



FEDERAL FOREST

RESOURCE COALITION

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July 19, 2023

Mr. Chris French
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National Forest System
U.S. Forest Service
Washington, DC

Dear Mr. French:

Thank you for the opportunity to respond to the above captioned Advanced Notice of Proposed Rulemaking published in the Federal Register on Friday, April 21st, 2023. We are extremely concerned that the ANPR could be construed as an effort to fundamentally reorient the Forest Service – and the National Forest System in particular -- away from its core mission absent a clear mandate to do so from Congress. Various incongruities and inconsistencies in the ANPR make it extremely unlikely to result in a legally sound (or effective) set of policies.

We strongly recommend that rather than engage in an unfocused, legally dubious effort to develop a myriad of new policies, planning processes, and procedures, ostensibly in the service of climate adaptation, the Forest Service should focus on implementing the considerable new authorities and funding the Congress has provided to address the wildfire and forest health crisis that has been building on Federal lands over the last several decades.

Any effort to address climate change should be accomplished through active forest management and the legally required Forest Planning process. Another ad-hoc set of “assessments,” “strategies,” and “plans” attempting to address abstract concepts like climate resilience are unlikely to be effective.

The roots of the wildfire and forest health crisis on Federal lands are not complicated. While climate change is an exacerbating factor in the extended fire seasons and severity of recent blazes, the National Forest System has been made uniquely vulnerable to these stresses by three-decade old decisions to drastically reduce timber harvest and create massive set-asides from management. Even when presented with new authorities – such as the insect and disease treatment Categorical Exclusions provided in recent Farm Bills and the Fuel Break Categorical Exclusion and Emergency Action Authority created in the Bipartisan Infrastructure Law – the Forest Service has been unwilling to use these authorities for fear of litigation that takes advantage of outdated species recovery plans and questionable legal precedents, resulting in significant constraints on management.

This has led to decades of passive management, even as land managers at the front line have been keenly aware of the precarious conditions on their National Forests. Addressing these concerns – aggressively thinning forests on unreserved acres, creating fuel breaks around critical infrastructure, and doing so using expedited authorities everywhere possible – should be the agency’s sole focus at this time. Non-fire prone forests, mostly east of the Mississippi, can integrate climate change considerations into their forest plan updates, most of which are due in the next five years or so.

We will address the “overarching questions” and the specific questions later. However, it is important to first rebut many of the premises found in the preamble, which claim (or at least appear to claim) that somehow recent regulatory changes carry the same weight as longstanding legislative mandates, and suggest that upon a finding of threats from climate change, the Forest Service is empowered to adopt policies which depart from – or directly counter – legally binding statutory responsibilities which Congress has not seen fit to either repeal or significantly amend.

After noting the existence of a recent Executive Order (Section 2 of Executive Order (E.O.) 14072, *Strengthening the Nation’s Forests, Communities, and Local Economies*), a memo from the Secretary of Agriculture Tom Vilsack

(Secretarial Memo 1077-044, *Climate Resilience and Carbon Stewardship of America's National Forests and Grasslands*) and the 2012 National Forest System Land Management Planning Rule (36 CFR part 219), the preamble claims for the Secretary a broad power to change management direction on the entire National Forest System because of climate stressors and other factors.

The broad claim of discretion does not hold, even when bolstered by the selectively drawn examples in the preamble. The preamble itself notes that the basic statutes guiding the Forest Service remain the Organic Act of 1897 (Organic Act), the Multiple Use Sustained Yield Act of 1960 (MUSYA), and the National Forest Management Act of 1976 (NFMA). The Organic Act established that one of the primary purposes of the National Forest System is “furnishing a continual supply of timber.”

The preamble cites early authorities (The Forest Reserve Act of 1891, Organic Act of 1897) – and claims these reflected “a focus on conservation and sustainability” that “shifted the focus of forest management towards: (1) improving and protecting forests; (2) securing favorable conditions for water flows (*i.e.*, protecting watersheds); and (3) furnishing a continual supply of timber.” MUSYA states that the National Forests “shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes,” and that the requirements to balance various uses of renewable resources is “declared to be supplemental to, *but not in derogation of*, the purposes of” previous laws including the Organic Act of 1897 (emphasis added).

MUSYA, the notice itself concedes, establishes “the regime the Forest Service must manage under today.” To justify changing direction away from the statutory multiple use mandate, the preamble says that NFMA gives the Secretary “broad authority to manage all forests that are in imminent danger of insect attack or disease” and “to use new research to protect the Nation’s natural resources.” While true, it is also critical to note that NFMA explicitly states that it is intended to achieve “the policies set forth” in MUSYA, which by reference incorporates the directive to produce a continuous supply of timber. Both NFMA and the Renewable Resources Planning Act refer to the MUSYA mandate, which, again, Congress has not seen fit to either repeal or amend.

Furthermore, the NFMA (Sec. 1604(m)) bars the Forest Service from harvesting of “stands of trees” prior to the “culmination of mean annual

increment of growth”, with exceptions for salvage harvest and thinning, which are described as “sound silvicultural practices.” None of the statutory authorities mentioned in the preamble create a legislatively sound foundation from which the Forest Service can unilaterally change management direction in response to climate stressors or other factors. They certainly do not allow the Forest Service to unilaterally enact a set of policies which would place certain trees off limits to harvest.

The preamble claims that since the 1990’s, “National Forest System management continued to evolve with new environmental laws and regulations,” but then only cites the 2012 Planning Rule. This rule established, according to the preamble, that the FS was to “provide for ecological sustainability and contribute to social and economic sustainability” and that it “explicitly recognized climate change as one of the challenges for land management into the future.” While the 2012 regulation can direct the Forest Service to incorporate the “climate change... challenge” into future management plans, it cannot relieve the Forest Service of the responsibility to meet the legally binding mandates found in the Organic Act, MUSYA, NFMA, and RPA.

The ANPR says it is intended to solicit feedback on “how the Agency can continue to adapt current policies and management and develop new policies and practices for conservation and climate resilience to support ecologic, social and economic sustainability in light of climate change, human induced changes, and other stressors.”

While we agree that we are seeing more frequent and larger scale disturbances across the National Forest System, we urge the Forest Service to use the existing National Forest planning processes required by Congress to develop plan components for adaptation to climate change and develop implementable strategies for increasing forest resilience. This approach rests on a firm statutory basis and is feasible in the face of the significant workforce challenges the Forest Service is already experiencing.

The mandate before the agency is to incorporate the legal requirements to furnish a continuous supply of timber into management “in light of climate change” and other stressors. It is not within the agency’s discretion to determine that in light of purported conclusions about the trajectory of the

climate, it may decide to cease meeting the statutory requirements Congress has never repealed.

The preamble to the ANPR helpfully includes three graphics which we will remark upon briefly. Figure 1 shows timber outputs over the last 112 years, demonstrating a significant decline in volume sold and harvested beginning in the late 1980's, with minor increases beginning around 2001 and continuing until recently. Based upon our review of current forest plans, however, the current timber sale level is about half the amount called for in the "Permissible Timber Sale Quantities" (PTSQ's) or "Allowable Sale Quantities" (ASQ's) in current plans. Failing to meet Forest Plan ASQ/PTSQ represents a missed opportunity to store carbon in long-lived wood products as well as the opportunity to encourage forest regeneration. Regenerating young forests rapidly sequester carbon in the trees and in underground root systems. Long lived wood products – such as lumber, panels, and paper manufactured from National Forest timber resources – stores carbon for long periods of time.

Figure 2 demonstrates that disturbance has increased in the last decade and a half, driven, according to the caption, "primarily by overstocked forests." Unsurprisingly, this trend of increased disturbances coincides with the decision to reduce harvest across much of the National Forest System, in large part by early science on how to best conserve a suite of species that includes the various spotted owls (Mexican, California, and Northern), the Grizzly Bear, the Canada Lynx, and a few others. In each case, Forest Plans were effectively (if not overtly) amended to require the Forest Service to favor dense, closed canopy forests, which experience has now demonstrated are uniquely vulnerable to catastrophic insect outbreaks and large fires. The trend of mega disturbances increased rapidly following the unilateral, top-down decision to place about one third of the NFS off limits to most management through the 2001 Roadless Rule. In other words, the strategy of reduced harvest and large-scale set asides has proven uniquely maladaptive to a changing climate.

Figure 3 demonstrates that without an active timber sale program, reforestation also suffers. Timber sales generate revenue as well as deposits into the K-V Trust Fund, administered by the Forest Service. Following the precipitous decline in outputs, reforestation accomplishments (never much more than 40 percent of goals) crashed as well. If one is concerned about climate resilience, then presumably they should be alarmed that reforestation has declined in lock-step with timber outputs. Both represent significant

missed opportunities to sequester and store carbon in both forest and wood product pools.

“Overarching” Questions:

The ANPR asks several “overarching” questions, most of which do not add clarity to what an eventual proposed rule would address, and which are largely duplicated in the specific questions which follow. FFRC may choose not to answer specific questions, but we do wish to provide feedback on the “overarching” questions.

