

1 *S2 Appendix: Comparison of our findings to previous studies: forest extent and* 2 *loss*

3 Comparison of our findings to the findings of earlier studies reveals that all studies show
4 relatively consistent values for global forest extent, deforestation and protection status of
5 forests. The global forest extent was estimated to be 40.9 million (year 2000) and
6 39 million km² (year 2005) by FAO [1] and Schmitt et al. [2], respectively. This corresponds
7 rather well to our estimate of 42.6 million km² for the year 2000. The estimate of FAO [1] is
8 based on country reports while the estimate of Schmitt et al. [2] is based updated Global
9 Forest Map (GFM) with 10% tree cover threshold. Our estimate is based on the GFC data from
10 Hansen et al. [3] with 20% canopy cover threshold (Table 4).

11 Around 13% of the global forest is under protection according to FAO [1] and Schmitt et al.
12 [2]. Our results, indicate a somewhat larger share of the world's forests are under some form
13 of protection, reaching 19% (Table 4). The protection estimate of FAO [1] is based on country
14 reports and the estimate of Schmitt et al. [2] is based on updated GFM data, WDPA data on
15 IUCN protection category I-VI protected areas from the year 2008 with a 10% tree cover
16 threshold. Our results are rather close to those in the previous literature, if only the IUCN
17 protection category I-VI areas are taken into account as this resulted in protection share of
18 11.5% of the global forest extent. If only the IUCN protection categories I-IV are included,
19 our results indicate 7.0% protection, while Schmitt et al. [2] report a share of 7.7%.

20 The global extent of IFLs (i.e. intact forest landscapes) and primary forests has been
21 estimated by Potapov et al. [4] and FAO [1], respectively. Potapov et al. [4] report the extent
22 of IFL to be 13.1 million km² in the year 2000 while FAO [1] report that the extent of primary
23 forest at 14.7 million km². Using the Potapov et al. [4] IFL areas in combination with the
24 Hansen et al. [3] forest extent, we estimated the intact forest extent in the year 2000 to be
25 somewhat smaller than reported elsewhere, 10.7 million km² (Table 4). Forest cover estimate
26 of Potapov et al. [4] is based on tree cover canopy dataset from MODIS 2005 (resolution of
27 500 m) and 20% canopy cover threshold.

28 Potapov et al. [4] report that 18.9% of the intact forest is protected whereas our estimate
29 was 34% (Table 4). Both studies, our and Potapov et al. [4], used the same dataset for the
30 definition of intact forest landscape. The difference may originate from the different estimates
31 of the extent of intact forest (see above) and from the different selection of categories of
32 protection status. Potapov et al. [4] included only the IUCN protection categories I-VI from
33 the WDPA data, whereas our study included more liberally all authority reported protected
34 areas (also including IUCN protection categories I-VI) from the WDPA data for the year 2010.

35 The global forest loss was estimated by FAO [1] to be 1.43 million km² over the period 2000-
36 2010 while Hansen et al. [3] reported that over the period 2000-2012 around 2.3 million km²
37 forest was lost (gross loss). Our assessment, based on data from Hansen et al. [3] and using
38 20% canopy cover threshold, revealed that forest loss rate over the period 2000-2012 was
39 2.1 million km². The forest loss estimates of FAO [1] are based on country reports, while the
40 estimates of Hansen et al. [3], and thus ours, are based on Landsat data with 30 m
41 resolution.

42 FAO [1] further reported that during the period 2000-2010 approximately 400,000 km² of
43 primary forest was lost whereas our assessment reveals that 269,000 km² of intact forest
44 area was lost during the period 2000-2012 (Table 4). FAO [1] used country reports for the
45 primary forest area estimates where the definition of primary forest might differ from country

1 to country, whereas we used globally coherent data [3,4]. Therefore, our results provide more
2 comparable results among different countries.

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4 **References**

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