Agenda Item: CEP 7a

Presented by: Korea (ROK)

Original: English

Fauna Survey of the ASPA 171 Narębski Point, ASPA 150 Ardley Island and ASPA 132 Potter Peninsula in 2010-11

Attachments: 1

Fauna Survey of the ASPA 171 Narębski Point, ASPA 150 Ardley Island and ASPA 132 Potter Peninsular in 2010-11

Information Paper Submitted by the Republic of Korea

The purpose of this survey is to formulate a comprehensive management plan for the Antarctic Specially Protected Area (ASPA) 171. It is an international collaborative survey focusing on the regional fauna. Thanks to assistance of our German and Argentine partners, changes in the ecosystem could be evaluated and an assessment of the impact on 3 ASPAs in Maxwell Bay could be made.

1. Survey Period : 2010.11.19-2011.02.23

2. Survey Region : ASPA 171 Narębski Point, ASPA 150 Ardley Island, ASPA 132 Potter Peninsula (see Figure 1)

3. Fauna Survey

Fauna at Narębski Point

At Narębski Point, two kinds of penguins (Chinstrap penguin, Gentoo penguin) and ten species of birds - Brown skua(5 nests), South polar skua(18 nests), Southern giant petrel (12 nests), Pale-faced sheathbill(1 nest), Kelp gull(5 nests), Antarctic tern (38 nests), Wilson's storm petrel(>50 nests), Black-bellied strom petrel(>10 nests) were confirmed to breed. In the penguin habitat, 2612 pairs of Chinstrap penguins and 2351 pairs of Gentoo penguins reproduced. The number of nests for Chinstrap penguins increased by 40 and Gentoo penguins increased by 62 during the years 2009 to 2010. At the coast of the Narębski Point, less than 5 individual Southern elephant seals were observed.

Avifauna at Ardley Island

Jointly with the avifauna research team from German JENA University, the number of nests for penguins and marine birds was surveyed. Inside Ardley Island, the following three kinds of penguins reproduced: Chinstrap penguins (9 nests), Adelie penguins (435 nests), and of Gentoo penguins (5603 nests) . Also, the following four species of marine bird nests were monitored: Brown skua(12 nests), South polar skua(21 nests), Southern giant petrel (6 nests), and Kelp gull(4 nests).

Avifauna at Potter Peninsula

With the help of Argentine Dirección Nacional del Antártico, the number of nests for marine birds, except for penguins, was surveyed. At Potter Peninsula, the following three species of marine birds were monitored: Brown skua(6 nests), South polar skua(2 nests), and Southern giant petrel (44 nests).

4. Installation and operation of the monitoring camera at Narębski Point

Two ecological monitoring cameras were installed at the penguin habitat and at the seashore of Narębski Point. The camera installed at the penguin habitat monitors penguin rookery, and the one installed at seashore monitors the refuge facility of birds and seals. (see Figure 2, Figure 3)

5. Basic ecological survey near the protected areas

A basic ecological survey was conducted 6 times, semimonthly from December to February, on the southeast coast of the protected area. On the surveyed area, a total of 3 order, 6 family and 11 species of birds and 1 order, 2 family and 3 species of seals were observed. Although penguins did not reproduce in this area, five

pairs of Brown skua and nine pairs of South polar skua were monitored. Two areas of ecological value due to their abundance of animal and plant species were examined in this survey. Vegetation is well developed near the freshwater lake, and species such as skua, penguin, and antarctic fur seal were using it as a refuge facility. Also, at the tip of the east coast, a small number of Antarctic fur seal, weddell seal and southern elephant seal were taking refuge as a group. In this regard, we need to further seek ways to safeguard this area through continuous research. (See Table 1, Table 2, Figure 4, Figure 5)

6. Present management status of the protected areas

Researchers from the Republic of Korea and Argentina joined together to review the present management status of the Narębski Point and Potter Peninsula. In each protected area, only the scientists who have access were allowed to enter and conduct research. Also, they were in compliance with all the obligations delineated in the access permit and the management plan.

7. Future survey plan

International collaborative fauna survey

In order to estimate the scale of the breeding population for fauna such as penguins, outdoor research should be conducted at a period when spawning ends and brooding begins. Also, in order to evaluate the fluctuations in scale of fowl breeding population inside the King George Island, simultaneous census should be carried out at the habitats in Narębski Point, Ardley Island, and Potter Peninsula. It is hoped the future survey will be arranged with the best schedule to operate each Antarctic research station, and work together to set up an efficient and scientific monitoring system. This will ensure the best quality joint research to be carried out at an optimum time.