***Overarching Question 1:** How should the Forest Service adapt current policies and develop new policies and actions to conserve and manage the national forests and grasslands for climate resilience, so that the Agency can provide for ecological integrity and support social and economic sustainability over time?*

The key to achieving climate resilience on the National Forests is to avoid further catastrophic losses from wildfires, insects, and other mortality. Currently every state where National Forests make up the majority of timberland are net forest carbon emittersⁱ. Carbon emissions from wildfires in the United States (not all of which are forest fires) increased by more than seven-fold between 2005 to 2018, from 20.5 million metric tons per year to 141.1 million metric tons per year.ⁱⁱ Reversing this trend is absolutely the prerequisite to the Forest Service’s effectiveness in achieving “climate resilience.”

Before promulgating new policies, it is critical that the Forest Service examine its existing “policies” and “actions” relating to climate change, climate resilience, and management of the National Forest System. As it turns out, the subject of climate change is addressed throughout the current Forest Planning and Forest Service project planning processes.

The 2012 Planning Rule (36 CFR 219) includes the following direction on when and how to consider climate change in the planning process:

Section 219.5 notes that the planning process is intended to “create a responsive planning process that informs integrated resource management and allows the Forest Service to adapt to changing conditions, including climate change, and improve management based on new information and monitoring (emphasis added).

During the forest plan assessment process (219.6) the Forest Service is expected to “assess System drivers, including dominant ecological processes, disturbance regimes, and stressors, such as natural succession, wildland fire, invasive species, *and climate change*; and the ability of terrestrial and aquatic ecosystems on the plan area *to adapt to change*;” Each plan assessment is expected to include a “*baseline assessment of carbon Stocks*” (emphasis added).

Section 219.10 restates the requirement to evaluate climate stresses and carbon stocks under the heading of “multiple use” 219.12 requires monitoring to include tracking “measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area.”

Second, the Forest Service Ecosystem Management Coordination (EMC) staff has already produced “guidance” to incorporate climate change considerations in both the project plan and forest plan revision processes. In an unsigned document dated January 2010 entitled “Climate Change Considerations in Land Management Plan Revisions” agency staff are directed to “Discuss the role of climate change in the plan documents” suggesting that the “affected environment section of the EIS” is an appropriate place “for a basic description of the influence of climate change on the planning unit.” It suggests that this section should establish “the current climatic baseline, describe predicted changes, and the uncertainty associated with the predicted changes.”

Planners are then directed to “Provide analysis at the appropriate scale using the best climate change information available” and that they should articulate “what climate change effects are occurring” and rely on existing regional-scale climate projections to understand the type and magnitude of climate change effects that could occur.” Finally, planners should “integrate climate change into the plan,” and that they should “integrate climate change considerations into the plan direction, rather than develop stand-alone plan decisions just for climate change.”ⁱⁱⁱ

Similarly, and January 2009 document called “Climate Change Considerations in Project Level NEPA Analysis” suggests that project planners should evaluate the effect of the project on climate change (if it is discernable) and the effects of climate change on the project area and likely outcomes from the project. It also says that climate mitigation measures must “be relevant to the

proposed action’s purpose and need as well as technically and scientifically feasible,” and that project planners may develop alternatives that “include mitigation measures to reduce GHG emissions, affect carbon cycling, or enhance adaptive capacity.”

Both the planning and project level guidance documents predate the 2012 planning rule and should be updated to reflect the changes in terminology and processes included in that regulation. Of course, given the poor quality of the Forest Service’s website, it is entirely possible that this direction has been updated and superseded to more accurately reflect the planning process required by the 2012 planning regulation.

Either way, the 2012 Forest Planning rule directly and explicitly addresses climate change, and the agency has developed specific direction on incorporating climate change into project planning. National Forests are currently analyzing climate change and developing plan components for forest resiliency as part of forest plan revisions, suggests that there is no need for updating or clarifying or developing new “policies and actions.” If anything, the Forest Service should ramp up the pace of completing forest plan revisions. The agency should consider updating and clarifying its existing “policies and actions” for “climate resilience” prior to issuing any new ones.

Overarching Question 2: How should the Forest Service assess, plan for and prioritize conservation and climate resilience at different organizational levels of planning and management of the National Forest System (e.g., national strategic direction and planning; regional and unit planning, projects and activities)?

Forest Service Chief Randy Moore has repeatedly informed Congress that the agency is struggling with recruitment, retention, and general workforce problems. In Congressional testimony and other public appearances, Moore has lamented the sluggish pace of hiring and the difficulty of recruiting and retaining staff. For instance, on April 18th, 2023, Chief Moore told Congress that the Forest Service was experiencing “workforce capacity” and “high post-fire workloads”^{iv} issues. Similarly, Chief Moore spoke in February of this year to the National Association of Counties^v, saying “when you look at the Forest Service and where we’ve been over the last 20 years, we have lost about 8,000 non-fire employees... we want to hire about 4,000 of those” already lost. “Many of you around the room have experienced what we’re experiencing in

the agency and that's workforce, and labor force. We hired 3,300 employees last year. And that was really good, getting that increased capacity. But then we lost 2,500 through attrition." Chief Moore then went on to discuss the impact of attrition, required training time, and high turnover on agency performance.

With these pressing and very real workforce issues in mind, the agency should be extremely cautious about developing new, untried planning, assessment, and prioritization efforts, especially considering the (apparently) already unlimited ability of the Forest Service to engage in planning at multiple levels, across multiple units, and for various and sundry purposes.

As the agency leadership is aware, the main statutes governing assessment and planning are the National Forest Management Act and the Renewable Resources Planning Act. The Forest Service has also adopted a policy of conducting Travel Management Planning on each NFS unit. But these types of plans, assessments, and strategies are not the only ones the agency conducts.

Based on a cursory review of public facing Forest Service webpages for individual NFS units, *there are at least seventeen different planning, assessment, and analysis processes*, engaged in to one degree or another, by various Forests. These include at least the following examples:

Air Resources Management Plan (White River)^{vi}

Best Available Scientific Information (BASI) (Angeles)^{vii}

Bioregional Assessment (Gifford Pinchot)^{viii}

Business Plan (Six Rivers)^{ix}

Climate Change Vulnerability Assessment (Carson)^x

Forest Carbon Assessment (Chattahoochee-Oconee, Mark Twain)^{xi}

Forest Ecosystem Analysis (Umatilla)^{xii}

Forest-Wide Roads Analysis (Deschutes)^{xiii}

Gov't Performance & Review Act Strategic Plan (Cleveland)^{xiv}

Integrated Plan (Tongass)^{xv}

Late-Successional Reserve Assessment (Fremont-Winema, Shasta-Trinity, Willamette)^{xvi}

Restoration Strategy (Cherokee, Okanogan-Wenatchee)^{xvii}

Subbasin Assessments (Nez Perce Clearwater)^{xviii}

Watershed Analyses (Rogue Siskiyou, Six Rivers, Willamette)^{xix}

Watershed Assessments (Beaverhead-Deerlodge, Cherokee, Wallowa-Whitman)^{xx}

Watershed Restoration Plans (Olympic)^{xxi}

Wildlife Conservation Strategy (Sawtooth)^{xxii}

This list is derived from a cursory review of public-facing webpages from each National Forest. Given the random, inconsistent nature of individual forest websites, it is entirely possible – likely even – that there are numerous other plans, strategies, assessments, and analyses on other NFS units.

Before proposing new, unfunded, legislatively unsound policies, plans, and strategies, the Forest Service should carefully inventory all existing plans, strategies, assessments, and analyses *already being conducted* on individual NFS units to determine which of them are a. legally required, and b. useful. The agency should review each of these to determine how to incorporate climate change considerations, if necessary.

For the most part, as we commented on the Forest Service's and Bureau of Land Management's recent "Request for Information" on Mature and Old Growth Forests (87 FR 50119), we believe the issues of climate resilience are best addressed through the existing forest planning process. Monitoring of climate resilience and progress towards meeting forest plan desired conditions and objectives are required questions for the forest plan monitoring process, which requires extensive attention and updating. Forests

should be held accountable for implementing monitoring plans and making the results available to the public. Forests should be encouraged to coordinate with the Forest Service Research Stations to incorporate relevant, peer reviewed climate science into the planning process.

Overarching Question 3: What kinds of conservation, management or adaptation practices may be effective at fostering climate resilience on forests and grasslands at different geographic scales?

First and most importantly, the Forest Service needs to clarify that its main responsibility is the management of the 193-million-acre National Forest System, and it must clarify that beyond those lands, the Forest Service's role is to "assist private landowners in achieving individual goals and public benefits regarding forestry". The Cooperative Forestry Assistance Act of 1978^{xxiii} establishes 10 "purposes" for cooperative work with non-Federal forest landowners and others. "Fostering climate resilience" is not mentioned in this list of purposes– although that may be implied by the inclusion of terms like "coordinated and cooperative Federal, State, and local forest stewardship" and "prevention and control of insects and diseases affecting trees and forests," and "prevention and control of rural fires."

Regardless, the Forest Service must focus on restoring the resilience of forests found on the National Forest System as task number one. Simply growing forests to maturity and then backing away from management is not the best option for either climate resilience or fulfillment of the agency's multiple use mission. For instance, Ponderosa pine in Oregon generally sequesters carbon most effectively for 150 years, after which these stands face "significant risk of carbon loss from wildfires."^{xxiv} Allowing older stands to stagnate and experience significant carbon loss through catastrophic fire is not the best way to "foster climate resilience."

