspots such as Okinawa are being challenged to develop a "management philosophy" to realize a "society that coexists in harmony with nature".

For Okinawa Cellular, a telecommunications business company operating on subtropical coral reef islands that represent the extremes of land and sea life richness, a starting point for implementing business in harmony with biodiversity conservation and restoration will be to quantify at a high resolution its interface with, dependencies, and impacts on nature. From this perspective, this report assessed nature-related risks and opportunities by overlaying geographical biodiversity data based on macroecology and other research findings with the location data of business activities.

Noteworthy in this report is the comprehensive assessment of the relationship between business infrastructure on land and at sea and biodiversity, including submarine cable that are essential for telecommunications businesses on the islands. Those of us who live in Okinawa, including the tourists who visit Okinawa, are supported by companies such as Okinawa Cellular. At the same time, the business activities of these companies certainly have a negative impact on nature, albeit to varying degrees. The purpose of this report is first to face this reality.

The aim of the TNFD is to discourage current nature negatives from a financial perspective and to encourage individual companies to become nature positives. Therefore, disclosure of nature-related risks and opportunities is not an end in itself. What is important is to take effective action, starting with this TNFD report. Beyond information disclosure, we hope that Okinawa Cellular's efforts will lead to the conservation and restoration of biodiversity and the sustainable development of Okinawa.

¹⁰ Reference paper: Taormina et al. 2018 doi: 10.1016/j.rser.2018.07.026

3.4 Assessment of relevant risks and opportunities

Based on the results of location-based assessment, dependency-impact evaluation, and literature review, we categorized relevant risks into "physical risks" and "transition risks", referring to the risk classification framework introduced in the TNFD, and presented the financial impact assumed from such risks and the measures implemented as risk mitigation measures in a simplified manner. Similarly, we organized the business opportunities for the organization, the possible financial impact on our business, and related examples of our initiatives, with reference to the framework illustrated in the TNFD.

This is just an initial summary, and we will continue to deepen our understanding of risks and opportunities based on scenario analysis and quantitative evaluation of financial impact, as we move forward with our efforts.

A) Risk organization

Based on the results of the location-based assessment and the findings based on existing information, such as literature, a simplified risk assessment reveals that a number of related risks can be assumed for base stations, sales offices, and submarine cable operations.

For example, base station operations depend on the flood and storm protection functions of the ecosystem, and a decline in such functions leads to an increased risk of communication failures due to typhoon damage. There are concerns about low or declining flood and storm protection functions in the coastal areas of Itoman and Tomigusuku cities, and on Miyako Island, where deforestation has been conspicuous in recent years. While we have already developed various Business Continuity plans (BCP), we will further promote risk countermeasures based on the status of the surrounding ecosystem. In addition, on the impact on biodiversity during construction and installation of base stations, we are working to reduce the size of base stations and utilize the "Starlink" satellite communication service to minimize the impact (see Column 1).

As for sales offices (such as au Style/au shops), there are concerns about the impact of land alteration on street stores, and we will consider measures to avoid or mitigate the impact, especially in Ishigaki Island, the southern parts (Itoman) and the northern parts of Okinawa Island, and Miyako Island, where biodiversity importance is high. In addition, we will also consider measures such as biodiversity restoration at large street stores and raising public awareness of biodiversity in stores.

On the submarine cable, it was suggested that the cable burial works in shallow water areas may have a negative impact on benthic organisms (corals, crustaceans, shellfish, etc.) through habitat destruction. To minimize such impacts, we are taking measures such as installing anti-pollution fences during submarine cable installation. In the shallow-water construction work on Ishigaki Island, we have installed "anti-pollution fences" to prevent water pollution from spreading when heavy machinery is used to excavate buried trenches. We have also signed "the Agreement on Prevention of Fishing Ground Pollution" with each fishery cooperative. In the coral reef area of Kume Island (the dried-out area offshore), natural stones are attached to the surface of the concrete used for backfilling to make the area look as natural as possible. In addition, to prevent the risk of submarine cable breakage in the event of disasters such as earthquakes and typhoons, a loop network has been constructed to ensure uninterrupted communication in the event of a partial disconnection (see Column 2).

