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SPRAINT SURVEYS AND SPARSELY POPULATED OTTER POPULATIONS

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Abstract: Otters deposit spraint anointed with anal sac secretions in prominent sites in their territory. Otters have been shown to be able to distinguish individuals from their spraint, including distinguishing their own spraint from that of others. They may use these to signal resource use to other otters. Because they plainly have significance to the animals, when attempting to encourage otters back into an area, spraints should not be wholly removed for analysis as they may be of critical importance in encouraging an otter to stay.

The spraints or scats of an otter are normally deposited on easily recognised sites, on grassy mounds near the sea shore, at the mouths of rivers, under bridges and at the entrances to holts (Conroy & French, 1985, 1987). For many years they have been used not only for survey work, (Green & Green, 1980, 1997) but also as a means of analysing otter diet (Watson & Hewson, 1973; Veen, 1975; Watson, 1978; Watt, 1991, 1995; Webb, 1975).

Like many carnivores, the otter has scent-producing organs and an anal scent is deposited on this spraint. However, relatively little is known of the chemistry of social odours in carnivores (Albone, 1984) and the actual communication function is the subject of much debate. There have been many proposed functions, including individual or group recognition, and these are not attributed to a single chemical compound but to differences in the relative concentrations of the constituents of this complex chemical mixture. These differences have not only been reported in the Eurasian otter (*Lutra lutra*) (Trowbridge, 1983), but also in the stoat (*Mustela erminea*) (Brinke *et al*., 1983), brown hyena (*Hyaena brunnea*) (Mills *et al*., 1980), red fox (*Vulpes vulpes*) (Albone & Perry, 1976) and the European badger (*Meles meles*) (Gorman *et al*., 1984).

The exact chemical composition of spraints was analysed by Trowbridge (1983), who extracted the scent from the spraint using ether and subjected the extract to gas chromatography analysis. The scent was found to consist of over 100 separate compounds and one compound was found to form a high proportion in all samples; this was also less volatile and lasted a long time, and so she concluded that this might be the compound that spelled "otter" to other animals.

Using trials with captive otters, Trowbridge (1983) also found that they were able to distinguish individuals by smelling the spraint, and that over 80% of the spraints could be accurately identified by the captive otter. Mason & Macdonald (1980) at Loch Broom in north west Scotland used the spraint of a captive otter and put it on spraint piles in the natural environment to compare how many of these sites were visited compared to some controlled areas. They found that the wild otters responded to these foreign spraints by sprainting more often on these piles than on the controlled sections.

In Russia, Rozhnov (1994) found that the Eurasian otter was able to distinguish between its own spraint and that of other otters and from their results showed that this could be up to 30 days after the spraint was deposited.

However, Kruuk (1992) suggested that otters use scent markings to signal their use of resources like feeding patches and freshwater pools, and concluded that spraints may only have a communication function for a short time of not more than 4 days after deposition.

While the debate about the exact significance of spraints may go on for many years, it cannot be questioned that they do play an important role in the social organisation of otters. The otter is a complex creature living a complex life in which the social order is maintained by the transmission of information between individuals by vision, sound or in the odour on spraint. In many surveys of otters in sparsely populated areas the spraint is the only evidence found of the otter being present (Strachan *et al*., 1990; Andrews *et al*., 1993). In certain areas of England spraints are taken on a regular basis for analysis, as in East Anglia and County Durham (Lovett, personal communication); the same is true for certain areas in America where the re-introduction of the American river otter is taking place (Berg, personal communication).

If, as all scientific evidence suggests, spraint does have a major significance in otter communication and is important to the social organisation of the otter, then we are in danger of stopping the otter from recolonising sparsely populated areas by continually removing the spraint. For example, if a male otter is in a particular county of England and spraints are continuously taken, then any other otter transient. It would be a logical conclusion that in areas where habitat improvements are being done, including the construction of artificial holts to encourage the otter to move back, then the removal of spraints for analysis should be discouraged. By leaving them they may be of critical importance to encourage an otter to stay in that area.

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Resúmen:

Relevamientos de fecas y poblaciones esparcidas de nutrias. Las fecas de las nutrias son depositadas normalmente en sitios fácilmente reconocibles, y se utilizan para realizar relevamientos y estudios de dieta. Como otros carnívoros, las nutrias poseen órganos odoríferos, pero poco se conoce sobre la química de los olores sociales en carnívoros y la verdadera función de comunicación es objeto de debate. En el rastro (esencia) de las nutrias se han aislado más de 100 compuestos químicos diferentes, con uno, menos volátil, representado en alta proporción en todas las muestras. Nutrias en cautividad pueden distinguir entre individuos olfateando sus fecas, y se ha demostrado que nutrias en libertad responden a la presencia de fecas de extraños con una mayor frecuencia de marcaje con fecas. La nutria Eurasiática tiene la capacidad de discernir entre fecas de hasta 30 días del propio individuo o de extraños. Sin embargo, también se ha señalado que las nutrias usan las fecas como indicadores del uso de un recurso y que estas pueden tener función de comunicación por períodos de no más de 4 días. A pesar de la discusión sobre la función de sus fecas, es incuestionable que estas juegan un rol importante en la organización social de las nutrias. En muchos relevamientos de nutrias las fecas son la única evidencia de su presencia, y en ciertos lugares de Inglaterra y Norteamérica éstas se recogen regularmente para análisis. Si las fecas juegan un papel importante en la comunicación y la organización social de las nutrias, corremos el riesgo de detener la recolonización de áreas poco pobladas por nutrias al extraerlas constantemente. Es lógico señalar que en áreas en las que se están haciendo mejoras en el hábitat, como la construcción de refugios, para el regreso de las nutrias, la remoción de fecas debe ser desestimulada. Dejar las fecas puede ser de importancia crítica para estimular a una nutria a mantenerse en dicha área.