While we will delve further into these issues in the specific questions below, we would summarize the best "conservation, management, or adaptation" practice for the National Forest System to be doing the exact opposite of the approach that has been adopted to disastrous effect in the last two to three decades. As noted above, decisions taken to favor dense, closed canopy stands, reduce overall timber harvests well below sustainable levels identified in forest plans, and to unilaterally set aside over 58 million acres of land from management have all contributed to overstocked, unhealthy, fire prone

National Forests. When these under-managed forests have been subjected to longer, hotter, and drier summers, the predictable result has been increased forest mortality, larger, more intense fires, and destruction of considerable amounts of life, property, watersheds, and wildlife habitat.

The depth of the crisis – and the need for a different approach to address it – has been affirmed by Chiefs in public forums over the last decade. In 2019, then-Chief Victoria Christiansen told the National Council of Forestry Association Executives that “about 80 million acres on the National Forest System overall are at risk, an about a third of that area is at high risk” of insects, disease, or catastrophic fire^{xxv}. In June of 2021, she told the Senate Energy & Natural Resources Committee that “we have a crisis. We have a crisis that that needs to be addressed differently.”^{xxvi}

Overarching Question 4: How should Forest Service management, partnerships, and investments consider cross jurisdictional impacts of stressors to forest and grassland resilience at a landscape scale, including activities in the WUI?

The Forest Service should work with State Foresters and other stakeholders to update State Forest Action Plans to incorporate climate resilience into the plans. The Forest Service has numerous programs to assist private landowners, work with State agencies, and address forest health. The Forest Service should use partnerships by contracting with partners to conduct needed analytic processes needed to implement fuels reduction and other forest health treatments on the National Forest System and on adjoining non-Federal lands.

The Forest Service has been directed to define the Wildland Urban Interface in cooperation with States and local governments through the Community Wildfire Protection Planning process. While attending to the Forest Plan revision or amendment process, the Forest Service should work with local governments to ensure these CWPP’s are fully up to date, incorporating reasonable assumptions about fire behavior, and are tied in with the strategic use of fuel breaks on Federal lands to protect life and property.

Overarching question 5: What are key outcome-based performance measures and indicators that would help the Agency track changing conditions, test

assumptions, evaluate effectiveness, and inform continued adaptive management?

The Forest Service should accurately track and report all data and locations of all vegetation management activities undertaken on the National Forest System. This includes continuing to report on timber sale program outputs through “Cut & Sold” Reports^{xxvii} and Periodic Timber Sale Accounting Reports^{xxviii}. The Forest Service should continue to monitor “harvest trends” on the National Forest System and update the online reports for this activity as well^{xxix}.

As alluded to earlier, the agency should also do a better job of monitoring forest plan implementation. The 2012 Planning Rule provided new direction to the field on how to better tailor their plan monitoring activities. In addition to identifying eight “elements” to include in monitoring reports, NFS units are directed to report on “measurable changes... related to climate change.” The agency has directed each NFS units to produce biennial “monitoring reports” indicating progress towards plan implementation.

Yet again based on a cursory review of public facing webpages for individual National Forest System units revealed that on average NFS units have not published a plan monitoring report in over 8 years.^{xxx}

As has also become obvious in recent years, the Forest Service has likely overreported the number of acres it has successfully “treated” to reduce hazardous fuels. An investigation by NBC News found that “the Forest Service has counted many of the same pieces of land toward its risk-reduction goals from two to six times, and, in a few cases, dozens of times.” The report found that the agency has likely over reported fuels treatment by “an estimated 21% nationally,” and that in “California, it is overstated by approximately 30%.”^{xxxi}

While simultaneously informing Congress (in annual budget requests) that the agency has been “treating over 3 million acres” a year, it has become obvious that the agency has relied on a shifting set of metrics from unknown sources to bolster this claim. Our research indicates that the agency has used at least four definitions of “treatment”, usually immediately after noting that between 56 and 80 million acres of National Forests “need treatment.”

Budget submissions to Congress over recent years have included the following definitions of “treatment”:

- **NFS Acres Treated**: defined as ““(a) acres of hazardous fuels treated in the wildland urban interface (WUI)”, the Forest Service says it has **“treated” 5.7 million acres between FY 2011 and FY 2015**, an average of **1.4 million acres** a year. This is treating **just over 1.75 percent** of the 80 million acre total each year.
- **Acres Treated New**: When a new, broader measure of “acres treated” was adopted in FY 2017 and applied retroactively to 2011, the Forest Service says its **average treatment acres shot up to 2.8 million**, and a nine-year total of over **25 million acres** treated between 2011 and 2019. This is treating **3.5 percent** of the 80 million acre total each year.
- **Acres Effectively Treated**: In 2020 and 2021, the Forest Service continued to report the broader “acres treated” numbers, but also developed a new metric, applied retroactively only to FY 2016, of “Acreage of NFS lands where final treatment effectively mitigates wildfire risk.” This metric touched **only 3.752 million acres** over that 4-year period, an average of **just 938,000 acres** a year. This is about **1.2 percent** of the 80 million acres total each year.

Moreover, the Forest Service used to track and report “prescribed fires” by acreage and ownership, publishing a daily update in the daily National Interagency Fire Center Situation Report. The last full year they did so was in 2018^{xxxii}, when they reported that they burned 1.3 million acres systemwide (65 percent of which was in Region 8, which does nothing to reduce fuels in the fire prone West). In 2019, until the end of April, the Situation Report included information on prescribed fires by ownership, cumulative for the current calendar year. Suddenly, in May 2019, the Forest Service stopped reporting the cumulative information.^{xxxiii}

The obvious challenges to accurately recording and reporting forest health and hazardous fuels treatment should not prevent the agency from developing understandable metrics for the public and policy makers, given the high levels of public interest and the considerable resources Congress has made available for this purpose.

In addition to reporting on fuels reduction, the Forest Service should (again, through the biennial forest plan monitoring reports) report on unit-by-unit progress in meeting forest plan goals for early successional forest habitat. Our analysis indicates that most National Forests east of the Mississippi that had specific goals for creation or maintenance of early seral forest habitats were only accomplishing about 31 percent of those goals.^{xxxiv} A more general effort to publish biennial forest plan monitoring reports would help the public understand whether the Forest Service actually implements forest plans, or whether the exercise generally creates binding constraints on land management while setting optional forest management goals (that are subsequently not tracked).

In addition to accurately reporting fuels treatments and progress towards creation of young forests (which rapidly sequester carbon), the agency should also consider treating annual fire statistics as a sort of “report card” that shows progress, or lack thereof.

While simply tracking acres burned is a worthwhile top line number, the agency should also track the number of acres that burned in high severity fires, and whether those burns were uncharacteristic for the forest (or other vegetation) types where they occurred. The agency should also track whether acres burned on acres identified in forest plans as suited for timber production, or in reserves like designated Wilderness Areas, Wild & Scenic River Corridors, Inventoried Roadless Areas, or other restricted land uses. It seems logical that a good metric for determining the effectiveness of fuels treatment is either a reduction in the overall area of National Forest burned, or a reduction in the number of acres that burned in uncharacteristic, high severity fires that will likely require significant reforestation and restoration efforts.

Specific Questions: Following the “Overarching Questions”, the ANPR launches in a haphazard, inconsistently organized set of more specific questions. We note each specific question here, although we may opt not to file comments on each question at this time. As we have done with the overarching questions, we show each question here in *italics*, with our answers following.

Examples, comments, and Tribal consultation would be especially helpful on the following topics:

1. Relying on Best Available Science, including Indigenous Knowledge (IK), to Inform Agency Decision Making.

a. How can the Forest Service braid together IK and western science to improve and strengthen our management practices and policies to promote climate resilience? What changes to Agency policy are needed to improve our ability to integrate IK for climate resilience—for example, how might we update current direction on best available scientific information to integrate IK, including in the Forest Service Handbook (FSH) Section 1909.12?

FFRC opts not to respond to this question.

b. How can Forest Service land managers better operationalize adaptive management given rapid current and projected rates of change, and potential uncertainty for portions of the National Forest System?

It is not clear whether this question applies only to the application of “Best available science, including Indigenous Knowledge” (nor is it clear which “portions of the National Forest System” the agency is seeking feedback on). However, as we have repeatedly noted above, Congress has provided the agency with the means of “adaptive management” through the Forest Planning, Amendment, Revision, and Monitoring processes. As we have also noted, despite internal direction to monitor plan implementation on a biennial basis, most units of the National Forest System haven’t put out monitoring reports in over 8 years.

If the agency more effectively incorporated climate change considerations into Forest Plans during the amendment or revision process, AND routinely produced monitoring reports to inform the public about how well adaptation strategies were functioning, the agency would be engaged in a transparent process of “adaptive management.”

The agency should also ensure that they are monitoring forest conditions in administratively or legislatively set-aside areas, such as designated Wildernesses, Wild & Scenic River Corridors, Inventoried Roadless Areas, Riparian Areas, Late Successional Reserves, and other areas where

management is severely restricted. We are seeing large scale mortality, uncharacteristic fire, or type conversion away from forest to other vegetation types in these areas. A 2020 research paper, for instance, found that there was considerably more high intensity fire in Inventoried Roadless Areas (ostensibly ‘protected’) than in general forest areas^{xxxv}.

c. Specifically for the Forest Service Climate Risk Viewer (described above), what other data layers might be useful, and how should the Forest Service use this tool to inform policy?