Utilization of the monitoring camera

Analysis of the images taken from the monitoring camera during the one year time frame will enable the researchers to evaluate the efficiency of the monitoring camera and find the best appropriate installation region. Based on the results from this evaluation, the monitoring camera will be relocated at an optimum location, where continuous monitoring can take place.

Basic ecosystem survey around the protected areas − not only the fauna, but also vegetation, geological, geographical survey will be performed in the ecologically valuable regions near the protected areas.

Annex A. Figures

Figure 1 - Map of the survey region

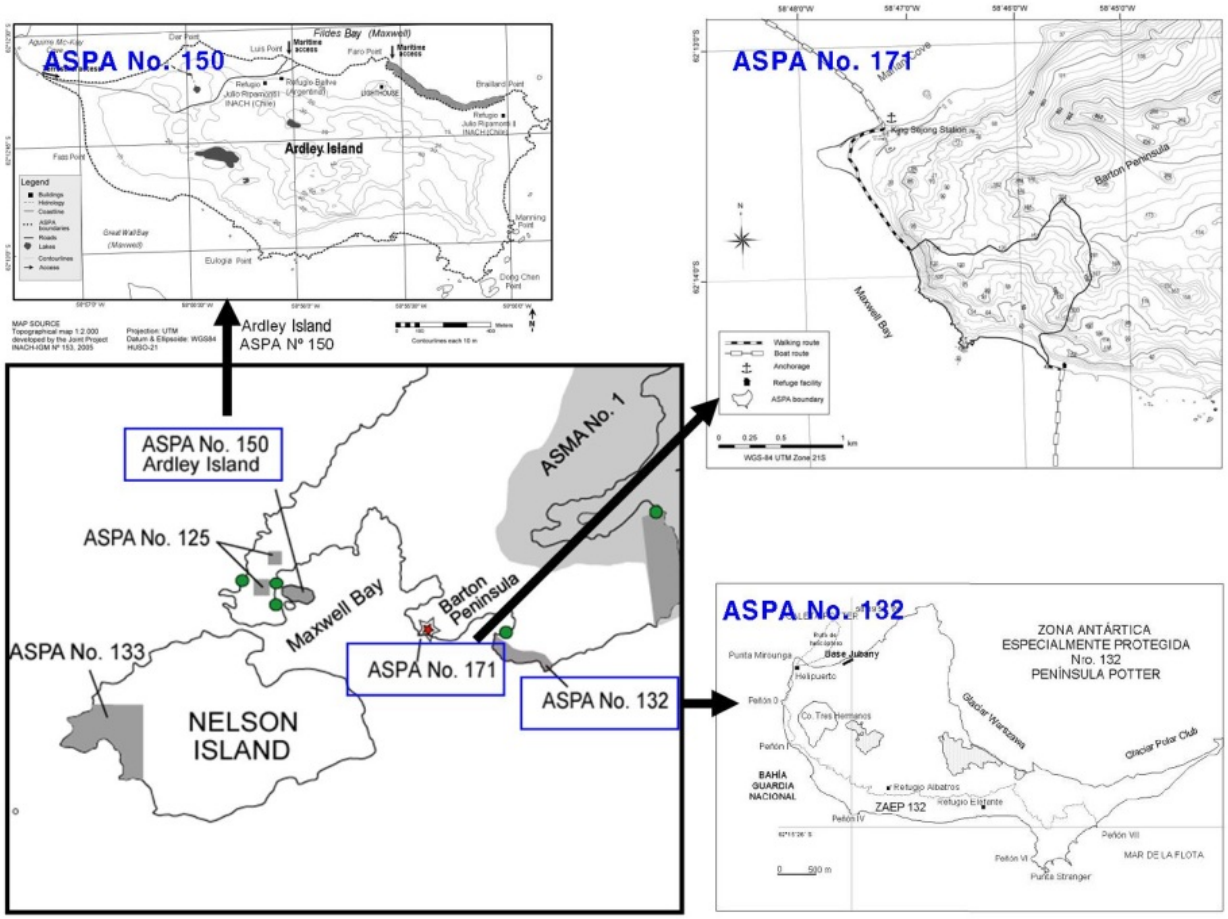


Figure 2 – Monitoring camera installation point

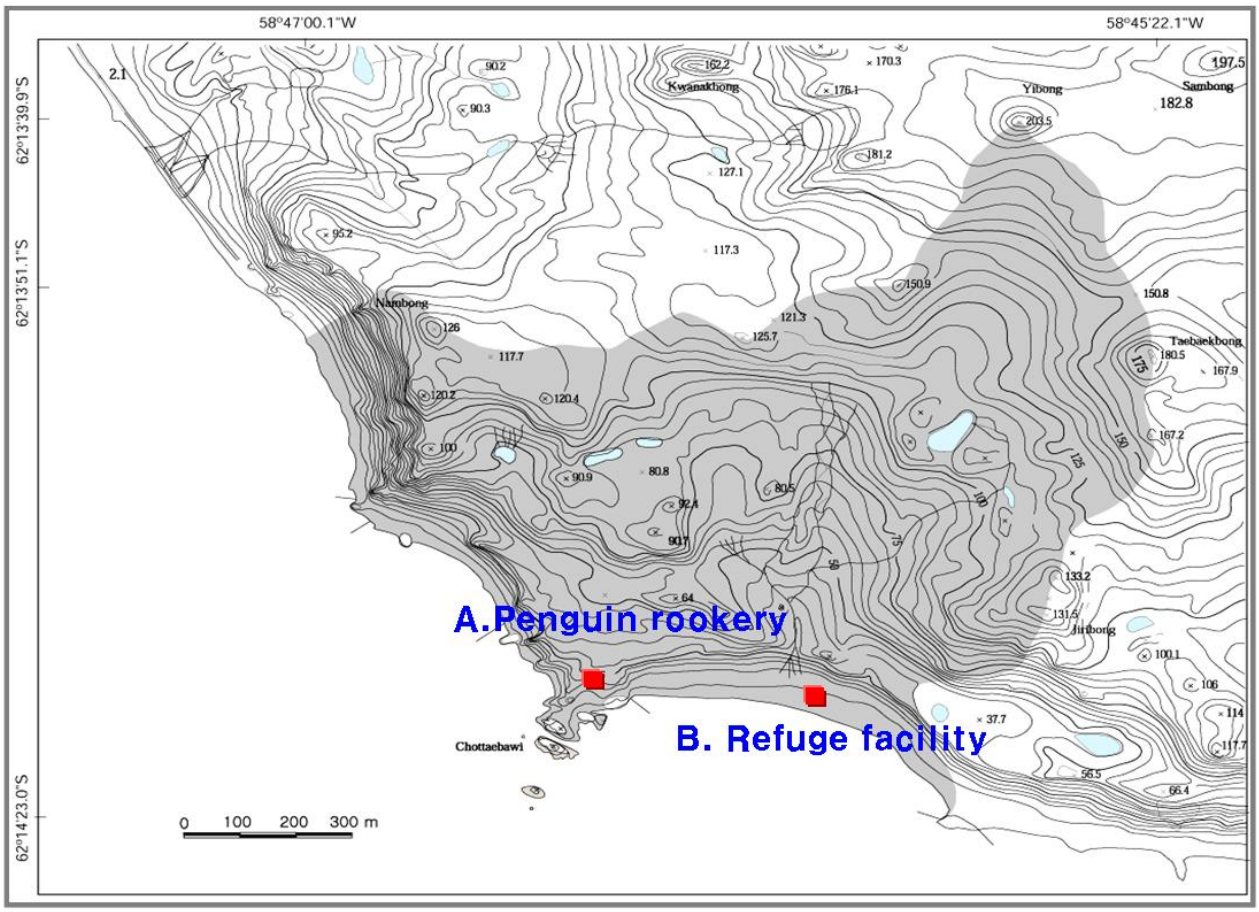


Figure 3 – Images from the monitoring camera

Figure 4 - Distribution of Brown skua and South polar skua nests near the protected area

