

Goddard Forum 2024
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ANDREA PFAFF

Program Specialist
New Jersey Forest Service



NEW JERSEY'S PUBLIC EDUCATION ON CLIMATE AND FORESTS

4

*steps towards engaging, effective & efficient
science communication*



Background

- **FULL DISCLOSURE** | My background is not in forestry!
 - *Graduate research in Arctic Marine Science*
& *undergraduate work in Marine Science and Filmmaking*



In what ways has this assisted with science communication in the world of forestry?



Background

NEW JERSEY HAS AN ESTIMATED 1.9 MILLION ACRES OF FOREST LAND

- ~ 850 million trees in NJ's forests across the state
- *NJ is ~ 40% Forested*
- *Forests are ~54% public*

HOW DO WE KNOW THIS?



US Forest Service
FOREST INVENTORY AND
ANALYSIS DATA



Background

NEW JERSEY HAS AN ESTIMATED 1.9 MILLION ACRES OF FOREST LAND

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NEW JERSEY HAS AN ~ 9 MILLION PEOPLE IN THE STATE

- ~ 5 people per an acre of forested land
- ~ 92 trees per person in New Jersey



4 Steps | *engaging, effective & efficient communication*

1 Identify your audience

2

Technical vs Non-technical?
Age / Education Background?
Favorability towards your message?
Etc.

3

4

4 Steps | *engaging, effective & efficient communication*

1 Identify your audience

2 Meet your audience where they are at

3

4

4 Steps | *engaging, effective & efficient communication*

1 Identify your audience

2 Meet your audience where they are at

3 Bring your audience to where you want them to be

4

4 Steps | *engaging, effective & efficient communication*

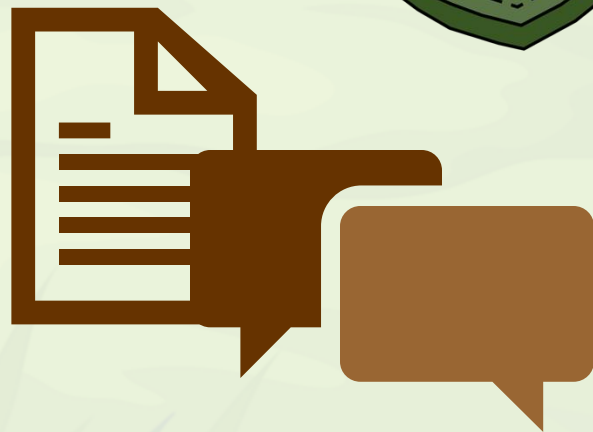
- 1 Identify your audience
- 2 Meet your audience where they are at
- 3 Bring your audience to where you want them to be
- 4 Provide open channels for further exploration

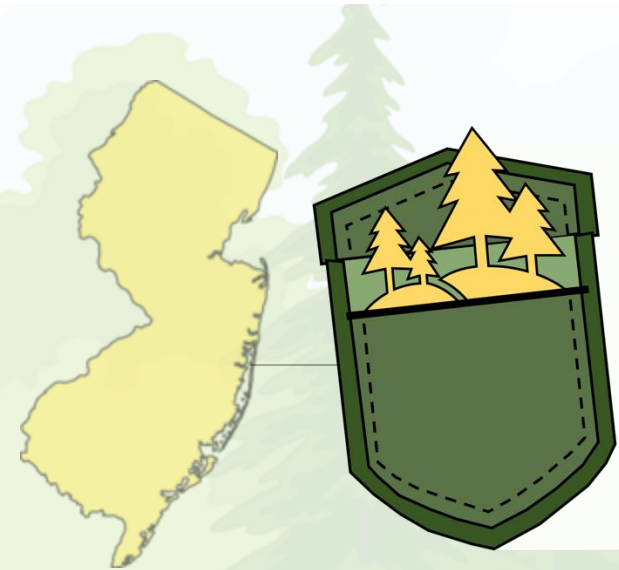
How does New Jersey employ these steps?

