

Figure 1. The observed frequency of cumulative snow water equivalent values during October through April each winter, 1968-2006, at the Madison Plateau SNOTEL site. Asterisks indicate the distribution of annual snow pack during the 8-winter monitoring period (1999-2006) of the behavioral responses of wildlife in Yellowstone National Park, Montana and Wyoming, to snowmobiles and coaches by Borkowski et al. (2006) and this study.

Figure 2: Predicted Bison Response Probabilities
(distance = 50m, group size = 4 bison, 4 snowmobiles)

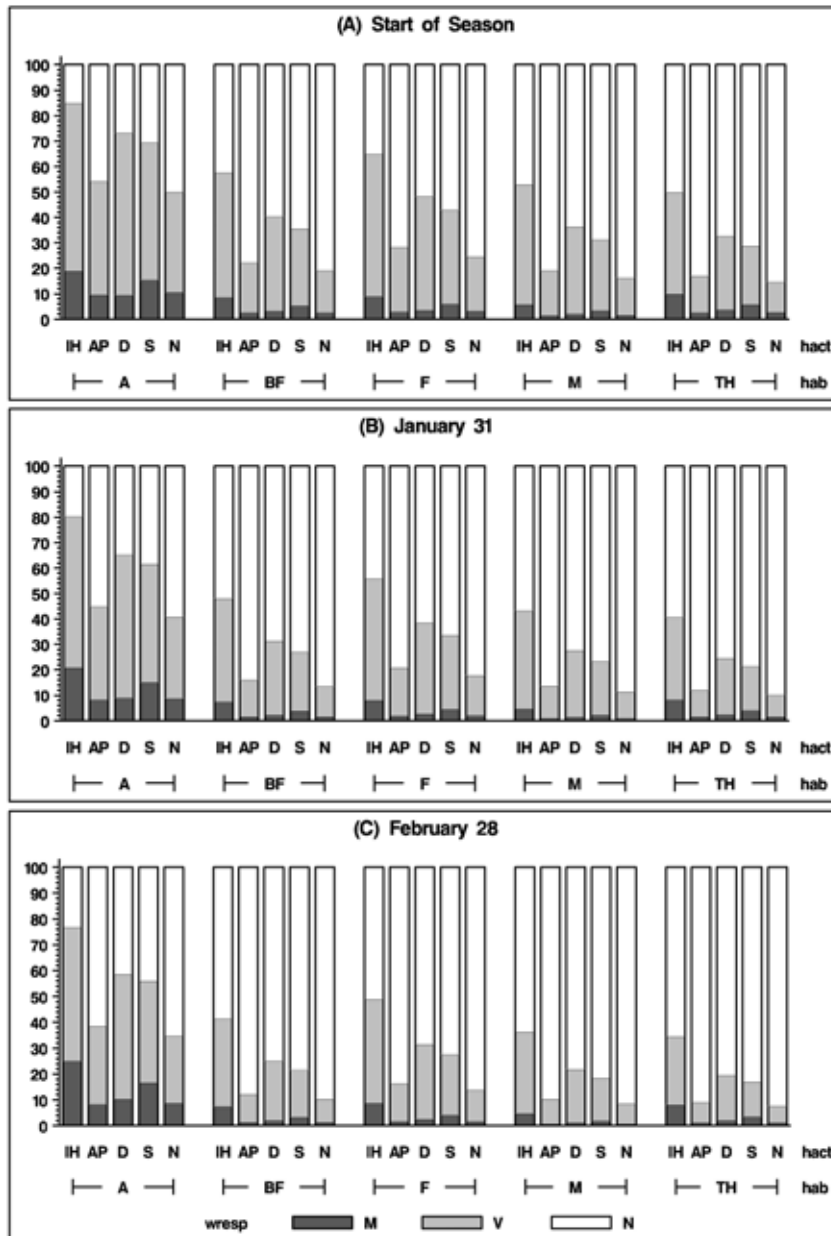


Figure 2. Predicted response probabilities for bison at the start of the winter season, on January 31, and on February 28. The responses of bison during human/wildlife interactions were examined at a distance of 50 meters, group size of 4 bison, and a group of 4 snowmobiles. Abbreviations are: wresp (most common bison response); M (movement); V (vigilance); N (no reaction/response); hact (human activity); IH (impede/hasten); AP (approach on foot); D (dismount vehicle); S (stop vehicle); hab (habitat); A (aquatic); BF (burned forest); F (unburned forest); M (meadow); and TH (thermal).

Figure 3: Predicted Bison Response Probabilities
(distance = 5m, group size = 4 bison, 4 snowmobiles)

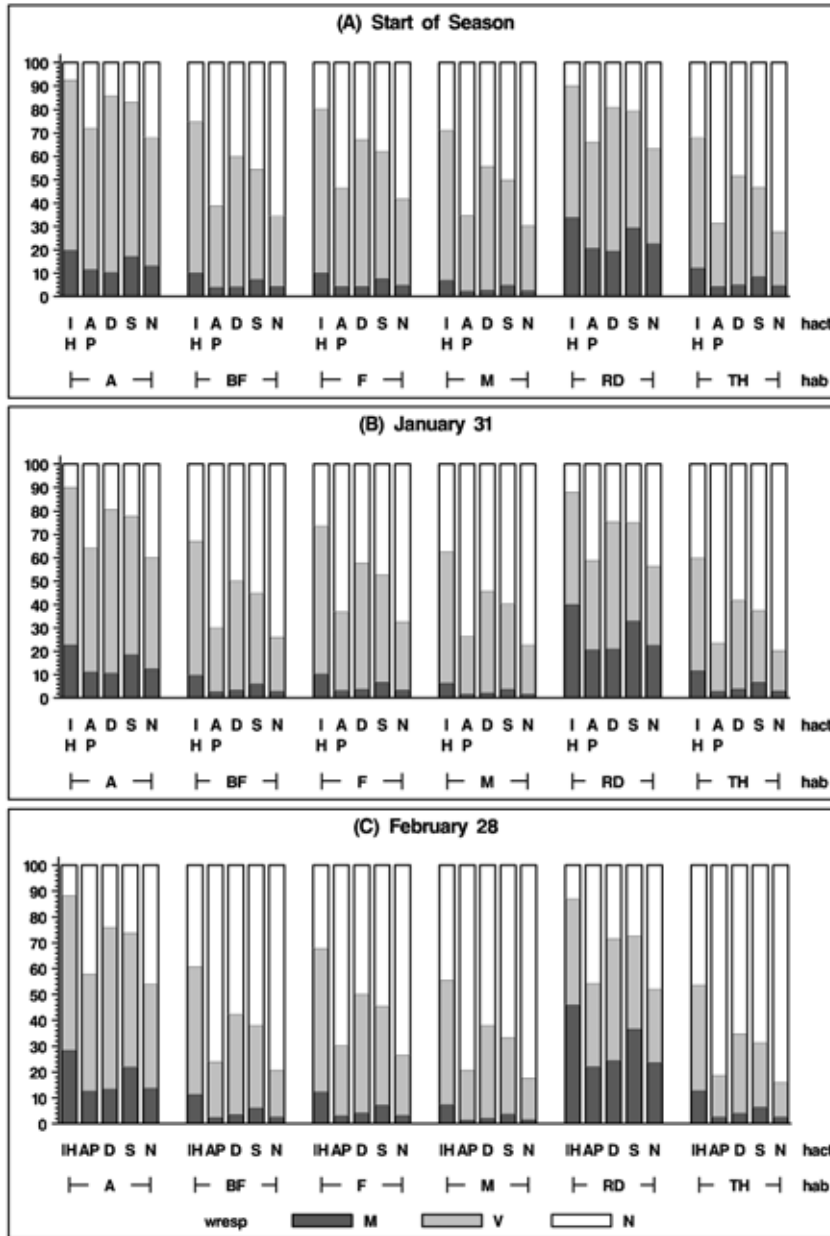


Figure 3. Predicted response probabilities for bison at the start of the winter season, on January 31, and on February 28. The responses of bison during human/wildlife interactions were examined at a distance of 5 meters, group size of 4 bison, and a group of 4 snowmobiles. Abbreviations are: wresp (most common bison response); M (movement); V (vigilance); N (no reaction/response); hact (human activity); IH (impede/hasten); AP (approach on foot); D (dismount vehicle); S (stop vehicle); hab (habitat); A (aquatic); BF (burned forest); F (unburned forest); M (meadow); and TH (thermal).