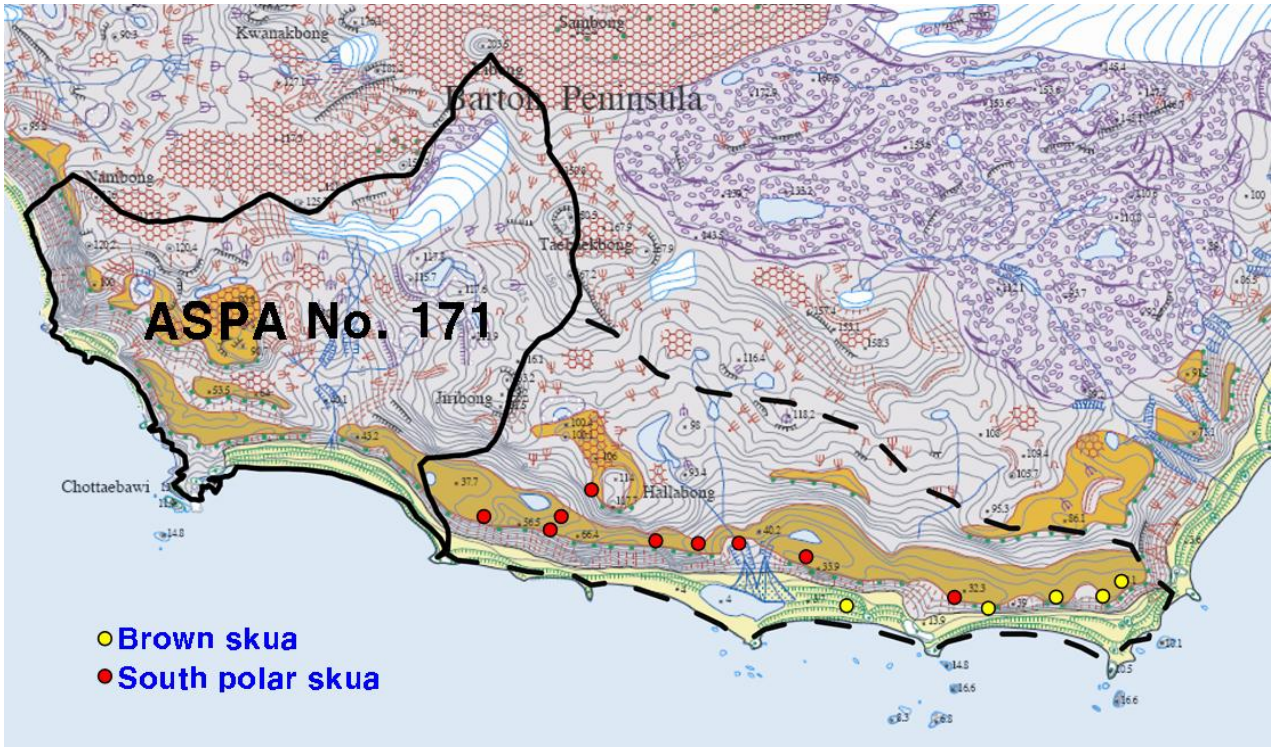
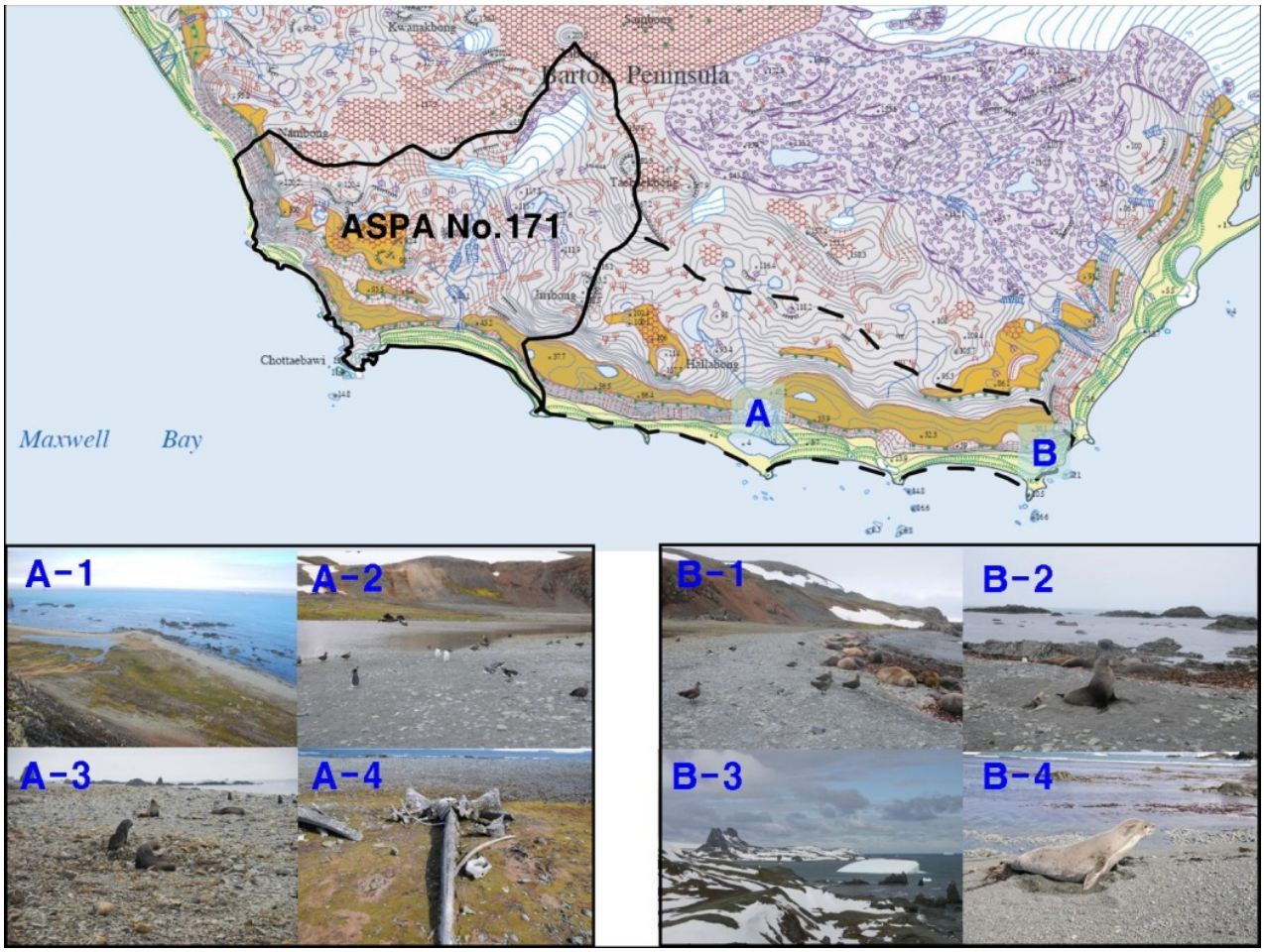


