

Biological Characteristics and Preservation of Dokdo Island

Kim, Ki-Tai

Marine Science Institute, Yeungnam University, Gyongsan 712-749, Korea

ABSTRACT: Dokdo, which is located in the middle of the East Sea, is a small island with a total area of 0.186 km². However, this small island, with its mild oceanic climate, has rich bio-resources and picturesque natural surroundings. Dokdo in the crystalline waters and in the central area of the deep sea is a treasury of algae (sea oak, sea mustard, gulf weed, laver, agar-agar, etc.), molluscs (squid, ear shell, conch, etc.) and fishes (Alaska pollack, anchovy, saury, herring, etc.). On the other hand, there are a lot of grasses and various kinds of grasses on the land of Dokdo. And a lot of back-tailed gulls (about 20,000 individuals) live on this island. There have been disputes on the sovereignty over Dokdo between Korea and Japan. Japan has claimed sovereignty over Dokdo since Japan incorporated the island into Japanese territory in 1905 when it occupied the Korean Peninsula by force. Korea governed Dokdo not only before 1905 but also after its liberation in 1945. The Korean government, while heavily financing building facilities like piers and quays, is endeavoring to preserve the natural surroundings of this island.

Key words: Bio-resources, Dokdo, Oceanic climate

FLORA AND FAUNA OF DOKDO ISLAND

Dokdo is a very small island located in the middle of the East Sea with an area of over one million km² and an average depth of 1,360 m. Dokdo is composed of 36 islets and 56 sunken rocks. This island was formed by the upthrust of an underwater mountain.

The coastal waters off Dokdo abound in seaweeds including sea oak designated as a precious natural resource. The various seaweeds growing here present quite a spectacle: *Eisenia bicyclis* (sea oak), *Undaria Pinnatifida* (sea mustard), *Ecklonia Stolonifera*, *Sargassum fulvellum* (gulf-weed), *Porphyra tenera* (laver), *Porphyra suborbiculata* (laver), *Gilidium amancii* (agar-agar), *Gigartina tenella* (seaweed tenella), *Codium fragile* (sea ataghorn), *Ulva pertusa* (sea lettuce), *Laminaria japonica* (kelp) (Shin 1998, Kim 2001).

A variety of fish resources are found in the coastal waters off Dokdo. Many kinds of fish resources are caught in large quantities here: of Mollusca, *Ommastephes sloami pacificus* (common squid), *Paroctopus doflini* (octopus), *Turbo cornutus* (turban shell), *Hariotis discus hannai* (abalone), *Mytilus crassitesta* (sea mussel); of Echinodermata, *Stichopus japonicus* (sea cucumber), *Hemicentrotus pulcherrimus* (sea urchin); of Fishes, *Theragra chalcogramma* (Alaska pollack), *Engraulis japonica* (anchovy), *Cololabis saira* (saury), *Sardinops melanostictua* (sardine), *Clupea pallasii* (herring), *Scomber japonicus* (mackerel), *Trachurus japonicus* (horse mackerel), *Seriola quinqueradiata*

(yellow tail), *Gadus macrocephalus* (pacific cod), *Oncorhynchus masou* (trout), *Oncorhynchus keta* (keta salmon), *Euthynnus pelamis* (skipjack tuna), *Stephanolepis cirrhifer* (file fish), *Takifugu prophyreus* (globefish), *Takifugu rubripes* (tiger puffer), *Limanda herzensteini* (flounder), *Oplegnathus fasciatus* (rock bream) (Shin 1998, Kim 2001).

