

Question 4

1. Are the definitions of stands or habitats described in Chapter 4 sufficient to design forest management approaches that will achieve the goals of providing habitats for the range of native plant and wildlife species, and promoting healthy ecosystem function?

Reviewer	Comments
Bisson	<p>I am going to focus my answer on the question of desired future conditions and riparian area management.</p> <p>I can understand the general goal of establishing mature forest stands adjacent to Type F and large/medium Type N streams. I also liked the acknowledgment that alder stands may be the appropriate species where site conditions favor it. My suggestion, however, is that the description on page 4-42 sounds a little like a one-size-fits-all stand goal. My guess is that continuous, mature riparian forests will be very difficult to achieve in practice (there will always be some gaps), and there are sound ecological reasons for promoting a range of forest succession states. See: ... Reeves, Benda, Burnett, Bisson and Sedell 1995 ...</p> <p>I felt the management goals for small Type N streams could have been made more specific with regard to the functions that would be protected. The description implies that certain streams serve different functions in different areas, but I wasn't sure exactly what this meant. A couple of examples would help.</p> <p>The statement that fine sediment and organic matter retention is limited in headwater streams is probably incorrect in many cases. See: ... Naiman and Sedell 1979, 1980 ...</p> <p>On page 4-43 it is suggested that temperature protection be focused on the downstream portions of Type N streams because these will have the greatest effect on fish-bearing streams. Doing so may overlook potential effects on headwater amphibian populations. See: ... Raphael, Bisson, Jones and Foster 2002 ...</p> <p>I liked the recommendation on page 4-44 that management focus on retaining vegetation that would be likely to interact with debris flows. This shows an awareness of an important ecological process.</p> <p>Finally, I think it should be acknowledged that retention of trees in headwall areas was also meant to serve as a future supply of large wood to streams (as well as providing some erosion control, which now seems uncertain). See: ... Cissel, Swanson, Grant, Olson, Gregory, Garman, Ashkenas, Hunter, Kertis, Mayo, McSwain, Swetland, Swindle, and Wallin 1998 ...</p>
Emmingham	Frankly, this part is a little confusing, even to a silviculturist. The text on page 4-18 does not reference the unnumbered Figures 1,2,3. There seems to be a

	<p>push to identifying only three stand conditions or categories. This results in inclusion of a lot of different stand structures (e.g. lumping) into those three categories. Perhaps this is done to simplify modeling. At any rate, it leads to some odd classifications. For example, in the text for the Regeneration figure it states that stands thinned and pruned up to 6” dbh will be included as “regeneration” in the non-complex category. It seems to me that a 6” dbh stand that has been thinned (even if wide) and pruned is quite different from a young, recently regenerated plantation.</p> <p>In the figure for non-complex the stem exclusion and understory reinitiation phases are depicted. As stated earlier, the term non-complex is a poor one, and certainly not descriptive of both of these phases. A stand in the non-complex category at stand closure is certainly very different habitat than the same stand would be 30 years later after one or two thinnings.</p> <p>The Complex figure has descriptions of stands in advanced stages of understory reinitiation with criteria for stands to be included. These categories were based on Oliver’s characterization of “natural” stand development. The criteria for complex stands seem appropriate for unmanaged coast range stands 150 to 250 years of age. My impression from the strategies in Chapter 5 and current management practices is that active thinning and partial cutting will be used to accelerate development of more complex stand structure. Few if any of the actively managed stands on the ESF would have such long rotations. Quite diverse stands with smaller tree diameters can be produced through density management (thinning) in 40-80 years. Where do such stands fit in a classification based on slow development of structure over 150-250 years? Perhaps a more realistic classification could be based on how younger Douglas-fir stands develop under thinning regimes.</p>
Gresswell	<p>The complexity of natural forested landscapes is almost impossible to characterize with three stand types; however, in the general context of the plan, they may be useful for management. On the other hand, the inherent variability of these landscapes is linked to the diversity of the biotic community, and management activities that substantially simplify the structure of a system will undoubtedly modify the biotic community.</p>
Irwin	<p>Probably the definitions are sufficient for managers. For readers and good public communications, I suggest developing LMS graphics that visually depict the habitat conditions.</p>
Ohmann	<p>Although I think all key components are present in Chapter 4, I think their presentation could be less awkward. Because the various vegetation classes are partially overlapping and not mutually exclusive, it’s unclear to me how standards and guidelines (e.g., the range of landscape percentages in each class) would be defined. For example, the term</p>

'stand structures' appears to apply to the designations regeneration, non-complex, and complex, yet throughout the FMP I mostly see references only to complex and non-complex. Also, I didn't see an explanation of why understory reinitiation (ER) is included in both non-complex (early ER) and complex (late ER). Is this related to rotation age? If so, perhaps more descriptive labels should be developed. In addition, old growth really is part of the continuum of stand development, and falls within the understory reinitiation and complex structure categories. Instead, it's treated as a separate entity that is put into reserves, and there are no plans to create additional old growth via active management. Indeed, it appears that the FMP has intentionally avoided stating that it is possible to grow new old-growth stands. I personally don't have any problems with this as a management strategy, assuming that you define old growth by the presence of the characteristics shown on p. 4-22. (Another definition to consider is the old-growth habitat index, OGH, developed by Tom Spies and Rob Pabst in Corvallis (unpublished).)

Similarly, 'hardwoods' are defined as a separate category rather than as one of the 'stand structures.' (Note: it is rather restrictive to recognize hardwood stands only as those comprised of >70% hardwoods. The CLAMS study cited also recognizes a mixed conifer-hardwood type, which are comprised of 30-70% hardwoods.) In the section on landscape proportions in the different vegetation conditions (p. 4-23-24), only the complex and non-complex stand structures are addressed, so it's not clear how hardwoods and old growth will be accommodated in the planning process. As stated in one of my earlier comments, I would like to see (as I would think a forest manager would like to see) a complete list of all of the different forest conditions that comprise the landscape in one place, with their associated ranges of landscape percentages.

Paragraph 3 on p. 4-23 introduces another classification scheme, this one for types of habitats. This has potential to further confuse the practitioner attempting to develop management prescriptions. It would be more clear if these habitat implications were integrated into the earlier descriptions of the stand structures.

