

## Chapter 5. Monitoring and Evaluation

*This is an early draft that should convey the intent of the Cibola's plan monitoring program. Please note that this chapter is still largely incomplete.*

### Introduction

Under the 2012 Rule, monitoring is comprised of two elements: the plan monitoring program and broader-scale monitoring strategies. Together, these should enable the responsible official to determine if a change in plan components or other plan content that guide management of resources on the plan area may be needed. The Regional Forester develops broader-scale monitoring strategies; however at this time those strategies have not yet been completed.

The Plan monitoring program is to be developed collaboratively with other agencies, organizations, and individuals, in consultation with tribes, while coordinating with FS Research and State and Private Forestry. Monitoring is continuous and provides feedback for the planning cycle by testing relevant assumptions, tracking relevant conditions over time, and measuring management effectiveness. It should also use the best available scientific information and be within the financial and technical capabilities of the agency. The plan-level monitoring program is informed by the assessment phase; developed during plan development; and implemented after plan decision. Biennial monitoring evaluation reports document whether a change to the plan or change to the monitoring program is warranted based on new information, whether a new assessment may be needed, or whether there is no need for change at that time. The monitoring strategy provides a framework for subsequent monitoring and evaluation designed to inform adaptive management.

In addition to the above, a plan monitoring program must contain at least one monitoring question and associated indicator to address each of the eight following elements. These are the minimum monitoring requirements as specified in the 2012 rule.

- i. The status of select watershed conditions (219.12(a)(5)(i))
- ii. The status of select ecological conditions (including key characteristics of terrestrial/aquatic ecosystems) (219.12(a)(5)(ii))
- iii. The status of Focal Species to assess ecological conditions (219.12(a)(5)(iii))
- iv. The status of select ecological conditions that contribute to the recovery of T&E species, conserve proposed & candidate species, and maintain a viable population of species of conservation concern (SCC)(219.12(a)(5)(iv))
- v. The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives (219.12(a)(5)(v))
- vi. Measureable changes on the plan area related to climate change and other stressors (219.12(a)(5)(vi))
- vii. Progress toward meeting desired conditions and objectives (including those for multiple uses) (219.12(a)(5)(vii))
- viii. The effects of management systems so that they do not substantially and permanently impair the productivity of the land (219.12(a)(5)(viii) and 16 U.S.C. 1604(g)(3)(C) – NFMA)

Monitoring questions should focus on providing the information necessary to evaluate whether plan components are effective and appropriate and whether management is being effective in maintaining or achieving progress toward the desired conditions and objectives for the plan area. Indicators are quantitative or qualitative variables that can be measured or described and when observed periodically, show trends in conditions that are relevant to the associated monitoring questions.

## 1 Using the Core Themes to Guide Development of the Plan 2 Monitoring Program

3 Following the release of the Assessment Report of Ecological / Social / Economic Conditions,  
4 Trends, and Risks to Sustainability, Cibola National Forest Mountain Ranger Districts, a number of  
5 needs for change to the existing 1985 Land and Resource Management Plan were identified. Draft  
6 needs-for-change statements were developed by the Cibola planning and extended teams, reviewed  
7 by line officers, and presented to Cibola users and interested citizens through various media,  
8 including collaborative work sessions held in each ranger district. During the work sessions,  
9 relationships with and among stakeholders were established or strengthened; information was shared;  
10 and self-convened, self-directed groups were organized around key issues. At these work sessions,  
11 input was gathered to inform needs-for-change statements that was ultimately published in a Federal  
12 Register Notice of Intent announcement. This announcement conveyed the Cibola's intent to develop  
13 a revised forest plan based on identified needs for change and to develop plan alternatives and  
14 analyze their respective effects on the environment.

15 These needs for change varied in scale. Those that spanned multiple resource areas on the forest  
16 included redrawing existing management area configurations, updating plan component language to  
17 reflect changed conditions on the forest and a new planning rule, better recognize and enhance the  
18 role of the Cibola in supporting local economies, address climate change and invasive species, and  
19 provide direction for addressing accumulated fuel in the wildland-urban interface. Detailed needs to  
20 change existing plan direction were also identified specific to ecological integrity, cultural and  
21 historic resources, areas of tribal importance, multiple uses, recreation, designated areas,  
22 infrastructure, land status and ownership, use and access, energy and minerals, and special uses.

