



STATEMENT OF OUTSTANDING UNIVERSAL VALUE

Brief synthesis:

The Okefenokee National Wildlife Refuge (ONWR) is a 406,650-acre range on the Atlantic and Gulf Coastal Plains of the Southeastern United States within Georgia and Florida. It is home to numerous endemic, threatened, and endangered species. The ONWR is a refuge for 48 mammals, 238 birds, 39 fish, 101 amphibians, and an undetermined number of invertebrates. The ONWR contains a vast peat bog filling a massive saucer-shaped depression. The shallow, dark-stained waters of the refuge flow slowly but continuously across the vast land toward two outlets - the famed Suwannee River to the west and the historic St. Marys River to the southeast. Scattered throughout the land are narrow arcuate sandy ridges forming islands and peninsulas. These sandy ridges serve as a stopping point for migrant species on their annual voyages throughout the Western Hemisphere.

The ONWR contains numerous endangered species, unique fauna, and rare geological features. The ONWR's environmental integrity is protected and managed via government regulations. Satisfying criteria (ix) and (x), ONWR's outstanding universal value is demonstrated by its exceptional quality.

Justifications for Criteria:

Criterion (ix): The ONWR exceeds the requirements for criterion (ix), which requires a property to have significant ongoing ecological and biological processes in the evolution and development of terrestrial, freshwater coastal, and marine ecosystems and communities of plants and animals.

The ONWR sits amidst a diverse mosaic of wetland, forest, prairie ecosystems, habitats, and ecotones. This mosaic's sheer scale, remoteness, and integrity are unusual for the temperate region. The ONWR has both ecologically significant processes and natural means of cyclically maintaining the balance of interdependent flora and fauna through forest fires and seasonal rains.

First, ecological processes on the ONWR have great significance. The ONWR is home to the largest remaining undisturbed freshwater peat deposit within the eastern U.S. and one of the largest in the subtropical zone worldwide. Peat acts as a carbon reservoir and thus has high ecological value, as the release of carbon dioxide contributes to continued climate change. The ONWR peat stores 95 million tons of carbon dioxide and is an essential environmental stabilizer. Further, the ONWR's peat allows scientists to discover valuable information about the processes that formed the terrestrial and freshwater ecosystems as peat well-preserved the presence of pollen, animal fecal matter, and charcoal.

Particular conditions are necessary for peat formation and contribute to its rarity. The ONWR's peat was formed by accumulating plant materials over base sands for over 6,500 years. Due to the ONWR's slow-moving water, anaerobic waterlogged conditions reduced decomposition and allowed for deep deposits of peat to form.

Second, the ONWR cyclically maintains complex conditions vital to support the ONWR's diverse flora and fauna. This balance is sustained through natural fires, which are often ignited by lightning. The ONWR sits in a region with some of the highest lightning occurrences in North America due to unique seasonal wind patterns that form convective storm systems. The Longleaf Pine-wire grass communities, for example, are dependent on the natural interplay between fire and precipitation. Fire removes invasive competitors while also preparing a seedbed favorable for the regeneration of longleaf pine seedlings. Precipitation, in turn, waters the seedlings and ensures that the fires do not run rampant.

The ONWR's landscape changes yearly because of seasonally ponded isolated wetlands. These wetlands fill with fall rain and dry out by June. This cycle along the edges of the ponds is critical for the successful reproduction of amphibian and invertebrate species.

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Criterion (x): The ONWR also satisfies criterion (x) because the ONWR has unique and significant natural habitats for in-situ conservation of biological diversity. The ONWR has a vast range of inter-dependent ecosystems and habitats. It also is home to many globally threatened species.

Significantly, the St. Mary's River and the Suwanee River originate in the refuge. The St. Mary's River forms the Florida-Georgia border. Eventually, it empties in the Atlantic Ocean while the Suwanee River cuts across 246 miles of Georgia and Florida to eventually reach the Gulf of Mexico. Protection of the river origin is essential, considering the rivers' far-reaching impact on the surrounding land. The estuary of the Suwanee River, for example, is a large National Wildlife refuge, and adjacent floodplains and marine ecosystems are entirely dependent upon the rivers' flow.