None of the risks listed in this report can be said to be imminent in the short term. However, risks related to nature and biodiversity in telecommunications business are an area for which there is insufficient information worldwide, so we will continue to take precautionary measures and keep a close eye on the latest information.

Business activities	Impact and Dependency	Risk classification		Timeframe	Risk overview	Financial impact	Countermeasure
Base station installation	<ul style="list-style-type: none"> Impact of base station construction on terrestrial ecosystems in areas of high biodiversity importance Dependence on flood and storm protection 	Physical	Acute	Short- and medium-term	Risk of base stations being damaged by expanding typhoon and landslide disasters due to degradation of forests, coastal ecosystems, etc.	Increase in restoration costs due to damage to base stations	<ul style="list-style-type: none"> Installation of base stations in areas appropriate from the perspectives of biodiversity and disaster prevention/mitigation Monitoring at sites of high biodiversity importance Establishment of a response system in the event of a disaster (operated by Starlink) Downsizing of base stations
		Transition	Reputation	Long term	Risk of criticism and reputation degradation due to deforestation, disturbance of rare species habitats, landscape degradation, etc. associated with installation of base stations	<ul style="list-style-type: none"> Decline in sales due to deterioration of reputation Incurring costs for implementation of nature restoration and conservation as needed 	
Handset sales and contracts	<ul style="list-style-type: none"> Impacts on land use change, including terrestrial ecosystems, due to the construction of a roadside store for terminal sales 	Transition	Regulation	Long term	Stricter laws and regulations regarding ecosystem destruction, pollution, etc.	Increased cost of compliance with stricter laws and regulations	<ul style="list-style-type: none"> Natural regeneration at sales outlets (to be considered) Awareness-raising activities at sales outlets (to be considered)
			Reputation	Medium-term	Deterioration of reputation due to modification of habitat by installation of street stores	Decline in sales due to deterioration of reputation	
Submarine cable installation	<ul style="list-style-type: none"> Impacts on marine ecosystems such as benthic organisms due to submarine cable installation, etc. Dependence on tsunami and other disaster prevention 	Physical	Acute	Short- and medium-term	Risk of cable damage due to increased typhoon and landslide damage associated with degradation of forests, coastal ecosystems, etc.	Increased restoration costs due to cable damage	<ul style="list-style-type: none"> Laying cable in appropriate areas from the perspective of biodiversity and disaster prevention Installation of anti-pollution fencing at the time of laying Monitoring of habitat restoration status and impacts Looped network construction as a disaster countermeasure
		Transition	Reputation	Long term	Criticism and reputation deterioration due to marine ecosystem disturbance caused by submarine cable installation	<ul style="list-style-type: none"> Decline in sales due to deterioration of reputation Incurring costs for implementation of nature restoration and conservation as needed 	

Figure 25 Risk organization

Column 1: Environmental considerations through space saving of base stations

While we have installed generators at our company with the aim of extending service during disasters, we have also made space-saving efforts by not installing generators at some locations, such as the Ginama station in Kunigami Village. By minimizing the space required to install base stations, we can be less impactful on the environment and more cost effective. Although the station is not equipped with a generator, it can be backed up by a neighboring station in the event of a disaster. In addition, the Taketomi station on Taketomi Island uses a color that blends with nature for the cylindrical columns and a stone wall for the fence to make it more in harmony with the landscape.



Figure 26 Space saving in Ginama station, Kunigami Village (left)
Landscape consideration in Taketomi station, Taketomi Island (Right)

Column 2: Disaster preparedness for telecommunications facilities, including the YUI submarine cable

The "YUI" optical submarine cable was developed to realize convenient 5G communications even in the remote islands of Okinawa in the summer of 2023. By connecting the existing submarine cable owned by Okinawa Prefecture and NTT West, respectively, between Okinawa Island and Kume Island and between Miyako Island and Ishigaki Island, with the YUI cable, a looped network is realized so that communication will not be disrupted even if part of the submarine cable is cut off due to an earthquake, typhoon, or other natural disaster. This submarine cable is almost ready to accommodate base stations on Ishigaki Island/Miyako Island/Kume Island, and all base stations are scheduled to be accommodated by FY2024.

