



INITIATIVE ASSESSMENT

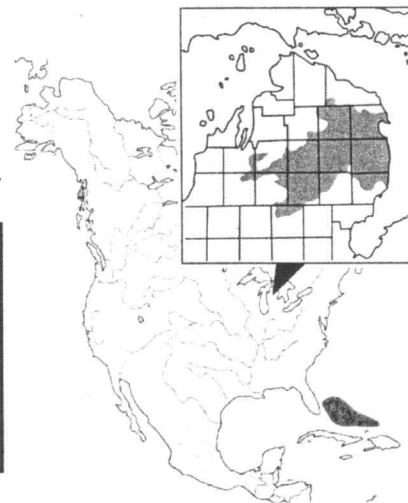
Kirtland's Warbler

Natural History

Kirtland's Warblers are one of the rarest birds in the world, being found in the summer in only a few counties in northern Michigan. This small songbird is restricted to nesting in jack pines that are 5-15 years old. Fewer than 3,600 birds exist.

Kirtland's Warblers spend the winter in scrubby habitat on a few islands in the Bahamian archipelago. These birds build their nests on the ground and about 75% of pairs are successfully able to raise a brood of

young each year. Kirtland's Warblers eat insects almost exclusively throughout the year.



Strategic Significance

This initiative establishes a new paradigm for endangered species management, one that supports a partnership that helps manages the species and jack-pine ecosystem on which it depends, independent of the federal status of the species.

Threats

Fragmentation of jack pine ecosystems, and consequently the impact of cowbirds, are the primary causes of the rarity of Kirtland's Warbler. This endangered species was pulled back from the brink of extinction and is now being considered

for de-listing. If that occurs, this species will not receive the level of protection and management afforded under the Endangered Species Act. This may lead to population declines and the species landing back on the endangered species list.

Impacts of

Climate Change

By 2050, the effects of climate change are expected to reduce existing breeding habitat in Michigan by 50% and winter habitat in Bahamas by 5%.

Conservation Goals

Our goal is to create a new conservation model for endangered species — one that addresses conservation needs AFTER de-listing

— by increasing the active involvement of citizens and private organizations. This approach not only will allow one of the great-

est conservation success stories to live on, but will serve as a model for future endangered species recovery efforts.

Priority Actions

Our model calls for the formation of a public-private partnership that coordinates the long-term management of Kirtland's Warblers. A

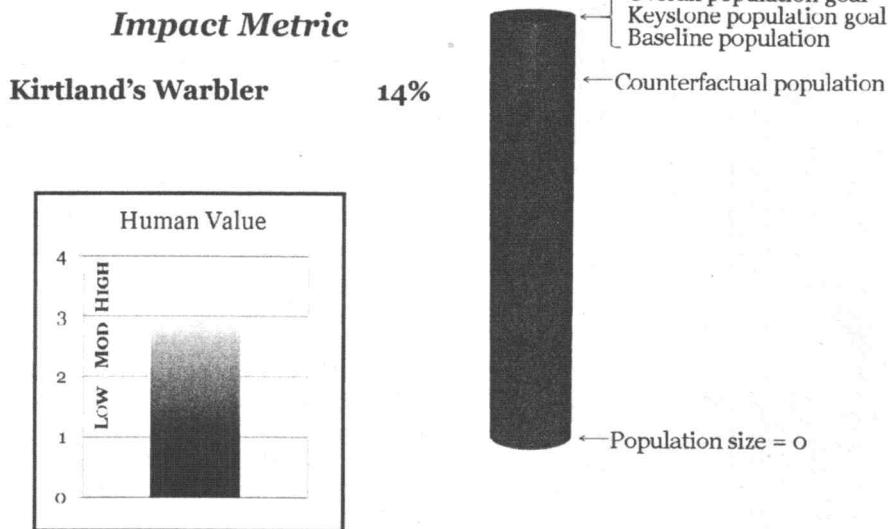
reliable, endowed funding source would provide the financial stability to maintain the necessary actions that are critical to sustain

the jack pine habitat in early succession, manage cowbirds, and develop new opportunities for creation of jack pine habitat.

Impact Metric: Percentage of species population goal achieved

The **Impact Metric** represents the percentage of the overall species population goal accomplished through this initiative.

Our model initiative is built upon the premise that necessary management actions for this species are likely to subside somewhat once de-listing takes place, and that species would initially decline at a slow pace (1%/yr). A public-private partnership would be responsible for habitat management and creating additional habitat.



Cost Metric

The estimated, unmet monetary cost over a given timeframe necessary to achieve our stated objective.

Total Unmet Costs: \$12.0 M

NFWF Portion: \$2.0 M

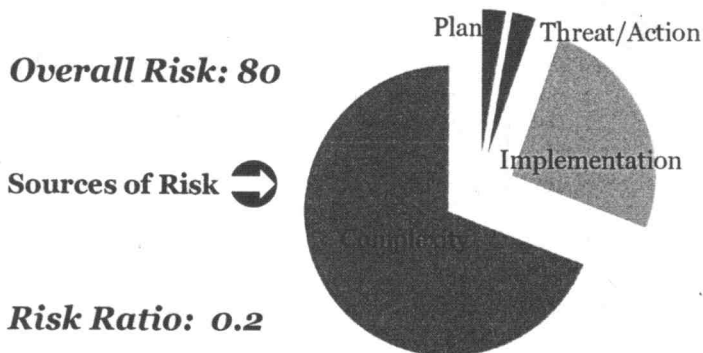
Timeframe: 10 years

NFWF Contribution

The NFWF contribution reflects that portion of the overall initiative benefits that can be attributed to participation by NFWF. In this initiative, we will bear 17% of the overall costs. of overall costs. However, because we are building capacity early in the development of this initiative with these funds and those are not readily replaceable, the NFWF contribution is estimated to be 30%.

Risk Metric

The relative risk incurred with investment, based upon four factors that affect success: development of strategic plan; identification of threats & management actions; ability to implement conservation actions; & ecological, social & political complexity. Risk is scored on an exponential scale, with higher risk scores for each factor contributing disproportionately greater risk than lower scores. Cumulative risk can range from 11 to 594. Higher scores represent greater risk.



The Risk Ratio (based on Sharpe Ratio) represents the percentage gain in the overall species population goal per unit of risk.

Impact:Cost Ratio

The marginal conservation gain of an investment as a function of monetary cost. Ratio represent the percent increase in species' population per \$1M NFWF investment and adjusted by the NFWF Effect.

$$\text{Impact:Cost Ratio} = \frac{14 \times 0.30}{2.0}$$

ImpactCost Ratio (gain/\$M)

Kirtland's Warbler 2.0%/\$M