Figure 4: Predicted Bison Response Probabilities
(distance = 50m, group size = 8 bison, 4 snowmobiles)

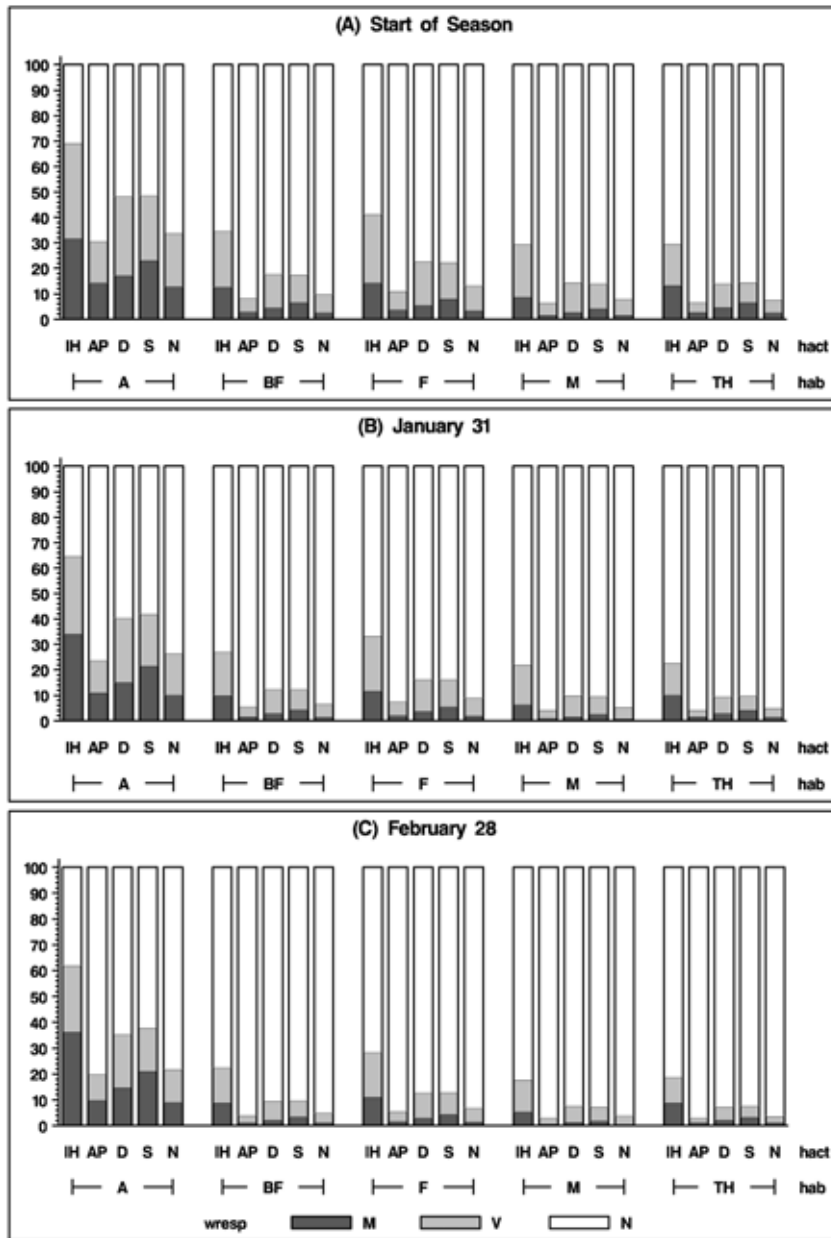


Figure 4. Predicted response probabilities for bison at the start of the winter season, on January 31, and on February 28. The responses of bison during human/wildlife interactions were examined at a distance of 50 meters, group size of 8 bison, and a group of 4 snowmobiles. Abbreviations are: wresp (most common bison response); M (movement); V (vigilance); N (no reaction/response); hact (human activity); IH (impede/hasten); AP (approach on foot); D (dismount vehicle); S (stop vehicle); hab (habitat); A (aquatic); BF (burned forest); F (unburned forest); M (meadow); and TH (thermal).

Figure 5: Predicted Bison Response Probabilities
(distance = 5m, group size = 8 bison, 4 snowmobiles)

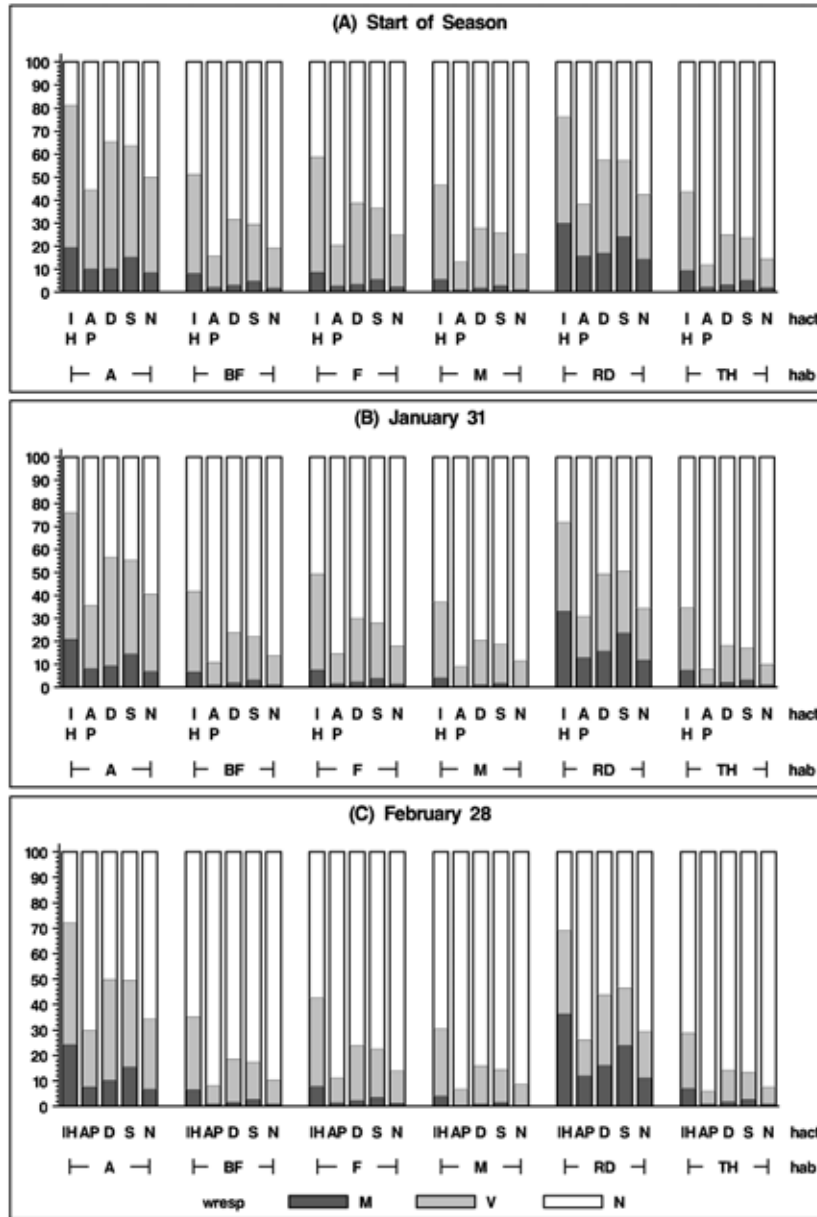


Figure 5. Predicted response probabilities for bison at the start of the winter season, on January 31, and on February 28. The responses of bison during human/wildlife interactions were examined at a distance of 50 meters, group size of 8 bison, and a group of 4 snowmobiles. Abbreviations are: wresp (most common bison response); M (movement); V (vigilance); N (no reaction/response); hact (human activity); IH (impede/hasten); AP (approach on foot); D (dismount vehicle); S (stop vehicle); hab (habitat); A (aquatic); BF (burned forest); F (unburned forest); M (meadow); and TH (thermal).

