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Recommended Citation
Hope A. Sheets (2002). Size-Frequency Distribution Of Leopard Frogs (Rana Ppiens_Complex) From The Late Tertiary Pipe Creek Sinkhole, Grant County, Indiana.
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SIZE-FREQUENCY DISTRIBUTION OF LEOPARD FROGS (*Rana pipiens* COMPLEX) FROM THE LATE TERTIARY PIPE CREEK SINKHOLE, GRANT COUNTY, INDIANA
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The Pipe Creek Sinkhole fossil assemblage preserves a continental fossil vertebrate fauna of Late Tertiary (c. 5 million years before present) age. The fauna is dominated by aquatic species, particularly leopard frogs (*Rana pipiens* complex). Unconsolidated sediments from the deposit were wet-sieved, yielding a large collection of ilia (hip bones—the most diagnostic skeletal element for frogs). I digitally scanned 202 *R. pipiens* left ilia from Pipe Creek sinkhole, as well as another 27 ilia of *R. pipiens* of known snout-vent length (SVL) from a modern population. For better precision, I created a template to keep everything at the same scale. From the scanned images I measured the acetabulum (hip socket) vertical diameter (AD), a parameter that could be measured on most fossil specimens. AD was positively correlated with SVL (\( r = 0.557, p < 0.003, n = 27 \)) in the modern frogs, indicating that AD is a suitable proxy for frog size. The size-frequency distribution of AD in Pipe Creek Sinkhole leopard frogs suggests three possible modes. If the Pipe Creek Sinkhole leopard frogs represent a single species, these modes probably reflect a mixture of age classes and sexual dimorphism (female frogs larger than males). The effects of sex and age might be disentangled by a skeletochronological study of the Pipe Creek Sinkhole frog ilia.