

Hanley, Z. L., Cooley, H. S., Maletzke, B. T. and Wielgus, R. B. 2018. Forecasting cattle depredation risk by recolonizing gray wolves. – Wildlife Biology 2018: wlb.00419.

Appendix 1

Table A1. Generalized linear mixed models including forest cover initially used to assess cattle depredation risk by wolves in Idaho and Montana from 1991–2008. Models were evaluated based on Akaike’s information criterion for small sample sizes (AICc). Variable code descriptions are located in Table 1. The change in AICc values between the top model and the preceding models (Δ AICc), degrees of freedom (df), and model weight (w_i) are also included.

| Model | Variables | AICc | Δ AICc | df | w_i |
|------------------|--|-------|---------------|----|--------|
| FOREST-CATTLE | FOREST + CATTLE_abund + (1 PACK) | 345.4 | 0.0 | 4 | 0.694 |
| LAND | FOREST + CATTLE_abund + PREY + CATTLE_abund*PREY + (1 PACK) | 347.5 | 2.2 | 6 | 0.235 |
| PACK-LAND | PACK_TOTAL + REPRODUCED + PREY + CATTLE_abund + FOREST + CATTLE_abund \times PREY + (1 PACK) | 351.5 | 6.1 | 8 | 0.033 |
| CATTLE-YR1DEP | CATTLE_abund + YR_1DEP + (1 PACK) | 352.3 | 6.9 | 4 | 0.022 |
| FULL | PACK_TOTAL + REPRODUCED + YR_1DEP + MADULT_O + MBREED_O + MADULT_L + MBREED_L + CATTLE_ABUND + FOREST + PREY + CATTLE_ABUND \times PREY + MBREED_O \times PACK_TOTAL + MBREED_L \times PACK_TOTAL + YR_1DEP \times MADULT_L + (1 PACK) | 353.9 | 8.5 | 16 | 0.010 |
| CATTLE-MORTALITY | MADULT_O + MADULT_L + CATTLE_ABUND + YR_1DEP + YR_1DEP \times MADULT_L + (1 PACK) | 355.8 | 10.4 | 7 | 0.004 |
| PACK-FOREST | PACK_TOTAL + REPRODUCED + FOREST + (1 PACK) | 357.1 | 11.7 | 5 | 0.002 |
| PACK-CATTLE | CATTLE_abund + PACK_TOTAL + (1 PACK) | 359.6 | 14.3 | 4 | <0.001 |

| | | | | | |
|-----------|--|-------|------|----|--------|
| PREY | $CATTLE_abund + PREY + CATTLE_abund \times PREY + (1 PACK)$ | 360.3 | 15.0 | 5 | <0.001 |
| MORTALITY | $MADULT_O + MBREED_O + MADULT_L + MBREED_L + YR_1DEP + YR_1DEP \times MADULT_L + (1 PACK)$ | 368.1 | 22.7 | 8 | <0.001 |
| PACK SIZE | $PACK_TOTAL + REPRODUCED + PREY + MADULT_O + MBREED_O + MADULT_L + MBREED_L + MBREED_O \times PACK_TOTAL + MBREED_L \times PACK_TOTAL + (1 PACK)$ | 374.6 | 29.2 | 11 | <0.001 |
| WOLF | $PACK_TOTAL + REPRODUCED + MADULT_O + MBREED_O + MADULT_L + MBREED_L + MBREED_O \times PACK_TOTAL + MBREED_L \times PACK_TOTAL + (1 PACK)$ | 374.8 | 29.4 | 10 | <0.001 |
| PACK-PREY | $PACK_TOTAL + PREY + (1 PACK)$ | 374.9 | 29.5 | 4 | <0.001 |
| PACK | $PACK_TOTAL + REPRODUCED + (1 PACK)$ | 377.3 | 32.0 | 4 | <0.001 |