- 1
- 2
- 3
- 4



Remember these as we go through!





A New Jersey Forest Service

POCKET PRESENTATION

- 1
- 2
- 3
- 4



SCAN & LEARN



STAY TUNED FOR FUTURE VIDEOS!



What's Carbon Got To Do With It?



What is Forest Data?



Why Manage a Forest?



What is Silviculture?



A New Jersey Forest Service

POCKET PRESENTATION



A series of educational videos on Forestry topics!



Future videos include:

DENDROLOGY

TREES OF NEW JERSEY

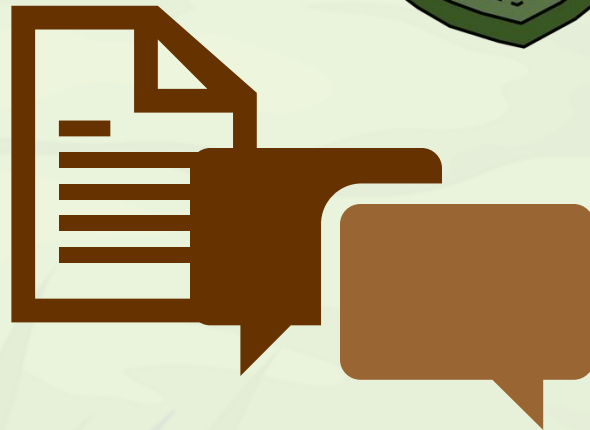
How does New Jersey employ these steps?

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askaforester@dep.nj.gov

- Open line of communication to the experts
 - Particularly helpful in government
- Can help setup in person events
 - (field walks, tabling, school/ university presentations)
- Provided on EVERY piece of communication material we create
 - Helps us track engagement for specific outreach efforts (adaptative management)

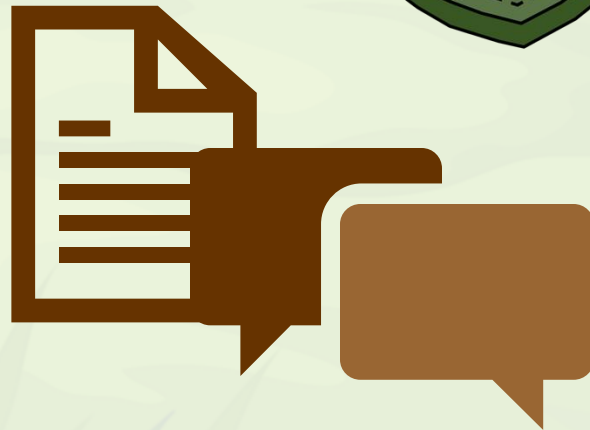
How does New Jersey employ these steps?

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Printed Materials

Example: Atlantic White Cedar Restoration

3' * 4' Poster



ATLANTIC WHITE CEDAR

Chamaecyparis thyoides

RESTORING A GLOBALLY UNIQUE & THREATENED ECOSYSTEM



WHY CEDAR?

Explore the incredible world of Atlantic white cedar swamps and the unique species that call them home! These swamps are a sanctuary for the threatened swamp pink and other plant species found only in the Pinelands. They also provide crucial habitat for Hessel's hairstreak butterfly, a species of special concern in New Jersey, and the state-endangered timber rattlesnake.

Cedar swamps play several key roles in maintaining clean and plentiful water in the Pinelands. Acting as a natural filter, the roots and soils bind to remove sediments and pollutants from the water. Swamps are also linked to groundwater, providing continual surface stream flow even during dry periods. Additionally, the Pinelands' distinctive tea-colored water comes from natural compounds called tannins produced by the trees. These massive cedar trees, along with the swamps' deep muck soils, are an important carbon sink.

Despite being the last stronghold for Atlantic white cedar, New Jersey's cedar swamps are at risk. With less than 25,000 acres remaining, they continue to disappear due to a variety of pressures, both ecological and human-caused. Join us in preserving these invaluable habitats and protecting the unique biodiversity of the Pinelands.

