



ARTHUR CARHART NATIONAL WILDERNESS TRAINING CENTER

MINIMUM REQUIREMENTS DECISION GUIDE WORKSHEETS

Prescribed burning of islands within Okefenokee Wilderness Area.

“ . . . except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act...”

– The Wilderness Act, 1964

Please refer to the accompanying *MRDG Instructions* [click here](#) for filling out this guide. The spaces in the worksheets will expand as necessary as you enter your response.

Step 1: Determine if it is necessary to take action.

Description: Briefly describe the situation that may prompt action.

The entire wilderness area is part of a vast fire dependant ecosystem. Fire is an integral part of maintaining the native habitats for the native fauna. Due to past logging and fire exclusion, the upland islands have been altered. The refuge’s Comprehensive Conservation Plan (CCP) recognizes the benefits of fire for hazard reduction and habitat restoration and incorporates its use within several strategies as follows:

Resource Objective 1. Restore, enhance, and promote the native upland communities and the associated wetlands to maintain the natural vegetation mosaic, diversity, and viability found prior to European settlement within the Greater Okefenokee Ecosystem while improving opportunities for Red-cockaded Woodpecker (RCW) activity.

Resource Strategy 1.3. Evaluate prescribed burn cycle to maximize benefit to the community plant species, black bears, RCWs and other species associated with fire-dependent systems. Base the use of prescribed fire on need rather than on a set schedule (holistic approach).

Resource Strategy 1.12. Wilderness islands will be prescribed burned using aerial ignition in the dormant season for hazardous fuel reduction and in the growing season for habitat restoration. Prescribed fire will be applied as needed to meet habitat restoration goals, generally between 2 to 6 years.

Wilderness Objective 1. Preserve the primeval character of the Okefenokee Wilderness through management and re-establishment of ecological conditions that allow maximum use of natural processes.

Wilderness Strategy 1.3. Establish guidelines as in the Fire Use Management Plan to allow maximum benefit for the wilderness resource from natural processes.

Okefenokee NWR is defined as a part of the Osceola/Okefenokee primary core population for recovery in the RCW Recovery Plan. The majority of the endangered RCW occurring on the refuge have home ranges that encompass the larger wilderness islands. Frequent fires are needed to maintain the habitat for this species. As described in the Recovery Plan frequent fires provide open structure by reducing hardwoods and the density of the midstory pines. It also encourages grasses and forbs in the groundcover that carry less intense fire than woody shrubs and may increase nutrient cycling. The following strategy identifies the refuge's commitment to enhancing habitat for this species:

Wildlife Strategy 1.7. Promote forest management practices designed to benefit RCWs and associated community species and facilitate growth of longleaf pine, both on the refuge and on adjacent state and private lands.

A. Describe Valid Existing Rights or Special Provisions of Wilderness Legislation

Are there valid existing rights or is there a special provision in wilderness legislation (the Wilderness Act of 1964 or subsequent wilderness laws) that allows consideration of action involving Section 4(c) uses? Cite law and section.

Yes: No: X Not Applicable:

Explain:

B. Describe Requirements of Other Legislation

Do other laws require action?

Yes: No: Not Applicable:

Explain:

The Endangered Species Act (1973) governs management of the RCW population on the refuge. It requires the protection and maintenance of the habitat associated with the perseverance of that population.

C. Describe Other Guidance

Does taking action conform to and implement relevant standards and guidelines and direction contained in agency policy, unit and wilderness management plans, species recovery plans, tribal government agreements, state and local government and interagency agreements?

Yes: No: Not Applicable:

Explain:

The RCW Recovery Plan identifies specific habitat requirements for this species that can be accomplished through the use of fire. The RCW prefers the fire maintained longleaf pine communities.

Several plans promote the use of prescribed fire as a management tool.

The National Fire Plan requires federal agencies with burnable acres to develop a mechanism to establish trends and to reduce the potential wildland fire danger to protect the life and property of surrounding landowners.

The Refuge's Fire Management Plan (FMP) has the following goals:

1. Protect life, property, and other resources (on and adjacent to the refuge) from unwanted fire.
2. Use fire to accomplish resource management objectives.
3. Restore fire as a natural ecological process.