The Forest Service should develop more accurate tracking of land management treatments and publish more recent forest plan monitoring reports on individual NFS unit websites. Evaluating the “climate risk viewer” should take place during the plan revision or amendment process.

2. Adaptation Planning and Practices: How might explicit, intentional adaptation planning and practices for climate resilience on the National Forest System be exemplified, understanding the need for differences in approach at different organizational levels, at different ecological scales, and in different ecosystems?

As noted above, the Forest Service is apparently unaware of a wide range of forest level planning and assessment currently taking place across the National Forest System. After carefully reviewing existing plans, the agency should incorporate “adaptation planning and practices for climate resilience” through the plan revision and amendment process.

While each National Forest System Regional Office has a planning staff (and a planning website), there is little to indicate what role these staff play in ensuring that individual NFS units incorporate climate change considerations into Forest Plan revisions or amendments. The agency has also recently purportedly adopted a new “internal planning structure” with Regional “Planning Teams” who will ostensibly assist individual units in the plan revision process. These planning teams would be an ideal way to ensure that individual units follow the portions of the planning process that direct consideration of climate change.

As far as “adaptation practices” go, for the vast majority of NFS lands west of the 100th Meridian should focus their “adaptation” work on reducing stand densities in frequent fire return interval forests, while creating age class diversity in forests adapted to less frequent fires. Malcolm North and other researchers found that most fire prone Western forests have seen tree densities “increased by six to seven-fold while the average tree size was reduced by 50%.” This prevalence of overstocked stands, North says, “suggest that treatments for restoring forest resilience may need to be much more intensive than the current focus on fuels reduction.”^{xxxvi} In other words, in fire adapted forests in the West (which occur preponderantly on the National Forest System), the chief “adaptation” strategy that should be employed is widespread use of heavy thinning to reduce forest stand densities.

North is not the only researcher to identify the widespread changes to the composition of Western, mostly fire prone forests. Hagmann et. al. found that forests of all types (dry, moist, cold) “had become more densely forested, resulting in homogenization of previously diverse forest and nonforest successional conditions.”^{xxxvii}

Moreover, the Forest Service should move aggressively to salvage and reforest unreserved National Forest System lands that have been damaged or destroyed in catastrophic fires. The Forest Service conducts salvage operations on a very limited footprint following catastrophic disturbance. For instance, following the King Fire which burned on the Eldorado National Forest, the Forest Service proposed conducting salvage operations on just 20 percent of the burned area. The determination to pursue this project was made using an “emergency situation determination” that took a full year to complete (severely testing the ordinary meaning of the term “emergency”).

Similarly, the Chippewa National Forest only conducted salvage operations on 4,700 acres of the more than 20,000 impacted by a 2012 blowdown event (again about 23 percent of the impacted area). Failing to salvage wood from disturbance events fails to capture already sequestered carbon in the form of long-lived wood products, makes reforestation more challenging, and can stoke fuel loads and fire danger well into the future.

One Forest Service study found that fuel loads increased in the 15 to 30 years following a fire, “and typically remain high for 35 to 40 years.”^{xxxviii} The authors found that “heavy fuel loading leaves these areas vulnerable to

uncharacteristically severe wildfire during this period.” They found that in stands “logged post-fire, all sizes of surface fuels were reduced following a short period of heightened fuel loads,” and that “Post-fire logging is a valid fuel treatment in these dry coniferous forests.”^{xxxix} Johnson et. al. found that salvage logging can also greatly reduce future fire danger, saying that a combination of salvage logging and treatment of residuals “reduced total surface fuel loadings ... by 73 and 77 percent.”^{xl} Another study showed that post fire salvage logging improved insect habitat quality, with “mean bee density and mean bee species richness” by increasing between 22 and 37 percent compared to burned areas that were not salvaged.^{xli}

So, by quickly salvaging timber and ensuring reforestation following disturbance, the Forest Service can assure far better overall carbon performance from the National Forest System than we are currently experiencing, where 80 percent or more of disturbed areas are left to decay and potentially reburn.

We also know that salvage can be compatible with preserving and even improving the habitat of sensitive species. The DeSoto National Forest was severely impacted by Hurricane Katrina in 2005. Within 60 days, the Forest signed a 20-page Environmental Assessment that led to salvage and recovery on more than 85 percent of the impacted acres and produced roughly 400 million board feet of merchantable timber^{xlii}. Far from decimating this forest, populations of sensitive and listed species have continued to thrive. In fact, between 2005 and 2014, Red Cockaded Woodpecker active colonies on the forest more than tripled, from fewer than 25 to 75 active colonies.^{xliii}

It is important to note that FFRC is not arguing for salvage harvest in restricted acres like Wilderness, Wild & Scenic River Corridors, and other areas (although removal of hazard trees is likely necessary to ensure public safety in some areas otherwise designated for recreational uses). And we are not arguing for maintaining maximum timber stocking levels everywhere on the National Forest System. However, routine failure to conduct salvage operations leaves substantial amounts of hazardous fuels on the landscape, potentially fueling future fires and concurrent carbon emissions. Once salvaged and reforested, particularly on acres suited for timber production, the Forest Service should maintain stocking levels that meet all forest plan objectives, including supporting sensitive wildlife species, not all of which thrive in dense, closed canopy forests.

a. Adaptation Planning:

i. How should the Forest Service implement the 2012 Planning Rule under a rapidly changing climate, including for assessments, development of plan components, and related monitoring?

The answer is not the creation of new rules but a renewed fidelity to the old. As noted above, the 2012 Planning Rule included significant, detailed guidance on how to incorporate climate change into the plan revision and amendment process. The Forest Service appears to have outdated guidance memos on the topic of incorporating climate considerations into the forest planning and project development processes. What remains to be done is to actually do it, and then conduct plan monitoring on the biennial schedule required in the planning regulations.

According to our review of public-facing websites for each National Forest, the average forest plan in the NFS was adopted over 10 years ago (many have been amended since). When plans are amended due to exigent circumstances – new species listings, critical habitat designations, major land acquisitions, or court orders – individual NFS units rarely (if ever) produce a new, unified document that can easily be consulted to determine the new plan direction.

Moreover, based on the publicly available forest plan monitoring reports, most Forests do not take monitoring very seriously, or they are not being adequately resourced to produce forest plan monitoring reports on schedule. According to our review, the average National Forest hasn't issued a plan monitoring report in over 8 years, effectively skipping 4 monitoring cycles. At least 7 National Forests have never produced a monitoring report. One forest (the Mendocino) hasn't published a monitoring report in 25 years.

Simply put, if the Forest Service took Forest Plan Implementation Monitoring more seriously, each NFS unit could have a much better idea of the extent to which climate change was impacting the unit, and how much each unit is impacting climate change. Forest Service plan monitoring questions include the following;

“Measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area (36 CFR 219.12(a)(5)(vi)).”^{xliv}

Management of individual National Forests will never approach “adaptive management” if the agency deprives itself of accurate monitoring data, and does not track the impacts of management, climate change, or other stressors on a routine basis.

Expediting the completion of new forest plans, plan revisions, and plan amendments, while incorporating the climate change direction provided in the 2012 planning rule, then rigorously monitoring actual plan implementation is the best strategy the agency can follow here. It would also have the benefit of demonstrating to the public that the agency takes the planning process seriously. At the moment, the Forest Planning process can best be described as taking too long to complete, resulting in plans that are not implemented, with goals and objectives that are not monitored. The only thing binding in current forest plans seems to be restrictions on management.

1. How might the Forest Service use management and geographic areas for watershed conservation, at-risk species conservation and wildlife connectivity, carbon stewardship, and mature and old-growth forest conservation?^{xlv}

It’s not clear whether this is asking how the Forest Service should use “management and geographic areas” (whatever those may be) on National Forest System land, or whether this is intended to be a broader question about land management, including on non-Federal lands where the Forest Service has minimal, if any, management authority.

As noted, the Forest Service has the authority (and duty) to produce management plans for each unit of the National Forest System and has the authority to conduct watershed assessments. Also as noted, the Forest Service has seen fit to engage in a wide range of planning and assessments across multiple forests (see the Northwest Forest Plan, the Sierra Nevada Plan amendments, and the Northern Rockies Lynx Amendments as examples) and to assess and plan for specific species or land use objectives on individual units.

As far as at-risk species go, the Forest Service’s management must reflect the best available science and must acknowledge that not every sensitive species has the same habitat requirements. As we have discussed, some species, like the Red Cockaded Woodpecker, flourish when forest managers create and maintain open stand conditions, not by maximizing either the number of old

trees in a stand nor the amount of carbon that the stand could potentially contain.

Similarly, some species thrive in early seral forests, including the formerly-listed Kirtland's Warbler. These birds do best in Jack Pine stands that are less than 80 years old, and in most cases, those stands will begin to undergo type conversion to some other forest type at that age. In this case, "mature and old growth conservation" is directly at odds with sensitive species conservation. The Forest Service must not let the politically-motivated emphasis on "mature and old growth" trees blind them to the needs of species, some of which are only recovering on managed areas of National Forests.

The same is true for species thought to require mature forest stands, such as the Canada Lynx. According to Forest Service research, while Lynx use of managed forests declines in the initial decade following a harvest, within 20 to 40 years these stands have frequently regenerated to the point where they are once again providing quality habitat^{xlvi}. Before assuming that either species conservation or carbon stewardship require significant set asides from management, managers should examine whether existing unmanaged forests (in Wilderness or Roadless Areas) can meet objectives for providing older forests.

ii. How might the Forest Service think about complementing unit-level plans with planning at other scales, such as watershed, landscape, regional, ecoregional, or national scales?

