

Utilisation of anthropogenic food by red foxes (*Vulpes vulpes*) in Britain as determined by Stable Isotope Analysis

Data Description

The main data file contains the following columns: fox sample ID, urban code (i.e. rural or urban), Location ID (to account for the non-independence between some datapoints), whisker carbon isotopes ($\delta^{13}\text{C}$), whisker nitrogen isotopes ($\delta^{15}\text{N}$), season (spring, summer, autumn and winter), sex (male or female) and age (subadult: < 12 months, or, adult: ≥ 12 months).

Urban_Code was based on an impervious surface density value of $\geq 25\%$ within a 500 metre radius of the fox location: 0 = rural; 1 = urban.

Season: 1 = spring (Mar to May), 2 = summer (Jun to Aug), 3 = autumn (Sep to Nov), 4 = winter (Dec to Feb).

Sex: 0 = male, 1 = female Age: 0 = subadult, 1 = adult

Missing values:

Season: n = 2

Age: n = 1

Food sources

The estimated isotopic ratios of each food source (with references)

Food Resource	Stable Isotope Values (SD)	References
Human Food	$\delta^{13}\text{C} = -23.32\text{‰}$ (0.62) $\delta^{15}\text{N} = 4.11\text{‰}$ (0.81) (n = 58)	Values calculated by subtracting human hair TDFs ($\delta^{13}\text{C} = 2.50\text{‰}$; $\delta^{15}\text{N} = 5.15\text{‰}$) from the mean stable isotope values of UK human hair. (These values were: $\delta^{13}\text{C} = -20.82\text{‰}$ (SD = 0.62), $\delta^{15}\text{N} = 9.26\text{‰}$ (SD = 0.81)). O'Connell & Hedges (1999); O'Connell et al.

		(2012); Bol, Marsh & Heaton (2007); O’Connell et al. (2001)
Pet Food	$\delta^{13}\text{C} = -24.42\text{‰}$ (1.58) $\delta^{15}\text{N} = 4.00\text{‰}$ (0.87)	Cecchetti et al. (2021)
	(n = 167)	
Mammals	$\delta^{13}\text{C} = -26.29\text{‰}$ (2.35) $\delta^{15}\text{N} = 6.40\text{‰}$ (1.64)	Cecchetti et al. (2021)
	(n = 164)	
Birds	$\delta^{13}\text{C} = -25.23\text{‰}$ (1.12) $\delta^{15}\text{N} = 6.48\text{‰}$ (1.40) (n = 61)	Cecchetti et al. (2021)
Invertebrates	$\delta^{13}\text{C} = -26.52\text{‰}$ (1.55) $\delta^{15}\text{N} = 2.19\text{‰}$ (3.89)	A. Robertson (Pers. Comm, based on Robertson (2012))
	(n = 249)	
Fruit	$\delta^{13}\text{C} = -26.66\text{‰}$ (1.98) $\delta^{15}\text{N} = -2.63\text{‰}$ (2.67)	A. Robertson (Pers. Comm, based on Robertson (2012))
	(n = 95)	

Code/Software

The mixing model was computed in R, using the package *SIMMR* (Govan et al., 2023)

[Ver: 0.5.1.216]

All statistical tests other than the PERMANOVA tests were conducted in R ver 4.3.2 (R Core Team, 2023); the PERMANOVA tests were conducted in MATLAB (2023) using the Fathom Toolbox (Jones, 2017).

References:

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