The need for prescribed fire for hazard reduction and habitat restoration was recognized soon after Okefenokee NWR was established. Natural and managed ignitions are used in combination to simulate natural fire regimes and accomplish fire and resource management objectives. These objectives include:

- Reducing hazardous fuels.
- Restoring habitat:
- Enhancing wildlife and plant species and populations.
- Controlling species not commonly abundant in fire dependent communities.
- Promoting biological diversity.
- Preserving endangered species.

D. Describe Options Outside of Wilderness

Can this situation be resolved by action outside of wilderness?

Yes: No: Not Applicable:

Explain:

Prescribed fire is used on the refuge upland management compartments along with selective thinning, planting, and small patch regeneration. These methods will continue to be used outside the wilderness. Prescribed fire and some planting of longleaf pine are an essential component of the refuge's RCW recovery program. As agreements are formed with adjacent landowners and/or land is acquired and improved, the RCW may be drawn to suitable habitat that develops outside the wilderness. Currently, there are only small fragments of suitable habitat outside the wilderness area.

E. Wilderness Character

How would action contribute to the preservation of wilderness character, as described by the components listed below?

Untrammeled:

Although humans are manipulating the habitat conditions on the islands through the use of fire, this action simulates the natural occurrence of fire that has been disrupted by the fragmentation of the landscape around the perimeter of the swamp. Lightning would start a fire on the uplands and then travel into the

swamp and onto other upland areas. Roads, houses, fire breaks, etc. have interrupted the once continuous fuels. As understory fuels are restored to grasses and forbs, longer intervals between prescribed fires may be possible. Also, maintaining the habitat for RCWs allows natural fires within the wilderness to move across the landscape without the need for suppression to protect the habitat.

Undeveloped:

Aerially igniting the islands does not leave any sign of human presence except for the expanse of blackened area. This type of burned area could also occur naturally from a lightning strike. A mosaic of burn patterns is possible with both methods of ignition.

Natural:

Fuel reduction around RCW cavity trees protects critical habitat. Regular prescribed burning will maintain and enhance this habitat and protect it from large, intense, naturally occurring wildland fires. These actions will allow the application of fire for natural resource benefit (Fire Use) throughout the wilderness.

Outstanding opportunities for solitude or a primitive and unconfined type of recreation:

The ignition of fire within the wilderness may distribute smoke into public use areas influencing their experience. Through environmental education and interpretation, the use of fire for the benefit of the ecosystem can become part of the wilderness experience. Only two islands that are accessible by visitors receive prescribed fire (Billys Island and Floyds Island). Access would not be allowed on prescribed burn days which influences their wilderness experience.

Other unique components that reflect the character of this wilderness:

An essential characteristic of the Okefenokee Wilderness is the abundance and diversity of wildlife. Through prescribed burning, native flora will be encouraged which will enhance the habitat for native fauna.

F. Describe Effects to the Public Purposes of Wilderness

How would action support the public purposes for wilderness (as stated in Section 4(b) of the Wilderness Act) of recreation, scenic, scientific, education, conservation, and historical use?

Explain:

Prescribed burning of the wilderness islands supports the scientific, conservation, and education purposes of wilderness. This action helps to maintain habitat for a wide range of animals, enhancing their food sources and the structure of their habitat. It also promotes the use of natural fire within the wetland areas of the wilderness without destruction of critical endangered species habitat as it moves across a drier island. Fire is also a component of the ecosystem that is interpreted in refuge messages.

Step 1 Decision: Is it necessary to take action?

Yes: No: Not Applicable:

Explain:

The importance of fire in the maintenance of the native habitats of the southeast is well documented. Although the wilderness is unobstructed, the avenues for introducing fire into the system are restricted by fragmentation of the surrounding uplands and may lengthen the interval between natural fires. To protect the RCW habitat on the islands and return the landscape to pre-European conditions, periodic prescribed burning is necessary to minimize the fuel loads and enhance the understory composition and structure. This in turn allows the spread of natural fires when they occur throughout the wilderness and thus, benefits the characteristics of wilderness.