HOW DID WE GET HERE?

For centuries, cedar wood has been highly prized for its durability, quality, and light weight. Since early colonial times, it had been exploitatively harvested without concern for re-growing the cedar that was extracted.

For hundreds of years, Atlantic White Cedar swamps were picked over. The prized cedar trees were cut, while the less desirable swamp hardwoods (like red maple and blackgum) were often left behind. These trees spread their seeds into cut areas previously occupied by cedar. Even when maple and blackgum were cut, their ability to sprout from stumps allowed them to grow faster and overtop tiny cedar seedlings competing for sunlight.

Atlantic White Cedar also suffers because it is a preferred food for white-tailed deer. As deer populations exploded in the latter half of the 20th century, they over-browsed cedar seedlings and saplings, and are one cause of cedar stands failing to recover after natural disturbances like fire, windstorm, or hurricane, or after being cut by humans.

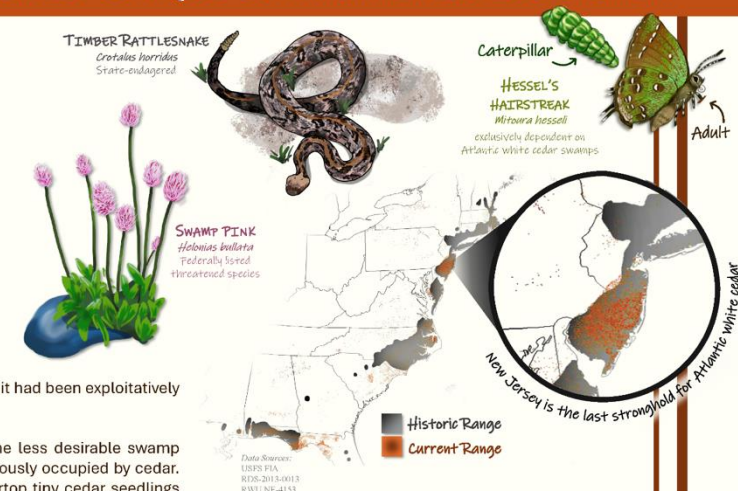
Hydrologic changes continue to cause additional loss of cedar swamps. White cedars thrive in the moist muck soils of a swamp, they are not tolerant of high concentrations of saltwater, drought, or excessive water inundation. Therefore, ongoing sea-level rise, ditching and wetland drainage, impoundment due to roads, flooding for agricultural water storage, and flooding from rebounding beaver populations all contribute to the decline of cedar forests.

WHAT ARE WE DOING?

Today, our Atlantic white cedar swamps are at a tipping point. The natural ecological processes that led to their formation have been interrupted for hundreds of years, threatening their existence. Rather than let this uniquely biodiverse ecosystem continue to decline and degrade, there are actions we can take to work towards restoration. We must allow the natural processes that sustained cedar through the millennia back on the landscape. Only then will we once again see contiguous stands of cedar along drainages and self-sustaining natural regeneration following disturbance. Our initial goal is to restore **10,000 acres** of minimally fragmented cedar forests.

Natural regeneration alone cannot restore cedar swamps due to the degraded nature of their habitat and competition from other species. Therefore, thoughtful ecological forest management using silvicultural techniques can aid in the restoration of this crucial habitat. Techniques such as seed tree harvests, clearcuts, natural and artificial (nursery-grown) regeneration, and control of competing species via fencing and targeted herbicide treatments will be used to facilitate the establishment of young cedar within lowland areas where cedar once dominated. The goal of this project is to expand and reinforce the integrity and function of existing Atlantic white cedar forests in the New Jersey Pinelands.

Funding for the project comes from natural resource damage settlements with polluters that have impacted the state's ground and surface water resources.



