Comparing Bird Population Trends in the Badlands and Prairies Using BBS and IMBCR Data

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We compared the direction and precision of trend estimates of bird species in the Badlands and Prairie Bird Conservation Region (BCR 17) from 2009-2015 using Breeding Bird Survey (BBS) and Integrated Monitoring in Bird Conservation Regions (IMBCR) data. We used Bayesian modeling estimates provided by the BBS and newly developed Bayesian estimates of IMBCR data. Trend estimates often differed between the two data sets and estimates of precision were generally smaller for IMBCR than for BBS data. In addition, because the BBS estimates do not correct for detection probability, the BBS estimates measure the trend on an index rather than the detection corrected abundance. If the relationship between the BBS index and true abundance is not linear and 1:1, the interpretation of the BBS trend is unclear. Finally, because BBS counts are conducted along roads, species that are attracted to or avoid roads may be over or under counted, respectively. BBS trends can be helpful for examining long-term trends (greater than 20 years) in bird abundance across large regions but only IMBCR trends provide sufficient precision to examine trends at shorter time intervals. IMBCR trends, therefore, are more useful for identifying current factors influencing bird population trends.