

Brief synthesis

Okefenokee National Wildlife Refuge (ONWR) is a vast and heterogeneous property in the Southeastern United States comprising a significant portion of the biodiversity hotspot of the North American Coastal Plain. The ONWR is made up of a mosaic of ecosystems, including temperate grasslands, forests, savannas, shrublands, and one of the only subtropical peatlands in the world. Encompassing a vast scale at 164,565 hectares, the uniqueness and scientific value of the area has been recognized since 1937 when it received its official National Wildlife Refuge designation. The importance of this region has since been affirmed globally as a Wetland of International Importance (in 1986) and through its more recent inclusion on the Terrestrial Global 200 Priority and Freshwater Global 200 Priority ecosystem lists, each foregrounding the urgency of conservation efforts.

Although ONWR has long been colloquially referred to as the “Okefenokee swamp,” that label undercuts the diversity of natural landscapes and biomes offered by the refuge and the bounties the property affords for the 1,270 flora and fauna species and untold thousands of invertebrate species who reside there. This rich species biodiversity, alongside the symbiosis of varied ecosystems in a unique biogeographic context, conforms with the expectations of UNESCO’s criteria ix and x and positions ONWR as an ideal candidate for World Heritage Site status and its concomitant promise of permanent protection.

Justification for criterion ix

The ongoing ecological processes among diverse ecosystems—including wetlands, peatlands, and longleaf pines—showcase remarkably intact habitats and ample opportunities for researchers. The origin of the property continues to be a source of debate among evolutionary scientists and geologists, making the protection of the region essential for further inquiry and analysis. A fuller understanding of the property will also deepen scientific insights and enrich surveys of the property’s surrounding ecosystems. These studies will have particular impact on the Suwannee and St. Mary’s rivers, twin ecological life forces of the region which mutually support ONWR to make it one of the world’s lushest temperate freshwater areas and for which Okefenokee serves as the principal headwaters.

While the majority of peatlands appear in cooler climates and feature slow vegetative growth and decomposition, the peat development in ONWR proliferates among layers upon layers of growth powered by the property’s high water table and low topographic relief, which mutually enable continual water seepage. The peat layers, consisting of water lily, chain fern, and pond cypress, have remained largely intact, with only 37 hectares impacted annually during the course of water trail maintenance. These peat layers store the geochemical history of the region, functioning as a database of global events recorded in the soil over the past 6,500 years. The events decoded here encompass natural events as well as man-made topographic impact events, including evidence of nuclear testing in the 1960s. As ideal repositories of carbon—peatlands store double the carbon of forests—peatlands are essential resources in the global effort to limit carbon emissions and combat rising temperatures and impending climate change. Because peatlands comprise less than 3% of the world’s land area, international scientists and scholars contend that their role in carbon storage is increasingly pressing.

Peat layers also reveal the history of natural fires that propelled the development of the Okefenokee ecosystem with different types of peat among the layers evincing key distinctions

among the vegetative systems. Evidence in the peat layers reveals severe fires as recently as the 19th century, events which spurred the development of surrounding prairies and open water areas that are home to diverse flora and fauna. And the region still features some of the highest occurrences of lightning fires in North America, with surface fires continuing to control vegetative growth. The symbiosis between the ONWR's varied ecosystems is best demonstrated through these ongoing ecological processes which produce awe-inspiring phenomena, including floating tree islands originally spawned by accumulated peat moss. While many of these natural characteristics can be found in other global sites, no other site in the world offers all of them together, making ONWR a true mosaic of co-existing natural phenomena and ongoing ecological processes.

Justification for criterion x

The diverse range of ONWR ecosystems has a ripple effect throughout the property, enabling a similarly diverse range of living organisms to prosper. As a globally recognized "biodiversity hotspot" and "key biodiversity area," ONWR is an outstanding example of a natural habitat that maintains ideal conditions for the conservation of variegated species of flora and fauna, many of which have been designated as "threatened" or "endangered."