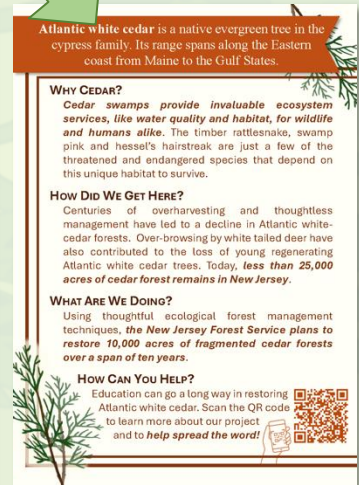
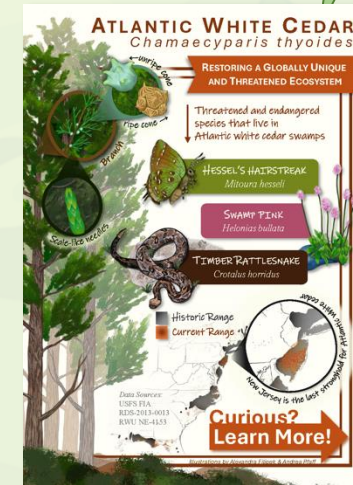
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Printed Materials

Example: Atlantic White Cedar Restoration

3' * 4' Poster



5" * 7" Front & Back Handout

ATLANTIC WHITE CEDAR

Chamaecyparis thyoides

RESTORING A GLOBALLY UNIQUE AND THREATENED ECOSYSTEM

Threatened and endangered species that live in Atlantic white cedar swamps

HESSEL'S HAIRSTREAK
Mitoura hesseli

SWAMP PINK
Helonias bullata

TIMBER RATTLESNAKE
Crotalus horridus

Historic Range
Current Range

Data Sources:
USFS FIA
RDS-2013-0013
RWU NE-4153

Curious?
Learn More!

Illustrations by Alexandra Filipek & Andrea Pfaff

Atlantic white cedar is a native evergreen tree in the cypress family. Its range spans along the Eastern coast from Maine to the Gulf States.

WHY CEDAR?

Cedar swamps provide invaluable ecosystem services, like water quality and habitat, for wildlife and humans alike. The timber rattlesnake, swamp pink and hessel's hairstreak are just a few of the threatened and endangered species that depend on this unique habitat to survive.

HOW DID WE GET HERE?

Centuries of overharvesting and thoughtless management have led to a decline in Atlantic white-cedar forests. Over-browsing by white tailed deer have also contributed to the loss of young regenerating Atlantic white cedar trees. Today, **less than 25,000 acres of cedar forest remains in New Jersey.**

WHAT ARE WE DOING?

Using thoughtful ecological forest management techniques, **the New Jersey Forest Service plans to restore 10,000 acres of fragmented cedar forests over a span of ten years.**

HOW CAN YOU HELP?

Education can go a long way in restoring Atlantic white cedar. Scan the QR code to learn more about our project and to **help spread the word!**



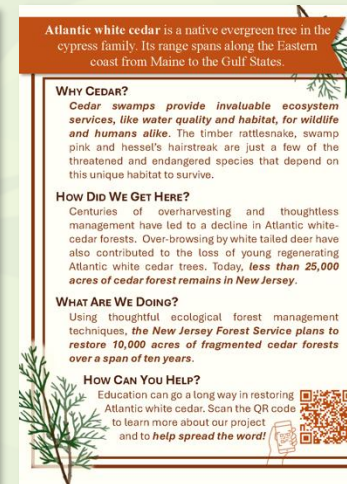
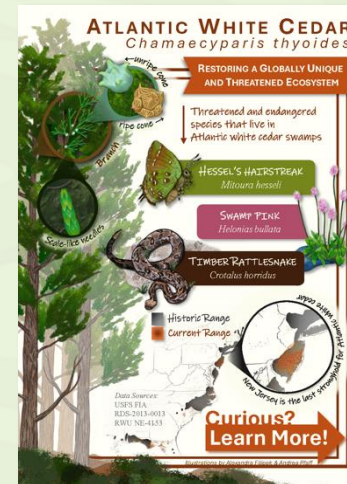
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Example: Atlantic White Cedar Restoration

