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KEY WORD : BATS / BAT ROOST / BAT SOUND / ECHOLOCATION

SARAN SAMANTARATH: AN APPROPRIATE TECHNIQUE FOR DESIGNING ALTERNATIVE ROOSTS AND USING PLAYBACK RECORDED BAT SOUND TO ATTRACT LESSOR YELLOW BAT (*SCOTOPHILUS KUHLLII*). THESIS ADVISORS: SURAPOL DUANGKAE, M.Sc. MUNTREE JLSAMAI, M.D. KASAME KULPRADIT, M.Sc. SOMPONG THONGCHAI, M.Sc., SOMPOAD SRIKOSAMATARA, Ph.D. 142 p. ISBN974-662-031-2

Bats, a highly evolved and diverse group of mammals, are an important part of the ecosystem. Bats have, however, become endangered due to lack of natural roosting sites. This experimental study dealt with alternative artificial roosts and methods of motivating, *Scotophilus kuhlii*, common yellow bats, to inhabit such roosts. Two types of roosts, one made of non-processed para rubber wood and the other made of aerated autoclave lightweight concrete (AAC) were tested. These roost types correspond to types of human civilization: wood to wood or water civilization and AAC to stone or land civilization. Sound that was recorded from a group of the same bat species was used to motivate the bats.

The findings of this study showed that roost type AAC or wood had no difference in the number of bats choosing to live in the roosts, based on data collected during February–May 1998 (n=97) at the 99% level of confidence by 2-tail Wilcoxon's Signed Rank Test. Roosts with bat sounds attracted more bat than roosts without sounds, at the 99% level of confidence by 1-tail Wilcoxon's Signed Rank Test at the same time (n=97). Testing during February–December 1998 (n=272), showed that there were 161 days on which bats lived in a roost (59.19%), with a mean of 9.46 bats /day.

This experimentation process and instruments can be applied with other valuable animals like *Tadarida plicata* (Free-tail bats) and *Aerodramus fuciphagus* (Edible-nest Swiftlets). It may also be used in conducting a census of bats. The experiment may have a role in developing the "New Theory" in alternative agriculture. In the future, bat roosts should be built with natural materials, with attention given to appropriate dimensions of entrance based on size of bats. The roosts should be equipped with bat sound players. Furthermore, GIS about bats in Thailand and an animal sound archive, as well as conservative bat- habitat zoning should be established. Bats, other creatures and mankind should live together in the world peacefully.