

F. Threats to Species of Concern and Related Habitats

The majority of the threats affecting Louisiana wildlife and their respective habitats are the direct or indirect result of encroachment by human development and related development pressures. Rapid population growth and subsequent demands on the state's natural resources have resulted in substantial habitat losses. Early impacts from human activities, such as the establishment of the state's agriculture base, resulted in the clearing and cultivation of prime alluvial areas, and have all but extirpated the coastal prairies of the southwestern parishes. Live oak cheniers and natural levee forests, found at higher elevations in the Gulf Coast Prairies and Marshes ecoregion, were the first to be developed for construction of roadways and home sites. During the last century the leveeing of the Mississippi River, construction of canal networks, and other development activities in marsh habitats have seriously degraded the state's coastal ecosystems. Expected population increases over the next century will create greater demands for residential sites, increase water usage and wastewater issues, increase the number of vehicles on the roads, and increase commercial and industrial development. All of these issues will have some impact on Louisiana's wildlife and associated habitats.

In order to effectively identify and address the widespread threats to wildlife habitats, an assessment of habitat viabilities and threats to each habitat type was needed. A listing of habitat threats and sources of those threats was compiled using TNC's Site Conservation/Measures of Success Workbook software (2000) and from input provided by the LDWF Core Committee and the CWCS Habitat Assessment Committee (Appendix H). Habitat types were evaluated by ecoregion, basin or coastal waters. Viability was assessed as a measure of the following three conditions:

- Size - a measure of the area of the habitat's occurrence
- Condition - an integrated measure of the composition, structure, and biotic interactions that characterize the occurrence
- Landscape Context - an integrated measure of two factors: the dominant environmental regimes and processes that establish and maintain the habitat occurrence and connectivity

Threats were then identified for each habitat type within ecoregion, basin, or coastal waters and these threats were rated by severity (level of damage expected over the next 10 years) and scope (geographic scope of impact expected over the next 10 years). A stress rating for each threat was calculated using the combination of severity and scope ratings. Next, the sources of the threats were rated as to their contribution to the overall threat and its irreversibility potential. For example, habitat destruction/conversion was identified as a major threat to Eastern Longleaf Pine Savannahs in the East Gulf Coastal Plain. Tremendous population growth has occurred in this ecoregion (20-30% increase between 1990-2000) and is expected to continue at a high level over the next decade (Figure 2.2). This threat was given a "Very High" rating in both severity and scope due to the sources of the habitat conversion threat, namely residential development. The combined ratings for severity and scope resulted in a stress rating of "Very High". The contribution of residential development to Eastern Longleaf Pine Savannah habitat

destruction/conversion was considered “Very High” and it was rated “Very High” in irreversibility potential. A source rating for the threat (residential development) was calculated from the combined scores for contribution and irreversibility. The final threat rating resulted from the combined source/stress rating from the viability table. The rankings of threats and sources of threats resulting from these assessments were used to prioritize threats to habitats within ecoregion, basin or coastal waters and this information was then used to develop conservation strategies addressing major threats for each habitat type. In order to develop conservation strategies to address the threats to species and their associated habitats, statewide meetings were held in order to gather technical and public input (Appendix I). As an example of the assessment procedure, the spreadsheets from the East Gulf Coastal Plain habitat/threats assessment may be viewed in Appendix J. A listing of all Threats and Sources of Threats identified during this assessment process and their definitions are found in Appendix K and Appendix L, respectively.

G. Threats to Terrestrial Habitats

Threats that appeared repeatedly across terrestrial habitats and ecoregions included:

- Habitat destruction or conversion
- Habitat fragmentation
- Habitat disturbance
- Altered habitat composition and structure

Habitat destruction or conversion involves actions that permanently alter a habitat so that natural functions and values of the ecosystem are disrupted and are not considered restorable. Historically, this threat was widespread across all habitats throughout the state, and it remains a current threat facing wildlife habitats throughout Louisiana. When habitat destruction or conversion occurs, **habitat fragmentation** follows. The remaining habitat becomes isolated on the landscape as it is divided into smaller and smaller blocks. Wildlife populations in these fragmented habitats are isolated from other breeding populations, face increased competition for limited resources, and come into conflict with other land uses.

The sources of threat for both **habitat destruction** and **habitat fragmentation** include:

- **Residential development** – This source of threat is greatest in the EGCP, UEGCP, and areas surrounding major urban centers of the state
- **Commercial/industrial development** – This source of threat follows occurrence patterns similar to residential development
- **Conversion to agriculture or other forest types** – These actions completely remove the natural plant associations of a habitat, can damage soils, and displace native wildlife species
- **Development of pipelines, roads or utilities** – Construction activities destroy habitats, result in fragmentation of surrounding habitats, and can serve as vectors for invasive and alien species introductions