

OWASA's Vision and Guiding Principles for its Forest Management Program

September 2019

Forest Management Vision Statement

Protect water quality now and for future generations by following science-based principles to manage our forest lands so they are healthy, diverse, resilient, and sustainable.

Guiding Principles

Background

OWASA plans to achieve its Vision through the application of seven guiding principles for our forest management program, forest stewardship plans, decisions, and actions:

- Protect Water Quality, OWASA's Highest Priority
- Improve Ecological Health of Forested Land
- Reduce the Risk of Wildfire
- Improve Wildlife Habitat and Species Diversity
- Sustainably Manage OWASA's Resources
- Engage the Community and Partner Agencies
- Minimize Adverse Impacts on Neighbors and Surrounding Community

These principles are mostly complementary with protection of water quality as our first and foremost objective. Any actions taken to achieve the strategies listed under any Principles must not impair or jeopardize water quality.

Several of these strategies are cross-cutting as they help achieve multiple guiding principles as summarized in Table 1.

Our various forest lands have evolved over many decades, and their composition, health, and condition are the result of individual land ownership patterns and land management decisions, combined with natural conditions and processes, such as forest succession and regeneration. As we develop forest stewardship plans for these various tracts, the strategies and management actions we select for each specific tract will be different depending on a number of factors, such as the type, composition, age, and quality of the existing forest and vegetation; underlying site conditions (soils, slope, orientation, etc.); and hydrology (presence of streams and riparian areas). Since each forest site is unique, OWASA staff may modify a strategy listed under a given Guiding Principle in order to achieve the long-term objective and strategy for a given forest stand or its forest land as a whole or to protect water quality. Thus the Guiding Principles serve as a compass to achieve the Vision, but may be modified as needed.

Sustainable management of our forest land is a major challenge and commitment, and it will take many decades to see results. Healthy, diverse forests are more resistant and resilient to stresses from drought, infestation, wildfire, storms, and the challenges associated with a changing climate. By following the proposed science-based principles and strategies where practicable, the long-term health, vitality, and resiliency of our forest land will be better than if we do not take any action. As a result, we will better protect long-term water quality conditions.

Guiding Principles and Strategies

Guiding Principle: Protect Water Quality, OWASA's Highest Priority

Strategies

1. We will maintain a network of riparian buffers that is more protective than required under local, state, or federal regulations. We recommend that these riparian buffers be excluded from forest management and that no timber harvesting occur within the boundaries of these buffers. We will strive to meet the following riparian buffers:
 - a. 300 feet from the normal pool elevation of Cane Creek Reservoir
 - b. 150 feet on either side of perennial stream (regardless of watershed)
 - c. 100 feet on either side of intermittent stream (regardless of watershed).
 - d. 25 feet on either side of ephemeral channels (regardless of watershed) and other areas such as non-jurisdictional wetlands; buffers will also be included around identified groundwater recharge areas.
 - e. Exceptions may be made for reasons such as: to remove invasive species; remove trees that present a major fire risk, may damage structures or endanger human life; or remove trees necessary to construct road crossings.
2. We will reduce the potential for concentrated overland flow through our riparian buffers.
3. We avoid crossing streams where practicable. Where stream crossings are needed, we design, construct, and maintain crossings to minimize erosion.
4. We avoid cutting trees and building roads on steep slopes and highly erodible soils.
5. We follow or exceed North Carolina Forest Service Forest Practices Guidelines Related to Water Quality.
6. We mark and protect the boundaries of conservation easements protected by Clean Water Management Trust Fund during active forest management on areas near them.
7. Logging roads, logging decks, and other major areas where soil is disturbed will be graded, stabilized to prevent erosion, and reseeded with grass or other appropriate vegetative cover.
8. Our contracts with contractors will include requirements for best practices to minimize the impact from potential petroleum spills and erosion and sedimentation.

