

ERIN ALLISON^{*}, EMILY TAYLOR^{**}, ZACKARY GRAHAM^{*}, MELISSA AMARELLO^{***}, JEFF SMITH^{***}, and ZACHARY LOUGHMAN^{*}. Improving Perceptions of Rattlesnakes with Conservation Message Framing.

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Given the current extinction crisis, there is an urgent need to investigate strategies for adapting human perceptions of unpopular species to benefit biodiversity conservation. As the most broadly distributed venomous snake in North America, Rattlesnakes are an iconic, widely-misunderstood group of snakes, with several species witnessing declines currently. Human tolerance of rattlesnakes is generally low, and occasionally persecutory, through intentional killings and rattlesnake round-up events. The objective of this study was to evaluate the effectiveness of messaging strategies for improving public perceptions of rattlesnakes. We deployed an online survey to social media users (n=1501) to assess change in perception after viewing one randomly-selected video message. Respondents observed a short video illustrating a utilitarian, ecosystem services message or an empathetic, social behavior message with rattlesnakes as the focal taxa. An 8-item pre and post survey defined perception variables along emotional, knowledge, behavioral gradients, and scored overall perception of rattlesnakes on a 5-point Likert scale.

Preliminary data analysis indicates a significant increase in perception for individuals with initially negative or neutral perceptions when presented with positive rattlesnake messaging. On average, perception score (8-40) increased by 13.1% after viewing the ecosystem services video and 10.9% after viewing the social lives video. We analyzed socio-demographics and perception prior to viewing a video message and found gender and religion best predicted pre-perceptions towards rattlesnakes. We found that the baby boomer generation (age 57-75) experienced an average 10.8% increase in perception score after viewing the ecosystem services video message. After viewing the empathetic social lives video, females scored 7% higher than males. Generation-Z (age 18-24) experienced a 15.2% increase after viewing the ecosystem services video message and a 15.6% increase after viewing the social lives video message.

The application of strategic message design to promote rattlesnake conservation and co-existence is a novel approach and this study is the first of its kind currently known to the authors. Evidence indicates that both a logically-framed ecosystem service and empathetic social behavior message are effective in improving feelings, knowledge, and behaviors towards rattlesnakes. Our data suggests that a utilitarian ecosystem services and empathetic social lives messages can be strategically implemented for different genders and age groups to effectively increase perceptions towards rattlesnakes. We hope this study will provide a framework for further messaging research to adapt human attitudes to benefit biodiversity conservation.