Predicted Suitable Habitat Modeling for Species of Concern in Montana

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Predicted suitable habitat models can be valuable and informative tools for species management and conservation, especially for rare or infrequently documented species. For nearly ten years, the Montana Natural Heritage Program (MTNHP) has produced predicted suitable habitat models for use by agency personnel, researchers, and the general public with the goal of predicting the distribution and relative suitability of habitat for those species. These models are produced using maximum entropy modeling (Maxent), a method of inductive modeling that is robust to small sample sizes. Recent advances in automation by MTNHP using Python and templated reports have decreased the time required for model production more than tenfold, allowing for the publication of models for all terrestrial vertebrate Species of Concern (SOC). Models for SOC can now be updated whenever valuable new data become available due to the costs and time saved by automation. Simplified results for most models have been incorporated into standard environmental summary products at MTNHP in the form of potential species lists for SOC within a grid of one square mile hexagons. Models for non-Species of Concern will be developed as staff time and funding allow, but should be very affordable (e.g., circa $250 per species).