CHARACTERIZATION OF NONINVASIVE MONITORING REPRODUCTIVE ENDOCRINE PROFILES FROM THE CAPTIVE AND FIELD EURASIAN OTTER (*LUTRA LUTRA*) IN TAIWAN

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Eurasian otter *(Lutra lutra)* has been categorized as endangered animal in "Wildlife conservation Act" of Taiwan. Among Taiwan area Kinmen island is the only left area with stable population of this species. However Eurasian otter do not reproduce well in captivity. The Reproductive profile in Eurasian otter is difficult to quantify because little is known about the complex endocrine interactions controlling in the reproductive cycle. Our main objectives were to characterize endocrine parameters by longitudinal monitoring of fecal hormone metabolites. In this study, we attempted to identify seasonality breeding, estrus and pregnancy states, sexual maturity, and predict the date of birth in Eurasian otters by examining fecal hormones and behavior. Fecal samples were collected from 3 captive Eurasian otters (1 female and 2 male) housed at Taipei zoo (from Sub-adults to adulthood) and field samples were collected from Kinmen Qionglin Reservoir (2017-2018) . Noninvasive methods were validated for monitoring fecal metabolites of reproductive hormone (Estrogen, Progesterone, Testosterone) by EIA.

In captivity, fecal estrogens and progesterone in females did not vary by season or month, nor did fecal testosterone in males. During this study, the female one became pseudopregnany one time and pregnant two times. Her sexual maturity age is at 3 years old, total gestation length was 56 and 58 days, and without delayed implantation. Pseudopregnany exhibited a similar progesterone peak of 55 days which could not be differentiated from pregnancy. Both pregnancy were characterized by a moderate rise in fecal progesterone for 5days post ovulation followed by a marked increase. Due to insufficient study size in the field sample, we could not see significant changes in the reproductive cycle during different seasons. These findings represent the first comprehensive information on normative endocrine of the Eurasian otter in Taiwan. However due to difficulty fecal collection in the wild field, more survey is necessary in the future study.