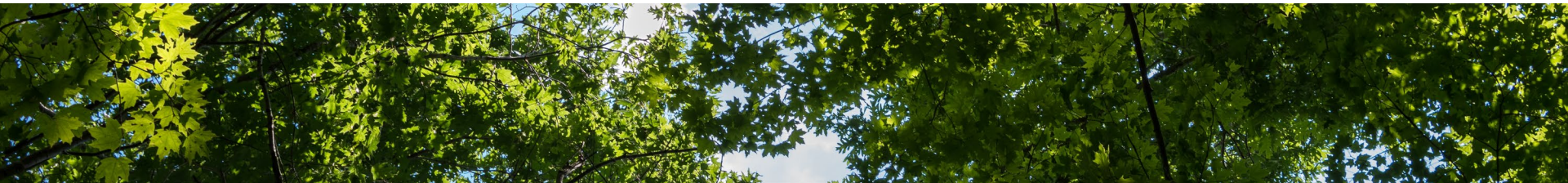
Wayne National Forest

Forest Planning & Ecosystem Services

December 4, 2018

Agenda

- Forest Service & Wayne NF Overview
- Revision Process and Wayne NF Background
  - Assessment
  - Topic Areas
  - Framework
  - Next Steps
- Working Groups



Forest Service Mission & Motto

- The mission of the USDA Forest Service is to sustain the health, diversity, and productivity of the 154 Nation's forests and 20 grasslands to meet the needs of present and future generations.

- Motto – "Caring for the land and serving people"

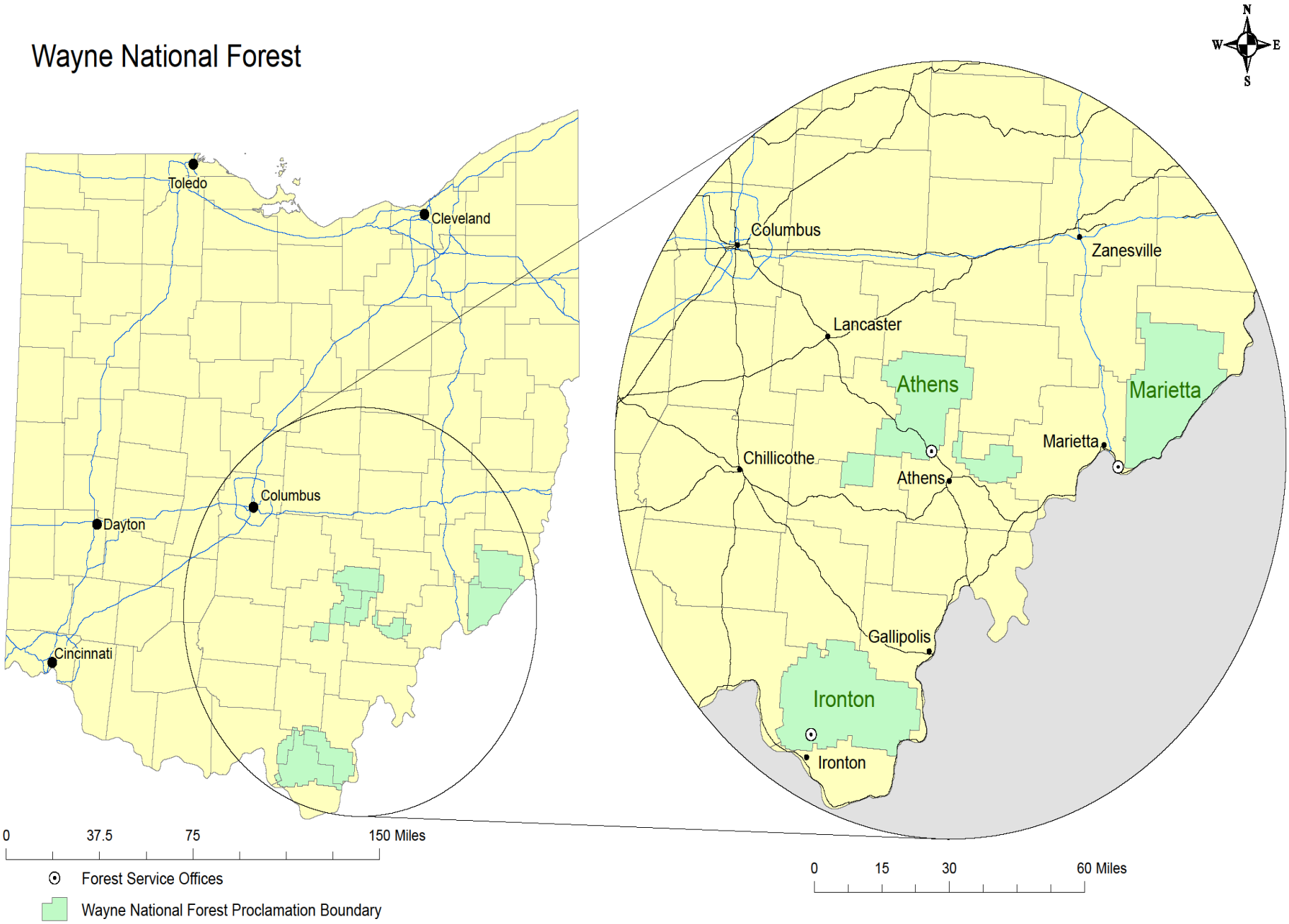
Principal Laws

- Multiple-Use Sustained-Yield Act of 1960
  - An Act to authorize and direct that the national forests be managed under principles of multiple use and to produce a sustained yield of products and services, and for other purposes
  - "…it is the policy of the Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes."
- National Environmental Policy Act of 1969
  - Requires environmental analysis and disclosure of Forest Service projects and the Forest Plan
- National Forest Management Act of 1976
  - Requires national forests to be guided by a forest plan, developed with public input, and amended at least every 15 years