If action is necessary, proceed to Step 2 to determine the minimum tool for action.

Step 2: Determine the minimum tool.

Description of Alternative Actions

For each alternative, describe what methods and techniques will be used, when the action will take place, where the action will take place, what mitigation measures are necessary, and the general effects to wilderness character.

Alternative # 1 **Grid aerial application of prescribed fire on wilderness islands.**

Description:

A helicopter would be used to gather data and conduct specific mission activities. These activities include:

1. Conduct flights to determine pre-burn water levels and fuel load conditions.
2. Deliver and retrieve personnel, supplies, and equipment to protect a historic structure/site when burning Floyds Island and Billys Island.
3. Conduct hazardous fuel reduction and habitat restoration firing operations over wilderness islands to achieve the above stated goals and objectives. Delayed aerial ignition device spheres (DAIDS) are placed in a grid over the desired burn area allowing spot headfires to burn to the surrounding burned spots.
4. Conduct post-burn monitoring reconnaissance flights to fulfill agency prescribed fire requirements and to determine if escape potential exists into the surrounding wetland areas.

Effects:

Biological and Physical Resource

Reconnaissance flights before and after burning allows decisions to be made on the basis of current conditions. Escaping fires are minimized by knowing the conditions. Igniting the island in a grid pattern controls the intensity of the fire especially around valuable resin covered RCW trees. The presence of the helicopter over the burning island adds disturbance and stress to the wildlife using the area.

Social and Experiential Resource

The noise from the helicopter may disturb visitors in the area, interrupting their solitude. Access to Billys Island and Floyds Island by the general public would be restricted when these islands are ignited. In addition, smoke from the prescribed burn activities may impair visibility and air quality; although, these impacts may be beneficial in stimulating interpretation of a critical component of the wilderness.

Heritage and Cultural Resource

Federally listed and potential historic structures/sites will be protected. (See MRDG on Historical Site Protection)

Maintaining Contrast and Unimpaired Character

This alternative would improve the wilderness character in the following ways;

- As the native habitat is restored, management operations may decrease by extending the return interval and spending less time over each island in order to accomplish the burn goals.

- By maintaining low understory conditions on islands and protecting RCW trees through prescribed burning operations, wildland fires are able to move unsuppressed within the wilderness.
- Degraded endangered species habitat may be improved under controlled conditions.

Special Provisions

Prescribed burning under this alternative supports the Endangered Species Act, the RCW Recovery Plan, and the National Fire Plan.

Safety of Visitors, Personnel, and Contractors and Work Methods

All personnel, flight crew, and refuge personnel, are required to have various degrees of training to properly and safely perform their duties. The use of aircraft is a hazardous operation. This type of operation would be limited, as much as possible, in order to reduce risks to all personnel. Helicopter landing sites are maintained on each island for emergencies during aerial ignition. There would be no public access onto Billys and Floyds Islands during prescribed burn operations to protect the well being of visitors.

Economic and Time Constraints

This alternative utilizes a helicopter. Aerial ignition takes between 1 -2 hours depending on the size of the island. Generally, no landing of the helicopter is necessary. Through time, the fire return interval may be extended as habitat conditions improve.

Additional Wilderness-specific Comparison Criteria

During ignition operations, the helicopter flies at approximately 200 ft. A minimum of 700 ft is maintained by the helicopter traveling to and from the island.

Alternative # 2 Aerial ignition of islands from one spot to imitate a lightning strike.

Description:

As in Alternative 1, a helicopter would be used to gather data and conduct specific mission activities. The difference would be in the firing pattern as described below:

- Conduct flights to determine pre-burn water levels and fuel load conditions.
- Deliver and retrieve personnel, supplies, and equipment to protect a historic structure/site when burning Floyds Island and Billys Island.
- Ignite the island with a determined number of (DAIDS) placed at one spot to imitate a lightning strike.
- Conduct post-burn monitoring reconnaissance flights to fulfill agency prescribed fire requirements and to determine if escape potential exists into the surrounding wetland areas.

