Fecal results

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Fecal samples from control hares had an average of 10.63 ± 1.71% protein, 1.09% less than samples from food supplemented hares (p = 0, t = 4.24, df = 250, R2 = 0.07; Figure 2B). Fecal samples collected in January were 0.66% higher in protein than those collected in March (p = 0.019, t = -2.37, df = 250, R2 = 0.02). Using the 148 cases where fecal samples were collected from a hare with weekly foraging data, fecal protein showed a slightly negative response to foraging effort (p = 0.018, t = -2.39, df = 146, R2 = 0.04).

The most parsimonious models for explaining diet quality, or fecal protein content, were models D2 and D4, which contained twig biomass and temperature (R2 = 0.14), and hare density and temperature (R2 = 0.13), respectively (Table 2). Model D2 found that as twig availability increased from 14 to 36 kg/ha, fecal protein increased from 10.1% to 11.4% (p = 0.02, β = 0.06 ± 0.03 ; Figure 5A). While fecal samples from food supplemented had 1.88 ± 1.2% higher protein than controls across the range of twig availability, there was no difference between the two groups’ responses to twig biomass (p = 0.9998; Figure 5A). There was a significant interaction between food treatment and ambient temperature (p = 0.0095). As weekly temperatures increased from -30 to 6°C, food supplemented hares increased their fecal protein by %, always staying above the 10% threshold, while control hare fecal protein decreased by %, from % to % (Figure 5B). Model D4 showed that hare fecal protein content decreased slightly as hare density increased, about 0.87 ± 0.305 for every 0.5 hare/ha increase. As the hare population increased from 0.2 to 1.1 hares/ha, fecal protein decreased from 11.5% to 10.4%, and food treatment did not affect the slope of this response (p = 0.71; Figure 5C).