

Preface

UNDER THE AUSPICES OF THE RESTORE ACT OF 2012 and the Deepwater Horizon Oil Spill: Final Programmatic Damage Assessment and Restoration Plan, the conservation objective in the northern Gulf of Mexico is to enhance and conserve habitat to support and sustain healthy populations of natural resources, including migratory birds. Billions of migratory birds representing >500 species use the northern Gulf of Mexico for all or part of their annual life-cycle, thereby underpinning the importance of the Gulf region in supporting not only local, but also continental and international populations of birds. However, birds and their habitats continue to be vulnerable to a variety of system stressors such as urban and industrial development, offshore energy development, contaminants (e.g., point and non-point sources), altered hydrological processes, natural disturbance events (e.g., hurricanes), and climate change (e.g., sea-level rise). The large-scale restoration work underway in the northern Gulf of Mexico presents many opportunities to mitigate these threats and advance bird-habitat conservation. However, to capitalize on these opportunities, decision makers and practitioners need information related to avian ecology and guidance for developing monitoring strategies that will establish baselines, evaluate management effectiveness, and increase our understanding of how ecological processes influence bird responses to habitat restoration practices.

Monitoring data are most valuable to decision makers when collected in a cost-efficient and scientifically robust manner that facilitates learning and is relevant to stakeholder needs and values. To that end, the Gulf of Mexico Avian Monitoring Network hosted a series of workshops and used the principles of structured decision making to identify core values and objectives supporting stakeholder data needs. Throughout these workshops, stakeholders agreed that bird-monitoring efforts should address three fundamental objectives: 1) maximize the relevancy of monitoring data, 2) maximize the scientific rigor underpinning monitoring, and 3) maximize integration of monitoring efforts. Relevancy speaks to the desire for status and trend assessments, greater understanding of management effectiveness, and greater understanding of how ecological processes affect birds and their habitats. Further, species experts subsequently used these core values and fundamental objectives in concert with

conceptual models (i.e., influence diagrams) to identify key monitoring needs and uncertainties underpinning our ability to advance restoration and conservation actions. Collectively, these fundamental objectives and conceptual models reflect, “what matters” about the design and implementation of future bird monitoring activities.

This document summarizes the stakeholder workshops and subsequent discussions. To facilitate readability and transfer of information, the document includes a number of topical chapters that collectively represents Strategic Bird Monitoring Guidelines for the northern Gulf of Mexico. Specifically, the guidelines contain: 1) an overview of core-values and fundamental bird monitoring objectives, 2) an overview of threats, challenges, conceptual models for priority species, and associated uncertainties for seven taxonomic groups (i.e., landbirds, marsh birds, raptors, seabirds, shorebirds, wading birds, and waterfowl), 3) an overview of avian health and physiological stressors, and 4) an overview of integration and data management challenges. Each chapter also identifies priority-monitoring activities and puts forth recommendations to facilitate decision-making and advance bird conservation across the northern Gulf of Mexico.

To our knowledge, these Strategic Bird Monitoring Guidelines represent the first comprehensive, Gulf-wide monitoring framework for any living marine resources in the northern Gulf of Mexico. However, for it to be fully successful, the bird monitoring community of practice must collaborate and integrate monitoring efforts with other monitoring communities of practice. For example, to understand patterns and trends in bird response will also require an understanding of food resource availability (e.g., fisheries), changes in habitat (e.g., loss of emergent marsh), and/or changes in climate-related events (e.g., sea-level rise). Hence, it is imperative that monitoring efforts operate in a holistic and integrated fashion. The information presented herein provides a clear vision of the data needs related to bird monitoring. It is our hope that these Strategic Bird Monitoring Guidelines serve as a useful tool to guide decision-making and future bird monitoring efforts, and places those activities in the larger context of holistic restoration across the northern Gulf of Mexico.