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Measuring the economic benefits of designating Baegnyeong Island in Korea as a marine protected area

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ABSTRACT

The Korean Government is considering designating Baegnyeong Island, which has several distinguishing features (it is the habitat of endangered species such as the spotted seal and has unique marine scenery and ecosystem), as a marine protected area (MPA). The policymakers are demanding information on the economic benefits of designating the island as an MPA. Therefore, this paper describes an attempt to measure the economic benefits, using a contingent valuation (CV) survey of 600 randomly selected households in Korea in 2015. We used a one-and-one-half-bound dichotomous choice (DC) question to derive the willingness to pay (WTP) responses, and applied a spike model to deal with WTP responses of zero. The yearly mean WTP

per household was computed to be KRW 3,590 (USD 3.15) for the next 10 years, an estimate that is statistically significant at the 1% level. Expanding the value to the national population gives us KRW 67.2 billion (USD 59.1 million) per year. The present value of the total economic benefits amounts to KRW 534.0 billion (USD 469.2 million) using a social discount rate of 5.5%. We can conclude that Korean households are ready to shoulder some of the financial burden of designating the island as an MPA.

KEYWORDS:

Baegnyeong Island | marine protected area | contingent valuation | economic benefit | willingness to pay

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