About the Wayne National Forest

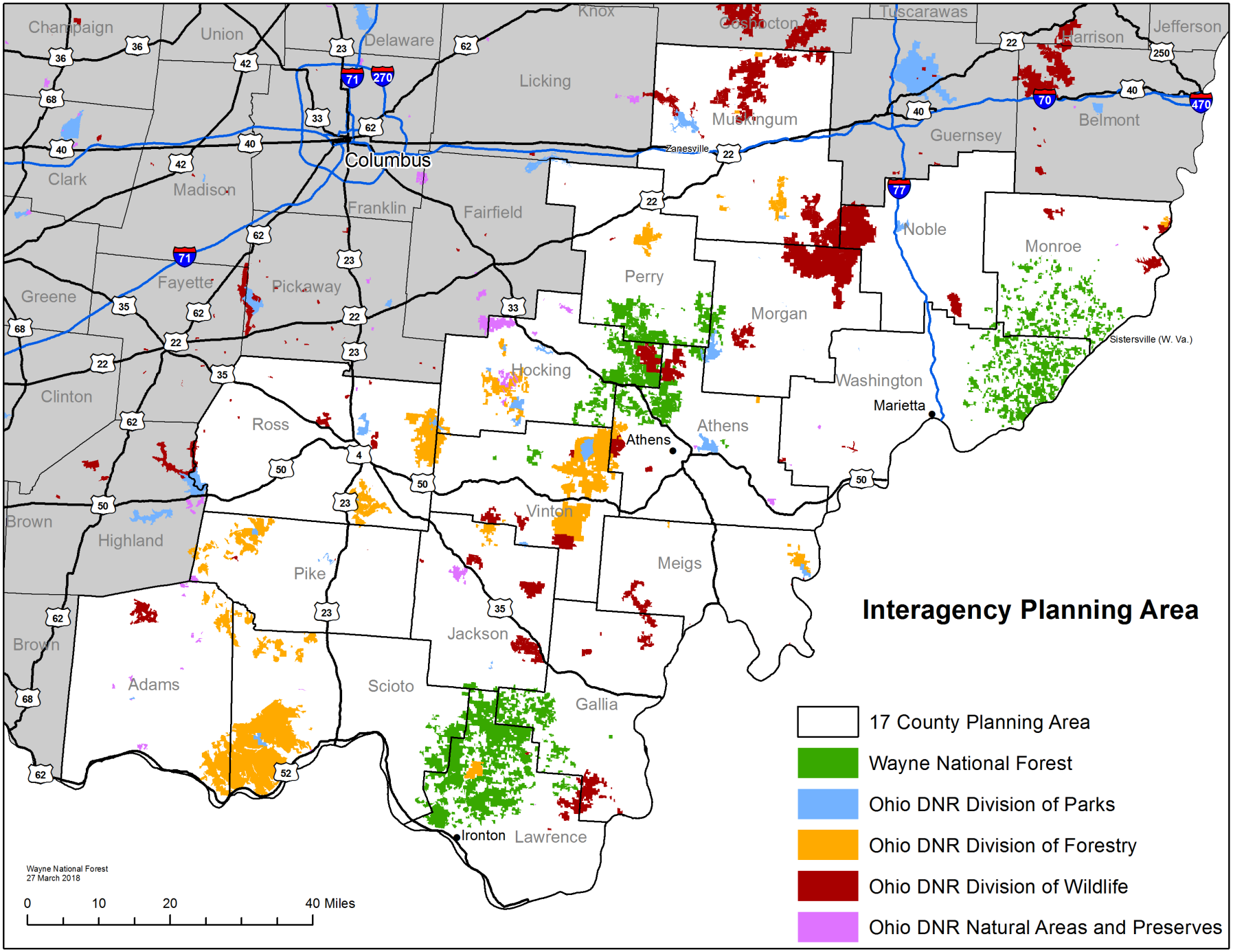
- Officially designated in 1935.
- Land acquired under the authority of the 1911 Weeks Act.
- Only National Forest in Ohio.
- Approximately 245,000 acres.

Wayne National Forest

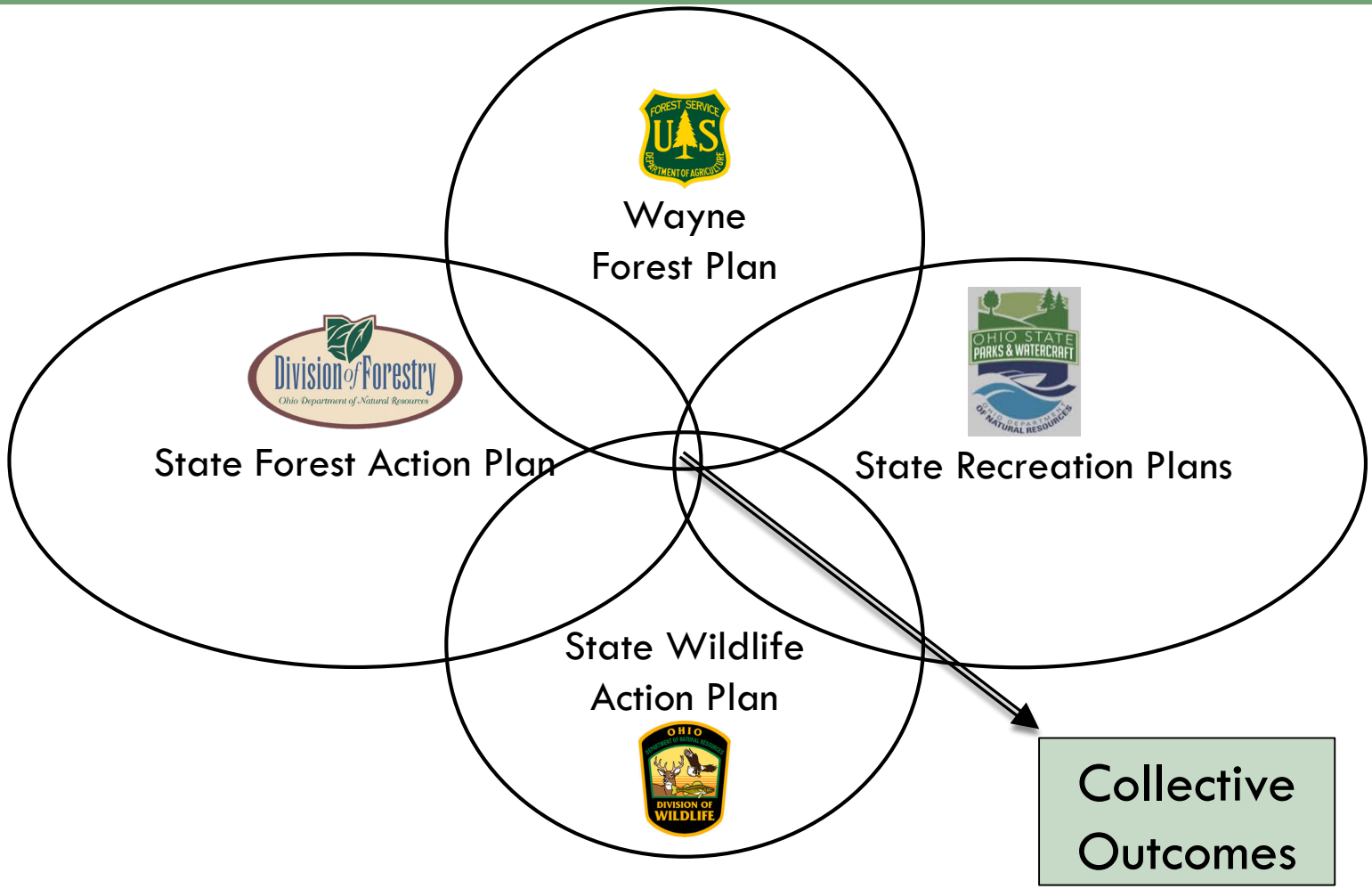


Land Ownership Importance

- Less than 10% state and federal lands in Ohio.
- 72% of Ohio's forests are family owned (less than 10% have plans).
- Average parcel size 17 acres.
- Wayne NF only holds ownership of 25% of the land with the Forest Proclamation Boundary.
- Management objectives cannot be achieved without a "Shared Stewardship" approach.
- Historically extractive industry