Again, as noted, there are no shortage of "complementing unit level plans" and plans developed at "other scales." With the widely publicly acknowledged staffing difficulties facing the Forest Service, the Forest Service should be extremely cautious about developing additional planning levels, particularly when a. it doesn't monitor implementation or existing Forest Plans, and b. from the evidence publicly available, it doesn't appear that "one off" plans for other purposes are either implemented or studied for their effectiveness.

a. Adaptation Practices:

i. How might the Agency maintain or foster climate resilience for a suite of key ecosystem values including water and watersheds, biodiversity and species at risk, forest carbon uptake and storage, and mature and old-growth forests, in

addition to overall ecological integrity? What are effective adaptation practices to protect those values? How should trade-offs be evaluated, when necessary?

Apparently, this is another section “a” (following the earlier “a” on “adaptation planning”). This continues to make responding to this ANPR difficult. Also, again, the Forest Service does not state whether they are seeking input on management of the National Forest System or whether this is a broader inquiry about achieving these objectives across the forested landscape, regardless of ownership. We continue to believe that the Forest Service should focus its efforts on the National Forest System lands, which are the only lands for which it is solely responsible for management.

As we have discussed and as discussed in the “Operational resilience” (North) paper cited earlier, for much of the fire-adapted forests west of the 100th meridian the best adaptation practices will nearly always be significant reductions in overall stand density and basal area to reflect historic stocking levels. Given that most Forests west of the 100th meridian have at least 20 to 30 percent of their land area in unmanaged land uses (either Wilderness or Inventoried Roadless Areas), the Forest Service should aggressively reduce fuel loads by commercially thinning forests on unreserved lands. Doing so will reduce carbon emissions from uncharacteristic wildfires, while maintaining healthier watersheds and wildlife habitats. Jones et. al. found that “Restoration methods such as mechanical thinning and prescribed” fire... “may reduce the spatial extent of severe fires and increase forest resilience to fire in a changing climate.”^{xlvii}

As the agency is aware, more than half of the lands in the National Forest System have strict limitations on management. In the Western Regions of the Forest Service, no region has less than 35 percent of its total ownership in either Congressionally designated Wilderness Areas or Inventoried Roadless Areas. Prior to reserving further lands from management, the Forest Service and public policy makers must decide whether there are already sufficient areas in low to no management status.

In fact, there is evidence that set-asides or reservation from management is not an effective “adaptation practice” for both “mature and old growth” forests and certain wildlife species. As Steel et. al. found^{xlviii}, “Recent disturbance trends in western forests create a test” of the assumptions behind a static approach to habitat conservation in disturbance-prone systems. “Results from

the Pacific Northwest suggest that in dynamic, disturbance-dependent forests, this assumption is not well supported...” and that “Under climate change, a static approach to mature forest conservation may be even less effective in drier and warmer regions such as the southern Sierra Nevada.”

Steel et. al. also found that over the course of just one decade, “50% of moderate or high-density mature forest habitat saw canopy cover decline below 40% constituting a transition to lower density forest (22% of the original extent) or non-forest vegetation (28% of the original extent). Within the mature forest classification, higher density areas experienced more extensive declines, with 85% of this subclass falling below the 60% canopy cover definition of high density.”^{xlix}

Further, Johnson et. al. found that Roadless and set aside areas “were associated with a far greater extent of fire relative to roaded areas. Between 1984 and 2018, an area equivalent to 30% of the total area of roadless lands experienced fire, whereas an area equivalent to 18% of roaded areas experienced fire.”¹

Gaines et. al. found that recovery plans for certain listed species were premised on the idea that long-term or permanent “reserves would provide habitat for the protected species during a lengthy recovery period,” which was based on the “tacit assumption” that “the climate is stable,” which has not “turned out to be true. Managing for northern spotted owls and other late-successional and old forest associated species within the context of static reserves has turned out to be incredibly challenging.”^{li}

In particular, Gaines et. al found that arbitrary age cut offs didn’t lead to better management or better habitat for listed species. They note that “Many 80-year-old trees are not very large and most today are shade-tolerant and a product of fire exclusion^{lii},” thus even if those trees are found in a particular stand it doesn’t mean they are contributing to habitat quality. In fact, these trees may make the overall stand more vulnerable to stand-replacing fires, which will both release massive amounts of carbon while degrading or destroying the available habitat. The authors found that “A considerable body of science and implementation experience” warrants reconsideration of the static reserve approach, as well as the “grave risks of inaction.”^{liii}

As far as “forest carbon uptake and storage” are concerned, the Forest Service must be aware that “management actions that emit carbon to the atmosphere in the short term may be able to enhance forest growth and provide greenhouse gas mitigation benefits over a longer period (Perez-Garcia et al. 2007)”^{liv} and that harvests lead to carbon stored in “durable wood products that can last more than 100 years.”^{lv} The U.S. Environmental Protection Agency says that over 2.6 Billion Metric Tons of Carbon are stored in harvested wood products^{lvi}. Forest management may also be able to reduce carbon losses associated with disturbances. Wildfire in particular is an increasingly substantial source of CO₂ and other greenhouse gas emissions from U.S. forests.

Recent research indicates that the macro scale dynamics of carbon uptake and storage cycles discussed above function at the watershed level as well. National Forest Foundation researchers modeled fuels treatments and likely emissions on the Cragin Watershed on the Coconino National Forest in Arizona. They found that “restoration treatments prevent the loss of forest carbon from high severity fires and help secure existing carbon in healthier, more resilient forests,” and that any short-term carbon loss from management is “temporary as the trees remaining in restored stands continue to sequester carbon.”^{lvii}

Fuel-reduction treatments can lower the risk of crown fires, which are more likely to lead to intense fire conditions that cause substantial carbon losses. Fuel-reduction treatments create carbon benefits over time by increasing the growth of the residual stand and reducing the risk of catastrophic fire. Fuel-reduction treatments may have the most substantial carbon benefit when ... thinnings provide wood for energy or products for long-term substitution.^{lviii}

In addition to producing carbon and habitat benefits, thinning that includes commercial material – mostly sawtimber – can help expand need fuels reduction treatments to additional acres. A recent study by Resources for the Future found that small diameter materials – which must be removed to reduce fuel density and allow reintroduction of prescribed fire – generally cannot be economically removed from National Forest System lands, but that “bundling small amounts of sawtimber harvest with treatments is capable of dramatically expanding treatable areas.”^{lix} This increase in sawtimber harvest need not amount to regeneration harvest (although that is appropriate on certain forest types). These researchers found that “treatment with just 20

percent of a site's sawtimber would expand the area on which it is economically feasible to treat from nearly zero if no sawtimber is harvested to 8 million acres."^{lx}

In forest ecosystems that are less reliant on frequent fire, the Forest Service can better achieve carbon uptake by meeting early seral forest goals found in current Forest Plans. Where current plans lack specific early seral goals, they should be adopted during the next plan revision process. In addition to creating a variety of habitat types, practicing rotational forestry on some acres ensures that the Forest Service is contributing to carbon uptake by creating younger, faster-growing stands.

In summary, any approach to improving the carbon sequestration and storage potential of the National Forest System must recognize that disturbances can fundamentally alter the carbon profile of any given forest stand, that management can reduce these risks, and that the effectiveness of a static approach to Carbon storage over the long term cannot be assumed.^{lxi}

ii. How can the Forest Service mitigate risks to and support investments in resilience for multiple uses and ecosystem services? For example, how should the Forest Service think about the resilience of recreation infrastructure and access; source drinking water areas; and critical infrastructure in an era of climate change and other stressors?

The Forest Service should take advantage of existing authorities, such as the Fuel Break Categorical Exclusion and the "Emergency Actions" authority provided in the recent Infrastructure law to create defensible space around critical infrastructure, including recreational infrastructure, drinking water source areas, and to protect communities. Under no circumstances, however, should the Forest Service use these authorities to create large areas of NFS land which will intentionally be allowed to burn during wildfire seasons.

As far as supporting "investments in resilience," the agency must be aware of the difficulties it encounters when forest management capacity in the private sector evaporates near National Forest System lands. After supporting a timber industry for decades, the Southwest Region of the Forest Service saw most remaining mills close as harvests declined. It has struggled for well over 15 years to attract investments in wood using capacity. Routinely *offering timber for sale* (as distinct from *planning to offer* timber for sale) incentivizes

investments in forest management capacity – including logging equipment, logging trucks, training a logging and forest management workforce, and development of wood using facilities that can anchor year-round, family wage jobs in frequently economically distressed areas.

By contrast, failing to supply promised “low value” timber has led to stranded capital, lost jobs, and unmanaged forests. Long closed mills in Northern California and Southeast Alaska stand as idle testament to squandered capital, invested to utilize low value material.

iii. How should the Forest Service address the significant and growing need for post-disaster response, recovery, reforestation and restoration, including to mitigate cascading disasters for example, post-fire flooding, landslides, and reburns)?

