

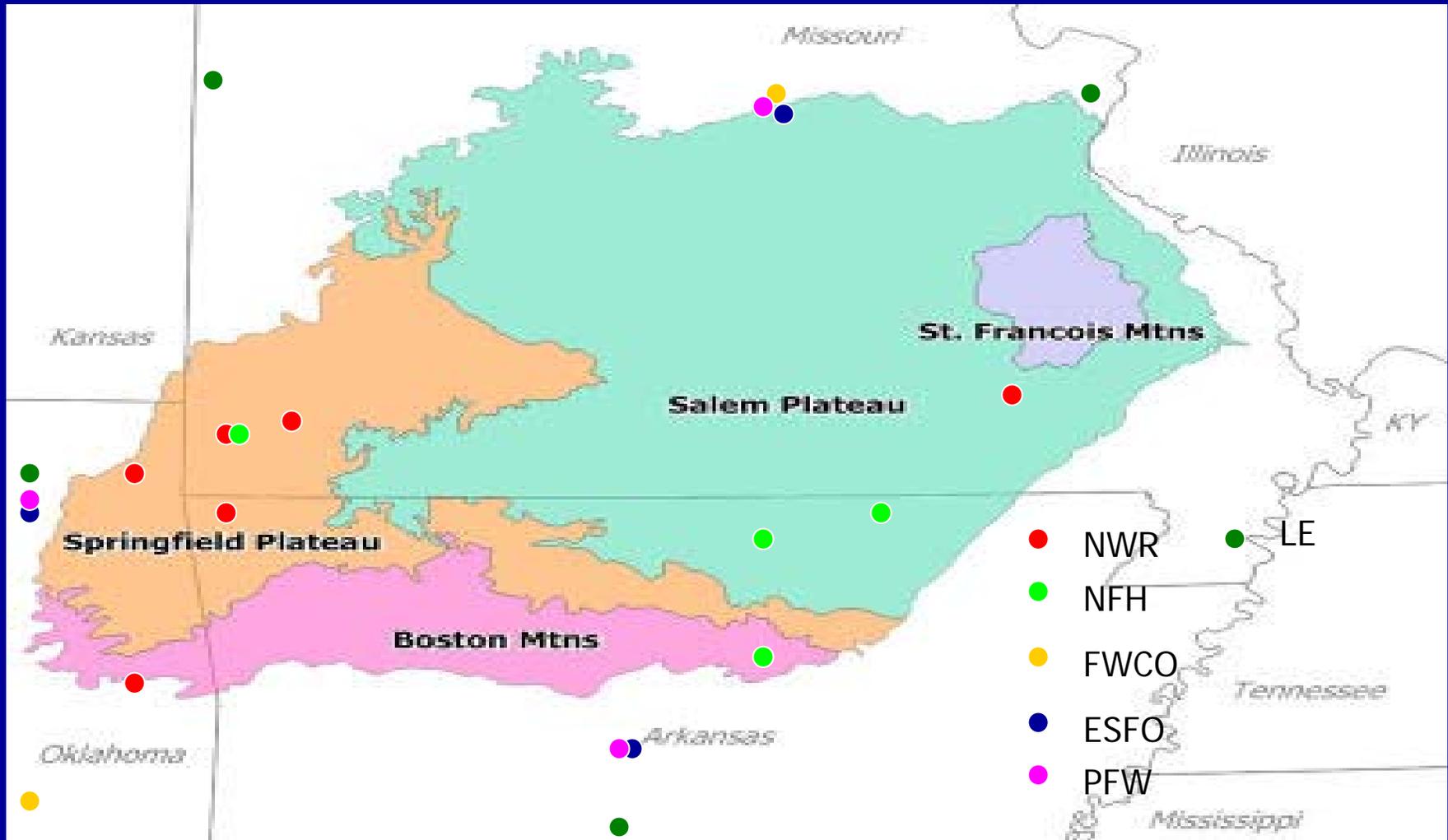


USFWS Trust Resources

- Service owned lands/facilities – NWR/NFH
- Migratory Birds
- Threatened and Endangered Species
- Interjurisdictional Fishes

Our Mission: Working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people

USFWS Stations Working in the Ozarks





Fisheries

- Neosho National Fish Hatchery
- Mammoth Spring National Fish Hatchery
- Norfolk National Fish Hatchery
- Greers Ferry National Fish Hatchery
- Missouri Fish and Wildlife Conservation Office (formerly FRO)
- Oklahoma Fish and Wildlife Conservation Office (formerly FRO)





National Wildlife Refuges

- Ozark Plateau NWR (OK) – multiple parcels totaling 4,000 ac.
- Logan Cave NWR (AR) – 123 ac.
- Ozark Cavefish NWR (MO) – 2 parcels totaling 41.3 ac.
- Pilot Knob NWR (MO) – 90 ac.
- Sequoyah NWR (OK) – 20,800 ac.