9. We minimize the use of herbicides to the extent practicable. Where feasible, we use prescribed burns and other practices to achieve our objectives. When we must use herbicides (to control invasive species or to promote a certain type of tree in accordance with a forest stewardship plan's goals and objectives), we use certified herbicide applicators who have been trained in best practices. We will select herbicides labeled for forestry use, use application methods that target the species we are trying to control, apply when there is low wind and little or no risk of rainfall. We avoid using herbicide in riparian buffers and when we must use them (such as for invasive species control), we select herbicides that are appropriate for use in an aquatic environment. OWASA will track the dates, amounts, locations, and specific herbicides used on its land.

Guiding Principle: Improve Ecological Health of Forested Land

Strategies

1. Our individual Forest Stewardship Plans are based on achieving ecological value for the applicable tract considering existing vegetation, soils, slopes, and other conditions.
2. We recognize that natural forests provide a model for sustainable resource management; therefore, responsible forest management should imitate nature's dynamic processes and minimize impacts when harvesting trees and other products.
3. Our forest stewardship plans include methods to control, minimize, and eradicate where practical invasive species while we are implementing the plans. In high ecological value areas, we may also manage invasive species at times when we are not actively managing other forest resources on the tract.
4. We maintain, manage and restore our hardwood forests to remain in hardwood forests.
5. We recognize active management of all forest lands on OWASA lands is not necessary to sustain ecosystem health. Some forest areas on OWASA land will be more appropriately reserved from active management (in addition to lands set aside for buffers). OWASA will monitor these lands to ensure they remain healthy.
6. Forest management best practices will be selected and implemented so as to maintain the continuity of the forest structure, complexity, and diversity, over time. We recognize that natural and assisted regeneration is one of these practices.
7. We use practices that promote soil productivity.

Guiding Principle: Reduce the Risk of Wildfire

Strategies

1. We manage accumulated debris from storm damaged areas and areas where dead trees and branches form "ladders" to the overstory that pose increased risk or consequences from a wildfire where and when practical.
2. We periodically inspect our forested land to identify potential hazards like pests, parasites, or storm damage that could lead to unhealthy or diseased trees and greater wildfire risk.
3. We thin overstocked pine stands to reduce the risk of wildfires damaging trees or producing hazardous crowning fires.
4. We conduct periodic prescribed burns to reduce the understory fuel levels that will reduce the impact and intensity of a wildfire.
5. We partner with the North Carolina Forest Service and County fire agencies to identify weather conditions that will ensure prescribed burns can be completed in a safe manner, to perform the prescribed burn following their safety practices, and to monitor the site after the burn is completed.
6. Our network of access roads within our forest lands will be designed and located to complement our wildfire risk management objective, such as maintenance of fire breaks, ensuring timely access for fire-fighting equipment, etc. A network of roads and firebreaks will also serve as another line of defense against wildfire spread.

Guiding Principle: Improve Wildlife Habitat and Species Diversity

Strategies

1. We provide a variety of wildlife habitats and tree species; this may include providing early successional habitats such as meadows we create following clear cuts.
2. We adopt practices such as prescribed burning, thinning, and small group openings which promote understory growth and habitat.
3. We will maintain, protect, or create snags (standing dead trees) for wildlife.
4. We protect 300 foot riparian wildlife corridors on perennial streams identified by NC Wildlife Resources Commission or NC Audubon as important wildlife corridors.
5. We create conditions for native plant species to thrive.
6. We manage our upland hardwood stands to promote oak and hickory to provide forage for wildlife.
7. We look to create wildlife habitat that may be limited in a particular area.
8. We recognize that pine monocultures by themselves do not provide the biological diversity that is needed to support diverse wildlife populations. Therefore, rotational pine management and harvesting is used only where site specific conditions warrant

that management approach or if OWASA identifies an existing pine area for rotational pine management to generate revenue to offset costs of managing other lands.