Champaign
Union
Delaware
Knox
Coshocton
Tuscarawas
Jefferson
Harrison
Licking
Muskingum
Belmont
Guernsey
Columbus
Zanesville
Clark
Madison
Franklin
Fairfield
Noble
Monroe
Fayette
Pickaway
Perry
Morgan
Greene
Sistersville (W. Va.)
Hocking
Washington
Marietta
Clinton
Ross
Athens
Vinton
Meigs
Brown
Highland
Pike
Jackson
Adams
Scioto
Gallia
Ironton
Lawrence
Wayne National Forest
27 March 2018
0
10
20
40 Miles
Interagency Planning Area
17 County Planning Area
Wayne National Forest
Ohio DNR Division of Parks
Ohio DNR Division of Forestry
Ohio DNR Division of Wildlife
Ohio DNR Natural Areas and Preserves

Coordinated Planning



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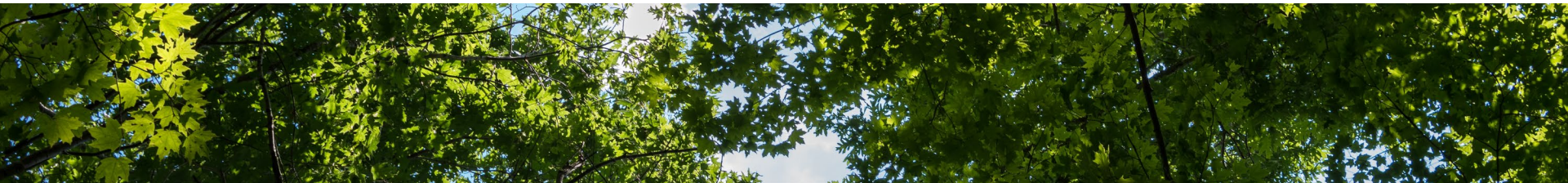
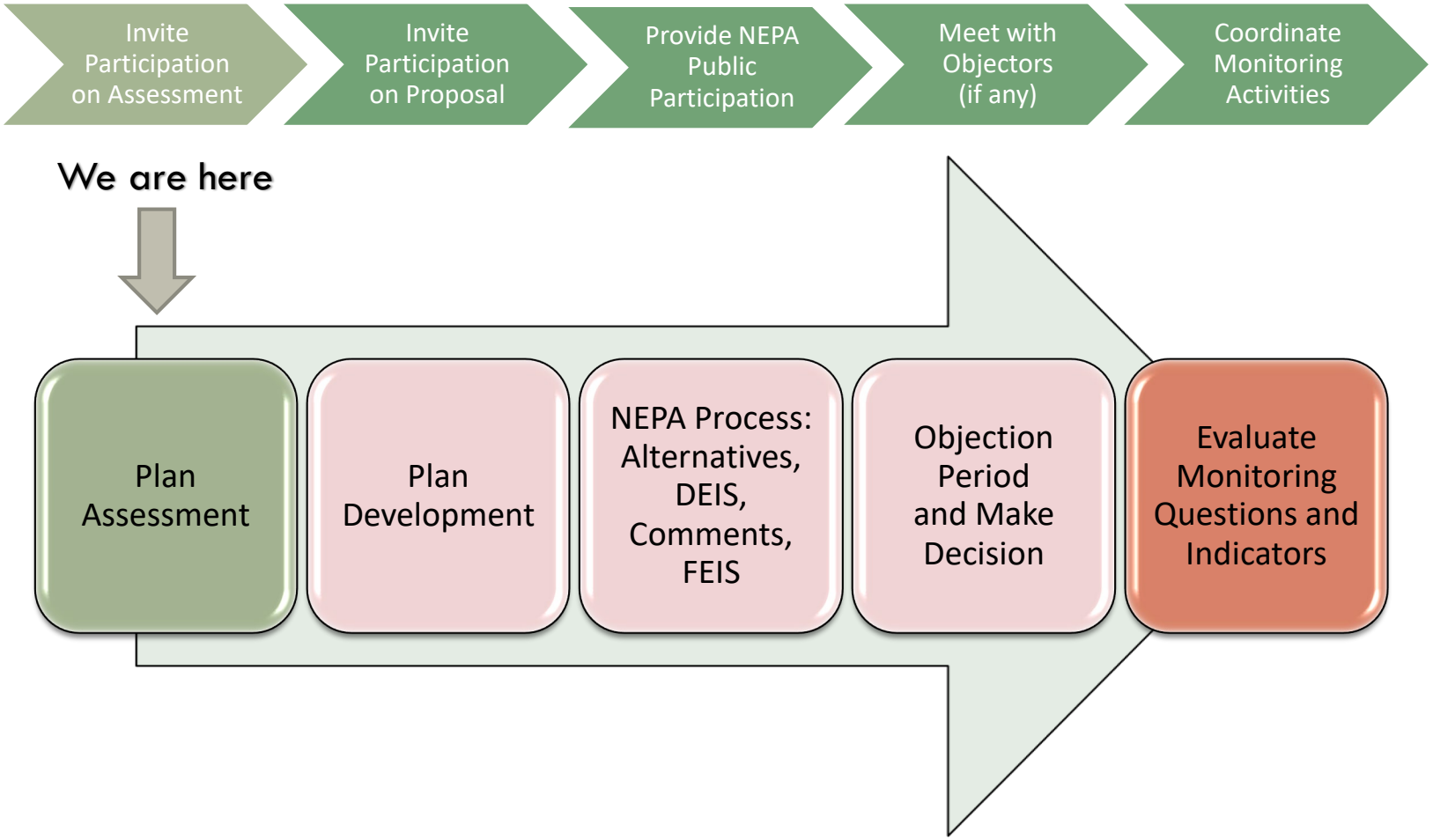


Forest Plan Revision Process



Revision Timeline

- *Assessment Phase*
  - **February 2019** – Release of the draft assessment, species of conservation concern, wilderness inventory, wild and scenic river inventory, and need for change.
    - **45-day official public comment** period after the release of the draft assessment and need for change.
  - **May/June 2019** – Release of the final assessment and need for change.

Revision Timeline

- *Plan Development Phase*
  - **July 2019 – March 2020** – working with the public to develop alternatives for the revised Forest Plan (Forest Service will provide initial proposal to assist the public in the alternative development process).
  - **March 2020 – December 2020** – development of environmental impact statement (EIS) that analyzes the environmental, economic, and social impacts of alternatives for the revised forest plan. The EIS development process includes the following:
    - **60-day official public scoping period** to identify focus areas and issues to be analyzed in the environmental impact statement.
    - **90-day official public comment period** on the draft EIS.
    - **60-day official objection period** on the draft record of decision/final EIS.
  - **Spring 2021** – Final EIS and Record of Decision for the revised Forest Plan.

Revision Timeline

- *Implementation and Monitoring Phase*
  - **2021 and Beyond –** Implement the revised Forest Plan and monitor the results.