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3' * 4' Poster



QR code to more information



5" * 7" Front & Back Handout

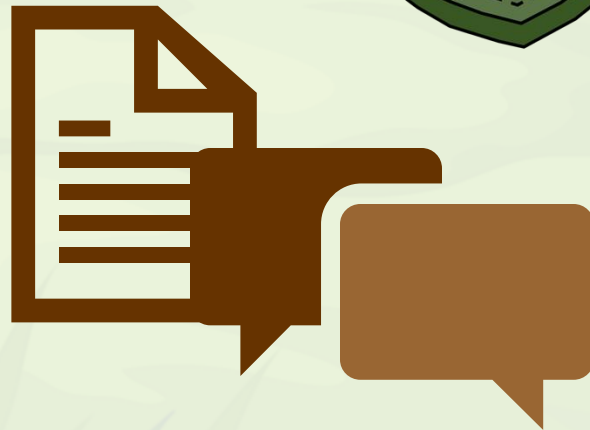
How does New Jersey employ these steps?

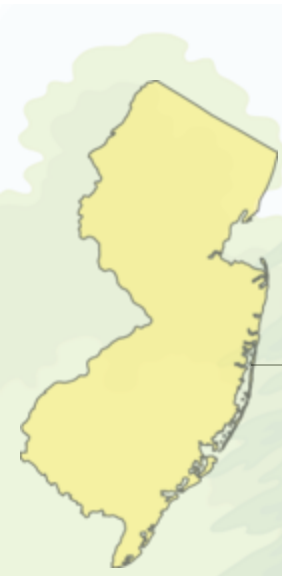
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Social Media Campaign

Example: FIA Video



1. Audience = Landowners in New Jersey
2. Many have concerns about letting FIA foresters on their land to measure and question the legitimacy of the program... general safety concerns
3. Understand that the program is | **a.** real , **b.** is conducted with safety protocols in place, **c.** produces extremely important forest data we use at NJFS and they can access!
4. Here is the **a.** website to read about the program, **b.** the website to access the data, **c.** a video about what forest data is and **d.** our email to ask us questions directly



Social Media Campaign

Example: FIA Video

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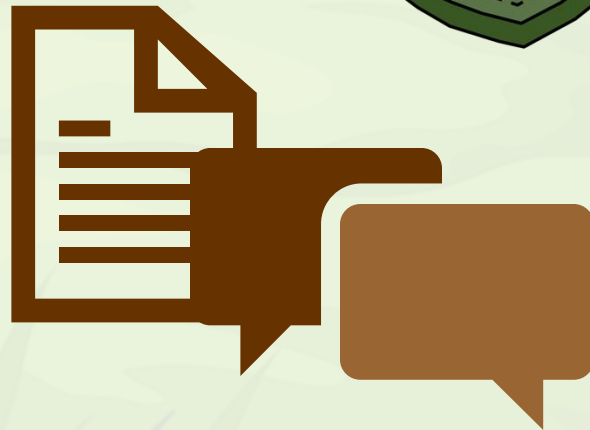
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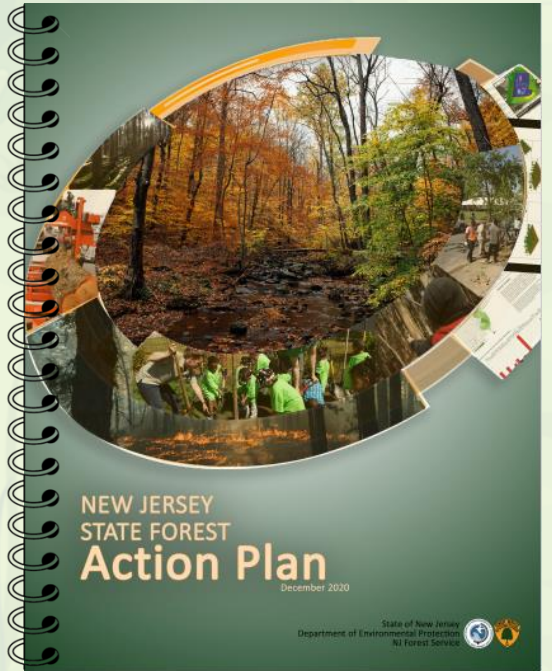
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Chatting with Documents