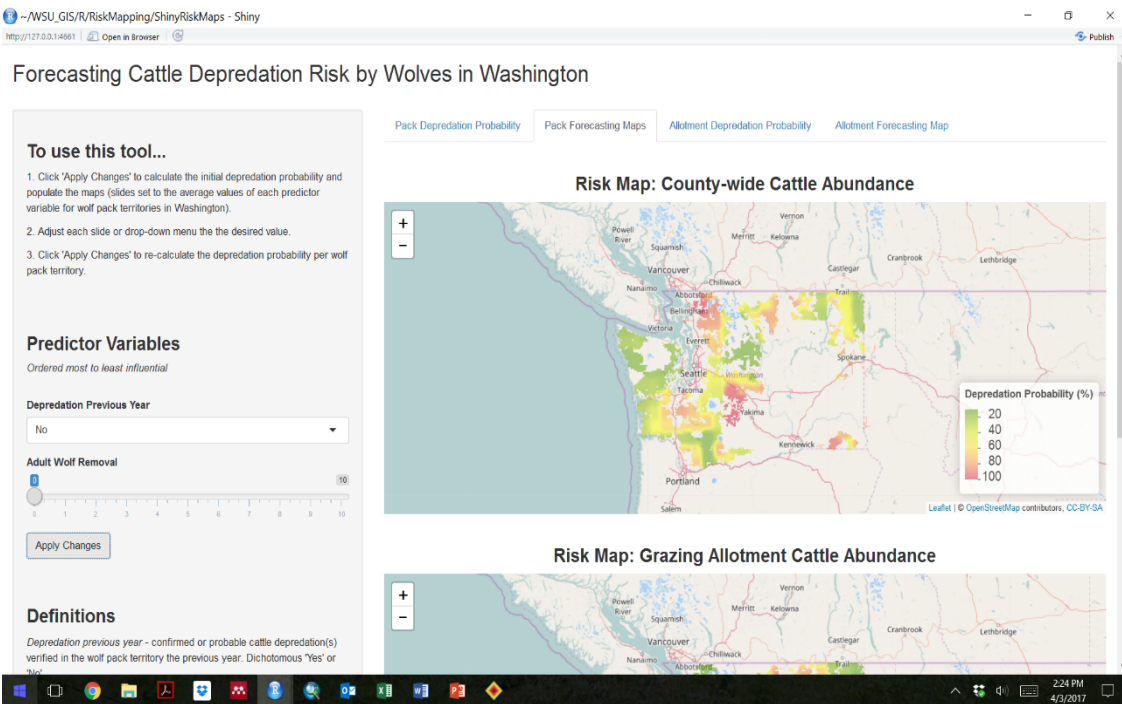
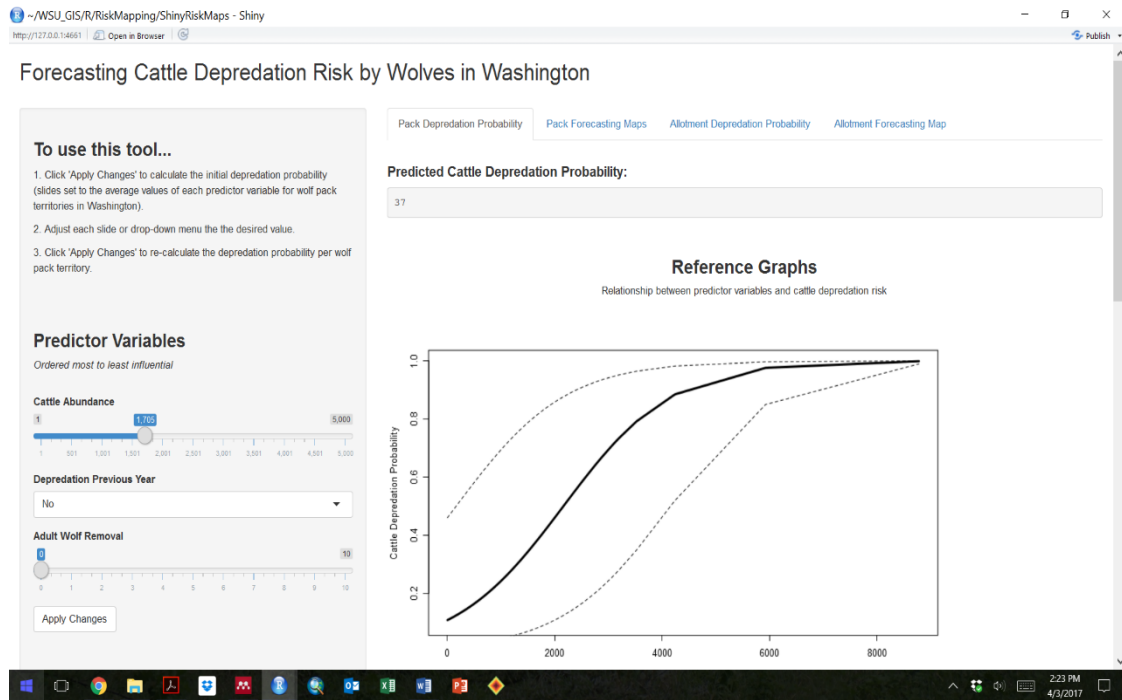


Figure A1. Computer screen shots of the interactive web page created using the Shiny package in RStudio (<<https://shiny.rstudio.com>>) to forecast cattle depredation risk by wolves among wolf pack territories in Washington, USA.