Supplementary material

Resilience of aboveground biomass from secondary forests following the abandonment of gold mining activity in the Southeastern Peruvian Amazon

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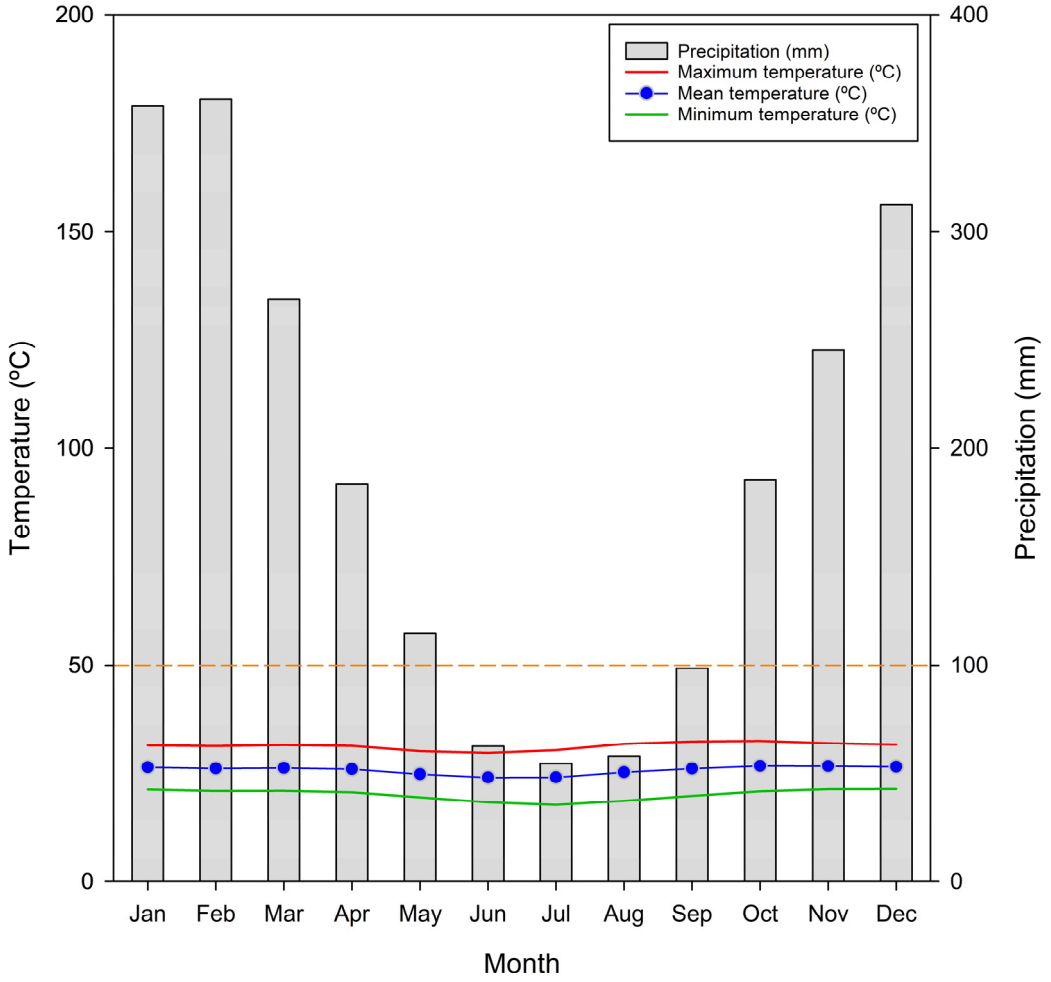

Figure S1: Climate diagram of Puerto Maldonado meteorological station (1950-2023). Values shown in climate diagram correspond to the average month annual temperature (blue line), maximum temperature (red line), minimum temperature (green line), and the total month precipitation (gray bars). Orange line represent the dry season, when precipitation is lower than 100 mm per month.