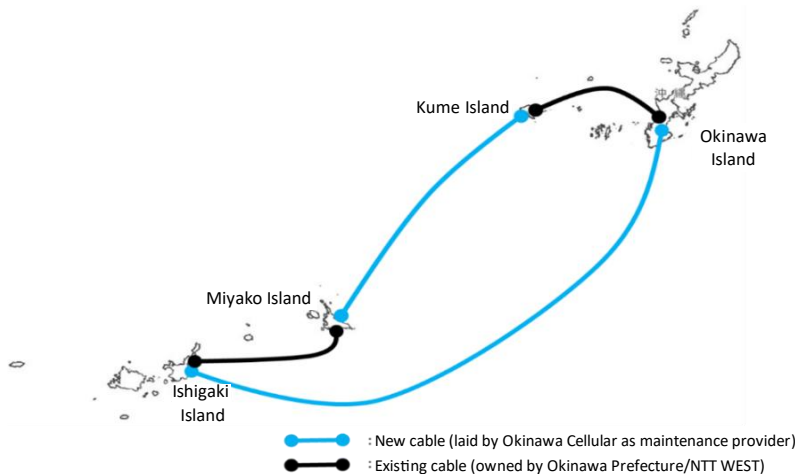


Figure 27 Configuration image of optical submarine cable "YUI"

In the event of a disaster, we provide a communications environment by securing communications, coordinating for early recovery, and installing public wireless LANs and charging facilities at evacuation centers and other locations. With two network centers (Nanjo Network Center and Tomigusuku Network Center) in the prefecture, we have established a mutual backup system to provide highly reliable communication services by using facilities that can ensure communication even if one of them fails functioning due to a disaster. In FY2024, we are introducing Starlink antennas to further strengthen our system for the early recovery of communications equipment and the rapid provision of support to disaster areas and evacuation centers.

B) Opportunity organization

We recognize that changes in the world's demands regarding nature and biodiversity can be a business opportunity as well as a risk, and we will continue to consider and respond to business opportunities as well. In this issue, as an initial arrangement, we have organized opportunities (business performance and sustainability performance¹¹) according to the framework presented by the TNFD and listed related activities.

For example, for business performance, we are promoting the collection and recycling of handsets to improve resource efficiency¹² and have begun to operate a "sustainable base station" with net zero CO₂ emissions. In addition, as a sponsor of "Dugongs AI," an application that makes Okinawa's biodiversity "visible," we are promoting activities to raise awareness of Okinawa's biodiversity (see Column 3). Furthermore, we placed advertisements in two local newspapers featuring full-size images of rare plants and animals found in Okinawa to emphasize the importance of preserving biodiversity and protecting the environment (see Column 4).

In terms of sustainability performance, we are promoting a shift from traditional paper bags to paper bags that do not use any plastic at all, or bags made from materials containing 25% biomass, and recycling to conserve petroleum and mineral resources. We are also installing IoT devices in stray dog and cat traps to protect rare animals in the Yanbaru region, building an automatic image recognition system using AI to measure the effectiveness of mongoose eradication and conduct habitat surveys, and using "Starlink" and the Biome app to conduct invasive species surveys on Iriomote Island.

¹¹ Opportunities are divided into two categories: opportunities related to business performance that directly contribute to financials and opportunities related to sustainability performance that generate positive environmental and social impacts.

¹² Currently, we have yet to reduce raw materials and costs, and we will promote initiatives to reduce resources used upstream in the supply chain and cut costs in the future.