Figure 6: Predicted Elk Response Probabilities
(distance = 50m, group size = 4 elk)

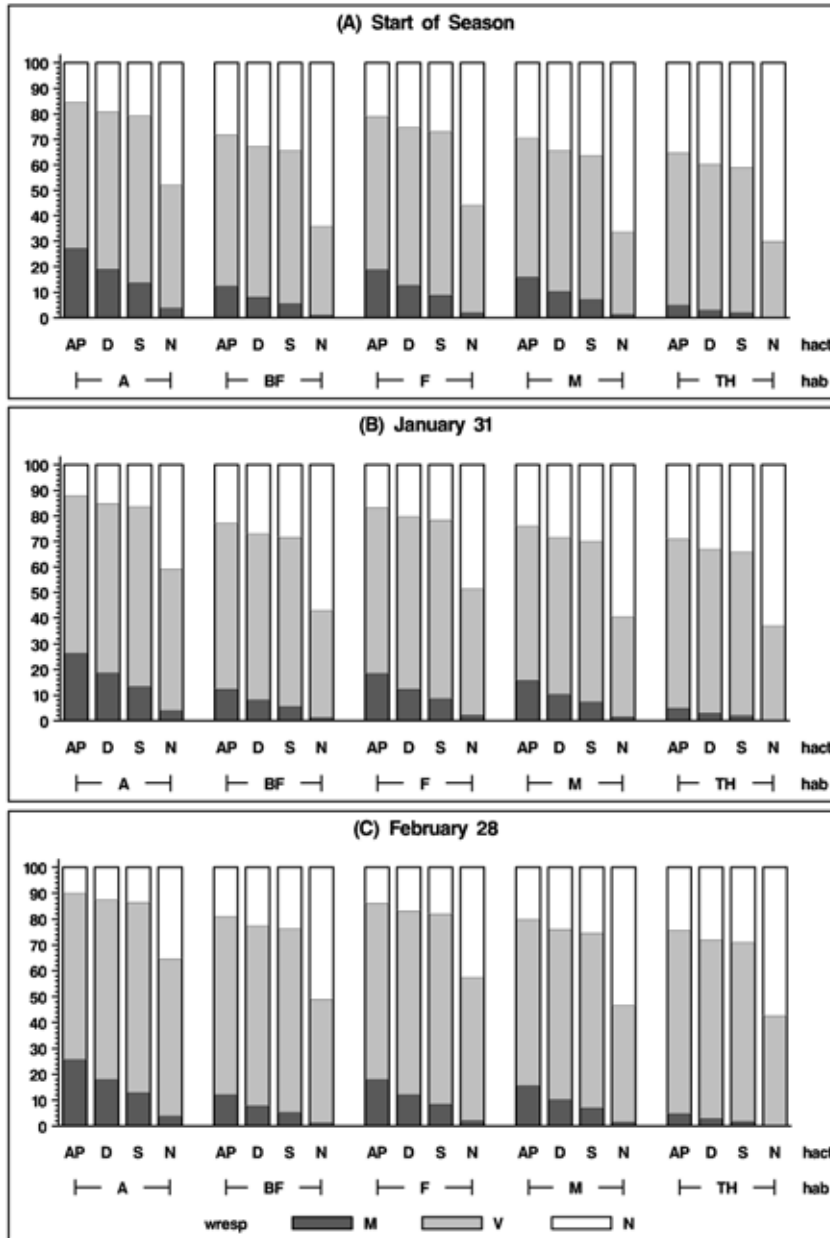


Figure 6. Predicted response probabilities for elk at the start of the winter season, on January 31, and on February 28. The responses of elk during human/wildlife interactions were examined at a distance of 50 meters and a group size of 4 elk. Abbreviations are: wresp (most common elk response); M (movement); V (vigilance); N (no reaction/response); hact (human activity); IH (impede/hasten); AP (approach on foot); D (dismount vehicle); S (stop vehicle); hab (habitat); A (aquatic); BF (burned forest); F (unburned forest); M (meadow); and TH (thermal).

Figure 7: Predicted Elk Response Probabilities
(distance = 5m, group size = 4 elk)

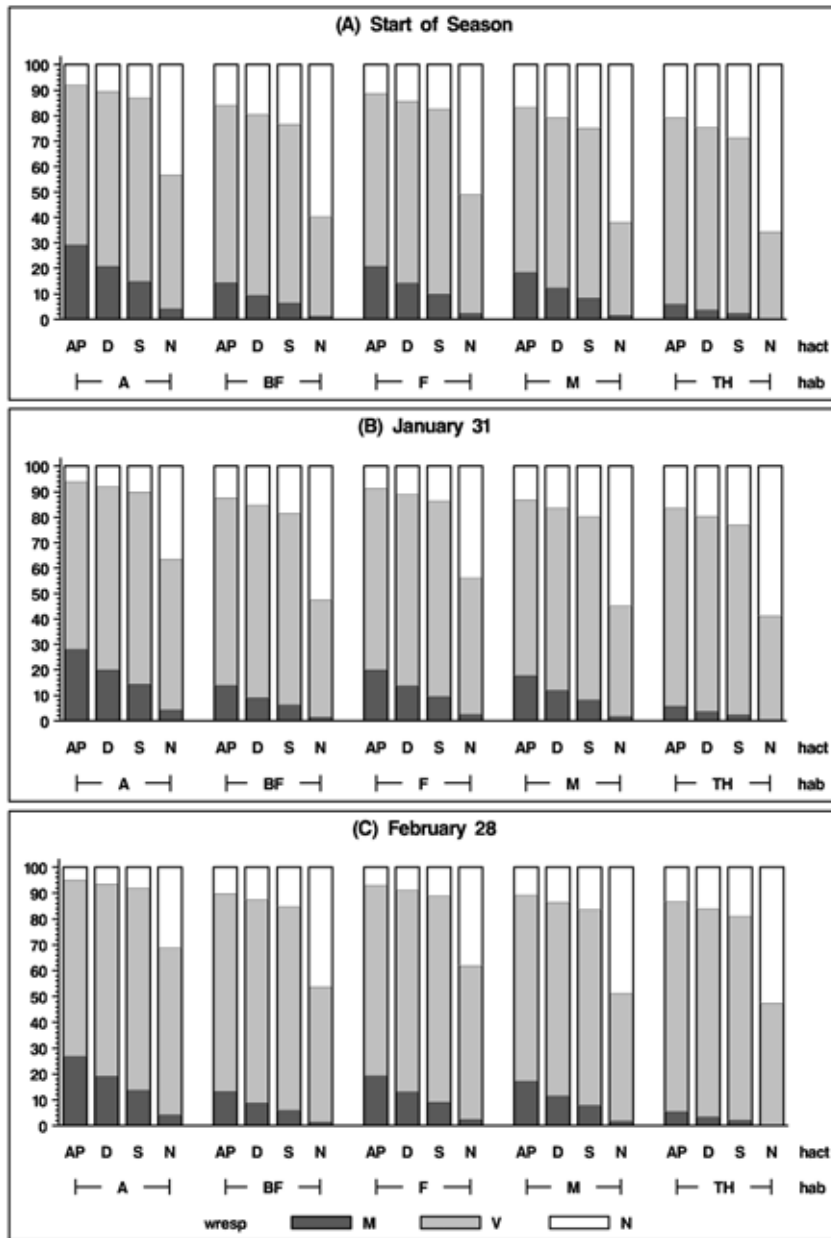


Figure 7. Predicted response probabilities for elk at the start of the winter season, on January 31, and on February 28. The responses of elk during human/wildlife interactions were examined at a distance of 5 meters and a group size of 4 elk. Abbreviations are: wresp (most common elk response); M (movement); V (vigilance); N (no reaction/response); hact (human activity); IH (impede/hasten); AP (approach on foot); D (dismount vehicle); S (stop vehicle); hab (habitat); A (aquatic); BF (burned forest); F (unburned forest); M (meadow); and TH (thermal).