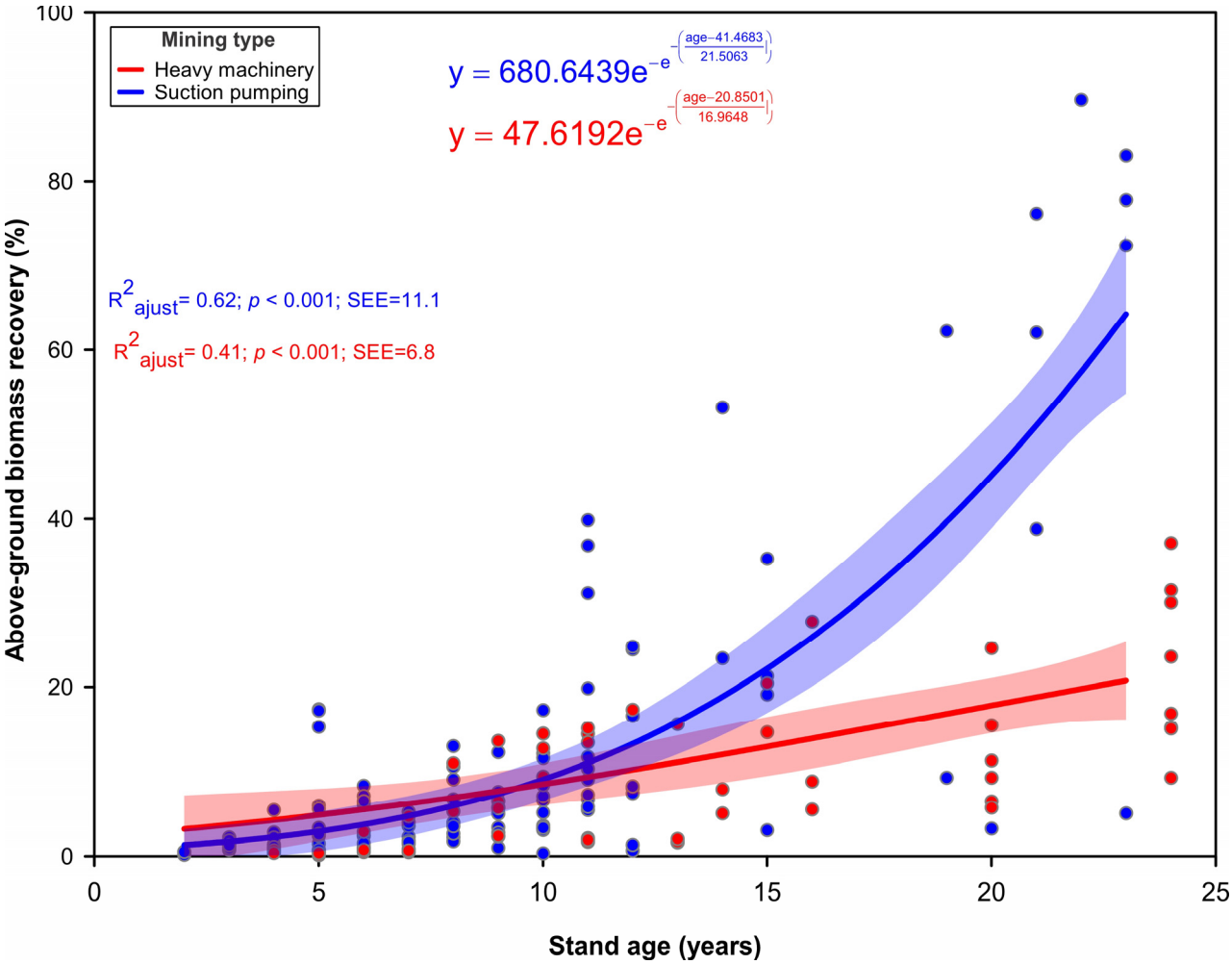

Figure S2: Relationship between aboveground biomass and stand age of tree community in two types of mining activities (heavy machinery and suction pumping) across a chronosequence in degraded lands of the Peruvian Amazon (A). Mean AGB (± standard error) of reference forests close to plots in degraded lands (B). SEE = Standard Error of Estimate.

Table S1. Comparison of five families with the highest importance value index (IVI) of tree community by type of mining activities (heavy machinery and suction pumping) across a chronosequence in degraded lands and reference forest in the Peruvian Amazon.

