

FEATURE ARTICLES

REPRODUCTIVE SEASONALITY OF SEVEN NEOTROPICAL PASSERINE SPECIES
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Abstract. We investigated gonad sizes, nesting patterns, and plasma hormone concentrations of seven Neotropical passerine species in a lowland tropical rainforest (Panama) at 9°N latitude over at least one annual cycle. All species had entirely regressed gonads for several months of the year (October to January), coinciding with the end of heavy rainfall. Gonadal recrudescence started in the dry season between January and March. Nesting began earlier (March) for open-habitat species than for forest-interior species (April), and lasted until August or December, respectively. Species differed widely in maximal relative testes sizes and reproductive hormone concentrations, but both measures were lower than in most temperate-zone species. Although we cannot provide a phylogenetically controlled comparison, polygynous and group-living species appeared to have larger testes than monogamous species, possibly indicating sperm competition. Testosterone concentrations were highest in polygynous species, intermediate in socially monogamous species, and lowest in a group-living species, indicating that testosterone is more influenced by social systems than by gonad cycles. Tropical birds may generally maintain low testosterone concentrations and relatively small gonads to decrease overall energy expenditure compared to temperate-zone relatives.

Key words: breeding season, gonad cycles, hormones, Panama, rainforest, seasonality, tropical.