**Appendix 2:** Allocation of deforested areas for scenarios with low deforestation rate.

To allocate deforestation area under low deforestation rate scenarios, we stratified the province into strata according to the precipitation gradient and land-planning zones (Fig. A2.1). Regarding climate, we divided the province into four zones using an official precipitation map (UPCA 2017) as follows: arid (<600 mm annual precipitation), semiarid (600-750 mm), sub-humid (750-1200) and humid (>1200 mm). Additionally, sub-humid and humid zones are divided between Corridors and Non-Corridors land planning zones (Fig. A2.1). This results in a total of six strata for scenarios with Corridors, and four strata for scenarios without Corridors (Table A2.1).

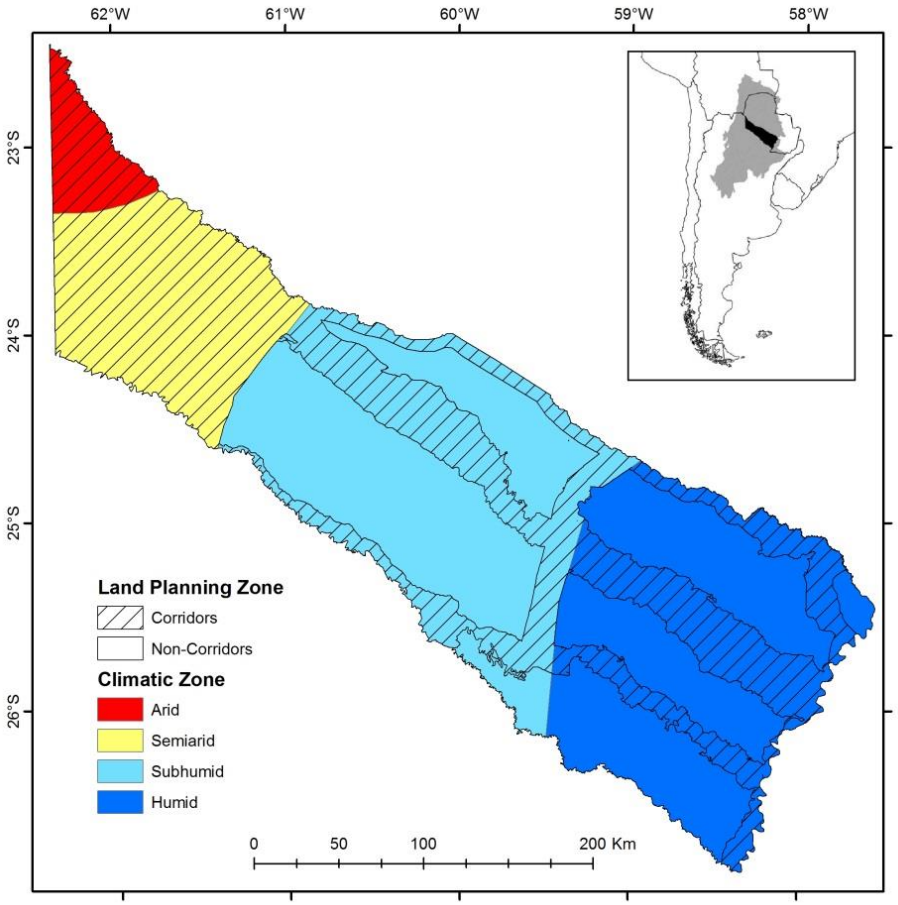


Figure A2.1. Province stratification for the simulation of deforestation according to land planning zones and climatic zones.

The proportion of deforestation for each stratum was established according to that observed in the period 2010-2015 (Arriaga Velasco-Aceves 2017). That is, 4% of total provincial deforestation was allocated in the humid zone, 69% in the sub-humid, and 27% in the semiarid zone. There was no deforestation observed in the arid zone. Regarding land

planning zones, 75% of the deforested areas were located in non-corridors zone and 25% in corridors zones. Using these proportions, we distributed simulated deforested areas (i.e., 400.000 ha) among the strata (Table A2.1).

To reach the deforestation quota in each stratum, we selected plots randomly and sequentially. In each selected plot we removed the total amount of forest area allowed per plot in our scenario quota. The routine stopped when the deforestation quote per strata was reached, but only after completing the deforestation in the last selected plot, which sometimes was slightly over the deforestation quote established. This explains why the deforested area obtained was slightly larger than 400.000 ha, and also the variability between repetitions for the same scenario (Table 2).

Table A2.1. Deforested area in the simulations under scenarios with low deforestation rates in each stratum of the province regarding climatic and land planning zones. In scenarios without corridors there are no land-use planning zones differentiated.

| | With Corridors scenarios | | Without Corridors scenarios |
|---|---|---|---|
| Climatic zone | Corridors | Non-Corridors | |
| Arid | 0 | 0 | 0 |
| Semiarid | 108000 | 0 | 108000 |
| Subhumid | 69000 | 207000 | 276000 |
| Humid | 4000 | 12000 | 16000 |

**Literature cited**

Arriaga Velasco-Aceves 2017. Expansión agropecuaria en la Provincia de Formosa: pérdida de ambientes naturales y fragmentación de bosques entre 2001 y 2015. Tesis de licenciatura. Facultad de Ciencias Exactas y Naturales. Universidad de Buenos Aires.

UPCA (Unidad Provincial Coordinadora del Agua) (2017). [online] URL: https://www.formosa.gob.ar/upca/mapas