Figure 8: Predicted Elk Response Probabilities
(distance = 50m, group size = 8 elk)

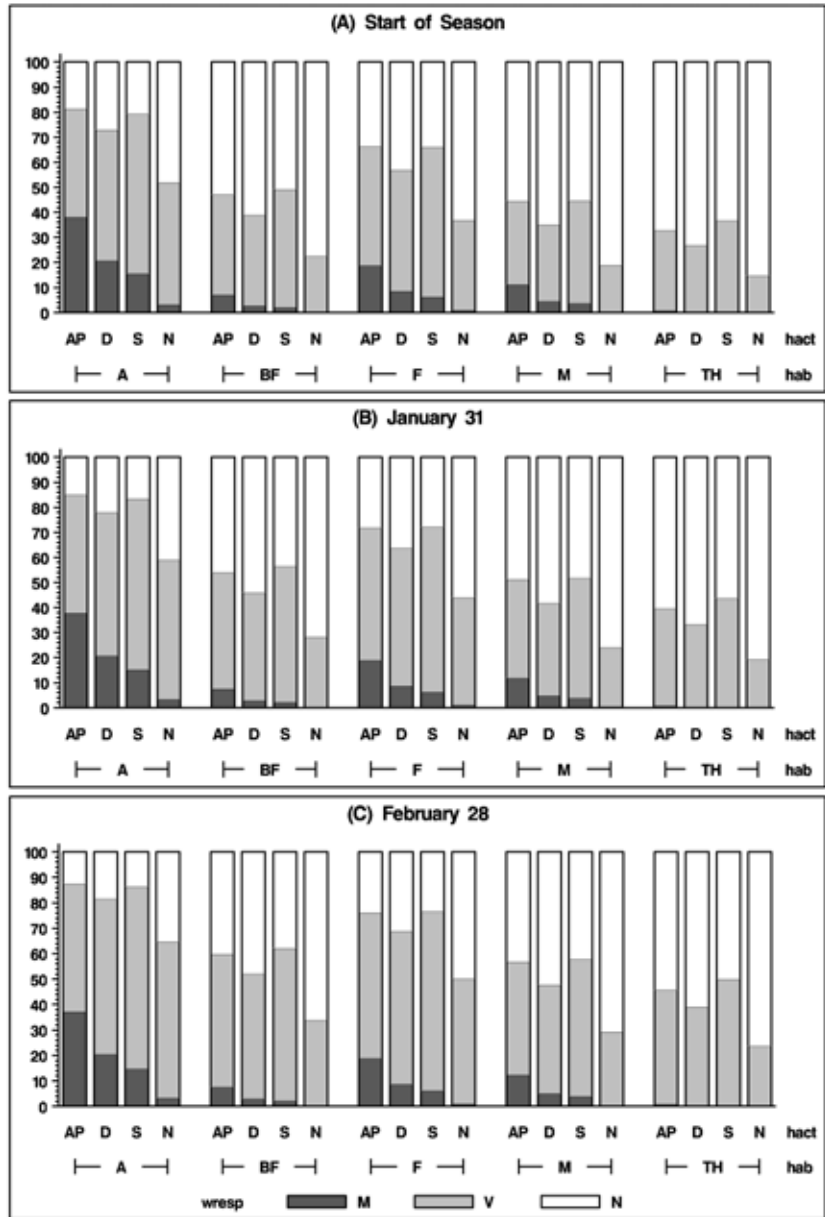


Figure 8. Predicted response probabilities for elk at the start of the winter season, on January 31, and on February 28. The responses of elk during human/wildlife interactions were examined at a distance of 50 meters and a group size of 8 elk. Abbreviations are: wresp (most common elk response); M (movement); V (vigilance); N (no reaction/response); hact (human activity); IH (impede/hasten); AP (approach on foot); D (dismount vehicle); S (stop vehicle); hab (habitat); A (aquatic); BF (burned forest); F (unburned forest); M (meadow); and TH (thermal).

Figure 9: Predicted Elk Response Probabilities
(distance = 5m, group size = 8 elk)

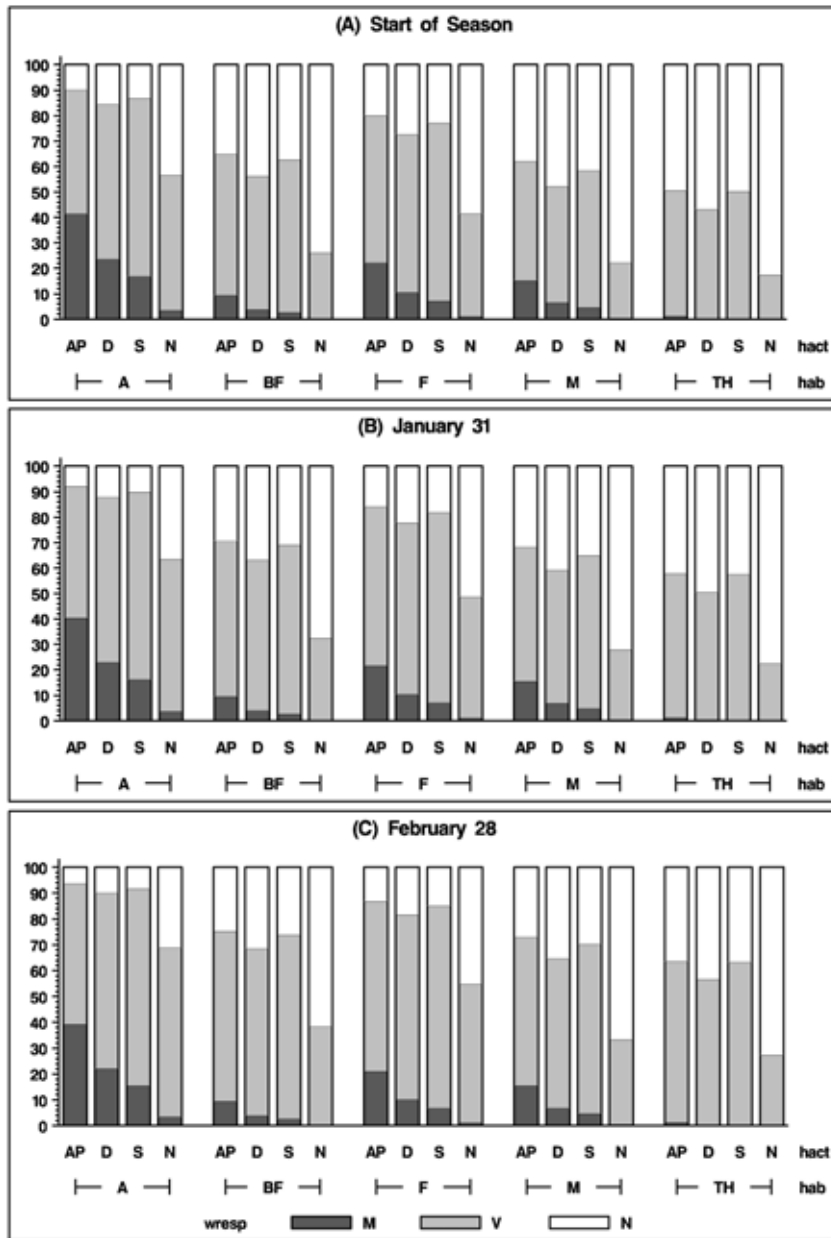


Figure 9. Predicted response probabilities for elk at the start of the winter season, on January 31, and on February 28. The responses of elk during human/wildlife interactions were examined at a distance of 5 meters and a group size of 8 elk. Abbreviations are: wresp (most common elk response); M (movement); V (vigilance); N (no reaction/response); hact (human activity); IH (impede/hasten); AP (approach on foot); D (dismount vehicle); S (stop vehicle); hab (habitat); A (aquatic); BF (burned forest); F (unburned forest); M (meadow); and TH (thermal).