23 As described in Chapter 1, those needs for change to the existing Forest Plan informed the  
24 development of four core themes for the Cibola's revised Forest Plan. These themes guide and  
25 summarize work, provide additional strategic focus, and strengthen collaboration through shared  
26 stewardship. The four themes are:

- 27 5) Respecting Cultural and Traditional Landscapes and Uses: The Land is a life-sustaining  
28 resource that shapes who we are, helps form individual and community relationships,  
29 and strengthens ancestral connections. The Cibola has a rich history of people connected  
30 to this ancient landscape. We recognize that American Indians, land grant heirs, historic  
31 communities and residents of contemporary communities are here because of the land  
32 and the value they place on it.

33 Our forest management will serve the needs of present and future generations by  
34 acknowledging and honoring the different forest-based cultures, traditions, values, and  
35 economic benefits.

- 36 6) Valuing Unique Places and Features: Our sky islands contain a multitude of hidden  
37 gems waiting to be explored off the beaten path... spectacular geologic features, scenic  
38 vistas, landscape contrasts and stark transitions. These features give sense of place,  
39 promoting harmony between humans and nature. These features contribute to society  
40 through provision of nature-based education opportunities, spiritual renewal, artistic  
41 inspiration, employment and economic development, and outdoor play and exercise.  
42 These services are critical for the cultural and physical health of our society. It is where  
43 people come to "get away from it all" and experience solitude in four congressionally-  
44 designated wilderness areas, and is also a special gathering place for extended families  
45 and groups.

1           7) Managing Holistically for Watershed and Ecosystem Health: The Cibola National  
2 Forest plan revision has a responsibility to reduce the potential for uncharacteristic  
3 wildfire and the effects of climate change, as well as consider the regenerative capacity  
4 of the land and restoration economies. The “restoration economy” refers to the  
5 employment, capital, resources, and economic activity that emerge from investments in  
6 ecological restoration. Restoration projects can include restoring functional physical  
7 landscape processes, growing and planting native plants, supporting springs and  
8 pollinators, enhancing habitat, and improving water quality. While investments in  
9 restoration benefit the environment, restoration projects also require workers, materials,  
10 and services to implement. The marketplace for these goods and services can create  
11 employment, spur business and workforce development, and increase activity in local  
12 economies. Through holistic management this plan will provide a framework for  
13 supporting restoration economies, multiple uses and benefits for this generation and for  
14 generations to come.

15           8) Managing For Sustainable Recreation: The Cibola National Plan has a responsibility to  
16 provide a recreation program that is resilient and relevant for current and future  
17 generations, fosters social and economic opportunities, and sustains the health, diversity,  
18 and productivity of the land. This is achieved by collaborating with local communities  
19 and partners, and recognizing their contributions and connections to the land, as well as  
20 the role they share with us as stewards of the land. The recreation program should be  
21 integrated into all resource management decisions and support the Forest’s management  
22 priorities.  
23

24 These four themes have been integral to developing desired conditions and other plan components in  
25 the preliminary draft Plan and they will essential to implementing the final Plan. It follows then that  
26 monitoring questions and indicators be structured such that Cibola National Forest users can know  
27 how management activities are helping to achieve the vision set forward in the Forest Plan. In  
28 addition to this, the eight minimum monitoring requirements in the 2012 planning rule also integrate  
29 well with the core themes.

## 30 **Draft Monitoring Questions and Indicators**

31 The Cibola intends to use the Core Themes as described above to guide the development of  
32 meaningful monitoring questions and indicators to determine whether or not management activities  
33 are making progress towards achieving or maintaining desired conditions. Table 23 demonstrates  
34 what this framework may look like.

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1 **Table 22. Example Matrix for the Cibola Mountain Districts Plan Monitoring Program.**

<b>Potential Monitoring Question</b>	<b>Potential Monitoring Indicator</b>	<b>Minimum monitoring requirement addressed</b>
<i>Respecting Cultural and Traditional Landscapes and Uses</i>		
Are plant species of known medicinal and cultural value being depleted?	Presence/absence of osha and other culturally important plants in suitable habitat.	ii. select ecological conditions v. status of visitor use vi. changes related to climate change and other stressors
<i>Valuing Unique Places and Features</i>		
<i>Managing Holistically for Watershed and Ecosystem Health</i>		
<i>Managing for Sustainable Recreation</i>		

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