Owing to the mild oceanic climate, Dokdo, except for the rocky area, is covered with various kinds of grass, which adds to the beauty of the island's scenery: *Sedum orizifolium*, *Aster spathulifolius*, *Chenopodium album* var. *Centrorubrum*, *Sonchus brachyotus*, *Chrysanthemum Zawadskii* var. *latilobum*, *Polygonum aviculare*, *Digitaria sanguinalis*, *Portulaca oleracea*, *Echinochloa crus-galli*, *Lysimachia mauritiana*, *Calamagrostis epigeios*, *Spergularia marina*, *Sorghum nitidum* var. *majus*, *Miscanthus sinensis*, *Agropyron tsukusiense* var. *transiens*, *Imperata cylindria* var. *koenigii* (Plates 1~9).

About 20,000 back-tailed gulls, designated as a precious natural resource, live on this island. They also add to the fantastic scenery of this island. The back-tailed gull is the resident bird of this island, nesting almost everywhere in Dokdo.

Warm and cool currents cross off the steep rias coast of Dokdo, and numerous varieties of fish are caught in large quantities in the fishing grounds near Dokdo. So it works as an important forward fishery base administering efficient control of marine resources. It also can be developed as a base of underwater mineral mining, the harborage of fishing boats, and a marine resort.

* Author for correspondence; Phone: 82-2-3452-8343, e-mail: kkt30@hotmail.com



Plate 1. *Aster spathulefolius* and *Chrysantheman zawadskii* var. *latelobum*.



Plate 4. *Chinopodium album* var. *centrurubrum*.

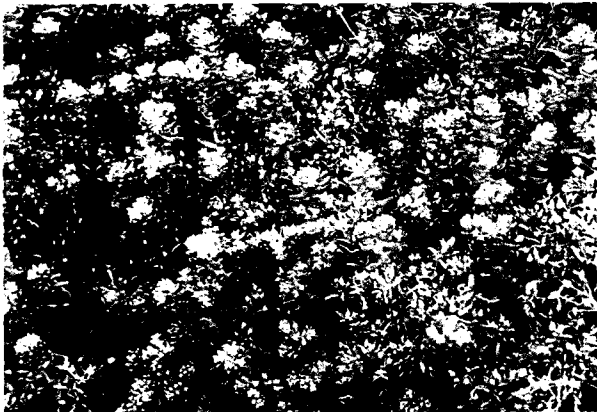


Plate 2. *Sedum oryzifolium*.



Plate 5. *Sonchus brachyotus*.



Plate 3. *Pinus thunbergii*, *Imperata cylindria* var. *koenigii* and *Sorghum nitidum* var. *majus*.



Plate 6. *Calamagrostis epigeios*.

It can be concluded that Dokdo, presenting quite spectacular scenery by soaring abruptly from under the waters, is a treasury of marine resources (Plates 10-12).



Plate 7. *Polygonum aviculare*.



Plate 10. The sea and the coastline of Dokdo. The grass and the seagulls are shown.



Plate 8. *Digitaria sanguinalis* and *Portulaca oleracea*.



Plate 11. *Eisenia bicyclis* which grows in the marine forest in the seas off Dokdo. It has been designated as a nature preserve.



Plate 9. *Echinochloa crus-galli* and *Spergularia marina*.



Plate 12. Degradation of Chlorophyta and Phaeophyta in the coastline of Dokdo.

NATURE PRESERVATION OF DOKDO ISLAND

The Korean people and their government recognize the importance of Dokdo. At present quite a few policemen and security

guards are stationed on Dokdo. It is true that frequent visits by academic investigators and tourists are gradually ruining the natural scenery of this island.

"Senseless development" and the "overprotectiveness" of Dokdo even before overall investigations are made may accelerate the ruin of this island. In this connection, the writer wishes to make some suggestions for the preservation of Dokdo.

- 1) Combustible rubbish is burnt on the island. But smoke from the burning rubbish defaces rocks, and, though not severely, pollutes the air and waters.
- 2) Incombustible rubbish is carried away to rubbish disposal facilities on the mainland. But some of it remains on the island to pollute the clear waters.
- 3) Rotten potatoes, sweet potatoes, oranges, apples and kitchen refuse are put into decomposable sacks and dumped into the clear waters. These sacks, though easily decomposed, may eventually pollute the waters if they are dumped continuously.
- 4) The garbage matter floating from the decomposed sacks accumulate on the coast and deface the scenery.

