

Data Papers

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Soil dynamics in forest restoration: a data set for temperate and tropical regions

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Abstract. Restoring forest ecosystems has become a global priority. Yet, soil dynamics are still poorly assessed among restoration studies and there is a lack of knowledge on how soil is affected by forest restoration process. Here, we compile information on soil dynamics in forest restoration based on soil physical, chemical, and biological attributes in temperate and tropical forest regions. It encompasses 50 scientific papers across 17 different countries and contains 1,469 points of quantitative information of soil attributes between reference (e.g., old-growth forest) and restored ecosystems (e.g., forests in their initial or secondary stage of succession) within the same study. To be selected, studies had to be conducted in forest ecosystems, to include multiple sampling sites (replicates) in both restored and reference ecosystems, and to encompass quantitative data of soil attributes for both reference and restored ecosystems. We recorded in each study the following information: (1) study year, (2) country, (3) forest region (tropical or temperate), (4) latitude, (5) longitude, (6) soil class, (7) past disturbance, (8) restoration strategy (active or passive), (9) restoration age, (10) soil attribute type (physical, chemical, or biological); (11) soil attribute, (12) soil attribute unit, (13) soil sampling (procedures), (14) date of sampling, (15) soil depth sampled, (16) soil analysis, (17) quantitative values of soil attributes for both restored and reference ecosystems, (18) type of variation (standard error of deviation) for both restored and reference ecosystems, and (19) quantitative values of the variation for both restored and reference ecosystems. These were the most common data available in the selected studies. This extensive database on the extent soil physical, chemical, and biological attributes differ between reference and restored ecosystems can fill part of the existing gap on both soil science and forest restoration in terms of (1) which are the critical soil attributes to be monitored during forest restoration? and (2) how do environmental factors affect soil attributes in forest restoration? The data will be made available to the scientific community for further analyses on both soil science and forest restoration. Soil information gaps during the forest restoration process and their general patterns can be addressed using this data set. There are no copyright or proprietary restrictions.

Key words: active restoration; forest ecosystems; natural regeneration; restoration success; soil attributes; soil properties; soil recovery.

The complete data set is available as Supporting Information. <http://onlinelibrary.wiley.com/doi/10.1002/ecy.3207/supinfo>

DATA AVAILABILITY STATEMENT

The data set is also available from the Dryad Digital Repository. <http://onlinelibrary.wiley.com/doi/10.1002/ecy.3207/supinfo>

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