PLAYING POLITICS WITH ENVIRONMENTAL PROTECTION: THE POLITICAL ECONOMY OF DESIGNATING PROTECTED AREAS

Online Appendix

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A1 Creation of Federal Protected Areas

The constitution of Brazil (Art. 225, Inc. VII) stipulates that it is the president's prerogative to create federal protected areas—officially known as *unidades de conservação*—for the purposes of conservation. The National Protected Areas System legislates the three administrative requisites for creating a protected area: technical studies, public consultations, and presidential executive orders, in that order (Ministério de Meio Ambiente, 2011). The first two requisites must be validated by the executive branch, either a presidential executive order or ministerial resolution. Oftentimes they are not fully considered or adequately implemented (Chiavari et al., 2016).

1. **Technical studies**. The president first puts together a team of professionals for assessing the siting, demarcation, extension, and contribution to biodiversity of the protected area. Technical studies are conducted by biologists, geographers, archaeologists, and cartographers, and they must primarily include:

   (a) A description of the most relevant vegetation and fauna that the protected area aims to conserve, as well as the geographic characteristics of the area.

   (b) An inventory of real estate assets located in the area that could be subject to expropriation and monetary compensation.

   (c) A report indicating whether the area belongs indigenous peoples or it was an ancestral territory inhabited by an indigenous tribe.

2. **Public consultations**. After the technical studies are completed, the president calls a public consultation that involves the direct participation of the local communities affected by the protected area. A public consultation consists of:

   (a) The provision of clear and detailed information (e.g., the findings of the technical studies, the rights of the affected citizens) to the local communities.

   (b) The organization of preliminary public meetings to discuss the economic, social, and environmental impact of the protected area on the affected communities.

   (c) The conformation of a commission made of local residents who will administer and monitor the protected area together with the Ministry of Environment.

3. **Presidential executive order**. Once the technical studies and the public consultations have been approved, the president issues an executive order authorizing the creation of the protected area in the location.

A2 Formal Model

In our decision-theoretic model, the federal government decides on the value of a single variable, the proportion of a municipal area protected, $s \in [0,1]$. For each unit of avoided deforestation, the federal government gains a measure of benefits, $\alpha > 0$. These benefits include domestic political gains, international reputation, and climate finance. The federal government also pays two types of electoral costs, one for federal and the other for local elections. Let $\beta \in [0,1]$ indicate the extent to which the local voters, economic elites, or interest groups blame the federal government, as opposed to the mayor, for bad economic outcomes. The costs are quadratic and the marginal costs are set at $\frac{1}{2}c_F, \frac{1}{2}c_L > 0$. To capture the logic of alignment, assume c_L is higher whenever the federal government and the mayor are from the same coalition of parties.

The federal government's quadratic utility function is written as:

$$u = \alpha s - \frac{1}{2}\beta c_F s^2 - \frac{1}{2}(1-\beta)c_L s^2. \tag{1}$$

Differentiating with respect to s, the first-order condition is

$$s^* = \frac{\alpha}{\beta c_F + (1-\beta)c_L}. \tag{2}$$

Corner solutions notwithstanding, s^* is strictly decreasing in c_F and c_L. Under the assumption that c_L is higher for aligned than for non-aligned mayors, our primary hypothesis holds. The lower the value of β (meaning voters and interest groups blame the mayor, not the federal government) the greater the difference between aligned and non-aligned mayors in the size of protected area.

A3 Sample Construction and Empirical Strategy

Here we provide further explanation of how we construct the sample for our empirical analysis and why this is relevant for our identification strategy. We also explain why we pool observations over multiple years and drop certain observations that do not conform to the requirements of our geographic RDD.

The main sample is constructed as follows. If Municipality A (treated) is bordered by two others in a given year, Municipalities B (treated) and Municipality C (control), then Municipality A will have two border segments for that year each with a unique municipality-pair coding (A-B and A-C). Since we examine only grid cells with opposing treatment conditions, we then would drop all grid-cell observations for grids along the A-B border, as these municipalities are both treated for that year. Grid cells along the A-C border, however, would enter into the dataset, as they are along an opposing treatment-control border.

We count each grid cell only once for each year of observation to avoid double-counting of grid cells. Grid cells are only counted for the municipal border pair to which they are closest. Therefore, in Figure A1, the grid cells for Municipality C will only be counted once for the year observation, and be coded only as an A-C or B-C pair, depending on the closest municipal border segment.