Leader's Intent – Assessment

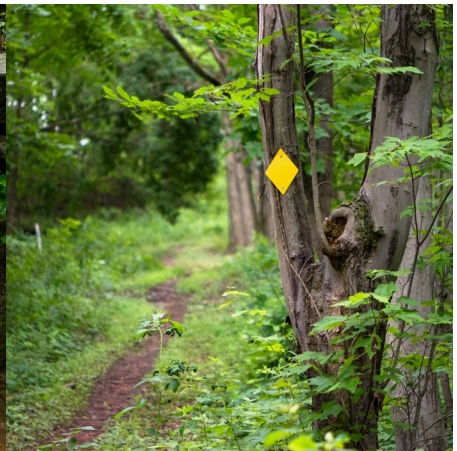
- To foster a more meaningful understanding of the Wayne's role in the area, using values to drive the Forest's relevancy with the public
- To create a practical and concise Assessment by localizing scope, eliminating redundancies, and covering topic areas contextually versus prescriptively
- To develop clear connections between the Forest's existing contributions and any management changes needed to honor public and agency values

"The Assessment rapidly evaluates existing information about relevant ecological, economic and social conditions, trends, and sustainability and their relationship to the land management plan within the context of the broader landscape. The Responsible Official shall consider and evaluate existing and possible future conditions and trends of the plan area, and assess the sustainability of social, economic, and ecological systems within the plan area, in the context of the broader landscape" – FSH 1909.12

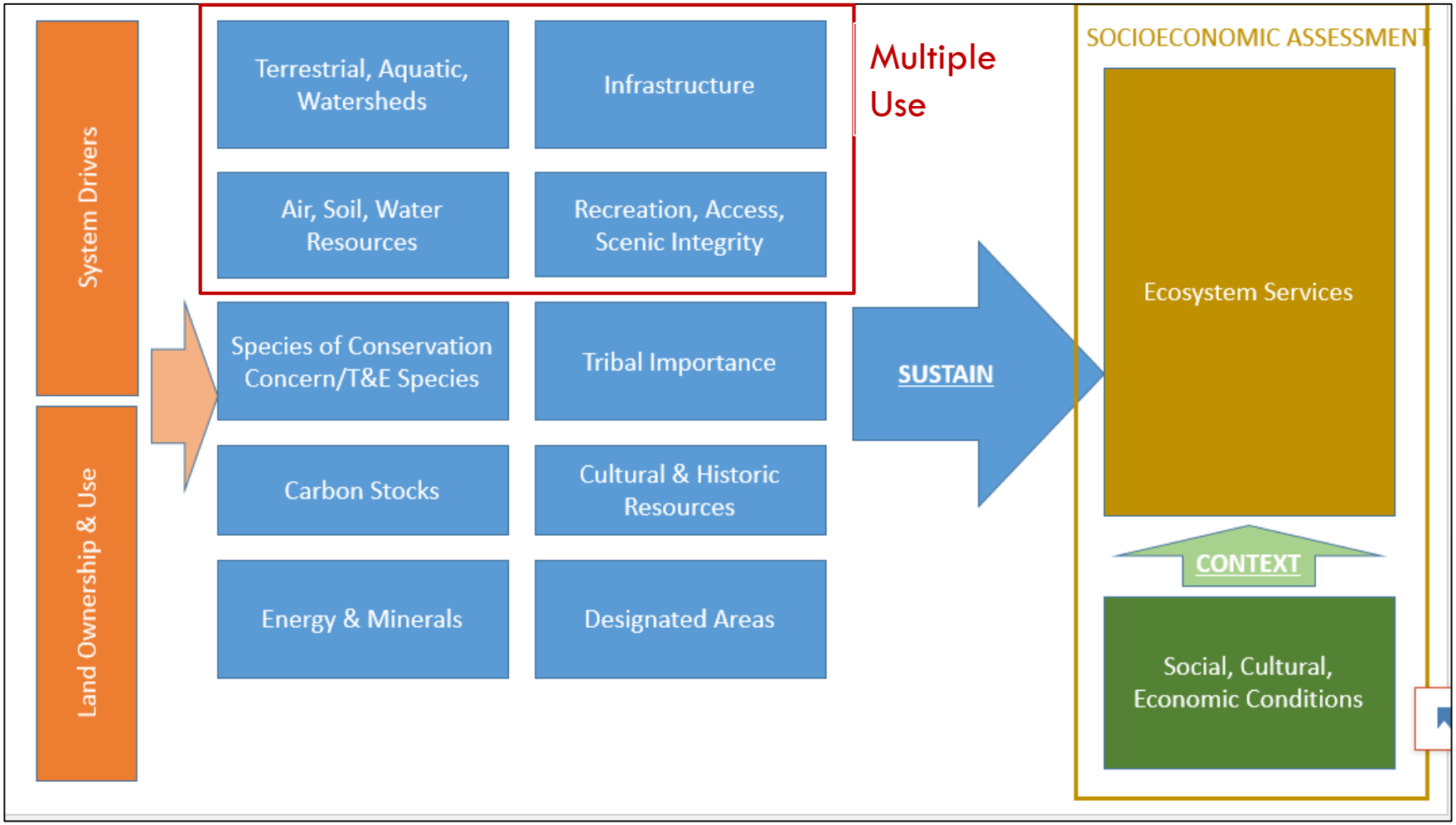
WHY OUR NATIONAL FORESTS ARE IMPORTANT

- National forest and grasslands provide resources that we use, including timber, fish, forage, wildlife, minerals, recreation, water and many specialty products.
- Healthy forest ecosystems purify the air; provide clean water; reduce the effects of drought and floods; store carbon; generate fertile soils; provide wildlife habitat; maintain biodiversity; and provide a variety of outdoor recreational experiences.





Topic Areas


System Drivers
Land Ownership & Use
Terrestrial, Aquatic, Watersheds
Infrastructure
Air, Soil, Water Resources
Recreation, Access, Scenic Integrity
Species of Conservation Concern/T&E Species
Tribal Importance
Carbon Stocks
Cultural & Historic Resources
Energy & Minerals
Designated Areas
Multiple Use
SUSTAIN
SOCIOECONOMIC ASSESSMENT
Ecosystem Services
CONTEXT
Social, Cultural, Economic Conditions

Key ES Themes

- Air Quality
- Biodiversity
- Cultural Identity & Heritage
- Forest Products
  - Timber
  - Non-Timber
- Flood Risk Reduction
- Renewable & Non-Renewable Resources
- Outdoor Recreation
  - Motorized
  - Non-Motorized
  - Fish & Wildlife-Related
- Water Supply & Quality

Framework

A Values-Driven Approach

What are the outcomes (i.e. services) that are most highly valued?

What is the condition/capacity of the landscape to properly provide for those outcomes over time?

How do we know that we've achieved those outcomes over time?

Framework

A Values-Driven Approach

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Hazard Risk Reduction - Flood risk reduction

Framework

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Hazard Risk Reduction - Flood risk reduction

- Healthy riparian zones are necessary for intercepting runoff and slowing water before hitting tributaries
- Infrastructure (i.e. road-stream crossings) that are upgraded to standard to reduce risk of debris pileup and road failures
- Connected floodplains and un-channelized waterways which can absorb and dissipate high-volume storm flow
- Water bars along roadways to intercept road runoff

Framework

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How do we know that we've achieved those outcomes over time?