Forest stand Age (years)	Mining type			
	Suction pumping		Heavy machinery	
	Family	IVI (%)	Family	IVI (%)
(a) < 5	*Malvaceae*	40.9	*Malvaceae*	35.3
	Urticaceae	32.7	*Cannabaceae*	26.6
	Fabaceae	11.6	*Piperaceae*	10.9
	Cannabaceae	3.8	*Hypericaceae*	10.0
	Asteraceae	3.4	*Phyllanthaceae*	8.6
(b) 5 to < 10	*Urticaceae*	22.8	*Malvaceae*	39.1
	Malvaceae	22.5	*Fabaceae*	11.6
	Fabaceae	19.8	*Urticaceae*	11.0
	Asteraceae	5.4	*Melastomataceae*	4.0
	Cannabaceae	4.0	*Hypericaceae*	3.7
(c) 10 to < 15	*Fabaceae*	26.6	*Malvaceae*	15.7
	Malvaceae	17.3	*Fabaceae*	12.3
	Urticaceae	14.7	*Melastomataceae*	9.7
	Moraceae	13.7	*Urticaceae*	7.1
	Euphorbiaceae	3.4	*Rubiaceae*	6.1
(d) 15 to < 20	*Malvaceae*	35.4	*Malvaceae*	16.0
	Fabaceae	24.0	*Melastomataceae*	14.0
	Moraceae	13.5	*Fabaceae*	13.3
	Urticaceae	11.0	*Piperaceae*	12.1
	Piperaceae	2.1	*Euphorbiaceae*	12.0
(e) 20 to < 25	*Fabaceae*	17.6	*Fabaceae*	31.5
	Euphorbiaceae	11.3	*Melastomataceae*	30.2
	Urticaceae	9.5	*Hypericaceae*	18.9
	Malvaceae	9.3	*Clusiaceae*	7.0
	Moraceae	4.9	*Urticaceae*	3.5
(e) Reference forest	*Fabaceae*	12.1		
	Moraceae	6.9		
	Rubiaceae	5.4		
	Myristicaceae	5.3		
	Arecaceae	4.8		

Table S2. Comparison of five genera with the highest importance value index (IVI) of tree community by type of mining activities (heavy machinery and suction pumping) across a chronosequence in degraded lands and reference forest in the Peruvian Amazon.

Forest stand Age (years)	Mining type			
	Suction pumping		Heavy machinery	
	Genus	IVI (%)	Genus	IVI (%)
(a) < 5	*Ochroma*	24.9	*Ochroma*	35.3
	Cecropia	23.1	*Trema*	26.6
	Andira	14.7	*Piper*	10.9
	Bixa	8.0	*Vismia*	10.0
	Inga	4.0	*Coccoloba*	8.6
(b) 5 to < 10	*Cecropia*	21.8	*Ochroma*	36.4
	Ochroma	18.7	*Cecropia*	10.5
	Inga	12.9	*Vismia*	3.3
	Tessaria	3.8	*Inga*	3.0
	Trema	3.7	*Apeiba*	2.9
(c) 10 to < 15	*Inga*	18.5	*Ochroma*	10.1
	Cecropia	13.5	*Miconia*	6.3
	Ficus	12.9	*Cecropia*	6.0
	Ochroma	12.7	*Apeiba*	5.3
	Guazuma	3.2	*Piper*	4.4
(d) 15 to < 20	*Ochroma*	25.9	*Miconia*	11.7
	Inga	16.4	*Piper*	11.5
	Ficus	13.1	*Apeiba*	10.8
	Cecropia	10.5	*Acalypha*	9.3
	Guazuma	9.5	*Cecropia*	7.6
(e) 20 to < 25	*Sapium*	10.2	*Miconia*	27.4
	Inga	6.6	*Tachigali*	27.3
	Guazuma	6.0	*Vismia*	18.2
	Erythrina	5.9	*Clusia*	6.7
	Cecropia	5.5	*Graffenrieda*	3.9
(e) Reference forest	*Inga*	5.1		
	Virola	4.1		
	Miconia	3.4		
	Astrocaryum	2.9		
	Ficus	2.9		

Table S3. Average of floristic similarity (Chao-Jaccard) among forest plots in two types of mining activities (heavy machinery and suction pumping) according to five recovery age classes of natural regeneration and in reference forest of tree community across a chrono-sequence in degraded lands of the Peruvian Amazon.

Stand age (years)	**0 to < 5**	**5 to < 10**	**10 to < 15**	**15 to < 20**	**20 to < 25**
0 to < 5	33.8%				
5 to < 10	26.4%	20.1%			
10 to < 15	18.7%	15.6%	13.2%		
15 to < 20	16.7%	13.9%	11.8%	11.0%	
20 to < 25	2.3%	2.5%	2.4%	3.2%	12.3%