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CORRECTION
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Corrigendum: Intact Forest in Selective Logging Landscapes in the Tropics

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A Corrigendum on

Intact Forest in Selective Logging Landscapes in the Tropics
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In the original article, there was a mistake in **Figure 3B** as published. There was a mistake (underestimates) in calculations of the proportion of cutting blocks left intact. The corrected **Figure 3B** appears below.

In the original article, there was a mistake in **Figure 4** as published. There was a mistake (underestimates) in calculations of the proportion of cutting blocks left intact. The corrected **Figure 4** appears below.

In the original article, there was a systematic error in calculations that resulted in underestimations of the proportions of logging blocks not directly affected by timber harvests.

In the original article, there was a mistake in the Abstract. It read as "an average of 57% (range 22–97%) of the area in logging blocks was not directly affected by timber harvests." The corrected sentence should read as "an average of 69% (range 20–97%) of the area in logging blocks was not directly affected by timber harvests."

In the original article, there were two mistakes in the first paragraph of the Results section. It read as "Intact forest covered a mean of 57% (range 22–93%) of the 48 logged blocks in the six tropical countries we sampled (**Figure 2**)". The corrected sentence should read as "Intact forest covered a mean of 69% (range 20–97%) of the 48 logged blocks in six tropical countries (**Figure 2**)." The second mistake reads as "There was no apparent difference in the proportions of forest left intact in the 12 FSC-certified (53 ± 19% SD) and the 36 non-certified FMEs (85 ± 17% SD, $t = 1.54$, $P = 0.13$; **Figure 4**; see Supplementary Table 1 for complete results and logging block statistics)." The corrected sentence should read as "There was no apparent difference in the proportion of forest left intact in the 12 FSCcertified (65 ± 21%SD) and the 36 non-certified FMEs (71 ± 17% SD, $t = 0.77$, $P = 0.45$; **Figure 4**; see supplementary data table for complete results and logging block statistics)."

In the original article, there was a mistake in paragragh 4 of the Discussion section. It read as "That value is much higher than the global average of 57% intact reported here, but is similar to the 77–97% intact forest found in logging blocks in Mexico where harvest intensities were also low (0.24–3.15 trees/ha)." The corrected sentence should read as "That value is much higher than the global average of 69% intact reported here, but is similar to the 77–97% intact forest found in logging blocks in Mexico where harvest intensities were also low (0.24–3.15 trees/ha)". The corrected paragraphs appear below.

ABSTRACT

The selective logging that characterizes most timber extraction operations in the tropics leaves large patches of logging blocks (i.e., areas allocated for harvesting) intact, without evidence of direct impacts. For example, in ~10,000 ha sampled in 48 forest management enterprises in Africa (Gabon, Republic of Congo, and the Democratic Republic of Congo), Indonesia, Suriname, and Mexico, an average of 69% (range 20–97%) of the area in logging blocks was not directly affected by timber harvests. The proportion of intact forest within logging blocks decreased very slightly with increases in harvest intensity in the accessed portion of the logging blocks (9–86 m^3 ha^{-1}) but decreased strongly with harvest intensity in entire logging blocks (0.3–48.2 m^3 ha^{-1}). More forest was left intact in areas farther from roads, on slopes >40%, and within 25 m of perennial streams, but the effect sizes of each of these variables was small (~8%). It is less clear how much of the intact forest left after one harvest will remain intact through the next. Conservation benefits without reductions in timber yields will derive from better management planning so that sensitive and ecologically critical areas, such as steep slopes and riparian buffers, constitute large and permanent proportions of the intact forest in selectively logged landscapes in the tropics.

Results (paragraph 1):