The resulting dataset thus includes only grid cells along a municipal border segment that form a treatment-control pair. That is, we only include grid cells that have a matching set of grid cells on the opposite side of the municipal border with opposing treatment conditions for a given year—e.g. aligned/unaligned. This is necessary because, as we explain in the main paper, the assumptions for identifying a causal effect in the RDD require that we examine only observations that are close in proximity to a forcing variable (in our case, the municipal boundary) that determines the treatment condition of grid cells. Comparing grid-cell observations across a boundary which separates municipalities with the same treatment condition would violate that requirement.

This sample creation method provides a partial panel dataset, in which not all municipal border segments are represented for every year of observations (i.e. a partial panel dataset). While dropping observations in this manner would limit a time-series analysis, our intention is not to study variation in grid cells over time per se. Instead, we rely on cross-boundary variation for leveraging the power of the discontinuity caused by the geographic boundary. We pool observations over time in the interest of gaining observations and thus efficiency in our estimator. Similarly, we include models with grid-cell fixed effects and state-year fixed effects to account for unobserved heterogeneity and therefore achieve further gains in precision.

Grid-Cell Fixed Effects

An important concern pertains to the inclusion of grid-cell fixed effects—for example, Models 2 and 3 in Table 1. Doing so would necessarily limit the variation that our estimates explain, as they only measure the effect of within grid-cell variation in treatment assignment over time. Effectively, these models only estimate variation in treatment for municipal pairs that switch treatment conditions at least once in the data set—that is, going from treatment-control to control-treatment, or vice versa.