Figure 10: Predicted Swan Response Probabilities
(1 snowmobile, group size = 1 swan)

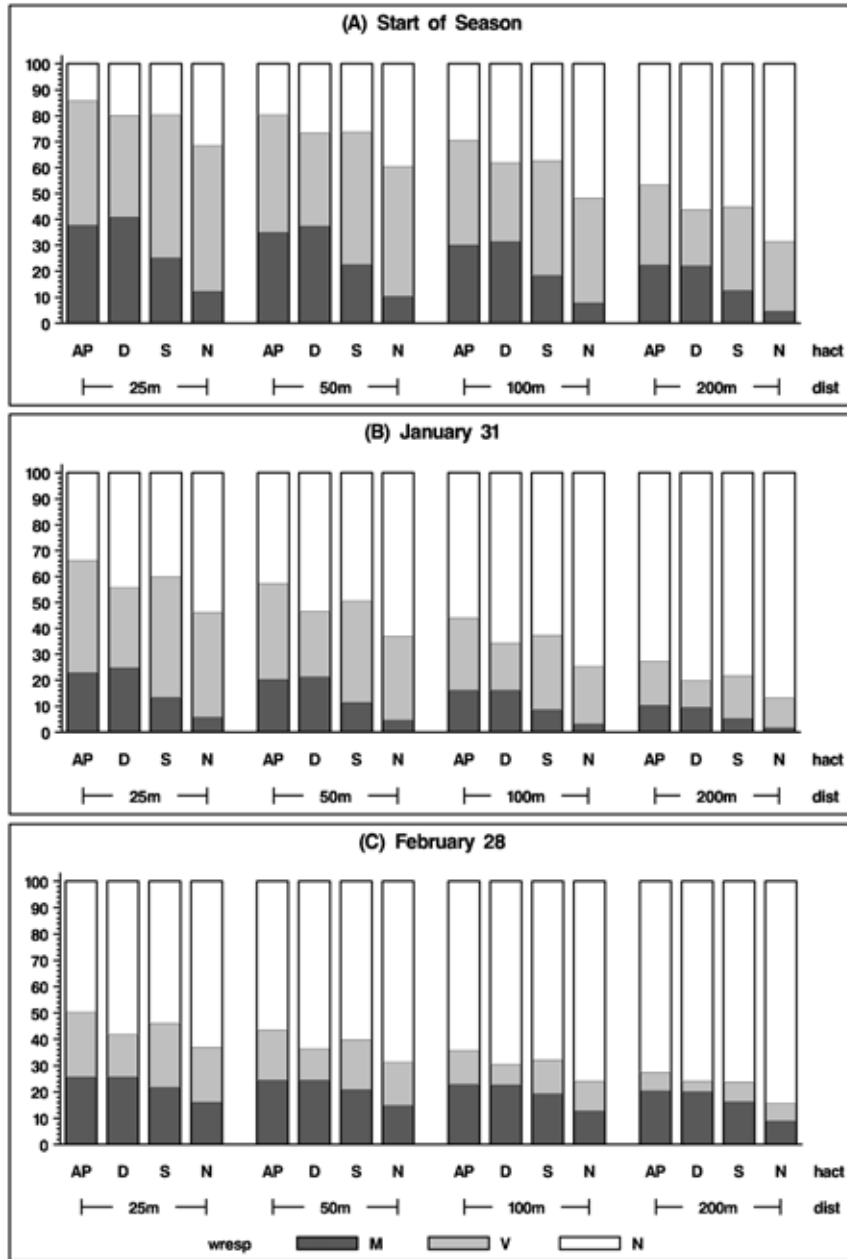


Figure 10. Predicted response probabilities for trumpeter swans at the start of the winter season, on January 31, and on February 28. The responses of swans during human/wildlife interactions were examined for 1 swan, 1 snowmobile, and distances of 25-200 meters. Abbreviations are: wresp (most common response); M (movement); V (vigilance); N (no reaction/response); hact (human activity); IH (impede/hasten); AP (approach on foot); D (dismount vehicle); S (stop vehicle); and dist (distance from road).

Figure 11: Predicted Swan Response Probabilities
(1 snowcoach, group size = 1 swan)

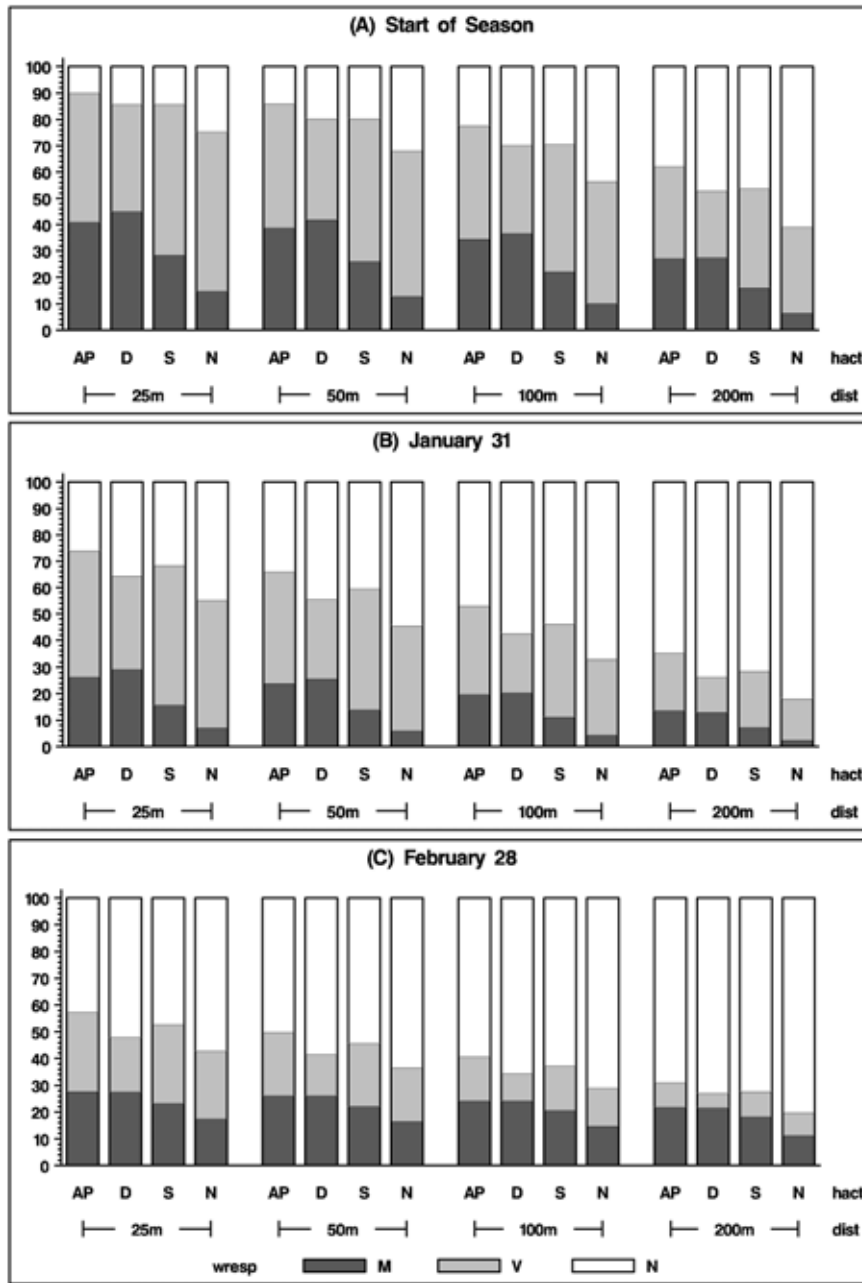


Figure 11. Predicted response probabilities for trumpeter swans at the start of the winter season, on January 31, and on February 28. The responses of swans during human/wildlife interactions were examined for 1 swan, 1 snow coach, and distances of 25-200 meters. Abbreviations are: wresp (most common response); M (movement); V (vigilance); N (no reaction/response); hact (human activity); IH (impede/hasten); AP (approach on foot); D (dismount vehicle); S (stop vehicle); and dist (distance from road).