- # of Aquatic Organism Passage sites upgraded to standard
- Roads decommissioned in high-volume flood zones
- Invasive Species Controls to ensure native competition in riparian areas

Agenda

The Template

Framework

Ecosystem Service	• What is our intended outcome?
Socioeconomic Context	• How is it valued? What is the utility?
Drivers of Change	• What sort of system drivers & stressors have affected our ability to manage for that outcome? Were they addressed in 2006? To what extent has climate change exacerbated drivers & stressors? • What has changed in Best Available Science, Technology, or Public Preferences?
Ecological Conditions	• How have they (drivers of change) changed the condition or capacity (key ecosystem characteristics) of the landscape to provide that outcome or service?
Sustainability	• Are we already doing something differently we weren't doing in 2006? • Can we exert any control of or mitigation for the intended service? Is WNF management sufficient in providing that service or is there a Need for Change?
Monitoring	• Is there a need for additional monitoring to ensure that our activities are achieving those services?

Framework - example

Ecosystem Service

- **Biodiversity** is important for maintaining ecological resilience, reducing the spread of potential pathogens, controlling for insects & disease, and generally balancing populations of highly valued plants, fish & wildlife

Socioeconomic Context

- Vegetation and forest products provide **economic security** to communities. Biodiversity is important for controlling the spread of pests that would otherwise feed on the vegetation needed for forest products or crops.

Drivers of Change

- **White-nose syndrome** causes a decline in bat populations. We have the data back up this assertion.
- Some increasing public awareness around the importance and role of pollinators

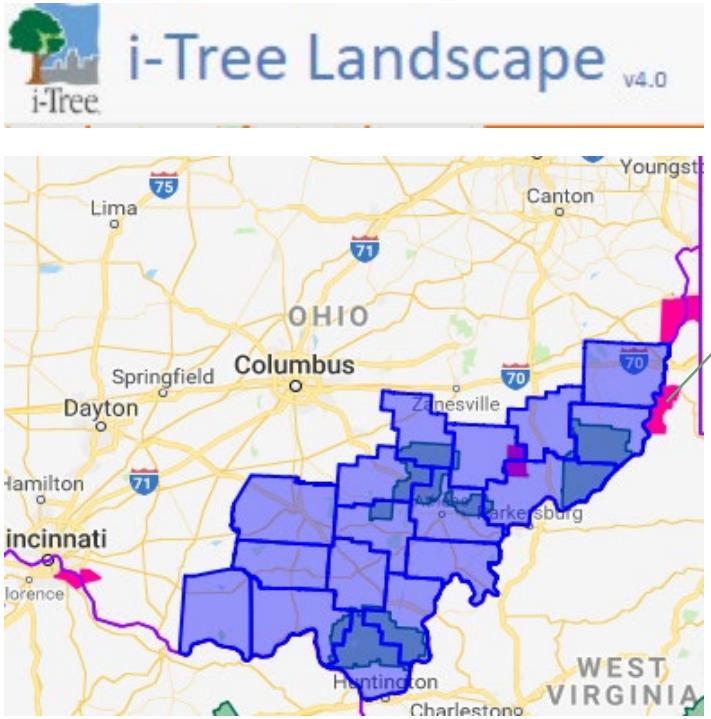
Ecological Conditions

- There are increasing insect & disease threats, resulting in larger **defoliation** events across the region

Sustainability

- We have **no direct control** of this stressor. Indirectly, we can **mitigate the impact** of the stressor on bats.
- Listing of northern long-eared bat has affected timing of certain activities within range of bat-use sites
- We could better maximize opportunities across ownership – more flexible MAs, address relative dead zones, increase pollinator habitat

Sample Ecosystem Service Summaries – Air Quality

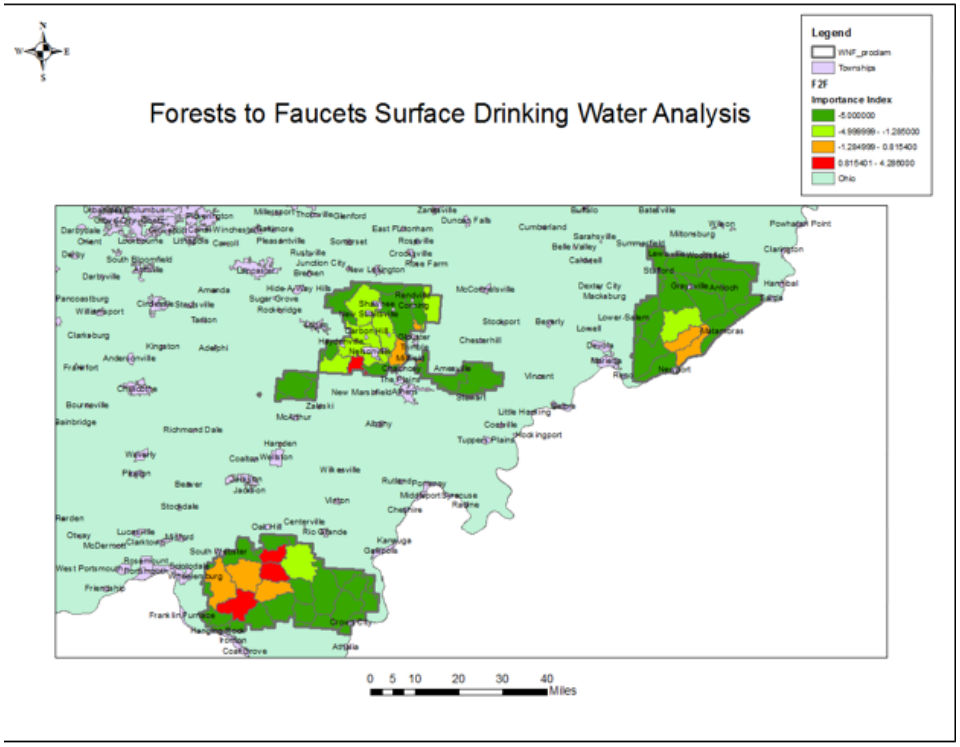


Non-attainment areas for sulfur dioxide

Suggests that trees across the proclamation boundary could potentially remove 38.3 million pounds of pollutants per year, a health equivalent of $3.8 million in avoided cost of illnes

Air Pollutant Removal, Wayne National Forest 2016-2018			Avoided Responses					
Pollutant	lbs/year removed	$/year benefit	ER Visits	Hospital Trips	Asthma Exacerbation	Mortality	School Loss Days	Work Loss Days
Carbon Monoxide	535,046.70	$535,046.70						
Nitrogen Dioxide	1,755,031.80	$8,826.00	0.03	0.14	53.7	0	0	0
Ground-level Ozone	22,264,566.10	$856,209.00	0.05	0.22	0	0.11	61.32	0
PM2.5	1,428,373.30	$1,963,531.00	0.04	0	52.58	0.25	0	0
Sulfur Dioxide	4,331,769.70	$6,380.00	0.06	0.14	25.3	0	0	0
PM10	7,992,211.80	$456,134.00						
Total	**38,306,999.40**	**$3,826,126.70**						