Figure 5 - Areas of ecological value near the protected area − (A) near freshwater lake and (B) coastal region A-1 Well developed vegetation area, A-2 Freshwater lake as a refuge facility for penguins and skuas, A-3 Refuge facility for Antarctic fur seal, A-4 Well preserved whale bone, B-1 Refuge facility for Southern elephant seal, B-2 Refuge facility for Antarctic fur seal and Southern elephant seal, B-3 Well developed mold colony, B-4 Refuge facility for Weddell seal



Annex 2. Tables

Table 1 - Avifauna near the protected area

SPECIES	DATE							
	2010		2011					
	04 Dec	20 Dec	03 Jan	19 Jan	04 Feb	21 Feb	Total	Peak Count
Pygoscelis papua	9	3	9	12	124	251	408	251
Pygoscelis antarctica	18	2	18	9	56	82	185	82
Pygoscelis adelie	3		1	1	-	-	5	3
Catharacta lonnbergi	3	3	12	9	11	5	43	12
Catharacta maccormicki	23	38	61	55	106	47	330	106
Larus dominicanus	-	3	11	8	4	25	51	25
Sterna vittata	3	6	2	3	-	-	14	6
Macronectes giganteus	3	2	4	3	4	1	17	4
Daption capense	86	35	3	-	-	-	124	86
Oceanites oceanicus	3	2	-	4	-	-	9	4
Fregetta tropica	2	-	-	-	-	-	2	2
Total	153	94	121	104	305	411	1188	581
No. of Order	3	3	3	3	3	3	3	
No. of Family	5	6	5	6	4	4	6	
No. of Species	10	9	9	9	6	6	11	
Species Diversity (H')	1.47	1.49	1.58	1.58	1.28	1.11	1.61	

Table 2 - Mammalia near the protected area

SPECIES	DATE							
	2010		2011					
	04 Dec	20 Dec	03 Jan	19 Jan	04 Feb	21 Feb	Total	Peck Count
Arctocephalus garzella	-	-	-	-	37	32	69	37
Mirounga leonina	7	6	4	9	39	37	102	39
Leptonychotes weddellii	1	3	-	3	-	-	7	3
Total	8	9	4	12	76	69	178	76
No. of Order	1	1	1	1	1	1	1	
No. of Family	1	1	1	1	2	2	2	
No. of Species	2	2	1	2	2	2	3	