

Burmese long-tailed macaque stone-tool use catalogued

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Eighty percent of a population of Burmese long-tailed macaques on an island in southern Thailand use stone and shell tools to crack open seafood, and do so using 17 different action patterns, according to a study published May 13, 2015 in the open-access journal *PLOS ONE* by Amanda Tan from Nanyang Technological University, Singapore, and colleagues, under an 8 year field project led by Michael D Gumert, also from NTU.

The authors of the study explored variation in how Burmese long-tailed [macaques](#) used percussive stone and shell tools to hammer coastal foods on Piak Nam Yai and Thao Islands in Laem Son National Park, Thailand. First, they catalogued the parts tool that macaques used for hammering: the flat face, narrow edge, or point. Next, they categorized the action patterns the macaques used during the hammering, including hand use, posture, and striking motion, for over 600 tool-uses across 90 individuals. Once the tool use and action patterns were identified, they observed over 100 macaques in over 3000 time points on Piak Nam Yai Island's coasts, to determine the proportion of individuals using each tool and action pattern.

Analysis of the observation showed that 80% of macaques used tools, supporting past findings from the project, each employing one to four different action patterns, and a total of 17 different action patterns in the population. Most commonly, the macaques used one-handed hammering with the points of smaller tools to crack open sessile rock oysters that required precision striking, and used one- or two-handed hammering

with the faces and edges of larger tools to crack unattached shellfish that had to first be placed on anvils, reflecting different techniques for different foods.

The authors suggest that cataloguing the tools and actions involved in macaque tool use lays the foundation for future studies, such as understanding how macaque tool use develops, and comparing macaque tool use with that of other stone-[tool](#)-users in the primate lineage.

More information: Tan A, Tan SH, Vyas D, Malaivijitnond S, Gumert MD (2015) There Is More than One Way to Crack an Oyster: Identifying Variation in Burmese Long-Tailed Macaque (*Macaca fascicularis aurea*) Stone-Tool Use. *PLoS ONE* 10(5): e0124733. [DOI: 10.1371/journal.pone.0124733](https://doi.org/10.1371/journal.pone.0124733)

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