Sample Ecosystem Service Summaries – Water Supply



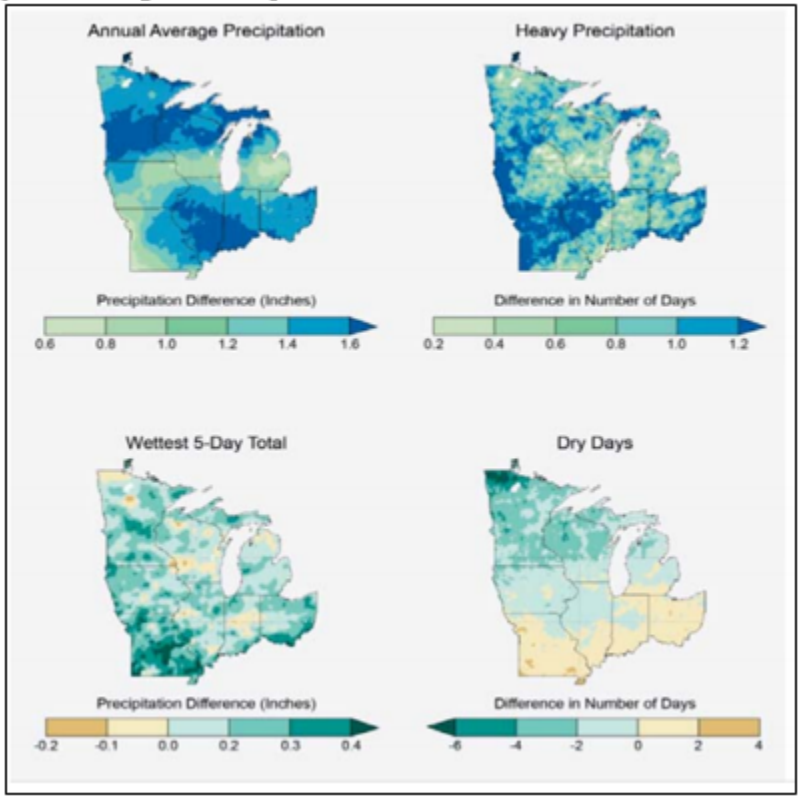
- 428 million cubic meters of surface water per year (Brown & Froemke, 2016)
- Contributes to an estimated 27% of the flow at confluence of Hocking & Ohio Rivers (Luce 2017)
- Water Use: 15% Municipal/Domestic, 4% Agriculture, 9% Industry/Mining, 72% Other
- 85% of municipal supply is groundwater. Source Water Protection Analysis reveals a Population Served of 79,473 across 7 systems
- Water-based recreation results in 63,648 annual visits, contribution of 17 jobs and $910k in value added
- iTree estimates an economic value of $3.1m/year in avoided runoff

Figure 5. Water as an input for industrial productivity, 2010

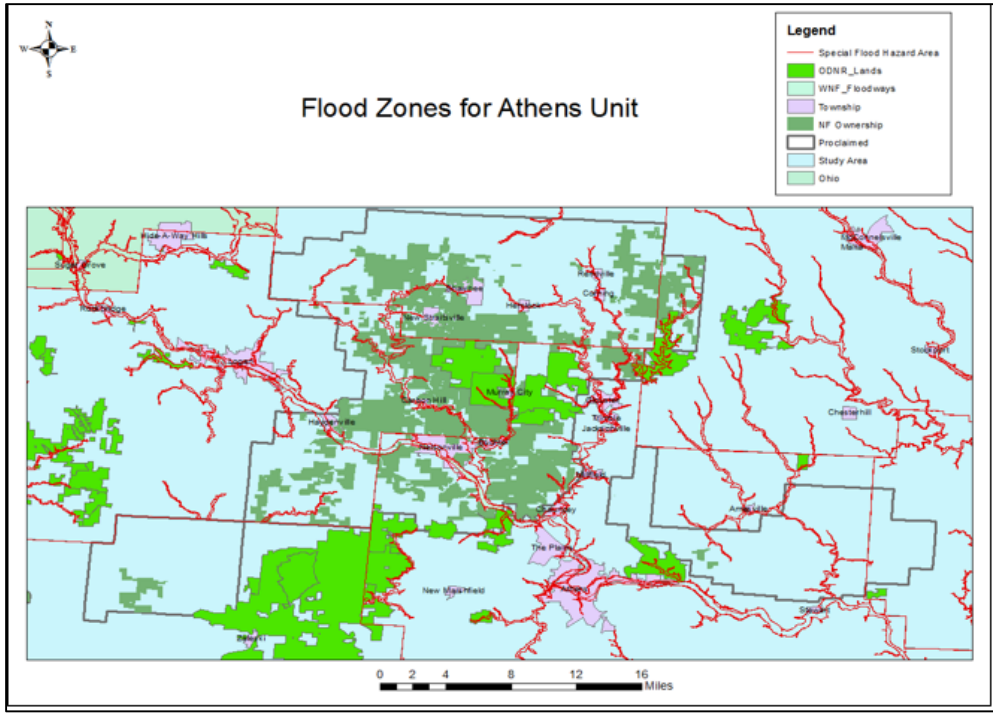
	Annual Water Withdrawal	Annual Industrial Output	Average Marginal Value (2010)
Agriculture	1.036 million (g/yr)	$503.5 million (GDP)	$0.49/gallon
Manufacturing	14.038 million (g/yr)	$11.809 billion (GDP)	$2.45/gallon
Mining	5.727 million (g/yr)	$647.4 million (GDP)	$0.11/gallon
Thermoelectric	898.042 million (g/yr)	53,044.22 (GWH)	0.06 gwh/gallon

Sample Ecosystem Service Summaries – Flood Risk Reduction

Projected Changes in Precipitation Patterns, 2041-2070 Relative to 1971-2000



*Courtesy of National Climate Assessment Global Circulation Model, 2013[1]



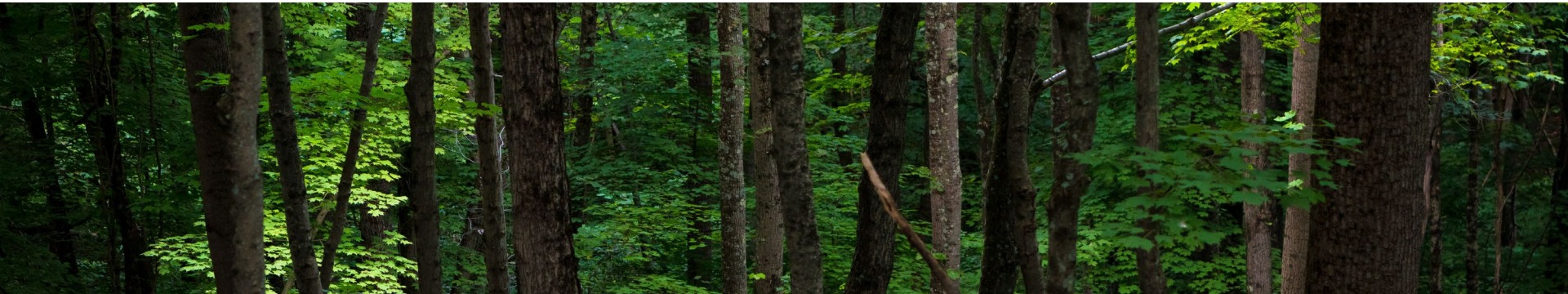
Avg. Annual Cost of Heavy Flood Events	Low	High
Athens Average Annual Cost Post-Flood	$47,233	$141,620
Marietta Average Annual Cost Post-Flood	$441,008	$1,317,024
Ironton Average Annual Cost Post-Flood	$252,090	$1,677,204
Average Annual Property Damage	$96,000	$796,934
Estimated Foregone Recreation Spending	$658,000	$1,368,171
Total Yearly Cost	$1,494,331	$5,300,953