Guiding Principle: Sustainably Manage OWASA's Resources

Strategies

1. We proactively manage our lands using forestry best management practices to prevent ecological decline.
2. We will ensure that OWASA's land holdings are managed to protect water quality and promote healthy forest ecosystems and diverse wildlife habitat.
3. We seek to limit timber removal to the level necessary to achieve our water quality, ecological health, and wildfire risk minimization goals.
4. We consider environmental conditions and impacts, community impacts, and economic efficiency when selecting stands to manage; for example, we may manage a lower priority stand concurrently with a nearby higher priority stand.
5. We reinvest any revenue we receive from commercial harvests back into managing our land and to further protect water quality. We will not sacrifice long-term benefits for short-term financial gain.
6. Staff provides the Board of Directors the estimated operating cost and revenue of the planned forest management strategies in the upcoming fiscal year as part of the annual budget review and approval process.

Guiding Principle: Engage the Community and Partner Agencies

Strategies

1. We will share information with neighboring landowners, the general public, and others about why and how we manage our forest land. We will do this through a variety of methods that may include meetings, tours, website updates, and email.
2. We provide meaningful and varied opportunities for the community to provide feedback on our Forest Management Program, Forest Stewardship Plans, and the implementation of those plans (see also next Guiding Principle).
3. We will continue to work closely with partner agencies in all aspects of our forest management program. We will: request their expert guidance as we develop and implement our plans; partner with them to use our land for demonstration, education, and training opportunities; and work with them to evaluate the ecological and cultural resources on our land and to study and document the outcomes of our forest management program.
4. We provide notice to neighboring landowners prior to performing land management activities.

5. We protect important natural heritage areas identified by the North Carolina Natural Heritage Program (NHP) and work with NHP to register them or protect them through conservation easements or NHP registry agreements where appropriate.
6. We work with NC Wildlife Resources Commission and NC Audubon to perform before and after species surveys where they deem the surveys an effective use of their staff time.
7. Where neighboring landowners also wish to manage lands, we work with them to coordinate our respective plans and management activities. (Note: we will not develop plans for neighboring landowners, but account for their plans when developing our plans).

Guiding Principle: Mitigate Adverse Impacts on Neighbors and Surrounding Community

Strategies

1. We meet with neighbors to our forest stands after providing them with the draft Forest Stewardship Plan for our nearby property. We listen to their concerns and where applicable, we develop measures that enable OWASA to meet its management needs while mitigating adverse impacts to our neighbors.
2. Where practical and site conditions allow, we maintain an aesthetic buffer of 100 feet from viewsheds and public roads. Where unique site conditions exist, OWASA will strive to provide a wider viewshed buffer.
3. OWASA will not access its forest land through another landowner's property unless a formal access agreement has first been developed and approved by OWASA and the landowner. The agreement will specify the terms and conditions under which OWASA can access the property.
4. Where we access our land through a common gravel road that serves OWASA property and private property, OWASA will restore the road to at least the condition it was in prior to our use for forest management activities.
5. We minimize noise impacts by limiting equipment operations within our forest lands to daytime hours, Monday through Saturday. We avoid having major equipment operate on our forest land on Sundays.
6. Where practicable, we will protect any unique or locally important cultural features on our property. This will be done by maintaining forested buffers, and using low impact methods if any active forest management is done in close proximity to such cultural features. Such sites will be clearly marked to indicate where equipment is not allowed.