As the natural purification of polluted waters takes a long time, even the decomposable garbage should be carried away to garbage disposal facilities on the mainland. The continued burning and dumping of garbage may eventually pollute the surroundings of Dokdo.

KOREAN SOVEREIGNTY OVER DOKDO ISLAND

Korea and Japan should maintain a friendly relationship as neighboring countries. However, when Korea was suffering from its worst economic depression, Japan onesidedly broke the fishery agreement between Korea and Japan in an attempt to catch more fish though it had already secured a large fishing quota as one of the biggest maritime countries.

There arose a controversy on the sovereignty over Dokdo while the two countries were locked in a dispute about the fishery zone. The Japanese began to claim sovereignty over Dokdo on the grounds that the island is located in the joint fishery zone.

Dokdo has been a territory of Korea since it was liberated from Japanese rule 50 years ago. The Korean government officially stationed policemen there. Recently, the Korean government supplied a large sum of money to build facilities like quays and piers, and made it a forward fishery base.

However, Japan still maintains sovereignty over Dokdo because, internationally, it is still considered to be a no-man's island.

The Japanese have claimed sovereignty over Dokdo since it incorporated the island into Japanese territory in 1905 when it occupied the Korean Peninsula by force. However, their claim is not based on international law or reliable historical records, but on the forgery that Dokdo has been an uninhabited island deserted by Korea. Now Japan, with its superiority of economic power,

tries to exploit exclusively the rich marine resources off the coast of Dokdo.

So it is necessary for Korea to claim sovereignty over Dokdo internationally by having Dokdo inhabited by Korean people. Though the Korean government has stationed quite a few Koreans on the island, the Korean inhabitation there has not yet been internationally recognized. To obtain international recognition of Dokdo as an island inhabited by and belonging to Koreans, the following requirements should be satisfied.

- 1) Dokdo should have residents of more than two families with residence registrations issued by the government. Recently, Koreans were enraged by the Japanese attempts to move some fisherman from Simane Hyun (a kind of province) to Dokdo. In response, many Koreans volunteered to live on Dokdo. However, the more Koreans live in Dokdo, the more rapidly the natural surroundings of the island will be damaged. For the same reason, the Korean government should station a minimum number of policemen and guards.
- 2) Drinking water should be produced in Dokdo. This may prove that Dokdo is an inhabited island. Fortunately, there is a fountain called 'Mulgol' on the West Island of Dokdo. Underground water wells out from the rock cracks on the west coast of the West Island. Though the water is mixed with salt water, it is possible to develop this fountain as a source of its drinking water supply.
- 3) It is important that we should grow trees on Dokdo. The soil of Dokdo is very sterile because it is a volcanic island. However, in May or June, though somewhat windy, the mild climate, rainfall, and sunshine are enough to cover the island beautifully with a variety of grasses. We should discover through research how to grow those kinds of trees such as black pines that can adapt well to the climate of Dokdo.

The above requirements should be satisfied to obtain international recognition that Dokdo belongs to Korea. We should take reasonable and flexible policies concerning our sovereignty over Dokdo. In this connection, it is desirable to render the fishing rights off the coast of Dokdo, which now belong to the residents of Ulleungdo, to the several families who wish to live on Dokdo. Any future residents on the island will lead a satisfactory life by engaging in fishery.

LITERATURE CITED

- Kim, K.-T. 2001. Marine ecosystem on Dokdo and Ullungdo Islands. *Korean J. Ecol.* 24(4): 245-251.
- Shin, Y. H. 1998. Marine resources and fishery on Dokdo Island. Dokdo Research Association. *Dokdo Res. Ser.* 4 : 1-254.
- (Received April. 1, 2002, Accepted April. 20, 2002)