Intact forest covered a mean of 69% (range 20–97%) of the 48 logged blocks in six tropical countries (**Figure 2**). When data from all regions are combined, we detected a small but statistically insignificant decrease in the proportion of forest left intact in logged blocks with harvest intensity in the accessed area (% intact = 0.78–0.0026 * harvest intensity; $SE_b = 0.0014$, df = 45, $P = 0.06$, adjusted $R^2 = 0.055$; **Figure 3A**). In contrast, if harvest intensities are assumed to represent conditions in entire logging blocks, which is commonly assumed, there was a more marked decrease in intact area with harvest intensity (% intact = 0.83–0.0109 * harvest intensity per cutting block; $SE_b = 0.0015$, df = 46, $P < 0.001$, adjusted $R^2 = 0.529$; **Figure 3B**). In the 42 logging blocks in six countries with road data, as expected, intact areas averaged a larger distance (289.6 m, SD = 25.54 m) from the nearest haul-road than accessed areas (231 m, SD = 20.6 m; $t = 4.0$, $P < 0.01$). Distances to haul-roads ranged 64–722 m for intact areas and 56–662 m for accessed areas. There was no apparent difference in the proportion of forest left intact in the 12 FSC-certified (65 ± 21% SD) and the 36 non-certified FMEs (71 ± 17% SD, $t = 0.77$, $P = 0.45$; **Figure 4**; see supplementary data table for complete results and logging block statistics).

Discussion (paragraph 4):

Comparison of our results with other published measures of logging impacts is challenging due to methodological differences, but the patterns we observed are similar to other reports in the literature. For example, based on field measurements of ground disturbance by selective logging in South America reported for 17 plots in six different published studies, Feldpausch et al. (2005) reported that 46–88% of the forest was not affected directly by logging. Those same authors reported that intact forest area decreased with logging intensity and was much smaller for conventional logging than RIL. In a more recent study of a forest subjected to RIL in Belize at a block-wide intensity of 2.9 m^3 ha^{-1} (2.7 trees ha^{-1}), Arevalo et al. (2016) reported that 93% of the 350-ha harvest block experienced no direct impacts of logging. That value is much higher than the global average of 69% intact reported here, but is similar to the 77–97% intact forest found in logging blocks in Mexico where harvest intensities were also low (0.24–3.15 trees/ha). Similarly, in a pantropical review of the literature on logging roads, Kleinschroth and Healey (2017) reported a median impact of 1.7% of the ground surface. Studies based on remote sensing, especially those that employed canopy-penetrating lidar and wall-to-wall sampling of logged blocks, often report considerably higher proportions of intact forest than field studies (e.g., Ellis et al., 2016). Despite the opportunities for lidar to detect accessed areas accurately (Melendy et al., 2018), larger scale studies using canopy-penetrating lidar have yet to reveal the spatial patterns of intactness in landscapes designated for logging beyond the scale of individual harvest blocks, which could have large implications for meta-population dynamics.

The authors apologize for these errors and state that they do not change the scientific conclusions of the article in any way. The original article has been updated.

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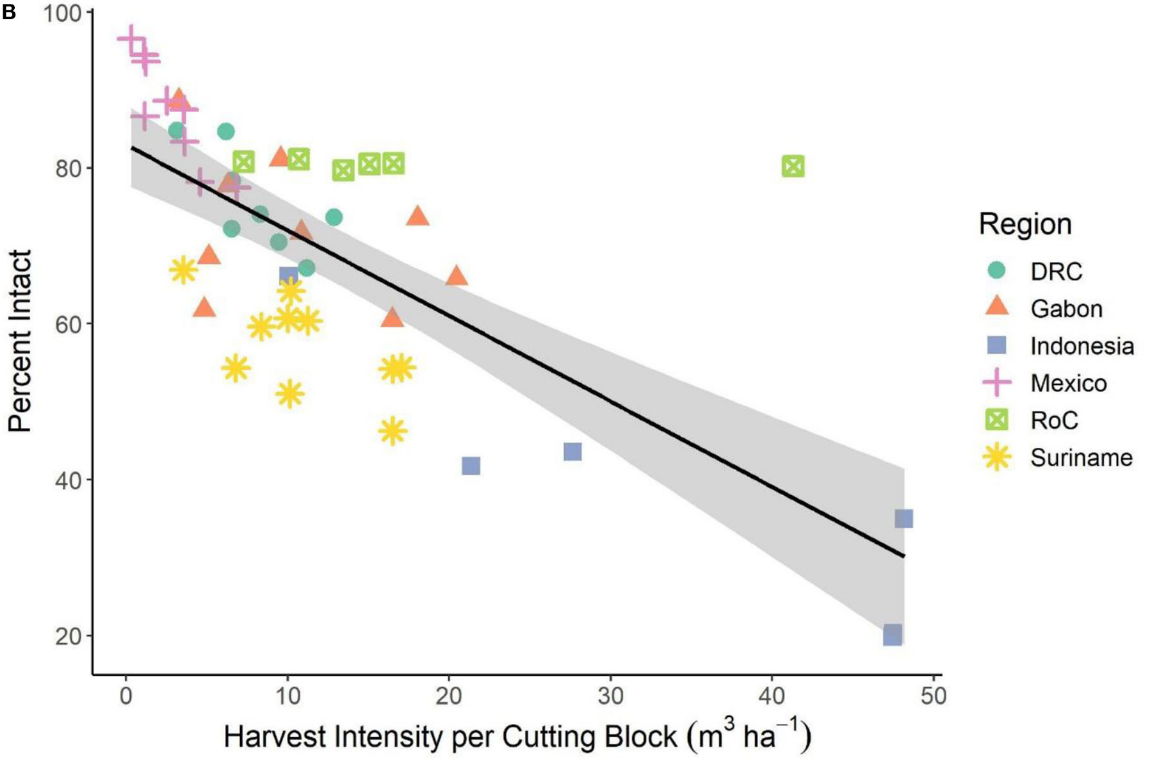
100
80
60
40
20
Percent Intact
0
10
20
30
40
50
Harvest Intensity per Cutting Block (m³ ha⁻¹)
Region
DRC
Gabon
Indonesia
Mexico
RoC
Suriname