As noted above in response to question “2”, the Forest Service should move expeditiously to salvage and reforest unreserved National Forest System lands that have been damaged or destroyed in catastrophic fires or other disturbance (like insect outbreaks, wind events, or ice damage). Failing to salvage wood from disturbance events fails to capture already sequestered carbon in the form of long-lived wood products, makes reforestation more challenging, and can stoke fuel loads and fire danger well into the future. (Even as we finalize these comments, the area burned in the 2011 Wallow Fire on the Apache-Sitgreaves National Forest is once again on fire).

By quickly recovering damaged timber and ensuring reforestation on unreserved acres following disturbance, the Forest Service can assure far better overall carbon performance from the National Forest System than we are currently experiencing, where currently 80 percent or more of disturbed areas are left to decay and potentially reburn.

It is important to note that FFRC is not arguing for salvage harvest in restricted acres like Wilderness, Wild & Scenic River Corridors, and other areas (although removal of hazard trees is likely necessary to ensure public safety in some areas managed for recreational uses). Routine failure to conduct salvage operations leaves substantial amounts of hazardous fuels on the landscape, potentially fueling future fires and concurrent carbon emissions. Once salvaged and reforested, particularly on acres suited for timber production, the Forest Service should maintain stocking levels that

meet all forest plan objectives, including supporting sensitive wildlife species, not all of which thrive in dense, closed canopy forests.

The Forest Service should treat post-fire resource protection work – including removal of hazard trees, reopening of roads, and erosion control – as emergencies, and should treat reforestation as an emergency as well. To the extent that there is strong scientific evidence that reforestation practices should be adjusted, for instance, to moving planting zones up slope to account for likely changes in future climate, those steps should be taken cautiously and should not be allowed to delay reforestation efforts when doing so would allow competing vegetation to establish itself and prevent a return to forested conditions.

iv. How might Forest Service land managers build on work with partners to implement adaptation practices on National Forest System lands and in the WUI that can support climate resilience across jurisdictional boundaries, including opportunities to build on and expand Tribal co-stewardship?

The Forest Service has numerous authorities that enable cooperation to implement a variety of management practices. These include but are not limited to the overall authorities found in the Cooperative Forestry Assistance Act, Tribal Forest Protection Act, as well as Good Neighbor Authority and Stewardship Master Agreements, among others. Co-management with tribes must be carefully managed to ensure that the Forest Service doesn't create a two-tiered public involvement process where decisions are ultimately decided in non-public negotiations with tribal partners, with perfunctory public involvement opportunities for non-tribal members.

It is also important to note that only managing in the Wildland Urban Interface is unlikely to be sufficient to protect communities, lives, and property. Prichard, Hessberg, et. al. found in 2021 that “Treating dry and moist mixed-conifer forests beyond WUI buffers can modify fire behavior and change the intensity of wildfires arriving at communities.^{lxii}”

v. Eastern forests have not been subject to the dramatic wildfire events and severe droughts occurring in the west, but eastern forests are also experiencing extreme weather events and chronic stress, including from insects and disease, while continuing to rebound from historic management and land use changes. Are there changes or additions to policy and management specific to

conservation and climate resilience for forests in the east that the Forest Service should consider?

As we have noted throughout, the most glaring failure on NFS units in the two eastern regions is failure to meet Forest Plan goals for early seral habitat. Many NFS units along the Appalachian mountains are in the process of proposing some of the first projects in twenty years that would create age class diversity and support a variety of species including Blue Winged Warbler, Kirtland's Warbler, Ruffed Grouse, and others. These projects will have benefits beyond habitat improvements for these species: They will support local jobs in the wood products sector (including logging and trucking jobs) while increasing recreational opportunities for hunters, anglers, and others interested in the outdoors and wildlife.

Maintaining some portion of the National Forest System in seral forest types, which do not have an "old growth" or "climax" phase, such as Jack Pine and Aspen, would have numerous conservation, climate, economic, and recreational benefits. Helping to meet the needs of local industries helps keep management capacity – a community of forestry professionals and businesses – in place. Having a variety of management opportunities will help the Forest Service react to as yet unforeseen stressors from future changes to the climate.

It is worth noting that many Forest Plans in Region 9 are either due for revision or soon will be. If the Forest Service follows the steps required in the 2012 planning rule (particularly Sections 219.5 and 219.6), and then routinely monitors outcomes through periodic monitoring reports, that should enable NFS units in that Region to incorporate climate adaptation more effectively into Forest Plans.

Overall, however, the Forest Service should proceed from the principle that managing unreserved forests in the two eastern regions will yield healthy, vigorously growing forests with a variety of age classes, stand densities, and other attributes. Maintaining stands at or above their maximum densities is not a viable option – it will leave these Forests vulnerable to random disturbances and less able to recover. Either way, attempting to use forests for carbon storage isn't a viable long-term solution, as the Forests will begin to undergo changes which will ultimately release carbon and potentially convert to non-forest.

3. Mature and Old Growth Forests. The inventory required by E.O. 14072 demonstrated that the Forest Service manages an extensive, ecologically diverse mature and old-growth forest estate. Older forests often exhibit structures and functions that contribute ecosystem resilience to climate change. Along with unique ecological values, these older forests reflect diverse Tribal, spiritual, cultural, and social values, many of which also translate into local economic benefits.

Per direction in E.O. 14072, this section builds on the RFI to seek public input on policy options to help the Forest Service manage for future resilience of old and mature forest characteristics. Today there are concerns about the durability, distribution, and redundancy of these systems, given changing climate, as well as past and current management practices, including ecologically inappropriate vegetation management and fire suppression practices. Recent science shows severe and increasing rates of ecosystem degradation and tree mortality from climate-amplified stressors. Older tree mortality due to wildfire, insects and disease is occurring in all management categories.

The Forest Service is analyzing threats to mature and old-growth forests to support policy development to reduce those threats and foster climate resilience. Today's challenge for the Forest Service is how to maintain and grow older forest conditions while improving and expanding their distribution and protecting them from the increasing threats posed by climate change and other stressors, in the context of its multiple-use mandate.

This is the only section of the ANPR that has its own “preamble,” and much of what is asserted here is highly debatable. We agree that there are “concerns about the durability” of old growth and mature forests, given the Steel et. al. research cited above^{lxiii} showing widespread mortality and forest loss in older forest types. Reserved forests in the Northwest and in California do not seem to be exhibiting “ecosystem resilience to climate change.” Rather, they are experiencing high levels of forest mortality, large scale wildfires (with significant associated carbon emissions), and widespread conversion to non-forest.

Similarly, Malmshemer et. al. found that “Evidence of increasing losses to disturbances ... in maturing forests suggests that a strong conservation-oriented strategy may not always produce significant global climate benefits,”

^{lxiv} and that older forests “generally become carbon-cycle neutral or even carbon emission sources” and that they emit “carbon without providing the carbon benefits available through product and energy substitution.” Following disturbances, these researchers found that carbon emissions from older forests exceed sequestration for two to three decades.

Moreover, as we noted in our comments on the Request for Information on Mature and Old Growth forest definitions, there are many forest types that do not have an “old growth” phase; instead, they type convert to other forest types or other vegetation types altogether (aspen in the Lake States being a particularly vivid example of this).

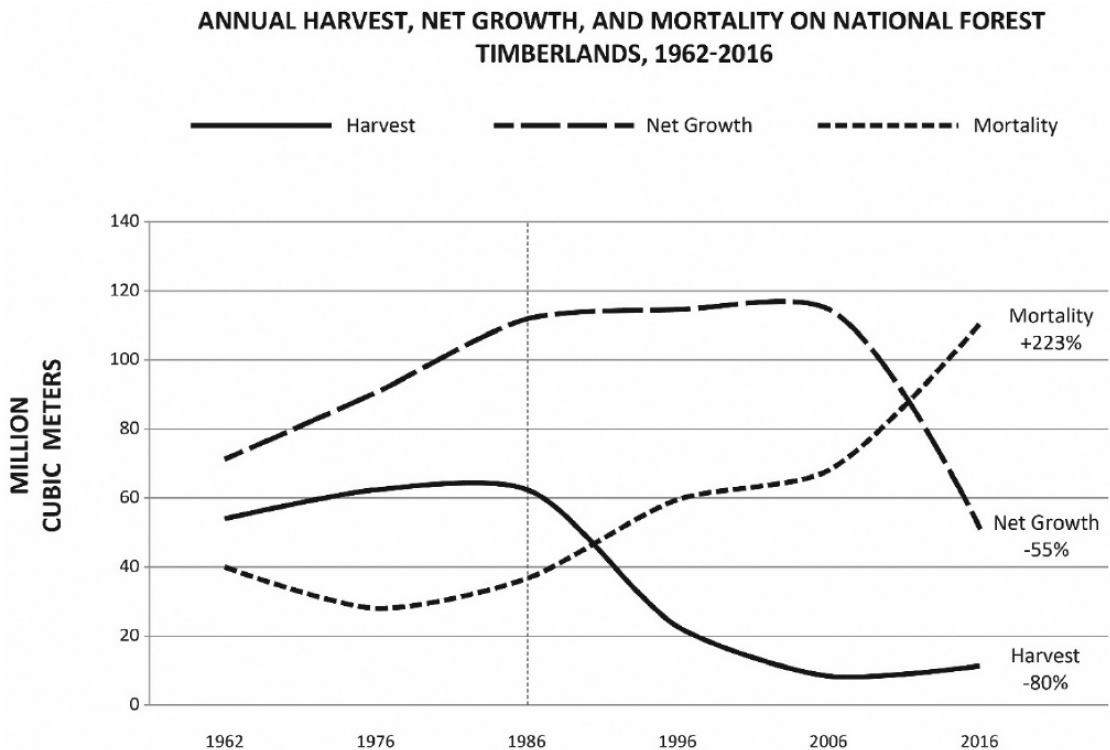
The preamble to these questions also asserts that recreational and spiritual values (ostensibly associated with mature or old growth forests) lead directly to “economic benefits.” While we have no doubt that some individuals have strong spiritual bonds with some forested areas, we question whether the Forest Service has any objective data which shows the presence of “mature or old growth” forests directly lead to higher visitor use, ecotourism, or other economic benefits. If the Southern Sierras have lost half of the mature forest they once had in the course of one decade, this may lead to a decline in visitation that reflects the failure of a policy based on large scale set asides.