Broad category	Subcategory	Business Opportunities for the Company	Potential financial impact	Timeframe	Initiative
Business performance	Resource efficiency	More efficient use of resources and energy, increased reuse and recycling, waste reduction, etc.	<ul style="list-style-type: none"> • Cost reductions through improved resource efficiency in the manufacture and recycling of telecommunications equipment • Improved resilience to fluctuations in mineral resource and energy prices • Increased resilience to mineral resource depletion 	Medium-term	<ul style="list-style-type: none"> • Switching electricity used at base stations to electricity from renewable energy sources (including use of non-fossil certificates) • Installation of solar power generation equipment at base stations • Starting operation of a "sustainable base station" with net zero CO₂ emissions to achieve carbon neutrality.
	Products & Services	Providing environmentally friendly products, developing nature-related solutions, and diversifying our business	<ul style="list-style-type: none"> • Securing new sources of revenue through new businesses • Improving resilience through business diversification 	Medium-term	-
	Market	Entering new markets by developing services that contribute to biodiversity using ICT, IoT, and AI	<ul style="list-style-type: none"> • Securing new sources of revenue through new businesses • Improving resilience through business diversification 	Medium-term	-
	Financial affairs	Use of nature-related green funds/bonds	<ul style="list-style-type: none"> • Raising capital through green funds/bonds, etc. 	Long term	-
	Reputation	Earn recognition from consumers, investors, and society through recognition of our efforts to conserve nature and biodiversity	<ul style="list-style-type: none"> • Increased sales due to improved corporate image • Obtaining funds to improve ESG ratings • Building reputational capital 	Short term	<p>Sponsored "Dugongs AI", an application for "visualizing" Okinawa's biodiversity, and conducted activities to raise awareness of Okinawa's biodiversity through the application.</p> <p>Full-size advertisements in two local newspapers introduced rare plants and animals that inhabit Okinawa, promoting the importance of conserving biodiversity and protecting the environment</p>

Figure 28 Opportunity organization (Business performance)

Broad category	Subcategory	Opportunities to Improve Sustainability	Impact on nature and biodiversity	Timeframe	Initiatives*
Sustainability performance	Sustainable use of natural resources	Reduce the burden on and dependence on nature by shifting to recycling and other recycling-oriented resource use, saving resources, and environmentally conscious procurement	Reduction in burden on the ecosystem resulting from reduced production of mineral resources and other resources (mine development, mining, etc.) and consumption of raw materials through recycling and resource conservation.	Medium-term	<ul style="list-style-type: none"> Handbags used at au Shops, au Style, and UQ Spot are now made of paper and do not contain any plastic. In addition, rainproof covers and handbags used for carrying catalogs and other items have been changed to bags made from materials containing 25% biomass. Handset collection and recycling: Used cell phones collected from customers at au stores and au Style are disassembled into circuit boards, LCDs, cameras, plastics, screws, antennas, motors, speakers, etc. Gold, silver, copper, palladium, etc. are collected from circuit boards, screws and antennas are turned into steel products, and plastics are turned into plastics as much as possible.
	Conservation and restoration of ecosystems	Nature restoration (greening, etc.) at business sites and measures to conserve native and invasive species in Okinawa Prefecture using ICT, IoT, and AI	<ul style="list-style-type: none"> Restoration of local ecosystems through natural regeneration (greening, etc.) at business locations Reduction of invasive alien species and recovery of native species through ICT, IoT, and AI-based initiatives 	Long term	<ul style="list-style-type: none"> Conducted a survey of invasive alien species on Iriomote Island using "Starlink" and the "Biome" application. The data collected contributes to environmental protection and measures against invasive alien species in Iriomote Island. In 2024, a seaweed bed restoration project in cooperation with a local elementary school will be implemented along the coast of Nosokoizaki, where sea squirts, an endangered species, grow in clusters on Ishigaki Island. IoT devices are installed in traps to protect rare animals in Yanbaru from stray dogs and cats to make patrols more efficient. Constructed an automatic image identification system using AI to save labor in processing image data acquired in the northern part of Okinawa Island for measuring the effectiveness of mongoose extermination and habitat surveys.

Figure 29 Opportunity organization (sustainability performance)

Column 3: Promoting environmental awareness through "Dugongs AI", an app that visualizes Okinawa's biodiversity

"Dugongs AI" is a smartphone application that uses big data on biodiversity and AI technology to enable users to see on a map what kind of species live in Okinawa Prefecture. As a sponsor of "Dugongs AI", we are using the application to promote educational programs on biodiversity for children in Okinawa and school trip students from outside the prefecture.



Figure 30 Handouts at the Naha Festival in Onoyama Park: an event using "Dugongs AI"

Column 4: Advertisements in two local newspapers promoting the importance of biodiversity conservation and environmental protection

On September 24, 2023, an advertisement was published in the morning editions of the Ryukyu Shimpo and Okinawa Times newspapers, showing rare plants and animals that inhabit Okinawa at full size. The ads emphasized the importance of preserving biodiversity and protecting the environment.