The ONWR is teeming with biodiversity. ONWR is home to 48 species of mammals, 238 species of birds, 39 species of fish, 101 species of reptiles and amphibians, and an undetermined number of invertebrates. The herpetofauna has awe-inspiring numbers rarely seen in a temperate ecosystem, including 64 reptile species and 37 amphibian species—the highest amphibian diversity in North America. The ONWR has an essential population of American Alligators, which are recovering from historic near-extinction in the wild. Fewer alligators are found outside the refuge boundary as development increases.

Many endangered species populations have declined due to loss of habitat. The ONWR's undeveloped and continuous land is a refuge for a wide variety of species. For example, the endangered red-cockaded woodpecker's numbers have increased in the past couple of decades, and it has been theorized that the increasing maturity of the ONWR's longleaf pine, an important component of their habitat, contributed to their population growth. Similarly, significant populations of the Flatwoods Salamander reside in the ONWR because the ONWR's longleaf pine and wiregrass communities provide a haven for the Flatwoods Salamander's niche mesic Flatwoods habitat.

Other rare and endangered species call the ONWR home, including indigo snakes, wood storks, and gopher tortoises. The ONWR is a critical resting place for birds migrating across continents.

The Taxodium forests continue to thrive as natural and unmanaged forests in the ONWR. The remnants of the once verdant Longleaf pine forests have been able to find sanctuary in the ONWR. Further, more than 620 species of plants live in the ONWR, including the endemic Okefenokee pitcher plant. Endangered plants, such as the Hairy Rattleweed, and plants on the Georgia list of plants of concern, such as the silver buckthorn, greenfly orchid, and the hooded pitcher plant, have verdant populations within the ONWR.

ONWR is uniquely situated to be a thriving habitat for many important and rare plant and animal species.

Statement of Integrity:

The superb integrity of the ONWR's peatland provides a continuum of the processes that have and are continuing to influence the landscape. The composition and layering of the peat, including the presence of pollen, animal fecal matter, and charcoal, provides valuable information about the processes that formed the terrestrial and freshwater ecosystems. The ONWR represents a rare subtropical peatland that provides insight unique to peatlands in other climates. Typically, the temperate/subtropical climate zone is not conducive to creating such deep deposits of peat, but the ONWR's unique combination of a high water-table and low topographic relief constitutes ideal conditions for creation of peat. The ONWR contains one of the largest freshwater peat deposits in the subtropical zone globally. When peatlands are left healthy and intact, like those located within the ONWR, they can account for some of the largest carbon sinks on land. It is estimated that peatlands hold 30% of carbon stored on land, while covering only 3% of land. Conversely, when peatland lands are disturbed, they can release "carbon bombs" containing large amounts of greenhouse gases in the atmosphere. Protecting peatlands is an important effort to mitigate climate change.

Further, the ONWR's size aids in the preservation of habitats and species by providing 165,000 ha of protection. The connectivity of this property allows for a network of small ecosystems created by streams and depressions to support invertebrates and amphibians while simultaneously supporting a healthy population of approximately 400 Florida black bears with large home ranges. Unlike in most other protected temperate wetlands, the scale of the ONWR, in principle, permits fire

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management beyond simplistic fire suppression, thus allowing natural fire processes and prescribed fires that mimic the environment's natural processes.

Protection and Management:

The ONWR was established in 1937 by executive order. Shortly after that, the United States Congress classified it as a tier 1 wilderness. The ONWR is afforded heightened environmental protection due to its Wilderness status.

The ONWR is currently managed by the U.S. Fish and Wildlife Service. For 15 years, management has been guided using Comprehensive Conservation Plans, which concentrate the impact of the over 400,000 annual visitors on a fraction of the land managed. Tangible results of Comprehensive Conservation Plans are demonstrated by the active restoration and maintenance of the longleaf pine communities. Through strategic planning prescribed fires, the longleaf has naturally regenerated. Between 1974 and 2003, 1,437 acres of refuge land were restored, primarily with longleaf seedlings.

The purpose of the ONWR is to protect the ecological system of the 177,252 acres of diverse land. Currently, the ONWR works with adjacent landowners and adjacent interest groups to protect the area's natural resources. The ONWR's protection and management sustainability is demonstrated through its Congressional environmental protection status, successful implementation of its managing agency's conservation plans, and engagement with invested stakeholders.