Effects:

Biological and Physical Resource

The reduced presence of the helicopter over the burning island under this alternative minimizes the disturbance and stress to the wildlife using the area. Reconnaissance flights before and after burning allow decisions to be made on the basis of current conditions. Igniting the island at one location does not control the intensity of the fire around valuable resin covered RCW trees. Scorch to the tree crowns is more likely as climate and understory conditions change through the burning window. The mosaic of the burn area may be more variable which would increase the variability of future burns as well. There is greater potential for a fire to escape off the island simulating the impact of a natural lightning strike unless more restrictive burn parameters are followed. An escaped fire into

the wetlands may influence the burn patterns of future wildland fires that burn during droughts. It is recommended in the refuge's CCP to attempt to limit fire escapes off the island during prescribed burning operations for this reason.

Social and Experiential Resource

The noise disturbance from the helicopter would be reduced from Alternative 1 because of the shorter time necessary to ignite the island. Access to Billys Island and Floyds Island by the general public would be denied when these islands are ignited. Smoke from the prescribed burn activities may be more intense due to the lengthened time to burn an island. The sight of smoke however may be beneficial in stimulating interpretation of a critical component of the wilderness.

Heritage and Cultural Resource

Federally listed and potential historic structures/sites will be protected. (See MRDG on Historical Site Protection)

Maintaining Contrast and Unimpaired Character

This alternative would improve the wilderness character in the following ways;

- Less time is necessary for ignition over each island.
- As the native habitat is restored, management operations may decrease by extending the return interval and spending less time over each island in order to accomplish the burn goals.
- By maintaining low understory conditions on islands and protecting RCW trees through prescribed burning operations, wildland fires are able to move unsuppressed within the wilderness.
- Degraded endangered species habitat may be improved by burning under more controlled conditions.

Special Provisions

Prescribed burning under this alternative poses more risk of damage to the habitat of the RCW considering the current composition and structure of the understory. The National Fire Plan desires more insurance against escaping fires from prescribed burns.

Safety of Visitors, Personnel, and Contractors and Work Methods

All personnel, flight crew, and refuge personnel are required to have various degrees of training to properly and safely perform their duties. The use of aircraft is a hazardous operation. By igniting one spot, the time the helicopter is in the air reduces the risk to flight crews. Helicopter landing sites are maintained on each island for emergencies during aerial ignition. There would be restricted access onto Billys and Floyds Islands during prescribed burn operations to protect the well being of visitors.

Economic and Time Constraints

This alternative utilizes a helicopter but the time for ignition would be less than an hour. Generally, no landing of the helicopter is necessary. Through time, the fire return interval may be extended as habitat conditions improve.

Additional Wilderness-specific Comparison Criteria

During ignition operations, the helicopter flies at approximately 200 ft. A minimum of 700 ft is maintained by the helicopter traveling to and from the island.

Alternative # 3 Hand ignition of islands after boat or helicopter transport to the island.

Description:

As in Alternative 1, a helicopter would be used to gather data and conduct specific mission activities as described below. However, fire crews would be transported to the island to ignite the fuels.

- Conduct flights to determine pre-burn water levels and fuel load conditions.
- Deliver and retrieve personnel, supplies, and equipment to protect a historic structure/site when burning Floyds Island and Billys Island.
- Transport fire crew to the island and ignite the island with drip torches.
- Conduct post-burn monitoring reconnaissance flights to fulfill agency prescribed fire requirements and to determine if escape potential exists into the surrounding wetland areas.

Effects:

Biological and Physical Resource

Reconnaissance flights before and after burning allows decisions to be made on the basis of current conditions. Igniting the island with on-the-ground fire crew would allow the protection of the valuable resin covered RCW trees and other resources. This method of burning the islands takes a longer period of time which makes burning patterns susceptible to changing climate conditions. Human presence on the islands with surveillance of burn operations from a helicopter may disturb the wildlife for a longer period of time.

Social and Experiential Resource

The noise from the helicopter may disturb visitors in the area, interrupting their solitude. Access to Billys Island and Floyds Island by the general public would be restricted when these islands are ignited. In addition, smoke from the prescribed burn activities may impair visibility and air quality for a longer period of time. Although these impacts may be beneficial in stimulating interpretation of a critical component of the wilderness.