This project, a joint effort by Okinawa Cellular, Ryukyu Shimpo, and The Okinawa Times, won the overall Grand Prix at the 42nd Okinawa Advertising Awards, and also won the Print Division Award at the 3rd "Zenkoren Saburosuke Suzuki Regional Advertising Grand Prix".



Figure 31 Okinawa rail, eyes of humpback whale (left), Iriomote wildcat, and black-banded sea krait (right) drawn in full scale

Column 5: The Okinawa Nature Conservation Project: supporting biodiversity conservation

The 15th session of the Conference of the Parties to the Convention on Biological Diversity (COP15) held in 2022 adopted a global biodiversity conservation target for 2030, and the recognition on the importance of natural capital is increasing. Amami Oshima, Tokunoshima, the northern part of Okinawa Island, and Iriomote Island, which were registered as a World Natural Heritage site in July 2021, are one of the most important areas for biodiversity conservation because they are a habitat for endangered species and have a highly unique ecosystem. In recent years, however, there have been concerns about the impact of the invasion and establishment of non-native species, and countermeasures have become an issue.

In order to maintain the precious ecosystem in the area and contribute to the protection of the natural environment, we have been conducting the "Okinawa Nature Conservation Project," an environmental conservation activity utilizing telecommunications technology, since October 2021. In the first phase of the project, IoT devices that automatically notify us when animals are captured were installed in 15 traps for the purpose of protecting rare Yanbaru animals from stray dogs and cats. The IoT devices have contributed to the efficiency of patrols of by the trappers. In March 2022, the second phase of the project, an automatic image identification system utilizing AI was constructed to measure the effectiveness of mongoose extermination and survey their habitat. AI has automated the sorting of more than 20,000 images, which had previously been done manually, leading to labor savings.

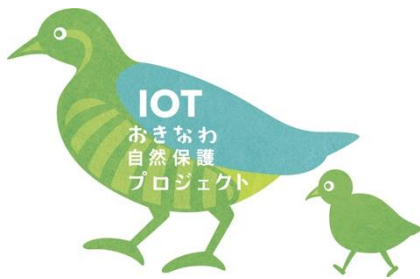


Figure 32 "Okinawa Nature Conservation Project" logo (Left)
Automatic mongoose image identification system (Right)

4. Risk and impact management

4.1 Process for identifying and assessing nature-related impacts/dependencies and risks/opportunities

We identified and assessed nature-related and other risks in our value chain. We examined nature-related risks mainly in the telecommunications business by quantitatively evaluating and judging priorities based on the business scale (sales ratio) and relationship with nature in three business domains: telecommunications, energy, and business creation/solving social issues. For the relationship with nature, the dependency and impact evaluation (VL, L, M, H, VH) of each business in ENCORE were quantified on a scale of 1 to 5 and the average value was calculated, then the values for each item were added together to calculate a total score.