Products

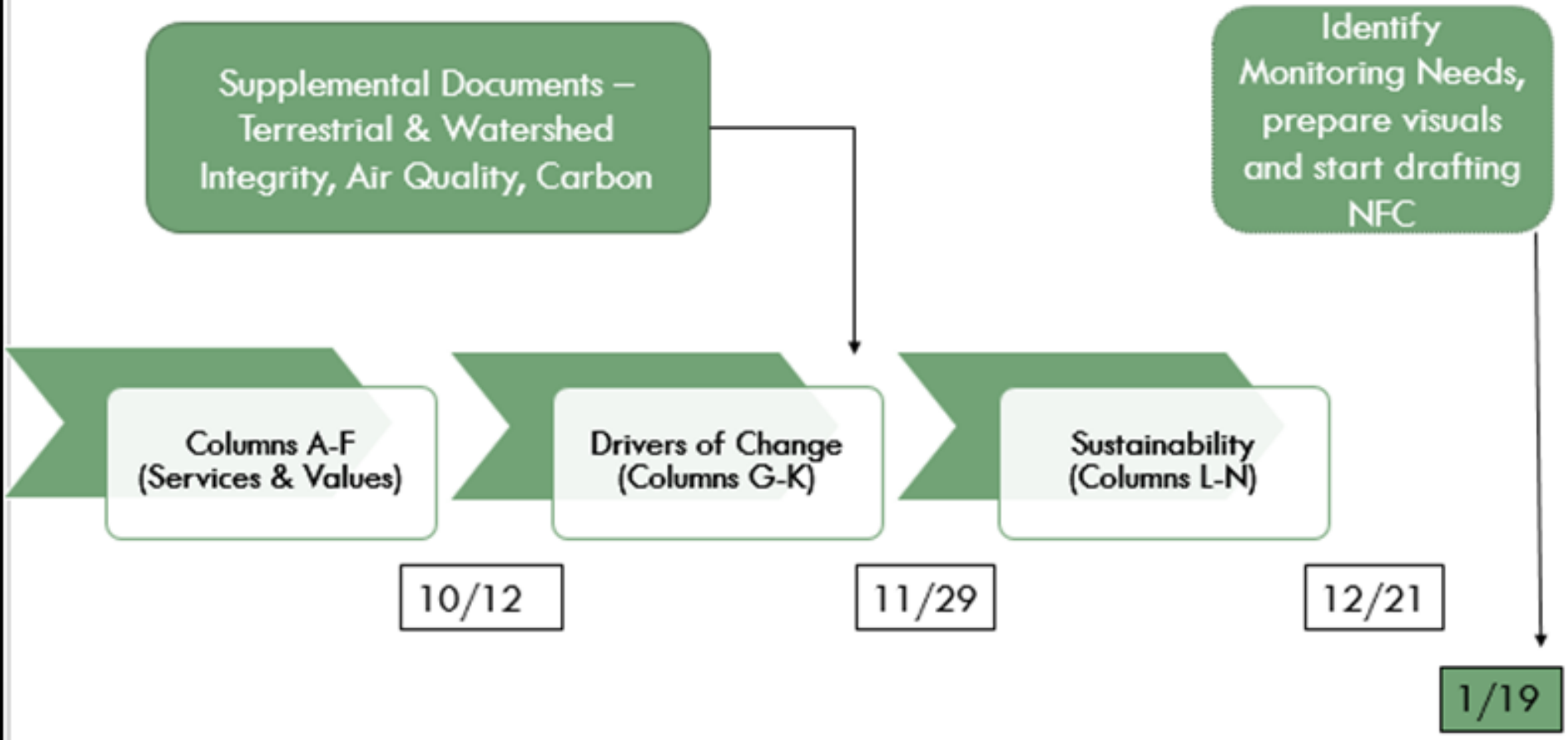
- **The Template**
  - The Spreadsheet (refined) with key questions for consistency
- **Supporting Documentation & References**
  - Ecological Assessments and other background reports
  - An annotated bibliography backing up assertions with data and literature (the project record)
- **Video presentations for each thematic element/ecosystem service**
- **A public-facing interactive tool**
  - ArcGIS Online Story Map

In-Process

- Phased approach to thematic elements, in tandem with working groups:
  - Phase I – Services & Values (September 17 – October 12)
  - Phase II – Drivers of Change (October 12 – November 29)
  - Phase III – Sustainability (December 7 – December 21)
- Monitoring Review – (December 21 – January 7)
- Draft Assessment and Need for Change (early February)

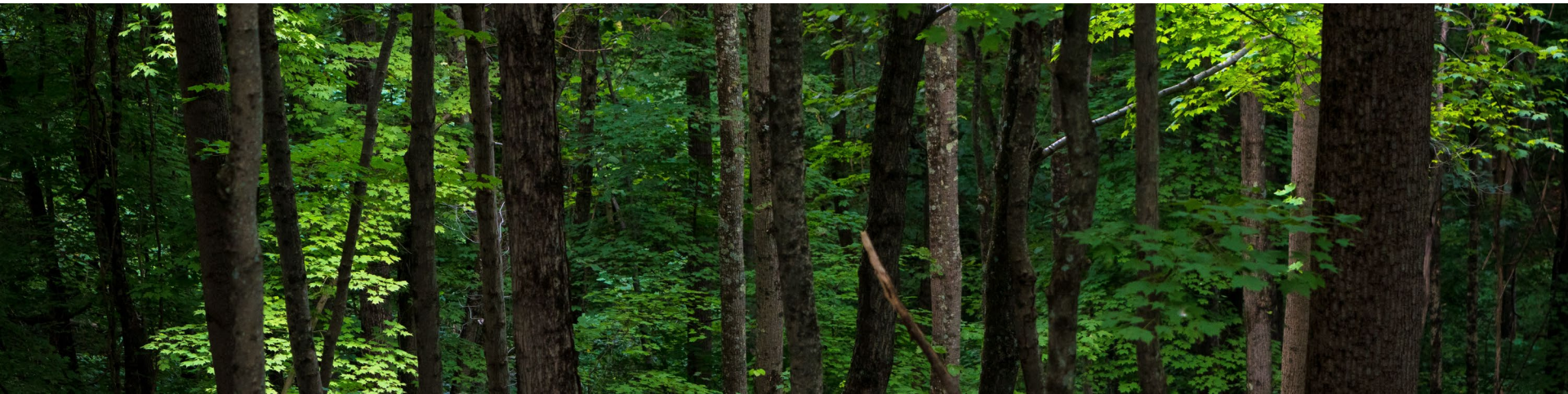


Timeline


Supplemental Documents – Terrestrial & Watershed Integrity, Air Quality, Carbon
Identify Monitoring Needs, prepare visuals and start drafting NFC
Columns A-F (Services & Values)
Drivers of Change (Columns G-K)
Sustainability (Columns L-N)
10/12
11/29
12/21
1/19