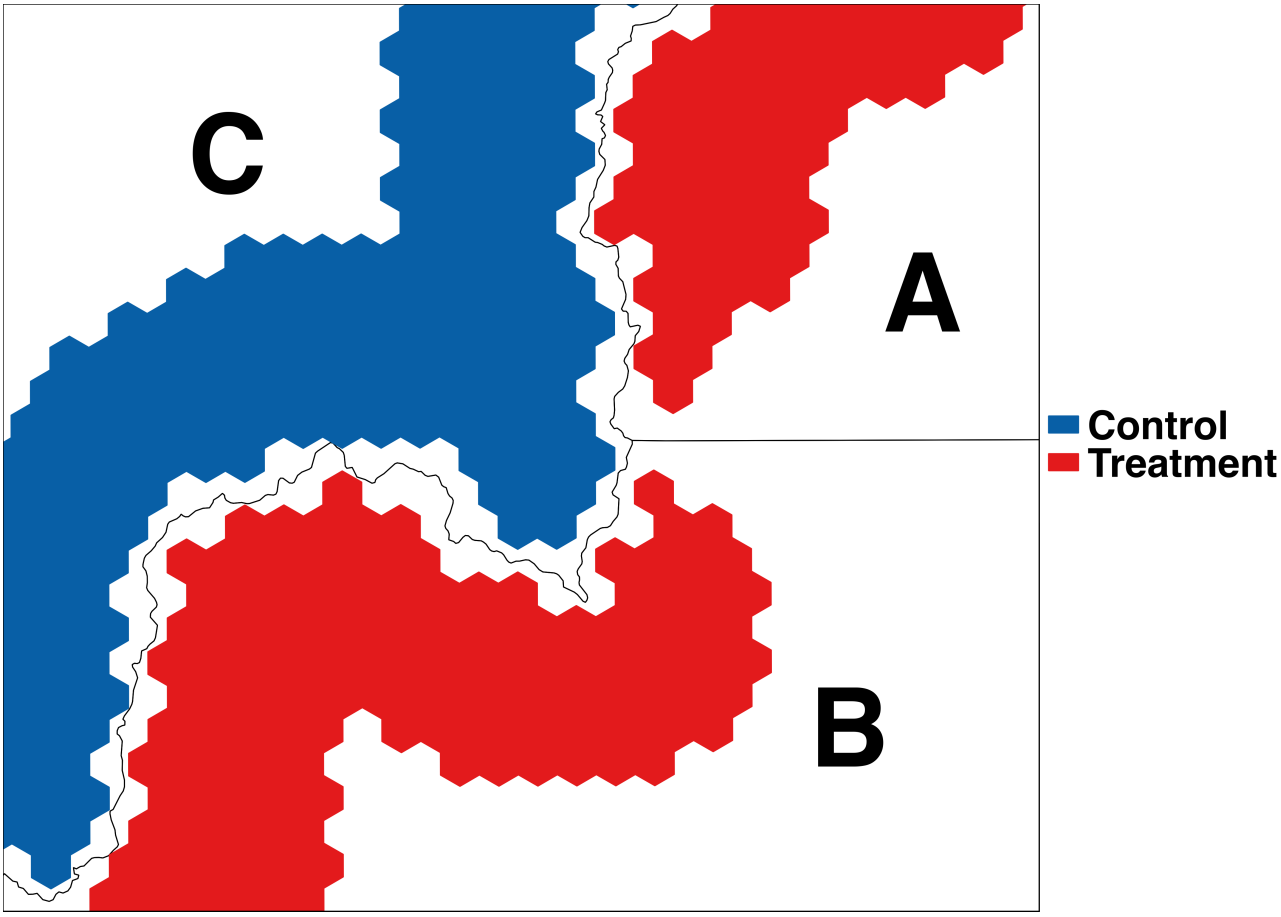

Figure A1: Diagram of sample selection along border between three municipalities. Sample grid hexes are indicated by red (treatment) and blue (control) colors. Hexes along the A-B municipal border are dropped as they have the same treatment status.

To illustrate why this occurs, Figure A2 shows a stylized panel dataset. Each pair of boxes corresponds to a municipal boundary pair, and each individual box represents a grid-cell observation for a given year. Here, each municipality only has one grid cell for simplicity. The letters T and C (as well as their respective colors, red and blue) correspond to the treatment condition for a given observation—treatment or control, respectively. In the figure, only the observations from Municipal Pair #2 for years 2, 3, and 4 would contribute to the estimate for the grid-cell fixed effects model. We would first drop all observations that do not correspond to treatment-control pairs across municipal boundaries, thus eliminating from year 1 for all Municipal Pairs (T-T), and year 4 and year 2 from Municipal Pairs #1 (T-T) and #3 (C-C), respectively. In the remaining dataset, only grid cells from Municipal Pair #2 present variation in treatment assignment over time (i.e. "switching" from C-T to T-C, or vice versa, at least once). Therefore, a grid-cell fixed effects model for this hypothetical sample would only estimate variation in treatment using observations from years 2-4 in Municipal Pair #2.

Year	Municipal Pair #1		Municipal Pair #2		Municipal Pair #3	
1	T	T	T	T	T	T
2	T	C	C	T	C	C
3	T	C	T	C	T	C
4	T	T	T	C	T	C

Figure A2: Stylized dataset of grid cells and municipal pairs by year. Individual boxes represent grid-cell observations in each municipal pair for a given year. Red-colored boxes with the letter T denote treated observations, whereas blue-colored boxes with the letter C denote control observations. In this hypothetical sample, a grid-cell fixed effects model would only estimate variation in treatment using observations from years 2-4 in Municipal Pair #2.

Even though the grid-cell fixed effects estimators reduce the variation in treatment condition, it still leaves a considerable amount of variation with which to conduct our empirical analysis. This is because we pool data over several years and the treatment variable, Coalition Alignment, shifts frequently over time (see Figure A5), leading to many cases in which municipal pairs switch treatment conditions at least once. Out of the 2,075 municipal-pairs border segments in our dataset, 1,803 present at least one "switch" in the dataset, which indicates that the majority of the municipal-pairs are contributing variation in treatment to the grid-cell fixed effects model.

This only applies to the two main models that incorporate grid-cell fixed effects. All of our analyses include a model without grid-cell fixed effects that would also include the additional years above without variation in the treatment assignment (years 2 and 3 for Municipal Pair #1; years 3 and 4 for Municipal Pair #3). The main results are consistently robust across all three models in all of our analyses, demonstrating that modeling choice is not driving results.

As an additional check to test whether the grid-cell fixed effects models are driving the results, we re-run our main analysis using a full panel data set in Table A17. The dataset for these models includes all municipal pairs, regardless of whether they form a treatment-control pair. Results using a full panel dataset are consistent, but attenuated, further indicating that modeling choice is not affecting our main results. All the main coefficient estimates are in the same direction, but slightly smaller. The fully specified model with state-year fixed effects is still significant, although the p-values for the other two models are larger ($p < 0.1$). These regressions, however, do not benefit from the reduced causal assumptions as they violate the RDD by including treatment-treatment and control-control municipal pairs.

Table A1: Summary Statistics, 1997-2012. Summary statistics are for border grid cells in the entire sample (all observations) and for only treated observations (grid cells in aligned municipalities) and control observations (grid cells in unaligned municipalities).