Ecological Services

- Missouri (Columbia), Arkansas (Conway), and Oklahoma (Tulsa)
- Four Program Areas:
 - Conservation Planning Assistance
 - Endangered Species
 - Environmental Contaminants
 - Partners for Fish and Wildlife (PFW in FWS R3/MO separate from ES – under Refuges)

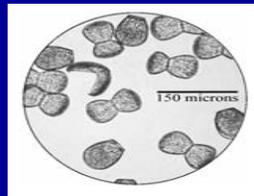


Aquatic Species Migration

- Restore fish passage by replacing/modifying structures (e.g., bridges, low-water crossings, dams) that impede species access to important habitats (e.g., spawning sites) and diminishes genetic viability
- Provide design assistance to agencies/applicants to avoid fish passage problems with new structures
- Challenge: costly projects - requires engineering expertise, multiple funding partners, and careful prioritization

Aquatic Species Migration

- Focus on federally listed threatened and endangered species and candidate species whose recovery is hampered by migration barriers
- Restoring fish (host) passage is frequently a priority recovery task for imperiled mussels (5 listed and 4 candidate mussel species in the Ozarks)



Example: Niangua darter (MO) – replacing poorly designed/built low-water crossings in critical stream reaches



Aquatic Species Migration

- Preventing the expansion (migration) of Nonindigenous Aquatic Species (aka Aquatic Nuisance Species) by anthropogenic and biological means
- Ozark streams are vulnerable, especially streams with imperiled mussels (e.g. zebra mussel)



Riparian Habitat/Restoration

- Priority: Conserve, manage, and restore habitats for T/E species, candidate and near candidate species, migratory birds, karst/caves, wetlands, and high quality, biologically diverse streams
- **Five Approaches:**
 1. Recommend/negotiate measures to avoid, minimize, and compensate for impacts to aquatic habitats from development actions (e.g., hydropower, gravel mining, highways) - FWCA, NEPA

Riparian Habitat/Restoration

2. Consult with federal agencies/applicants under section 7 of ESA for actions impacting listed species/habitats and HCP's under section 10 of ESA for non-federal activities – ESA regulatory
3. Develop proactive partnerships and provide technical and financial assistance to restore riparian/aquatic habitats on public and private lands – PFW, T/E recovery, NRDA
4. Acquire important habitats for conservation/management under the National Wildlife Refuge System - Refuges

Riparian Habitat/Restoration

5. Provide grant funds (e.g., section 6 ESA) and Federal Aid funds to states to acquire, manage, and/or restore priority habitats

Example of an Innovative Approach in the Ozarks:

Programmatic Safe Harbor Agreement and Candidate Conservation Agreement with Assurance for the Speckled Pocketbook (E) and Yellowcheek Darter (C) in the Upper Little Red River Watershed, AR

Recreational Fisheries

- Production of sportfish for stocking is a key role of NFH's. Emphasis of NFH's in Ozarks on federally owned/managed waters and stream sport fisheries impacted by federal reservoirs (e.g., CE – White River)
- Challenges for NFH's: infrastructure maintenance, protecting water quality, fish health



Recreational Fisheries

- **Integration of Conservation Actions** - Sustaining a quality recreational fishery in the Ozarks is dependent on conserving/restoring aquatic habitats/species, water quality and quantity, producing quality fish, providing fish passage, and preventing the spread of ANS's
- **Idea:** Utilize the National Fish Habitat Initiative (NFHI) to integrate Ozark aquatic conservation actions. The Ozarks could become a focus area under the Southeast Aquatic Resources Partnership (SARP), an existing NFHI partnership

Water Quality and Quantity

- USFWS focus is on T&E species, candidate and near candidate species, migratory birds, and protection of water at NWR's and NFH's
- All 20 of the Ozark aquatic dependent listed and candidate species are threatened by water quality degradation
- Surface – Subsurface inter-change in the Ozark's karst landscape creates an unique need to conserve/restore recharge areas



Water Quality

- Lead and Zinc mining in the northern Ozarks (MO, OK) has caused profound, long-term landscape level impacts on water quality
- USFWS is concerned with the effects of emerging contaminants (e.g., endocrine disruptors, pharmaceuticals, bio-fuels) on sensitive Ozark aquatic species (e.g., Ozark hellbender)



Water Quality

- Challenge: Continued water quality impairment from urbanization and land use changes in the Ozarks will likely cause further endangerment of Ozark aquatic species, especially narrow endemics (e.g., crayfish, cave invertebrates)
- Need: Expand the cooperative mussel toxicity studies by USGS/CERC, USFWS-ES, MSU, and others (e.g., ASU) to include other key parameters threatening Ozark mussels
- Need: Enhanced collaboration between federal and state agencies, communities, and NGO's to protect and restore the water quality of Ozark streams, including water quality standards that adequately protect the diversity of unique and sensitive Ozark aquatic species