Figure 12: Predicted Swan Response Probabilities
(1 snowmobile, group size = 7 swans)

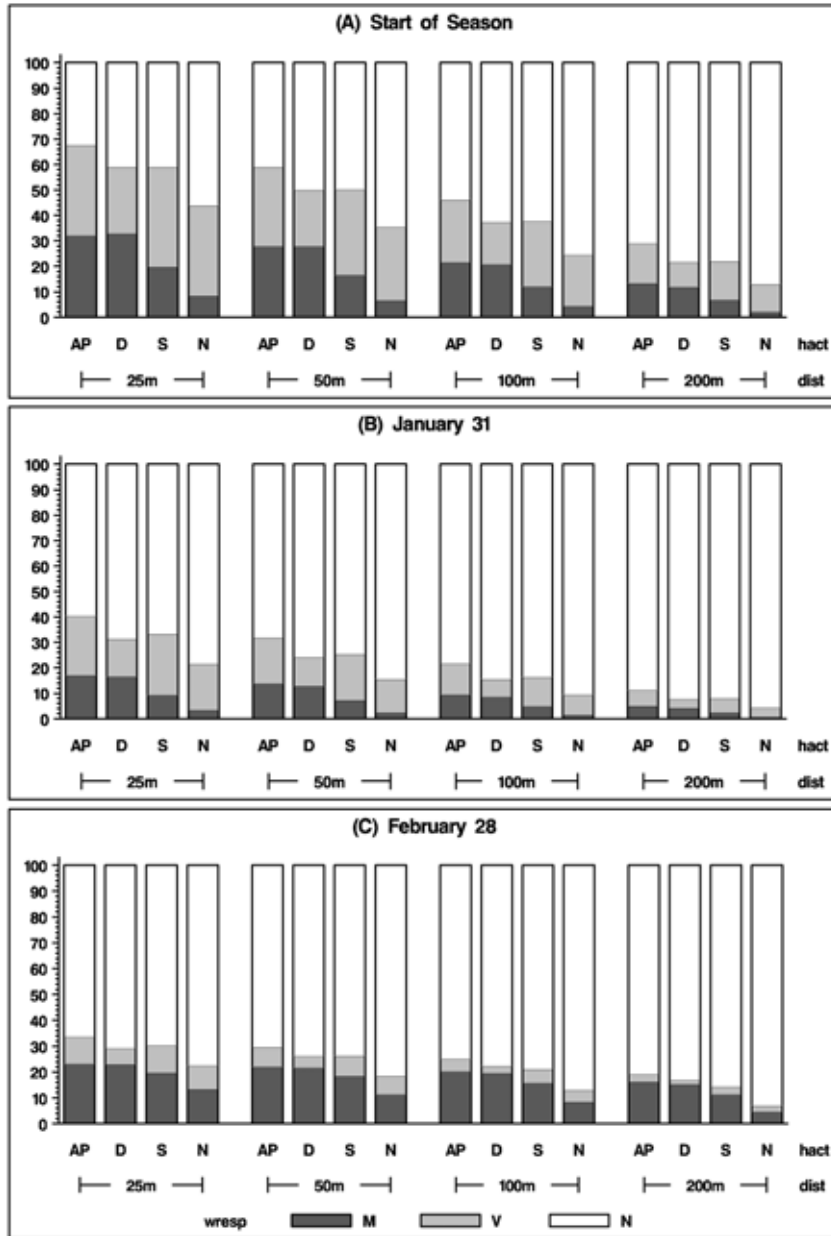


Figure 12. Predicted response probabilities for trumpeter swans at the start of the winter season, on January 31, and on February 28. The responses of swans during human/wildlife interactions were examined for 7 swans, 1 snowmobile, and distances of 25-200 meters. Abbreviations are: wresp (most common response); M (movement); V (vigilance); N (no reaction/response); hact (human activity); IH (impede/hasten); AP (approach on foot); D (dismount vehicle); S (stop vehicle); and dist (distance from road).

Figure 13: Predicted Swan Response Probabilities
(1 snowcoach, group size = 7 swans)

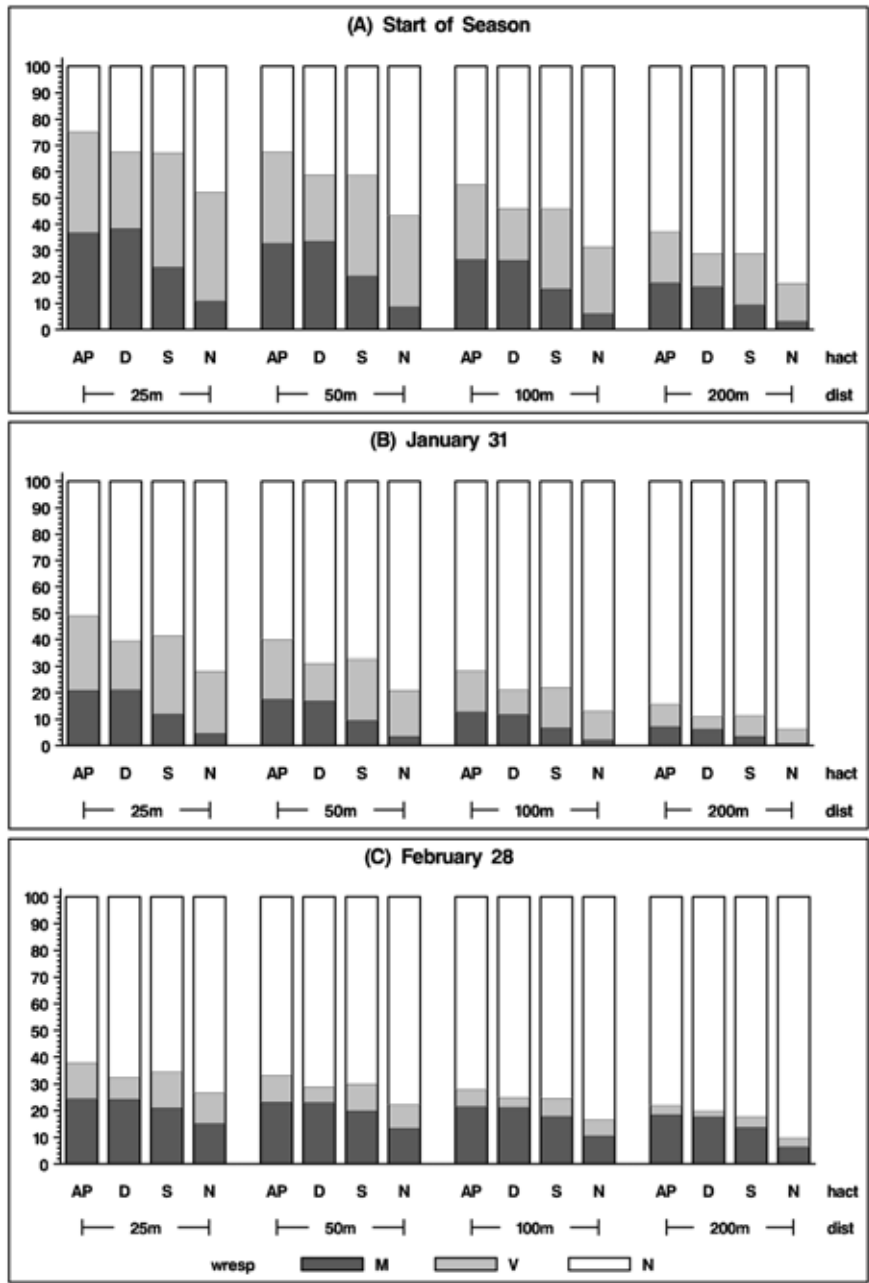


Figure 13. Predicted response probabilities for trumpeter swans at the start of the winter season, on January 31, and on February 28. The responses of swans during human/wildlife interactions were examined for 7 swans, 1 snow coach, and distances of 25-200 meters. Abbreviations are: wresp (most common response); M (movement); V (vigilance); N (no reaction/response); hact (human activity); IH (impede/hasten); AP (approach on foot); D (dismount vehicle); S (stop vehicle); and dist (distance from road).

