

SEXUAL SEGREGATION IN SPIDER MONKEYS (*Ateles geoffroyi*) AT RUNAWAY CREEK NATURE RESERVE, BELIZE.

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Sexual segregation, the separation of males and females socially, spatially, or by habitat, has been documented and recognized as an important part of the socio-ecology of many vertebrates (i.e. ungulates, bats, whales, and fish). However, it has not been quantified or systematically examined in any primate species. We investigated temporal patterns of sexual segregation in a population of spider monkeys in Belize. Using data collected over a 23 month study, we used the Sexual Segregation and Aggregation Statistic to test three hypotheses: *i*) the sexes segregate, *ii*) the sexes aggregate, or *iii*) the sexes group at levels expected by random association. Spider monkeys live primarily in sexual segregated societies. We found that aggregation never occurred in this population. Significant segregation accounted for 65% of all months; however the degree of segregation varied monthly and between the two study years. Males and females associated at random during two periods of the year: May-June and December-January. We examined two possible ecological factors contributing to sex segregation and suggest that variation in monthly food availability and seasonal birthing peaks may contribute to these patterns. The separation of males and females is not yet identified as a factor underlying fission-fusion dynamics. Sexual segregation might reveal an important new source of variation in primate social grouping patterns.

Keywords: spider monkeys, sexual segregation, social organization