Heritage and Cultural Resource

Federally listed and potential historic structures/sites will be protected. (See MRDG on Historical Site Protection)

Maintaining Contrast and Unimpaired Character

The method of igniting the fuels places humans on the ground in contrast to aerial ignition. This alternative would improve the wilderness character in the following ways;

- As the native habitat is restored, management operations may decrease by extending the return interval and spending less time over each island in order to accomplish the burn goals.
- By maintaining low understory conditions on islands and protecting RCW trees through prescribed burning operations, wildland fires are able to move unsuppressed within the wilderness.
- Degraded endangered species habitat may be improved under controlled conditions.

Special Provisions

Prescribed burning under this alternative supports the Endangered Species Act, the Red-cockaded Woodpecker Recovery Plan, and the National Fire Plan.

Safety of Visitors, Personnel, and Contractors and Work Methods

Safety of the ground crews is at high risk because of the limited access, lack of escape routes, and travel by foot on the islands. The longer time to complete a burn on an island would increase the exposure of the crew to hazards such as heat, severe weather, and travel obstacles. A helicopter would have to still remain in the area to advise the ground crew which would increase the number

of hazards. Helicopter landing sites are maintained on each island for emergencies during aerial ignition but these are few and far between. There would still be restricted access onto Billys and Floyds Islands during prescribed burn operations to protect the well being of visitors.

Economic and Time Constraints

This alternative utilizes a helicopter and a fire crew. Ignition would take one to two days on larger islands if appropriate natural fire breaks were in place. Through time, the fire return interval may be extended as habitat conditions improve.

Additional Wilderness-specific Comparison Criteria

The use of fire crews on the ground would not eliminate the need for aerial surveillance. Safety of the fire crew is foremost and would require aerial support.

Step 2 Decision: What is the Minimum Tool?

The selected alternative is: Alternative # 1 Aerial application of prescribed fire on wilderness islands.

Describe the rationale for selecting this alternative:

The limited on-the-ground access to most of the islands, lack of escape routes, and traveling by foot on the islands, poses a threat to anyone on the ground during ignition. Safety for the crew is the number one reason why Alternative 3 is not feasible. Alternative 1 and 2 do not require anyone on the ground during ignition making them more favorable.

The current composition and structure of the habitat (a result of fire suppression and winter burning in the past) supports the use of aerial ignition as described in Alternative 1. Igniting the fuels in a grid and having the ability to control the burn pattern around important endangered RCW clusters, allows maximum control, reduces scorch and reduces the risk of the fire moving off the island. Alternative 2 is of interest because it minimizes human manipulation of the habitat. However, the habitat has not been restored to the point where fire would move across the landscape at low enough intensity to warrant Alternative 2. It is certainly an approach to be considered in the future as our knowledge of fire within the wilderness increases and the habitat is restored to pre-settlement conditions.

Alternative 1 provides maximum protection to the RCW clusters during wildland fire events by regularly reducing the fuels and the structure variability of the understory. As prescribed burning of the islands increases in this manner, longer intervals between prescribed fires may be possible.

Describe any monitoring and reporting requirements:

Reconnaissance before and after the burn is critical in making informed decisions on the ignition process. All fires are evaluated in terms of meeting the goals and objectives stated in the prescribed burn plan. Red-cockaded woodpecker clusters are surveyed every other year and evaluated in terms of the management that was done since the previous survey. In addition, wilderness logs are completed for each entry by Refuge staff into the wilderness. These logs are used by supervisors to ensure that wilderness values are considered for each entry and monitored for interdisciplinary coordination, consolidation of trips, etc.

Please check any Wilderness Act Section 4(c) uses approved in this alternative:

- Mechanical transport
- Motorized equipment
- Motor vehicles
- Motorboats
- Other: _____
- Landing of aircraft
- Aircraft over wilderness area
- Temporary road
- Structure or installation

Be sure to record and report any authorizations of Wilderness Act Section 4(c) uses according to agency procedures.

Approvals	Signature	Name	Position	Date
Prepared by:				
Recommended:				
Recommended:				
Approved by:				