Table 1. Proposed Strategies to Achieve Guiding Principles Are Cross-Cutting

DRAFT LIST OF PROPOSED STRATEGIES	DRAFT GUIDING PRINCIPLES						
	Protect Water Quality	Improve Ecological Health of Forested Land through Science-Based Principles	Reduce Risk of Wildfire	Improve Wildlife Habitat and Species Diversity	Sustainably Manage OWASA's Resources	Engage the Community and Partner Agencies	Mitigate Adverse Impacts on Neighbors and Surrounding Community
Protect riparian buffers (graduated system where larger buffers are provided along perennial streams).	✓	✓	✓	✓	✓		✓
Minimize potential for overland flow through riparian buffer.	✓						
Avoid stream crossings where practicable. Design, construct, and maintain crossings to minimize erosion.	✓	✓	✓		✓		✓
Avoid cutting trees and building roads on steep slopes and highly erodible soils.	✓	✓		✓	✓		✓
Follow or exceed North Carolina Forest Service <i>Forest Practices Guidelines Related to Water Quality</i> .	✓	✓	✓	✓	✓	✓	✓
Mark and protect boundaries of conservation easements protected by Clean Water Mangement Trust Fund	✓	✓		✓	✓	✓	✓
Grade, stabilize, and re-establish vegetative cover on logging roads, logging decks, and other major areas where soil is disturbed.	✓			✓	✓		✓
Contracts include requirements for best practices to minimize impact from potential petroleum spill, erosion and sedimentation.	✓				✓		✓
Minimize the use of herbicides to the extent practicable. Where feasible, use prescribed burns and other practices. When we must use herbicides (to control invasive species or to promote a certain type of tree in accordance with a forest stewardship plan's goals and objectives), we select certified applicators who have been trained in best practices, select herbicides appropriate for use in aquatic environments where feasible, apply when there is low wind, and use application methods that target the species we are trying to control.	✓	✓	✓	✓	✓		✓
Base our individual Forest Stewardship Plans on achieving ecological value for that tract considering existing vegetation, soils, slopes, and other conditions.	✓	✓	✓	✓	✓		✓
Recognize that natural forests provide a model for sustainable resource management; forest management should imitate nature's dynamic processes and minimize impacts when harvesting trees and other products.	✓	✓	✓	✓	✓		✓
Control, minimize, and eradicate where possible invasive species while we are implementing the plans. In high ecological value areas, we may also manage invasive species at times we are not actively managing the forest resources on the tract.	✓	✓		✓	✓		✓
Maintain, manage, and restore our hardwood forests to remain in hardwood forests.	✓	✓		✓	✓		✓
Recognize that active forest management on all OWASA forest lands is not necessary to sustain ecological health. Some forest lands will be more appropriately reserved from active management and monitored to ensure they remain healthy.	✓	✓		✓	✓		✓
Select and implement forest management best practices to maintain the continuity of the forest structure, complexity, and diversity over time. Recognize that natural and assisted regeneration is one of these practices.	✓	✓	✓	✓	✓		✓
Use practices that promote soil productivity.	✓	✓		✓	✓		✓
Manage accumulated debris from storm damaged areas and areas where dead trees and branches form "ladders" to the overstory that pose increased risk or consequences from a wildfire where and when practical.	✓	✓	✓	✓	✓	✓	✓

DRAFT LIST OF PROPOSED STRATEGIES	DRAFT GUIDING PRINCIPLES						
	Protect Water Quality	Improve Ecological Health of Forested Land through Science-Based Principles	Reduce Risk of Wildfire	Improve Wildlife Habitat and Species Diversity	Sustainably Manage OWASA's Resources	Engage the Community and Partner Agencies	Mitigate Adverse Impacts on Neighbors and Surrounding Community
Periodically inspect our forested land to identify potential hazards like pests or parasites that could lead to unhealthy or diseased trees and greater wildfire risk.	✓	✓	✓	✓	✓	✓	✓
Thin overstocked pine stands to reduce the risk of wildfires damaging trees or producing hazardous crowning fires.	✓	✓	✓	✓	✓		✓
Conduct periodic prescribed burns to reduce the understory fuel levels that will reduce the impact and intensity of a wildfire.	✓	✓	✓	✓	✓		✓
Partner with the North Carolina Forest Service and County fire agencies to identify weather conditions that will assure prescribed burns can be completed in a safe manner, to perform the prescribed burn following their safety practices, and to monitor the site after the burn is completed.	✓		✓		✓	✓	✓
Design and locate our network of access roads within our forest lands to complement our fire risk management objectives, such as maintenance of fire breaks, ensuring timely access for fire-fighting equipment, etc.	✓		✓		✓	✓	✓
Provide a variety of habitats and forest species including some snags (dead trees); this may include providing early successional habitats such as meadows following final harvests.	✓	✓	✓	✓	✓		✓
Adopt practices which promote understory growth and habitat.	✓	✓	✓	✓	✓		✓
Maintain, protect, or create snags (standing dead trees) for wildlife.		✓		✓			
Protect 300 foot riparian wildlife corridors on both sides of perennial streams identified by NC Wildlife Resources Commission or NC Audubon as important wildlife corridors.	✓	✓		✓	✓	✓	✓
Create conditions for native plant species to thrive.	✓	✓	✓	✓	✓		✓
Manage our hardwood stands to promote oak and hickory to provide forage for wildlife.		✓		✓	✓		
Create wildlife habitat that may be limited in an area.		✓		✓	✓		
Recognize that pine monocultures by themselves do not provide biological habitat needed to support diverse wildlife populations. Rotational pine management and harvesting is used only where there is a compelling need.		✓		✓	✓		✓
Proactively manage our lands using forestry best management practices to prevent ecological decline.	✓	✓		✓	✓		✓
Manage our landholdings to protect water quality, healthy forest ecosystems, and wildlife habitat.	✓	✓	✓	✓	✓		✓
Seek to limit timber removal to the level necessary to achieve our water quality, ecological health, and wildfire risk minimization goals.	✓	✓	✓	✓	✓	✓	✓
Consider economic efficiency when selecting stands to manage; for example, we may manage a lower priority stand concurrently with a nearby higher priority stand.					✓		✓
Reinvest any revenue we receive from forest management in managing our land and to further protect drinking water quality. We will not sacrifice long-term benefits for short-term financial gain.	✓	✓	✓	✓	✓		✓
Share information with landowners, the general public, and others about why and how we manage our forest land. Use a variety of methods to accomplish this.					✓	✓	✓
Provide meaningful and varied opportunities for the community to provide feedback on our Forest Management Program, Forest Stewardship Plans, and the implementation of those plans.					✓	✓	✓