FIGURE 3 |

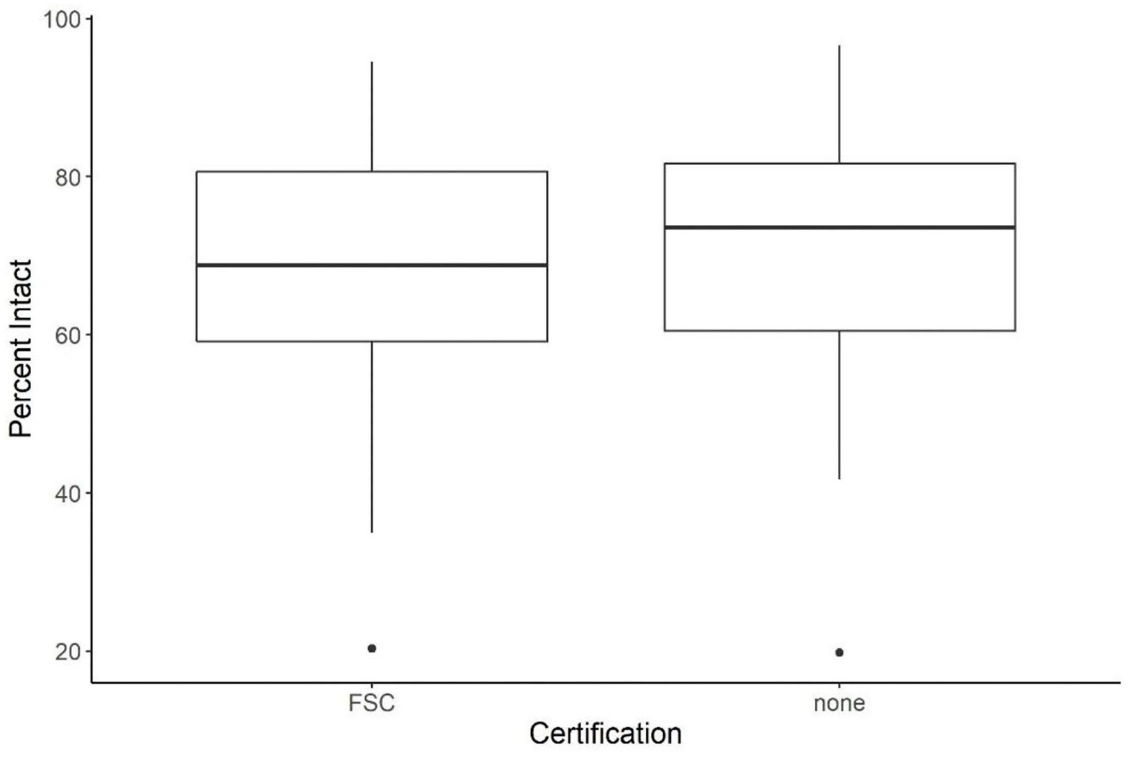

FIGURE 4 |