

Question 10

1. The discussion of specific monitoring questions (Chapter 6) is designed to guide forest managers toward high priority monitoring topics. The questions are intended as examples and are not designed to serve as project-specific monitoring questions. Are the monitoring concepts and questions structured in a way that testable, relevant, and efficient monitoring projects could be developed from them? Why or why not? Do the monitoring questions adequately address the ecological and management assumptions within each resource strategy? Please state any assumptions you feel are not adequately addressed.

Reviewer	Comments
Bisson	<p>As I stated above, I felt the sections on implementation and monitoring did a fairly thorough job of describing the process and cooperation needed for monitoring, but a number of difficult questions pertaining to monitoring were unanswered. An example from my own area of interest is the time it would take to detect a management-related effect on a fish population. My own estimates and power analyses by other scientists have suggested it will take several decades to detect all but extremely large-scale changes in salmon populations when using classical BACI experimental methods. There is strong support for the Intensively Monitored Watershed (IMW) approach now recommended by the state of Washington as the best way to monitor management-related effects, but recently some NOAA Fisheries scientists have suggested that widespread synoptic surveys are more tractable statistically. I'm not sure what the best approach to monitoring fish populations in the Elliott State Forest might be, but it would be helpful to develop the theoretical approach to aquatic monitoring in greater detail in the plan. Here are some recent references: ... Botkin, Peterson and Calhoun, tech. eds. 2000; Roni, Beechie, Bilby, Leonetti, Pollock and Pess 2002; Roni, Liermann and Steel 2003 ...</p>
Gresswell	<p>The monitoring concepts and questions are directly applicable to the forest management plan, and if they are carried out in a timely manner, and if they are given a high priority throughout the life of the plan, the adaptive management strategy should be very effective for evaluating compliance, effectiveness, and validation. As written, the plan will be altered and modified to meet management goals if the original plan is not effective. In the past, however, monitoring has suffered from lack of support once a project is initiated, and it is seldom useful. For example, the development of a monitoring strategy often takes place after a project begins; funding for monitoring activities is usually inadequate; and when budgets are tight, monitoring is frequently the first thing to be curtailed or eliminated. It is especially disconcerting that the state of Oregon currently does not have a formal monitoring program for state forest management. Several questions</p>

	<p>remain unanswered: When will monitoring begin? Will monitoring coincide with the initiation of other parts of the management plan? How will monitoring be funded? Is monitoring directly linked to all other plan activities?</p>
Irwin	<p>My response relates to the next question as well, because monitoring and adaptive management should be inseparable. The management experiments should be used to identify priority monitoring topics, in addition to implementation monitoring. Page 6-15 simply states that management experiments range from relatively small scale, short term operations on a unit, to long term tests of silvicultural prescriptions and multi-watershed scales, while page 6-17 identifies the importance of statistical rigor and experimental design in adaptive management experiments. It would help immensely to specify clearly how the Plan would link forest managers with scientists in crafting replicated experiments, and describe the experiments and response variables succinctly. For example, a nice experiment might involve responses of nesting Neotropical migrant birds to the stand-structural conditions and vegetation composition conditions in LS/OG stands, complex and non-complex stands, controlling for other factors such as stand size, edge effects, etc. In short, it's still not clear in the draft how managers will know when or if the goals for biodiversity (or indicators such as birds) have been reached – such as sufficient green trees retained.</p>
Ohmann	<p>The cover letter requested I review Chapters 4 and 5, so I have not read Chapter 6 carefully enough to comment here. If you haven't already done so, I recommend finding reviewers to focus specifically on these sections.</p>