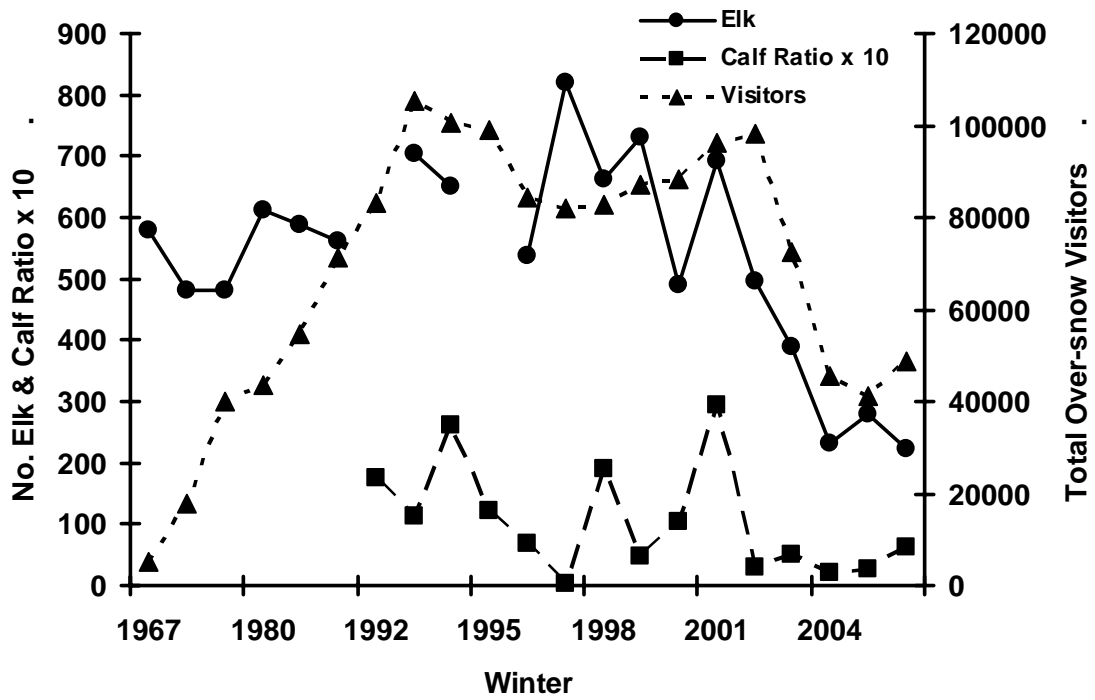


Figure 14. Winter counts and calf ratios (x 10) of central Yellowstone elk (Garrott et al. 2006) and numbers of visitors on over-snow vehicles during 1967-2006 in Yellowstone National Park, Montana and Wyoming, USA.

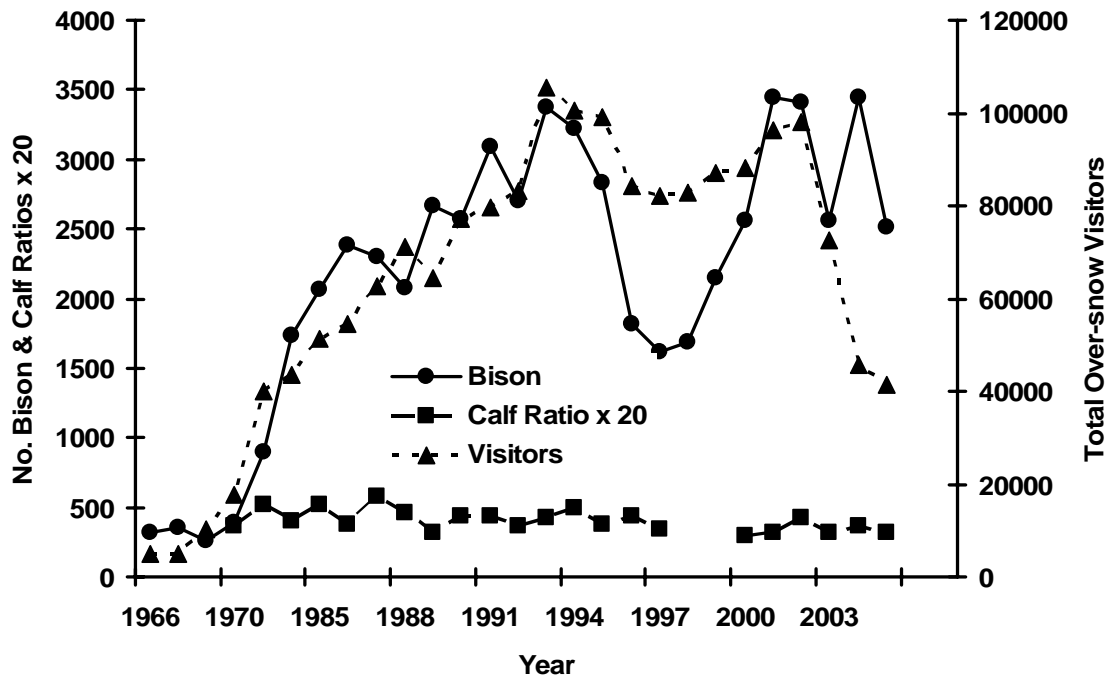


Figure 15. Summer counts and calf ratios (x 20) of central Yellowstone bison (Fuller 2006) and numbers of visitors on over-snow vehicles during 1966-2006 in Yellowstone National Park, Montana and Wyoming, USA.

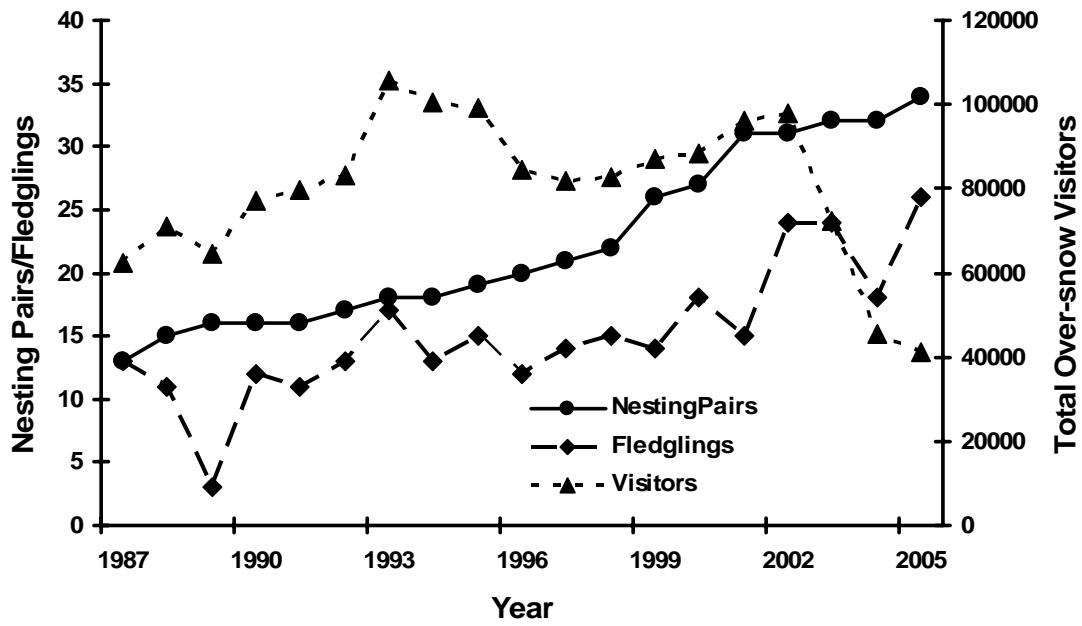


Figure 16. Nesting pairs and fledglings of bald eagles (McEneaney 2006) and numbers of visitors on over-snow vehicles during 1987-2005 in Yellowstone National Park, Montana and Wyoming, USA.