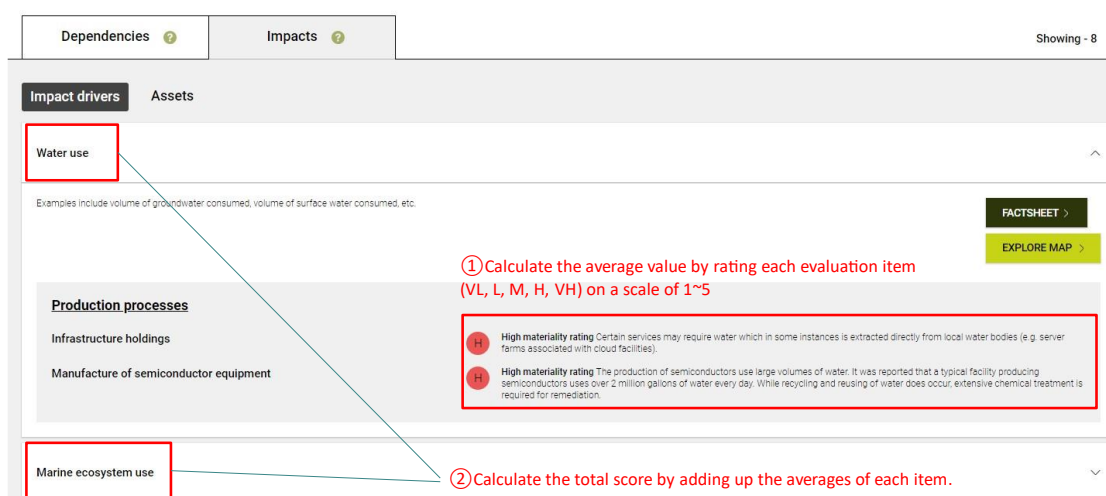


Figure 33 Scoring process for dependencies and impacts

In selecting the detailed evaluation items, the telecommunications business was divided into the following categories: base station installation, handset sales, cable installation, and IT solutions. Each of these categories was then further divided into upstream, direct operations and downstream processes. Then, with reference to ENCORE, we assessed the impact on the ecosystems involved in each process and the dependence on ecosystem services. Based on this, we extracted base stations, handset sales locations (shops/sales offices), and submarine cables as targets for detailed evaluation based on location information, taking into account the effectiveness of the action (whether it is direct operation or not), the status of understanding of location information (latitude/longitude and cable routes), the degree of impact and dependence, and the actual state of business activities.

For base stations, submarine cables, and handset sales locations (stores and sales offices), we overlaid the location information of our own assets on Think Nature's biodiversity maps to assess and understand the biodiversity importance and intactness for each location/area, and identified priority areas for detailed assessment. In addition, for each of the relevant nature impact/dependency items identified with reference to ENCORE, we evaluated the degree of impact and the status of dependent ecosystem services in the operation area to identify the impacts and dependencies that should receive special attention.

We then referred to the risk/opportunity classification framework presented in the TNFD ver. 1.0

to organize the impact on our business and our efforts related to each risk/opportunity. The identification of relevant risks and opportunities was organized based on the results of the location assessment and impact dependency assessment conducted this time, as well as research based on existing information such as literature, etc. Regarding our activities, inquiries were made to each department of the company, and they were organized. Priorities for each risk/opportunity will be organized based on detailed analysis in the future.

4.2 Processes for managing nature-related and other risks, and their integration into the company's overall risk management

Measures to address significant nature-related risks detected in the location-based assessment and impact/dependency assessment are strategically developed by the Sustainability Committee as described in "2. Governance 2.1 Management structure for biodiversity and natural capital" and are targeted and managed under the supervision of the Board of Directors. In addition, the Board of Directors, the Sustainability Committee and the Environmental Subcommittee will discuss, report and review the impact and management of other nature-related and other risks, with defined roles, authorities, membership and frequency.

As a "designated local public institution" under the Disaster Countermeasures Basic Act, we have formulated a Business Continuity Plan (BCP) for large-scale natural disasters as our disaster countermeasure policy to provide stable information and communication services under any circumstances. We are implementing various initiatives, including the development of a system to prepare for disasters and prompt support activities for disaster-stricken areas, in cooperation with related organizations.

Regarding the BCP, we verify its effectiveness in our annual "Disaster Countermeasure Drill" and are working to build a stronger foundation for disaster countermeasures by repeating the PDCA cycle every year. Furthermore, in preparation for typhoons and other large-scale disasters, we have concluded cooperative agreements with the government, the Self-Defense Forces, and other infrastructure companies, and we conduct periodic drills every year based on these agreements.