While the substantial endemic biodiversity on the property encompasses mammals, reptiles, amphibians, and a host of plant species, it is the bird community where the property stands out as an essential refuge for the region. The region supports 238 species of migratory and resident bird species, a number that represents 88% of all bird species found in the North American Coastal Plain. Indeed, ONWR was originally established as a refuge for migratory birds taking advantage of the property's location along the Atlantic flyway as an ideal resting area or wintering location. As the global climate continues to warm and coastal shorelines shrink, the importance of ONWR as a migratory stopover for the larger North American region will grow increasingly pressing. While migratory birds that regularly move through the refuge include osprey, swallow-tailed kites, and some neotropical bird species, it is the wading birds that provide the best barometer of the ecosystem's overall health. The sandhill cranes have thrived in the Okefenokee prairies since the 1940s as they make their annual journey south from the upper midwestern United States, and the endangered red-cockaded woodpecker has benefitted from ONWR management's tireless efforts to restore the longleaf pine ecosystem, allowing new clusters to develop after decades of near extinction.

Beyond the valuable resources the ecosystem provides for the bird community, threatened species of other animals also rely on the refuge's diverse landscape. The Florida black bear, once considered threatened, is now designated a "recovered" species, with approximately 400 currently living in the upland hardwood habitat, dining out daily on black gum fruit. And the Florida panther, one of the most endangered large mammals in the world, is part of a significant recovery effort in which ONWR is one of only three sites being considered as a possible location for its reintroduction because of its unique scope of appropriate habitats. The American alligator, which serves as an ostensible icon of the southeastern United States, has one of its largest populations in the world at ONWR, and it is notably one of the few regions where the alligator resides that is unimpeded by development, hunting threats, or other human interventions. An essential cog in the overall ecosystem, the alligator's eggs provide food for raccoons, and its slithering movements create trails that are written in peat and relied upon by other species.

And these rich animal stories present only a fraction of ONWR's overall biodiversity, which extends to 620 plants, including endangered carnivorous plants, as well as thousands of

invertebrates, with as many 1,000 species of moth alone. These staggering numbers reflect a region where species do not merely flourish in the present, but one that offers conditions for sustained species survival.

Statement of integrity

In an area littered with roadside signage advertising that “trees grow jobs,” it is not surprising that ONWR has been subjected to incursions by the lumber industry and other industrial efforts at land development. However, the area has been largely protected from such interventions since 1937, and the property’s resilience has allowed it to maintain much of its native habitats and wilderness character. The majestic old-growth cypress trees continue to provide cover for the understory in several areas of the property, and only two non-native fauna (feral hogs and red bay ambrosia beetles) impact the area in any discernible way. Given the area’s history, its high degree of naturalness is a testament to the property’s hardiness, a particularly noteworthy trait because of how many comparable wetlands have been unable to survive comparable development efforts. The perimeter of the property remains largely unchanged for 7,000 years, constituting contiguous stretches of protected lands along the Suwanee and St. Mary’s rivers and down to the state border with Florida. While mining companies have made inroads to develop titanium and zircon operations on the eastern boundary of the property, environmental groups have expressed opposition to these threats, which impinge not only on the integrity of ONWR, but on the integrity of surrounding protected areas along the Suwanee and St. Mary’s rivers. The unfragmented nature of ONWR is a testament to these and similar efforts over the past 85 years to maintain the area’s natural character, beauty, and heterogeneity.

Requirements for protection and management

While the land within ONWR’s boundaries remains largely protected, development threats outside its borders persist in the form of planned mining operations and timber interests. Because of the symbiotic nature of the intermingling ecosystems and the mutual impact between the property and its bordering ecosystems, conservancy efforts are essential to maintain the naturalness it still displays. Since 1938 and the efforts of the Civilian Conservation Corps (CCC), the property has benefitted from a rigorous protection regime that monitors entrances, maintains facilities, and recognizes the need for continued vigilance. The refuge staff will continue working on partnerships with organizations and resources outside ONWR itself to maintain its natural resources, and to ensure protection during crises and emergency weather situations. Because ONWR understands the importance of fire to maintain the ecosystem with the concurrent risk this creates for surrounding properties, ONWR is actively engaged in acquiring additional land to create a fire-resilient forest buffer and allow continued fire expansion throughout the breadth of the property. The ongoing ecological processes and biodiversity extends upstream and downstream from the property itself, making cooperation with and awareness of surrounding areas essential as the refuge ensures its valuable place as “a natural island within a sea of the highly modified landscape of the Southeastern United States.”