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IDENTIFYING MICROSATELLITE MARKERS FOR *BERBERIS THUNBERGII*: SCREENING MICROSATELLITE LOCI OF CLOSELY RELATED SPECIES.

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Acadia National Park (ANP) is a 47 square mile national park on Mount Desert Island, Maine, which borders the town of Bar Harbor, ME. Areas within park boundaries, which surround the nearby community of Bar Harbor, contain well-established naturalized subpopulations of *Berberis thunbergii* (Japanese barberry). Population growth within ANP may be stimulated by two potential mechanisms: recruitment from previously established subpopulations within ANP or by migration (via seed) from the nearby ornamental plants in the town of Bar Harbor. Identifying the genetic relationship of three subpopulations of Japanese barberry within the park and adjacent to Bar Harbor is of interest to determine the dominant source of population growth within ANP, degree of out-crossing within and between subpopulations, and the amount of genetic influx from nearby ornamental cultivars. The first step toward such an in-depth genetic analysis is the design of co-dominant markers (e.g. microsatellite markers) that will be capable of distinguishing individuals at the necessary allelic level. Initial investigation toward identifying microsatellite marker loci for *B. thunbergii* was carried out by screening published microsatellite primers that successfully amplified microsatellite loci of *Berberis vulgaris*. PCR amplified microsatellite loci were the expected size when compared to those of *B. vulgaris*, however, DNA sequencing revealed a tendency toward high conservation rates of loci in *B. thunbergii* individuals. Presently, we are investigating ISSR based microsatellite identification methods and may eventually utilize Next Gen (454) Sequencing to identify stronger microsatellite candidate loci.