coho recovery of habitat complexity. But this report does not itself evaluate the effectiveness of specific projects or the overall cumulative effectiveness of projects relative to any particular criteria or metrics (e.g. increased numbers of pools, channel-to-floodplain connectivity, off-channel habitat, stream temperature/water quality concerns, location of projects in priority reaches or which address priority recovery actions). In our view, the most important investment that the Department of Forestry's monitoring unit can make related to voluntary efforts goes beyond merely counting the number and cost of projects to robust effectiveness monitoring -- something that this report only aspires to do under next steps, resources permitting.

Until such monitoring is done, it is premature to make statements about the benefit of restoration projects – voluntary or otherwise – for coho.

We further encourage the Board's attention to the participation of small forest landowners whose management objectives and need for incentives differ from those of industrial owners.

Expectations for the ecological benefits of voluntary restoration efforts should be realistic and based on metrics that relate to recovery outcomes. This effort to catalogue the last 20 years of voluntary restoration is an important piece of information because it will help set realistic expectations for voluntary efforts. The federal coho recovery plan recognizes the potentially positive role of these efforts.[iii] But the unless and until such voluntary efforts are demonstrated to be effective and obviate the need for regulatory change, the need for stronger land use controls will remain.

Also needed is a further clarity about the metrics that will be used to demonstrate attainment of desired habitat recovery outcomes through any mechanisms, including those identified in the federal recovery plan. For timberlands, these metrics should relate to increased shade through increased retention of riparian trees, increased sustainable natural recruitment of large wood, and other factors related to habitat complexity and road system impact reductions.[iv]

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[i] *See e.g.* NOAA-NMFS, 2016, 2016 5-Year Review at 12: "it is only when marine survival is low that it becomes apparent whether habitat quality and quantity are sufficient to support self-sustaining populations. With marine survival rates expected to decrease for OC coho salmon entering the ocean in 2014 (Peterson et al. 2014a and b), 2015, and 2016, it may be advisable to wait to observe how populations fare during this potential downturn before deciding to change their status (NWFSC 2015)."
http://www.westcoast.fisheries.noaa.gov/publications/status_reviews/salmon_steelhead/2016/2016_oc-coho.pdf

[ii] Id. at pp. 19-20, emphasis added.

[iii] http://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/oregon_coast/oc_coho_plan_exec_summary_12_16.pdf

[iv] http://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/oregon_coast/final_north_coast_stratum.pdf.