DRAFT LIST OF PROPOSED STRATEGIES	DRAFT GUIDING PRINCIPLES						
	Protect Water Quality	Improve Ecological Health of Forested Land through Science-Based Principles	Reduce Risk of Wildfire	Improve Wildlife Habitat and Species Diversity	Sustainably Manage OWASA's Resources	Engage the Community and Partner Agencies	Mitigate Adverse Impacts on Neighbors and Surrounding Community
Work closely with partner agencies in all aspects of our forest management program. We will: request their expert guidance as we develop and implement our plans; partner with them to use our land for demonstration, education, and training opportunities, and work with them to evaluate the ecological and cultural resources on our land and to study and document the outcomes of our forest management program.	✓	✓	✓	✓	✓	✓	✓
Provide notice to neighboring landowners prior to performing land management activities.					✓	✓	✓
Protect important natural heritage areas identified by the North Carolina Natural Heritage Program (NHP) and work with NHP to register them or protect them through conservation easements or NHP registry agreements where appropriate.	✓	✓		✓	✓	✓	✓
Work with NC Wildlife Resources Commission and NC Audubon to perform before and after species surveys where they deem the surveys an effective use of their staff time.		✓		✓	✓	✓	
Where neighboring landowners also wish to manage their lands, we work with them to coordinate our respective plans and management activities.	✓	✓	✓	✓	✓	✓	✓
Meet with neighbors to our forest stands after providing them with the draft Forest Stewardship Plan for our adjacent property. We listen to their concerns and work collaboratively to develop measures that enable OWASA to meet its management needs while mitigating adverse impacts to them.					✓	✓	✓
Where practical and site conditions allow, we maintain an aesthetic buffer of 100 feet from viewsheds and public roads. Where unique site conditions exist, OWASA will strive to provide a wider viewshed buffer.					✓	✓	✓
OWASA will not access its forest land through another landowner's property unless a formal access agreement has first been developed and approved by OWASA and the landowner. The agreement will specify the terms and conditions under which OWASA can access the property.					✓	✓	✓
Where we access our land through a common gravel road that serves OWASA property and private property, OWASA will restore the road to at least the condition it was in prior to our use.					✓	✓	✓
Minimize noise impacts by limiting management to daytime hours Monday through Saturday.					✓	✓	✓
Where practicable, protect any unique or locally important cultural features on our property. This will be done by maintaining forested buffers, and using low impact methods if any active forest management is done in close proximity to such cultural features. Such sites will be clearly marked to indicate where equipment is not allowed.					✓	✓	✓