It's also worth noting that in at least one instance, the presence of older trees has led to diminished recreational opportunities, as the Forest Service has been forced to close a campground due to concerns that older trees may fall and injure or kill campers.^{lxv}

There is also no objective evidence that current Forest Service visitors feel that there are insufficient areas of mature or old growth available for them to visit for whatever reason. The most recent Forest Service National Visitor Use Monitoring Program results show that “95 percent of visitors are satisfied with their overall experiences, including more than 80 percent who report being very satisfied” and that visits to areas under restrictive land use designations make up a distinct minority of NFS visits (wilderness visitors made up about 5.4 to 5.8 percent of all Forest Service visitors, in spite of the fact that wilderness makes up almost one fifth of total National Forest acres)^{lxvi}.

Nor is there any indication that visitors find any area of the NFS “overcrowded,” with less than three percent of visitors to developed day use areas reporting these were overcrowded.^{lxvii} Forest Service visitors who are engaged in “wildlife related visits” also spend the least (\$1.1 billion vs. \$3.4 billion for downhill skiing and \$5.5 billion for other recreational visits), have the lowest GDP contributions (\$1.2 billion vs. \$4.4 billion for downhill skiing and \$6.7 billion for other recreational visits), and generate the fewest jobs (15, vs. 57 for downhill skiing and 82 for other recreational visits). Finally, fully 89.8 percent of NFS visitors said they were “very satisfied” with the scenery on the NFS unit they visited^{lxviii}.

We also question the extent to which current forest conditions reflect “ecologically inappropriate vegetation management,” unless the agency is referring to an over-reliance on a no-cut approach to managing our National Forests since the early 1990’s. Lippke et. al. found that after reducing harvests in the mid to late 1980’s on the National Forests, by “2016 mortality had tripled; and net growth declined by 55%... The rate of C stored in mortality (dead trees) exceeded C growth of living trees.”^{lxix} This decision to reduce management has had predictably disastrous results, as illustrated in the below graph.^{lxx}



Since it has been established that older, denser forests are converting to non-forest due to fires, insect, and drought, to the extent that the Forest Service seeks to “*grow older forest conditions while improving and expanding their distribution and protecting them from the increasing threats*” then the imperative is to treat these stands with appropriate silviculture that sustainably creates a variety of age classes, stand densities, and other attributes over time. A static reserve approach on additional acres of the National Forest System is neither supported by law nor supported by science.

The Forest Service must also review the more than 2,000 different forest plan standards and guidelines (in the attached document) to determine whether they already provide both adequate “protection” for older forests as well as effective adaptation strategies that will allow NFS lands to produce older and mature forest conditions over time and across each NFS unit.

It is also critical that the Forest Service consider the overall health of the National Forests, not simply engage in a misplaced focus on particular old or mature trees. Just because a stand includes older or mature trees doesn’t mean that stand is healthy, nor does it mean that the stand can be restored to health using only non-commercial thinning or prescribed fire.

a. How might the Forest Service use the mature and old-growth forest inventory (directed by E.O. 14072) together with analyzing threats and risks to determine and prioritize when, where, and how different types of management will best enable retention and expansion of mature and old growth forests over time?

The Forest Service found in the Mature and Old Growth Inventory^{lxxi} that 13.4 Million Acres of “Old Growth” on National Forest System lands was already in Congressionally-designated Wilderness areas, more that 54 percent of the total old growth. Similarly, 25.6 million acres of “mature” forests were in these restricted land use areas (38 percent of the total). Outside of these already restricted land areas, the Forest Service should actively manage all mature and old growth forests in areas designated in Forest Plans as suited for timber production to ensure that they remain resilient to current and future conditions. For some species, this includes using regeneration harvest to recreate desired forest types – such as Jack Pine, Aspen, and several different types of hardwood species that do not regenerate without canopy removal.

The literature establishing the effectiveness of management – particularly thinning in fire prone stands – is voluminous^{lxxii}. Just because the dominant trees in a stand are very old for a particular forest type does not mean that the correct management approach is to cease all management and timber removal from that stand. Some forest types, like Lodgepole Pine, Jack Pine, Douglas Fir, and Aspen are adapted to significant disturbances that frequently result in mineral seed beds or root suckering, which fosters regeneration. The most effective strategy to “maintain” older forests of these types would be through periodic cutting to ensure age class diversity, with different stands maturing at different times.

In forest types that are adapted to more frequent fires, thinning should be used to maintain appropriate stand densities, followed by enough regeneration harvest to ensure age class diversity over time. Just because the dominant trees in a stand have reached or are approaching the age classes identified in the regional definitions of old growth does not mean that the best way to conserve that stand is to leave it choked with uncharacteristically high basal area, made up in part by trees which do not contribute to overall resilience.

Given that the Mature and Old Growth Inventory found 39 million acres of mature and old growth forests on National Forest System Wilderness, Roadless, and National Monument areas strongly suggests that these types of ecosystems are already well distributed across the landscape. In fact, when incorporating lands managed by the Department of the Interior’s Bureau of Land Management, there are over 112 million acres of mature and old growth forest, over 175,000 square miles. This is an area larger than all but three states, and is larger than the states of West Virginia, Maryland, Vermont, New Hampshire, Massachusetts, New Jersey, Hawaii, Connecticut, Delaware, and Rhode Island combined.

It is important to note that these impressive acreages of old growth and mature forests were found based on a review of less than 20 percent of total forest area of the United States (notably, the review pointedly did not include any analysis of the millions of acres of forests found in the National Park System, which is not open to commercial timber harvest). It is not clear at all that Congress has established that the “challenge” before the Forest Service is to *“maintain and grow older forest conditions while improving and expanding their distribution.”* The agency should incorporate conservation (not

preservation, which has proven ineffective) of mature and old growth Forests into existing forest plans, in concert with the other legally binding statutory mandates which remain in effect.

b. Given our current understanding of the threats to the amount and distribution of mature and old-growth forest conditions, what policy, management, or practices would enhance ecosystem resilience and distribution of these conditions under a changing climate?

The Forest Service must acknowledge the inherent contradiction of trying to “retain” old growth since old growth is a developmental phase in dynamic forest ecosystems. Management on unreserved acres provides the best chance for the agency to achieve both “old” and “mature” forest stages, while providing early seral habitat across the landscape over time.

As DeGraaf et. al. found, “there is a greater likelihood of meeting more species' requirements when more varied habitat conditions are present,” and that “a forest landscape that is managed to provide all successional stages of the forest types present, using silvicultural methods appropriate to the site, provides habitat for the most species over time. Habitat conditions needed by various species are present continuously in a shifting mosaic as some stands are regenerated and others mature.”^{lxxiii}

Avoid adding any additional mature or old growth forests on National Forest System lands to non-management status – Wilderness, Roadless, or National Monument – would be a good start. As noted, over 39 million acres of Mature and Old Growth is already located in unmanaged areas. We’ve witnessed significant mortality and forest loss in areas where set asides have been the primary “conservation” strategy. Given this “strategy’s” proven ineffectiveness, it would be unwise to expand its use.

4. Fostering Social and Economic Climate Resilience.

a. How might the Forest Service better identify and consider how the effects of climate change on National Forest System lands impact Tribes, communities, and rural economies?

Again, Congress has established a forest planning framework with an expectation of multiple use on the National Forests. Climate change should be

identified and considered during the Forest Plan Assessment process, and those considerations should be adopted in a transparent process during the plan revision process, with careful and routine monitoring of plan implementation.

The Forest Service also ought to accurately track how long it takes to establish fuel breaks and other measures to protect communities, as well as areas where it tried, but failed, to establish defensible space around communities and infrastructure. The agency should also establish locally-based standards for maintenance treatments to ensure fuel breaks remain effective. In the cases of Grizzly Flats, Greenville, and Paradise, California, the synergy of climate change, historic drought, unprecedented fire conditions, and singular failure to establish fuel breaks left those communities vulnerable to catastrophic fire, at a considerable cost in life and property.

Ironically, during some of the most robust forest product markets in history (in 2020 and 2021), several sawmills were forced to close their doors since they could not secure adequate timber supplies, primarily from National Forest System lands. Mills in St. Regis and Townsend, Montana, Glendale, Oregon, and Hill City, South Dakota all closed, owing fully or partially to their inability to ensure long-term supplies of wood fiber from nearby National Forest System lands. These closures took place in an environment in which billions were being invested in new mill capacity in regions with primarily non-Federal forests.