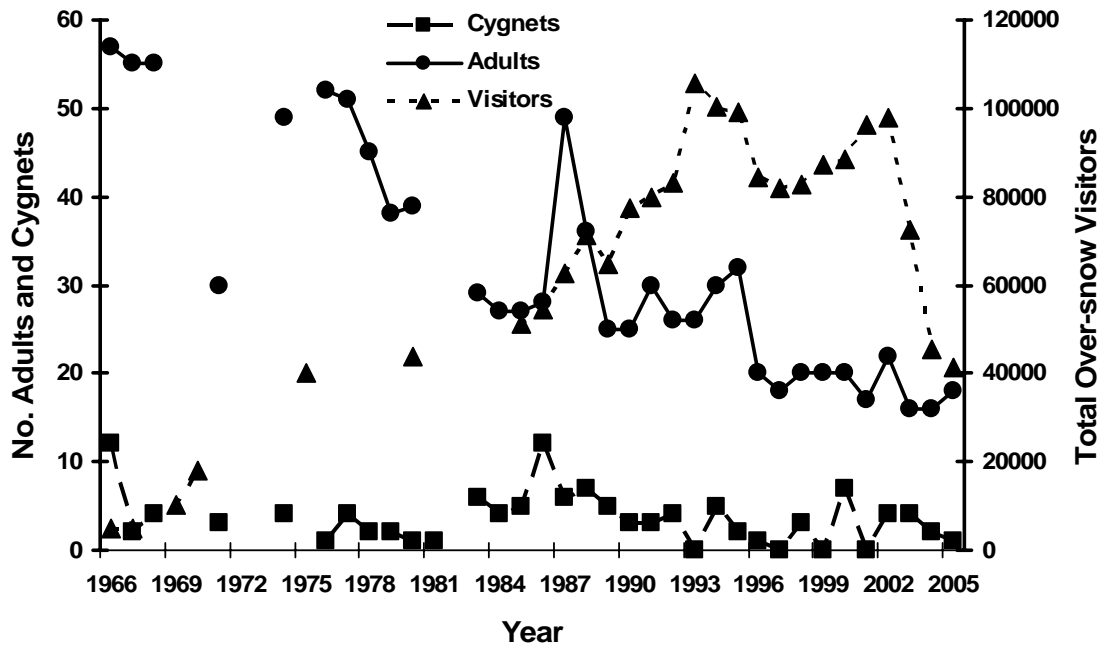


Figure 17. Number of resident adult/subadult trumpeter swans and cygnets (McEneaney 2006) and numbers of visitors on over-snow vehicles during 1966-2005 in Yellowstone National Park, Montana and Wyoming, USA.

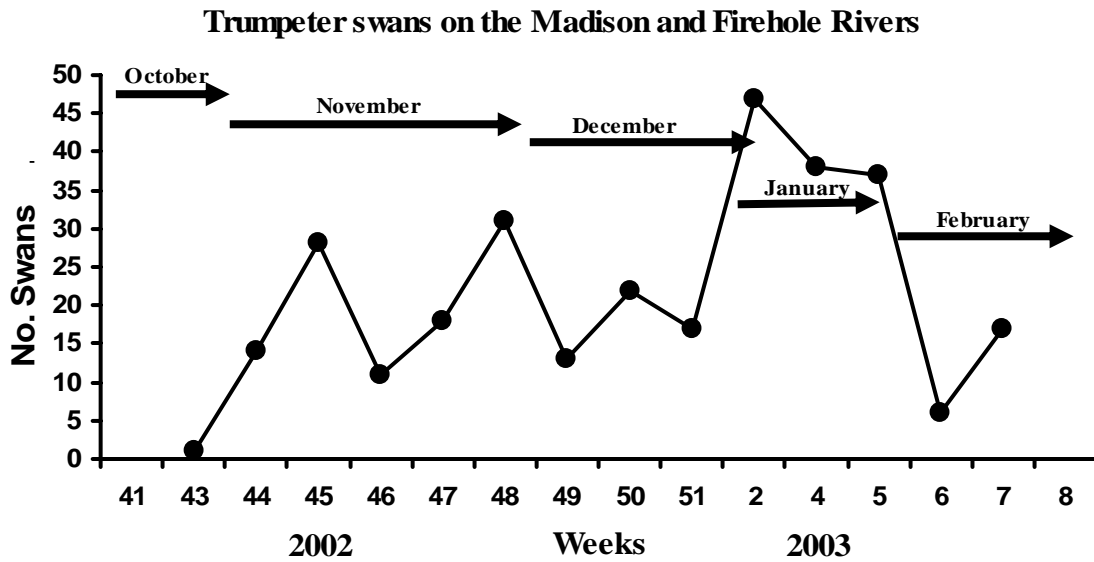
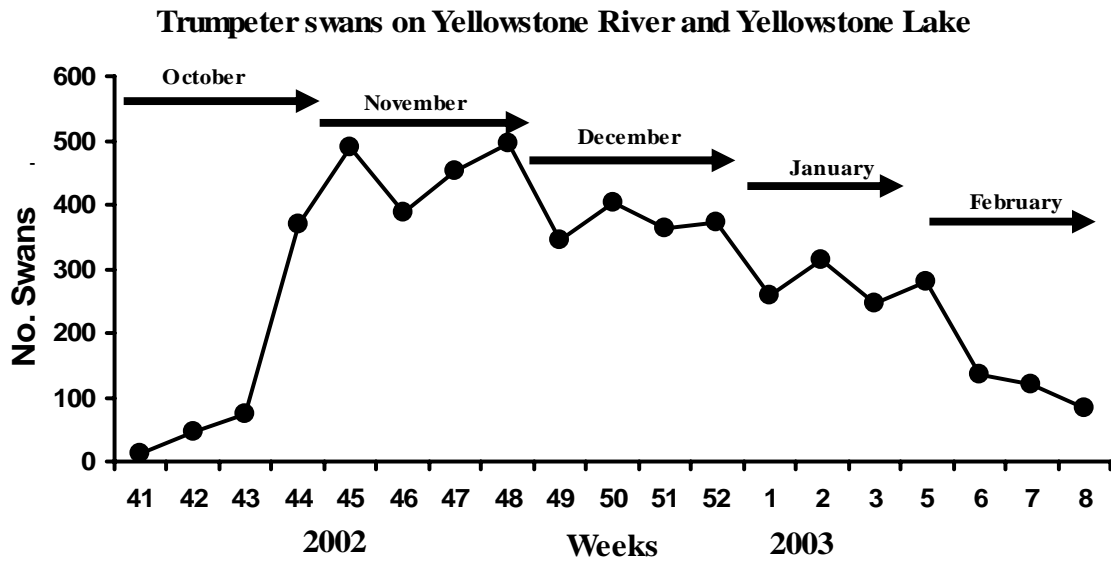


Figure 18. Number of trumpeter swans counted on the Yellowstone River or Lake and Madison or Firehole Rivers during October 2002-February 2003 in Yellowstone National Park, Montana and Wyoming, USA.