- AI as an accessibility tool to large verbose documentation
- Lots of safety rails to guide how the AI responds
- So many accessibility opportunities
 - speech to text* → *text to speech*
 - many languages*



New Jersey State Forest Action Plan

311 page technical document



User

What is New Jersey's goal in managing Forests and how do they support that goal?

The New Jersey Forest Service Action Plan

New Jersey's approach to forest management is characterized by a commitment to multiple interrelated goals that address environmental preservation, biodiversity, recreation, and sustainable use of resources.

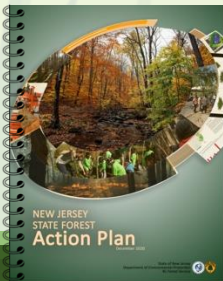
Goals

1.Land Preservation: The State of New Jersey aims to preserve land to protect water resources, biodiversity, historic resources, and to mitigate the effects of climate change while providing public recreational opportunities.

2.Biodiversity: Enhancing biodiversity is considered paramount in forest management. This includes addressing issues such as fragmentation of forests, invasive species, land use changes, and climate change impacts.

3.Carbon Management: In response to climate change, the state focuses on improving forest density and diversifying forest carbon resources to enhance carbon sequestration.

4.Recreation and Public Engagement: Expanding recreational opportunities and improving quality of life through interaction with New Jersey's natural spaces is also a significant goal.





User

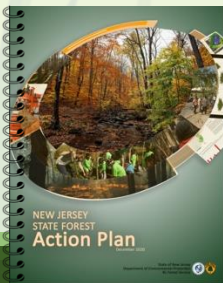


What is New Jersey's goal in managing Forests and how do they support that goal?

The New Jersey Forest Service Action Plan

Support for Goals. To support these goals, New Jersey employs various strategies and programs:

- **Green Acres Program:** This program provides funding for land acquisition for parks, forests, and wildlife management areas, as well as for open space preservation projects.
- **Tax Incentive Programs:** The Green Acres Tax Exemption Program and other initiatives encourage private landowners to preserve open space and engage in sustainable practices.
- **Forest Stewardship Program (FSP):** This program offers technical and financial assistance to private woodland owners, helping them develop management plans that promote biodiversity, water quality, and responsible land use.
- **Partnerships and Incentives:** The New Jersey Forest Service works closely with local governments, conservation organizations, and private landowners through education, technical guidance, and financial incentives to promote active forest management.





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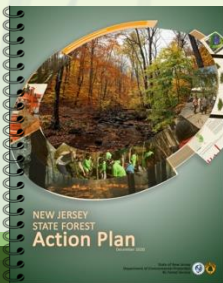


What is New Jersey's goal in managing Forests and how do they support that goal?

The New Jersey Forest Service Action Plan

- **No Net Loss Reforestation Act:** This legislation mandates a compensatory planting plan for state entities undertaking projects that result in deforestation, ensuring that forest cover is maintained.
- **Education and Outreach:** The NJ Forest Service engages in extensive outreach efforts to raise awareness among landowners about sustainable forest management practices, helping them transition to stewardship roles.

Through these comprehensive efforts, New Jersey strives not just to manage its forests sustainably but to enhance their ecological integrity, thus ensuring they can continue to provide vital resources and services to the community and environment alike.



INTEGRATED OUTREACH AS A MANAGEMENT STRATEGY



NJ DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE PARKS, FORESTS & HISTORIC SITES
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forestry.nj.gov



askaforester@dep.nj.gov



[@NewJerseyDEP](#)

Andrea.Pfaff@dep.nj.gov



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Questions?



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