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## Breeding Behavior of Captive Vancouver Island Marmots (*Marmota vancouverensis*)

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**Abstract:** The future of the critically endangered Vancouver Island marmot (*Marmota vancouverensis*) hinges on a successful captive breeding and reintroduction program. A solid understanding of Vancouver Island marmot life history is crucial. Since wild marmots breed in underground burrows that are often inaccessible, the breeding behavior of most species is poorly understood. In the Vancouver Island marmot captive breeding program, above-ground nest boxes are used to mimic these burrows. Through the use of cameras installed in the nest boxes and enclosures of adult Vancouver Island marmot pairs housed at the Calgary and Toronto Zoos, we are studying behavior over the 2002 through 2004 breeding seasons. Behaviors are compared among nest boxes, enclosure areas, and above-ground observations from studies of wild Vancouver Island marmots. This will (1) provide information on behaviours that occur in captivity, and (2) help us form hypotheses about behaviors that occur among wild animals when they are underground. Both of these parameters may have implications for future reintroductions. Additionally, behavioral differences between animals that were successful or unsuccessful in producing pups are being identified and will be tested against environmental and management variables. Endocrine profiles of individual Vancouver Island marmots will also be taken into account during analyses. Our preliminary results indicate that (1) 75% of matings occur in the nest box, (2) the average duration of matings occurring in the nest box is longer in successful pairs than in unsuccessful pairs, with successful pairs engaging in a number of matings lasting  $\geq 10$  minutes, and (3) 'short' matings ( $< 10$  minutes) are primarily surrounded by affiliative behaviors such as greeting and play-fighting while 'long' matings ( $\geq 10$  minutes) are primarily surrounded by non-social behaviors such as eating and resting. Our aim is that the final results will help breeding facilities manage animals in a manner that fulfills the genetic and demographic goals of the breeding program while producing sufficient animals for reintroduction.

**Key Words:** Vancouver Island marmot, *Marmota vancouverensis*, captive breeding, breeding behavior, British Columbia