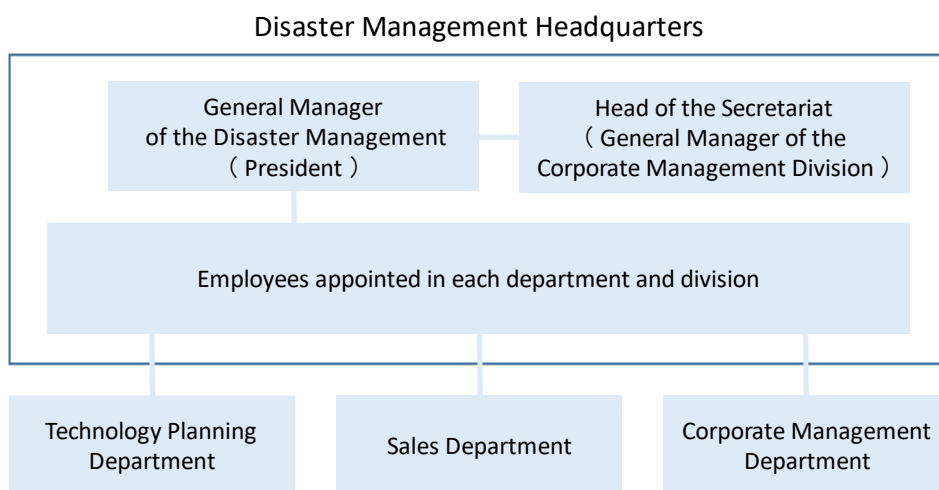


Figure 34 Disaster response system

5. Indicators and Targets

Based on the Clean Energy Roadmap 2030, we calculate our greenhouse gas emissions (Scope 1, 2 and 3), including those of our group companies, and manage the risks and opportunities presented by climate change through regular and quantitative monitoring of our environmental impact. To achieve carbon neutrality, we are committed to the following indicators and targets to reduce greenhouse gas emissions.

Category		FY2021 Emissions (t-CO ₂)	FY2022 Emissions (t-CO ₂)	FY2023 Emission (t-CO ₂)	Target (compared to FY2021)
Scope1	Direct greenhouse gas emissions by businesses themselves	13	24.20	-	Net zero CO ₂ emissions by FY2030
Scope2	Indirect emissions from the use of electricity, heat and steam supplied by others	25,004	13,763	-	Net zero CO ₂ emissions by FY2030
Scope3	Indirect emissions other than Scope 2	-	116,417	-	Net zero CO ₂ emissions by FY2040

Figure 35 Greenhouse gas emissions

In addition, we also monitor water consumption and industrial waste generation.

Category	Unit	FY2021	FY2022
Water consumption (tap water, gray water, groundwater, sewage, water and wastewater)	m ³	14,230	17,995
Industrial waste generated	t	73.8	59.1

Figure 36 Water consumption and industrial waste generation

For contribution to the conservation of Okinawa's and the global environment, we will continue to study strategies related to natural capital and the indicators necessary to achieve our goals.

*See the description in the [Sustainability Report](#) for ESG data.

6. For the future

Okinawa Prefecture is a biodiversity hotspot viewed from both a national and international perspective, and since almost all base stations are located at extremely important locations, measures to mitigate the impact on the ecosystem and biodiversity must be considered in the future. In this report, we conducted a primary understanding and assessment of the impact on and dependence on nature based on location information for base stations, submarine cables, and stores and sales offices, which have relatively large relationships with nature and biodiversity, among telecommunications businesses of particular business importance, and summarized related risks and opportunities. In the future, we will expand and deepen our assessment and management in the following three directions, leading to a comprehensive understanding of risks and opportunities and the implementation of effective countermeasures.

① Expansion of coverage

It is assumed that businesses other than telecommunications business, which were not identified in detail in this assessment, also have impacts on and dependence on nature and biodiversity, and that there are related risks and opportunities. For example, with respect to the au electricity business, although we are promoting the use of renewable energy to achieve carbon neutrality, in some cases, the promotion of renewable energy may have a negative impact on biodiversity. Recognizing these concerns, we will promote an assessment of the current situation, including the status of efforts by electric power companies. In the telecommunications business, we will also enhance traceability and promote risk/opportunity assessments for upstream processes in the supply chain and other areas where location-based assessments could not be conducted this time.

② Depth of evaluation

We have now conducted location-based assessments of base stations, submarine cables, and stores and sales offices, and have identified areas that need attention from the perspective of biodiversity importance, as well as items that need attention from the perspective of impact and dependence. Based on the results of this assessment, we will proceed with detailed analysis of these targets as well, including the actual degree of impact from operations, the probability of occurrence and degree of impact of business risks, and the degree of positive effects from countermeasures, to address risks and seize opportunities related to nature and biodiversity.

③ Consideration of indicators and targets

For management and improvement on our performance to nature and biodiversity, it is necessary to set appropriate indicators and targets. We will continue to set important indicators, establish a monitoring system, and set appropriate targets to understand our actual status, while referring to the TNFD's guidance.

The nature and biodiversity touch points and issues across the company are many and varied, and information needs to be updated in a variety of areas. Recognizing that nature and biodiversity must be addressed over the medium to long term, we will update our assessment and information disclosure as needed.