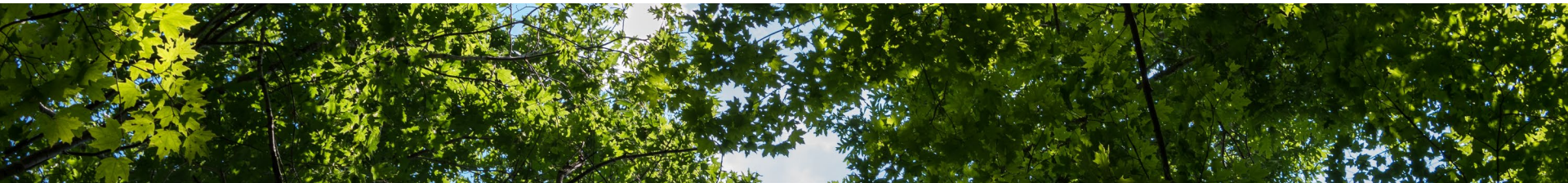
Concurrent Assessment Processes

- Wilderness inventory & assessment
- Wild & Scenic River inventory & assessment
- Species of Conservation Concern (SCC)
- Reasonably Foreseeable Development Scenario (RFDS)



Agenda

- Monthly Forest Plan Revision Update
- Revision Process and Wayne NF Background
  - Assessment Requirements
  - Leader's Intent
  - Current Status
- The Pre-Assessment & Assessment
  - Topic Areas
  - Framework
  - Next Steps
- Working Groups



Assessment

- Working Groups:
  - Public invited to participate in the Assessment process
  - Designed around assessment topic areas
  - Groups will provide information only
    - Air Quality, Water Quality, & Water Supply Working Group
    - Biodiversity & Forest Health Working Group
    - Local Culture & Heritage Working Groups (3 total, 1 per unit)
    - Renewable Energy Working Group
    - Outdoor Recreation Working Group
    - Wild & Scenic Rivers Working Group
    - Wilderness Areas Working Group

Assessment

- Working Groups:
  - Technical Working Group, invitation only
    - Non-Renewable Energy & Minerals Working Group
  - Citizen-Initiated Working Groups, with support from the Forest Plan Revision Team
    - Sustainable Economies, Ecological Forest Management, & Climate Protection (Contact Roxanne Groff)

How to participate

Forest Plan Revision Webpage: www.fs.usda.gov/main/wayne/landmanagement/planning

- Submit comments
- Sign up for email alerts
- Find information on public meetings
- Contact the revision team

Email: WaynePlanRevision@fs.fed.us

Phone: (740) 753-0555

Mail:

Wayne National Forest
Supervisor's Office

c/o Forest Plan Revision Team

13700 US Highway 33

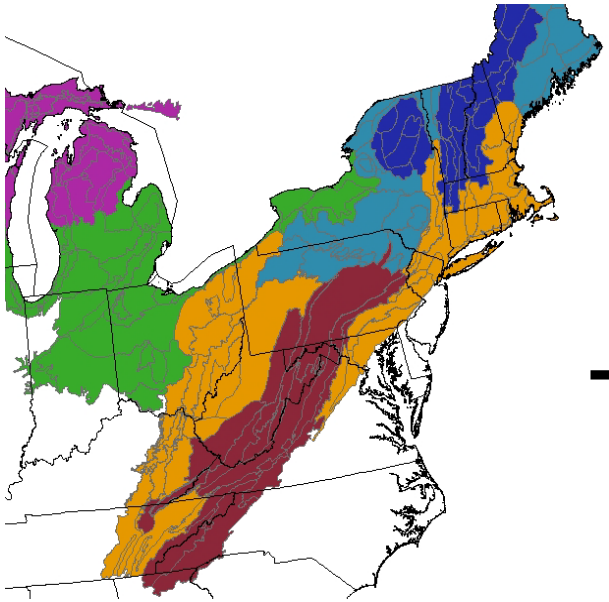
Nelsonville, OH 45764

Agenda

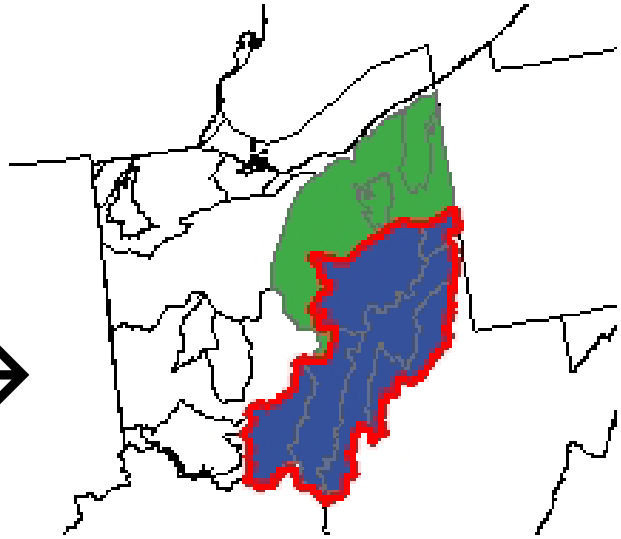
- Questions?

- Potentially Unneeded Slides…

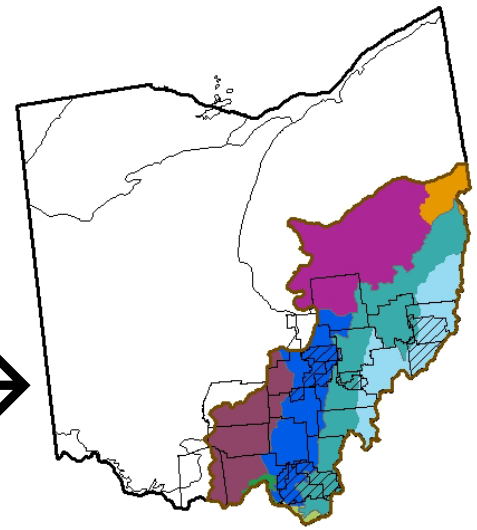
Why this Planning Area?
Ecological Provinces →Sections →Subsections



Provinces



Sections



Sub-sections

- 221Ea - Pittsburgh Low Plateau
- 221Eb - Teays Plateau
- 221Ec - Ohio Valley Lowland
- 221Ed - East Hocking Plateau
- 221Ee - Unglaciated Muskingam Plains
- 221Ef - Western Hocking Plateau
- 221Eg - Lower Scioto River Plateau
- 221En - Kinniconick and Licking Knobs

Landis Modeling Process

Landscape Builder

Creates spatially representative landscapes to initiate Landis modeling.

Linkages 3.0

Ecosystem process model used to estimate species establishment and maximum growing capacity based on soils and climate.

Landis forest landscape simulation model:
used to model succession, disturbance and management.