

Why is NPWRC a leader in migratory bird Science?

- Migratory birds cross state and national borders making them a Federal Trust responsibility
- The Department of Interior (DOI) has a statutory obligation¹ to manage migratory bird populations
- USGS NPWRC meets DOI obligations with science that informs management decisions required to support sustainable migratory bird populations
- See back page for more details

Bird Populations are Declining

- 3 billion fewer birds since 1970
- 31% fewer ducks since 2015
- 43% fewer mid-continent arctic geese since 2014

Birds are Important to People



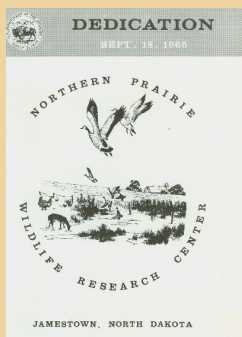
Bird watching contributes:

- >1.4 million jobs
- >\$279 billion in annual economic output



Waterfowl hunting contributes:

- >27,000 jobs
- >\$4 billion annually to the US GDP
- Subsistence (food)



Our foundation still shapes us today

During 1965, NPWRC was founded in Jamestown, North Dakota with the expressed mission of conducting research to inform management of duck populations in North America. This charge required assembling a multi-disciplinary team of scientists to understand the needs of ducks in grassland and wetland ecosystems. In response to changing priorities of DOI and partners, our mission broadened to study all migratory birds. Our foundational strengths carry through today as we address challenging information needs, increase management efficiency, and detect emerging trends facing migratory birds that cross states, countries, and continents.

NPWRC Science Strengths

Large-scale



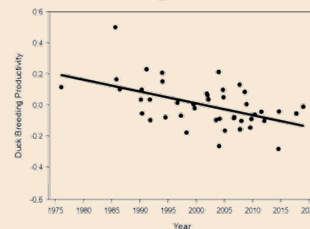
Co-production

Helping partners develop their questions, solving them together

Multi-disciplinary

Energetics
 Population Biology
 Wetland Ecology
 Movement Ecology
 Land Management
 Migratory Birds
 Biochemistry
 Plant Ecology
 Entomology
 Statistics
 Mapping
 Nutrition

Long-term



Field Expertise

Decision-Relevant Research



Collaborative

¹ Migratory Bird Treaty Act (treaty with U.S., Canada, Mexico, Japan, and Russia)

Informing Harvest and Population

Decisions:

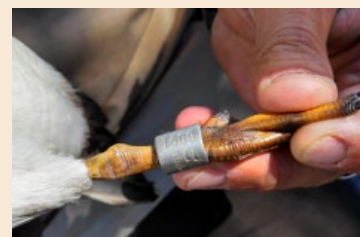
Key partners: Central and Mississippi Flyways, States, and USFWS

- Sustainable harvest management ^{3, 9, 10, 11, 13, 14, 15, 58}
- Improvements to population monitoring efficiency and accuracy ^{16, 17, 18, 21, 103}
- Land management to support healthy bird populations ^{2, 12, 19, 20, 22, 68}
- Species recovery ^{24, 26, 28, 29, 30, 31, 32, 59}

Do you want details?

Footnotes are project #s described in our

Report



NPWRC is developing tools to evaluate Avian Influenza in migratory birds using duck banding programs ¹⁰³

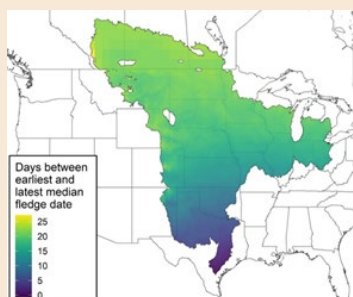
Informing Habitat

Management

Decisions:

Partners: Migratory Bird Joint Ventures, States, NGOs, USFWS, USDA, private landowners

- Strategic habitat management ^{1, 4, 8, 66, 72, 90}
- Smart energy development ^{35, 50, 51, 53, 54}
- Evaluation of conservation programs ^{60, 64, 65, 95}
- Management of agricultural and working lands for win-win outcomes ^{6, 67, 74}
- Developing management tools on public and private working range/grasslands ^{5, 7, 85}
- Developing innovative tools for changing species needs and distributions ^{69, 79, 88, 91, 92}



NPWRC is informing timing of grazing and haying of grasslands to maximize landowner flexibility and success of birds ⁵

Partnerships are Critical for Managing Migratory Birds

Flyways: Populations & Harvest



Flyways are international Federal-State/Province regulatory partnerships

NPWRC Partners with 2 Flyways and 6 Joint Ventures

Joint Ventures (JVs): Habitat



JVs are voluntary *partnerships* of Federal and State agencies, NGOs, private landowners, and corporations with a common interest in bird habitat conservation

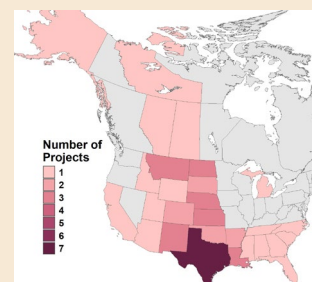
Maintaining Important Department of Defense Missions

Partners: U.S. Army, U.S. Air Force, U.S. Army Corps of Engineers

- Minimizing U.S. Army and Air Force wildlife conflicts and bird strikes ^{36, 37}
- Assisting with compliance of Endangered Species Act and Biological Opinions without compromising mission ^{23, 25, 27, 33, 34, 56}



NPWRC Piping Plover research provides the U.S. Army Corps of Engineers with tools to operate the Missouri River for many uses while avoiding ESA jeopardy ^{23, 27, 30, 33, 34, 56}



Tracking Studies: NPWRC partners with States and Provinces to address information needs about bird movements using cutting edge technology. We have 14 recent projects on 11 species. ^{9-15, 21, 23, 30, 35-37, 59}