

Area Lag (yr)	Models	Proportion	$w_i$
1	16	0.25	0.99
2	16	0.25	0.01
3	16	0.25	0.00
4	16	0.25	0.00

**Table S2.** The relative importance ( $w_i$ ) of the lag in areal disturbance due to well pads as a predictor of the count of males sage-grouse at individual leks. The relative importance is across all models with a lek distance of 0.8, 1.6, 3.2 and 6.4 km and the Pacific Decadal Oscillation index lagged one to four years.