

Changes in the Phase 3 Indicator Field Guide Chapters from version 3.0 to version 4.0

Changes documented in change proposals are indicated in **bold** type. The corresponding proposal name can be seen using the comments feature in the electronic file.

Ozone Bioindicator Plants

- Combined the east and west versions of the Ozone Bioindicator procedures into one chapter. Clarified the text throughout the new chapter.
- Modified: 9.1.7 Communications. Updated the contact addresses.
- Clarified: Figure 9-1. Deleted old figure 9-1 from both East and West chapters, and added a new figure 9-1.
- Clarified: 9.2.5 Species Selection. Clarified the species tables for each region and updated the link to the current ozone indicator web site.
- Modified: table 9-4. For code 0960, blue elderberry, the scientific name was changed from *Sambucus cerulea* to *Sambucus mexicana*; for code 0969, changed 'Mountain snowberry' to 'Snowberry' and the scientific name from *Symphoricarpos oreophilus* to *Symphoricarpos* spp.; for code 0965, changed 'Huckleberry' to Thin leaf huckleberry.' Also added a third footnote to the table.
- Modified: table 9-5. For code 0960, blue elderberry, the scientific name was changed from *Sambucus cerulea* to *Sambucus mexicana*; for code 0969, changed 'Mountain snowberry' to 'Snowberry' and the scientific name from *Symphoricarpos oreophilus* to *Symphoricarpos* spp.; for code 0965, changed 'Huckleberry' to Thin leaf huckleberry.' Also added two footnotes to the table.
- Modified: table 9-6. For code 0969, changed 'Mountain snowberry' to 'Snowberry and coralberry' and the scientific name from *Symphoricarpos oreophilus* to *Symphoricarpos* spp.
- Clarified: 9.4.3 OZONE HEXAGON NUMBER. Clarified the text.
- Clarified: 9.4.6 CREW TYPE. Clarified the text and code 2.
- Modified: 9.4.7 OZONE SAMPLE KIND. Modified code 2 and code 3. This was done to be consistent with discussions and agreement on wording at the 2006 Ozone meeting.
- Modified: 9.8 ACKNOWLEDGEMENTS. Updated the email address for indicator advisor and added a co-indicator advisor as a second contact person.

- Modified: Appendices A, B, C, and D. These appendices were organized for easy use by regions. Text in the data sheets were updated to match the rest of the chapter.
- Corrected: Appendix 9.A. Data Sheet for the Voucher Leaf Samples. Under the list of species codes, change code 111 to 998.
- Added: Appendix 9.E. Supplemental Bioindicator Species.

Lichen Communities

- Corrected: 10.2. Data Collection 1: Sample Procurement. In item number 2, the Abundance value for Code 1 was corrected from “Rare (< 3 individuals in area)” to “Rare (1-3 individuals in area)” so that the text is consistent with the changes in 10.3.9.
- **Modified: 10.3.9. ABUNDANCE.** Under *Values*, changed code 1 from “Rare (< 3 individuals in area)” to ‘Rare (1-3 individuals in area)’ to match what is trained.

Soil Measurements and Sampling

- **Modified: 11.7.9 CONDITION CLASS.** Changed the variable title from ‘CONDITION CLASS’ to **CONDITION CLASS NUMBER**. Also, moved the variable to number 11.7.11. Modified the procedures to eliminate using ‘0’ if the soil sample is on a forested condition class not already recorded on the 4 subplots or macroplot, if used. Changed *When collected* from ‘all soil sample locations’ to ‘soil sample locations that are being sampled (SOIL SAMPLE STATUS = 1 or 11).’ Changed *Values* from ‘0 to 9’ to ‘1 to 9’.
- **Modified: 11.7.10 VISIT NUMBER.** Moved variable to 11.7.9. Clarified the procedure description.
- **Modified: 11.2.11 SOIL SAMPLE STATUS.** Moved variable to 11.7.10. Modified the procedures to accommodate a new code 11. Modified *When collected*. Changed *Field width* from ‘1 digit’ to ‘2 digits’. Modified code 01 from “Sampled” to “Sampled: forest that has been identified as a condition on the plot.” Added a code 11 defined as ‘Sampled: forest that has NOT been identified as a condition on the plot’.
- Changed: 11.12 ACKNOWLEDGEMENTS. Change the affiliation of the East Advisor from “North Central Research Station” to “Northern Research Station”.

Crowns: Measurements and Sampling

- Clarified: 12.4 Crown Rating Precautions. Clarified text for trees with no crown by definition.

- Clarified: 12.5 UNCOMPACTED LIVE CROWN RATIO. Added text to the description.
- Modified: Figure 12-4. Sapling UNCOMPACTED LIVE CROWN RATIO determination examples. Corrected the figure to match the text and figure 38 in chapter 5 of the phase 2 field guide.
- Modified: Figure 12-6. UNCOMPCATED LIVE CROWN RATIO outline and rating examples. Corrected the lines on the right-side tree.
- Clarified: 12.6 CROWN LIGHT EXPOSURE. Replaced the word ‘side’ in the description and codes with ‘quarter’ to clarify the instructions. Also added text to the description.
- Clarified: 12.7 CROWN POSITION. Added text to the description.
- Corrected: Figure 12-10. Corrected the percentages in the figure.
- Clarified: 12.9 CROWN DENSITY. Added text to the description.
- Modified: Figure 12-11. CROWN DENSITY rating outline examples. Removed the line and ‘x’ from the tree on the lower left.
- Clarified: 12.11 FOLIAGE TRANSPARENCY. Added text to the description.
- Modified: 12.12 Acknowledgements. Changed the name to ‘CONTACTS’ and listed the current national crown indicator advisors.

Vegetation Diversity and Structure

- Clarified: 13.8.1.1 SPECIES CODE. Added text to the instructions and updated how to access the reference plants dictionary.

Down Woody Materials

- Clarified: 14.4.1 Rules for Coarse Woody Debris (CWD). Clarified the text in rule number 13.
- Corrected: 14.4.3.4 CWD DECAY CLASS. Corrected a typographical error in the note underneath the table of decay class descriptions. Text changed from “CWD DECAY CLASS 5 pieces can be difficult to identify because they often blend into the duff and litter layers. They must still resemble a log, therefore, the first tally rule is that they must be > 5.0 inches in diameter, > 5.0 inches from the surface of the ground, and at least 3.0 feet long...” to ““CWD DECAY CLASS 5 pieces can be difficult to identify because they often blend into the duff and litter layers. They must still resemble a log, therefore, the first tally rule is that they must be \geq 5.0 inches in diameter, \geq 5.0 inches from the

surface of the ground, and at least 3.0 feet long...” The two 5-inch dimensions should be ≥ 5 inches.

- Corrected: 14.4.3.5 SPECIES. Corrected the text describing code 0299 (from “unknown conifer” to “unknown dead conifer” and 0998 (from “unknown hardwood” to “unknown dead hardwood”.)
- Clarified: 14.5 Sampling Methods for Fine Woody Debris (FWD). Added clarifying text to item number 4.
- Clarified: 14.7: Fuel Loading on the Microplot. Added clarifying text to the first paragraph.
- Added: Figure 14-12. Added a citation.
- Corrected: 14.10 ACKNOWLEDGEMENTS. Updated the text.
- Modified: Appendix. Data Sheets. The old data sheets were deleted and a combined data sheet added.