In St. Regis, the mill closure fundamentally changed the community. According to the Clark Fork Valley Press, the closure of the mill caused the loss of 99 jobs and will force many residents of the town to move elsewhere for work.^{lxxiv}

These closures left millions of acres of National Forest System lands harder to manage – loss of nearby mills raises the transportation cost of timber, making otherwise profitable timber sales (and the benefits of lowered stand densities) less viable. Forests that have lost nearby milling capacity will find themselves paying more money to outside contracts to do forest management work at a pure cost to the government. The loss of wood demand makes rural communities less prosperous while making Federal lands more expensive to manage.

The Forest Service's priority should be retention of existing wood using facilities as the best means to ensure community resilience and forest management capacity. We have routinely seen Forest Service efforts to offer large forest management projects in regions without forest industry struggle. Experience has shown that reputable, capable operators do not have confidence that the Forest Service will actually offer the fuels reduction work or the timber volumes promised, leading to the award of contracts to operators with less experience or who are poorly capitalized. Frequently, these operators have failed to perform on large-scale contracts. Experience suggests that supply leads to investment – not theoretical future supplies, but actual, biddable timber.

As one example, the Manti LaSal National Forest began selling beetle killed spruce timber after letting the trees stand dead for several years. An animal bedding manufacturer built a facility nearby and began purchasing salvage sales. After three years of steadily available fiber, an additional producer started bidding on the timber sales. Supply leads to investment which leads to competition for fiber, which provides the Forest Service with more options to accomplish forest management goals.

b. How can the Forest Service better support adaptive capacity for underserved communities and ensure equitable investments in climate resilience, consistent with the Forest Service's Climate Adaptation Plan, Equity Action Plan and Tribal Action Plan?

Again, private sector investment in forest management capacity will follow from reliable supplies of commercial timber. Many communities near National Forests suffer from high levels of poverty, unemployment, and population loss. Actively managing forests provides stable, year-round employment in industries that pay family-wage jobs. Having a wood products "value chain" helps both the community (through employment opportunities in forest management, timber harvest, log trucking, and in forest products manufacturing facilities) and the Forest to adapt to future, unexpected changes in forest conditions.

FFRC would also strongly support an effort to allow local contractors to propose fuels reduction forest management projects – including non-commercial fuels reduction and commercial forest thinning – for small to medium scale projects that can be executed under one or more expedited

authority, such as the Insect & Disease Treatment CE or the Fuel Break CE discussed above.

c. How might the Forest Service better connect or leverage the contribution of State, Private and Tribal programs to conservation and climate resilience across multiple jurisdictions, including in urban areas and with Tribes, state, local and private landowners?

State Forest Action Plans present an opportunity for the Forest Service to develop climate resilience considerations into delivery of existing Cooperative Forestry and Tribal Forestry programs.

d. How might the Forest Service improve coordination with Tribes, communities, and other agencies to support complementary efforts across jurisdictional boundaries?

Good Neighbor Authority is the most effective program created to assist in co-management of Forest Service lands. According to the National Association of State Foresters, Good Neighbor Authority has led to more than 490 projects in 34 states, leading to healthier forests, job creation, and more revenue for communities across the country. FFRC is in the process of seeking amendments to the existing Good Neighbor program to ensure that partners can use proceeds from the projects to improve roads, trails, and other resources on non-Federal lands. The Forest Service has the opportunity (and \$200 million courtesy the Infrastructure Act) to solidify co-management through Good Neighbor and Shared Stewardship agreements.

The Forest Service should also consider more widely adopting the Stewardship “A to Z” concept that has been pilot-tested on the Colville National Forest. By taking advantage of private sector investments, including from forest products companies, water utilities, or philanthropies, using these types of contracting instruments can reduce the staff burdens on the Forest Service and attract additional investors.

The Tribal Forest Protection Act also provides a more than adequate framework within which climate resilience can be addressed.

e. How might the Forest Service better support diversified forest economies to help make forest dependent communities more resilient to changing economic and ecological conditions?

As we have discussed throughout these comments, the best way for the Forest Service to incentivize economic development, diversification, and strengthening communities is through a reliable and growing supply of wood fiber to meet the needs of existing wood products facilities. As we noted above, the National Forest System is not currently functioning this way: We've seen multiple mill closures even during periods of record-breaking prices for commercial wood products.

Congress has given the Forest Service unprecedented new authorities (Farm Bill CE's, permanent Stewardship Contracting Authority, expanded Good Neighbor Authority) and funding streams (Great American Outdoors Act funding for facilities, roads, and trails maintenance, permanent mandatory funding for land acquisition through the Land & Water Conservation Fund). The Infrastructure and Inflation Reduction Acts provided the Forest Service with roughly \$7 Billion for fuels reduction, forest thinning, and the creation of fuel breaks.

The Forest Service has between three and five years remaining with those pots of available funding, and yet we have seen the agency select areas as "priority firesheds" that have little to no forest management capacity: The individual forests sometimes have few if any timber staff, with limited experience in planning or administering timber sales. In many cases there are few (if any) outlets for wood fiber, and little to no logging or trucking capacity. Instead of allocating resources to forests with fuels reduction needs AND management capacity, the Forest Service has instead opted to use other criteria and to allocate resources to regions with limited prospects for success.

If the Forest Service can direct the remaining Infrastructure and Inflation Reduction Act funds to Forests that have internal management capacity, capable external partners, and functioning wood supply chains, they will bolster the resilience of neighboring communities while generating revenue from commercial timber sales to extend non-commercial work onto additional acres. There are considerable amounts of work to be done on the roaded land base of the National Forest System. The forest products industry wants to

partner with the Forest Service to accomplish it. We look forward to working with you to make it successful.

Sincerely,



Bill Imbergamo, Executive Director
Federal Forest Resource Coalition

On behalf of the undersigned organizations:

Alaska Forest Association
Allegheny Hardwood Utilization Group
American Forest & Paper Association
American Forest Resource Council
American Loggers Council
Associated California Loggers
Associated Logging Contractors of Idaho
Associated Oregon Loggers
Black Hills Forest Resource Association
California Forestry Association
Colorado Timber Industry Association
Forest Landowners Association
Forest Resources Association
Great Lakes Timber Professionals Association
Hardwood Federation
Intermountain Forest Association
Minnesota Forest Industries
Minnesota Timber Producers Association
Montana Logging Association
Montana Wood Products Association
Pennsylvania Forest Products Association

ⁱ Greenhouse Gas Emissions and Removals From Forest Land, Woodlands, and Urban Trees in the United States, 1990–2019 Northern Research Station Resource Update FS–307 April 2021

ⁱⁱ Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990–2018 U.S. Environmental Protection Agency April 2020

iii Climate Change Considerations in Land Management Plan Revisions Unsigned USDA Forest Service guidance document, January 2010.

iv Chief Moore, testimony before Senate Energy & Natural Resources Committee, United States Senate, April 18, 2023 www.energy.senate.gov/services/files/B56FB23D-905B-42C3-95E4-AE5F5A33165E

v Chief Randy Moore, speech before the National Association of Counties Legislative Conference, February 13, 2023, Washington, DC <https://www.c-span.org/video/?526013-1/forest-service-chief-wildfire-resiliency>

vi https://www.fs.usda.gov/detail/whiteriver/landmanagement/?cid=fsbdev3_001237

vii www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd495635.pdf

viii www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd762774.pdf

ix https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm9_027540.pdf

x www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd620536.pdf

xi www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd1003700.pdf
www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd1046260.pdf

xii) Note: this is the name in header, link goes to the Travel Management Plan)
<https://www.fs.usda.gov/main/umatilla/landmanagement/planning#ecosystem%20and%20roads>

xiii <https://www.fs.usda.gov/detail/deschutes/landmanagement/planning/?cid=stelprdb5284161>

xiv https://www.fs.usda.gov/detail/cleveland/landmanagement/planning/?cid=fsbdev7_016548

xv <https://www.fs.usda.gov/detail/tongass/landmanagement/?cid=stelprd3812864>

xvi <https://www.fs.usda.gov/main/fremont-winema/landmanagement/planning>
www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5109352.pdf
https://www.fs.usda.gov/detail/willamette/landmanagement/planning/?cid=fse_030888

xvii www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5352644.pdf
www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5340103.pdf

xviii www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3818421.pdf

xix (<https://www.fs.usda.gov/detail/rogue-siskiyou/landmanagement/planning/?cid=stelprdb5315589>
<https://www.fs.usda.gov/detail/willamette/landmanagement/planning/?cid=stelprdb5389545>)

xx www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd513050.pdf
<https://www.fs.usda.gov/detail/cherokee/landmanagement/planning/?cid=stelprdb5282122>

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xxii www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5374175.pdf

xxiii Cooperative Forestry Assistance Act of 1978 as amended, 16 U.S.C. 2101

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^{xxv} <https://www.fs.usda.gov/speeches/leadership-through-shared-stewardship>

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^{xxvii} <https://www.fs.usda.gov/forestmanagement/products/cut-sold/index.shtml>

^{xxviii} <https://www.fs.usda.gov/forestmanagement/products/ptsar/index.shtml>

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<https://www.predictiveservices.nifc.gov/intelligence/archive/archive2018.html>

^{xxxiii} Contrast the last report for April 2019 with reports from May 2019
<https://www.predictiveservices.nifc.gov/intelligence/archive/archive2019.html>

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