Years	1997 - 2012
All Observations	
Observations	870,719
Grid Cells	121,141
Municipalities	790
Muni. Pairs	2,075
Protected Area	40,232
Mean Prot. Area	0.0383
Std.Dev. Prot. Area	0.1868
Treated Observations	
Observations	434,076
Protected Area	17,731
Mean Prot. Area	0.033
Std.Dev. Prot. Area	0.1733
Control Observations	
Observations	436,643
Protected Area	22,501
Mean Prot. Area	0.0436
Std.Dev. Prot. Area	0.1991

A4 Identifying Assumptions

- Table A2 presents the codebook for the variables used in the balance tests.
- Figure A3 shows the balance statistics for pre-treatment covariates in the 1996 mayoral election. Covariates that fail the test and whose difference in means for treated and control observations is statistically significant ($p < 0.05$) are coffee and soybean suitability (both rain-fed and irrigated), rice suitability (only rain-fed), accessibility, and threatened mammals.
- Table A3 shows the results from the balance tests for the 2000, 2004, and 2008 mayoral elections. Covariates that fail the test and whose difference in means for treated and control observations is statistically significant ($p < 0.05$) are population count and density (2000); temperature, workability, and population count and density (2004); and deforested area (2008).
- Table A4 shows the results from Moran's I spatial autocorrelation test for the 1996, 2000, 2004, and 2008 mayoral elections. Moran's I is an index ranging from -1 to 1, with negative values indicating dispersion and positive values indicating the presence of spatial clusters. The only covariate that fail the test (Moran's $I \leq 0$) is population density (1996).

Table A2: Codebook for Variables in Balance Tests

Variable	Source	Measurement
Municipal ideological scores	Power and Rodrigues-Silveira (2019)	Left-right scores $[-1, 1]$
Deforested area	IBGE	% of hexagon area, 1991
Rainfall	FAO-GAEZ	Mm., annual mean, 1960-1991
Evapotranspiration	FAO-GAEZ	Mm., annual mean, 1960-1991
Temperature	FAO-GAEZ	Celsius, annual mean, 1960-1991
Climate aggressiveness	IBGE	Index (z-score)
Altitude	GDEM-NASA	Meters
Slope	FAO-GAEZ	Index (z-score)
Accessibility	FAO-GAEZ	Index (z-score)
Workability	FAO-GAEZ	Index (z-score)
Nutrients	FAO-GAEZ	Index (z-score)
Water bodies	IBGE	% of hexagon area
Vegetation	IBGE	% of hexagon area, 1995
Cacao suitability (irrigated)	FAO-GAEZ	Kg/ha, 1960-1991
Cacao suitability (rain-fed)	FAO-GAEZ	Kg/ha, 1960-1991
Coffee suitability (irrigated)	FAO-GAEZ	Kg/ha, 1960-1991
Coffee suitability (rain-fed)	FAO-GAEZ	Kg/ha, 1960-1991
Pasture grasses suitability (irrigated)	FAO-GAEZ	Kg/ha, 1960-1991
Pasture grasses suitability (rain-fed)	FAO-GAEZ	Kg/ha, 1960-1991
Pasture legumes suitability (irrigated)	FAO-GAEZ	Kg/ha, 1960-1991
Pasture legumes suitability (rain-fed)	FAO-GAEZ	Kg/ha, 1960-1991
Maize suitability (irrigated)	FAO-GAEZ	Kg/ha, 1960-1991
Maize suitability (rain-fed)	FAO-GAEZ	Kg/ha, 1960-1991
Rice suitability (irrigated)	FAO-GAEZ	Kg/ha, 1960-1991
Rice suitability (rain-fed)	FAO-GAEZ	Kg/ha, 1960-1991
Soybeans suitability (irrigated)	FAO-GAEZ	Kg/ha, 1960-1991
Soybeans suitability (rain-fed)	FAO-GAEZ	Kg/ha, 1960-1991
Sugarcane suitability (irrigated)	FAO-GAEZ	Kg/ha, 1960-1991
Sugarcane suitability (rain-fed)	FAO-GAEZ	Kg/ha, 1960-1991
Threatened amphibians	Jenkins et al. (2015)	Mean number of species
Threatened birds	Jenkins et al. (2015)	Mean number of species
Threatened mammals	Jenkins et al. (2015)	Mean number of species
Minimum distance from urban areas	NASA-CIESIN	Km., 1995
Urban hexagon	NASA-CIESIN	1-0, 1995
Minimum distance from Transamazonica	Walker, Reis, and Caldas (2011)	Km., 1993
Minimum distance from federal highway	Walker, Reis, and Caldas (2011)	Km., 1993
Minimum distance from federal road	Walker, Reis, and Caldas (2011)	Km., 1993
Ethnolinguistic fractionalization index	Weidmann, Rød, and Cederman (2010)	ELF index
Population (count)	NASA-CIESIN	Num. of inhab., 1995
Population (density)	NASA-CIESIN	Inhab. per squared km., 1995

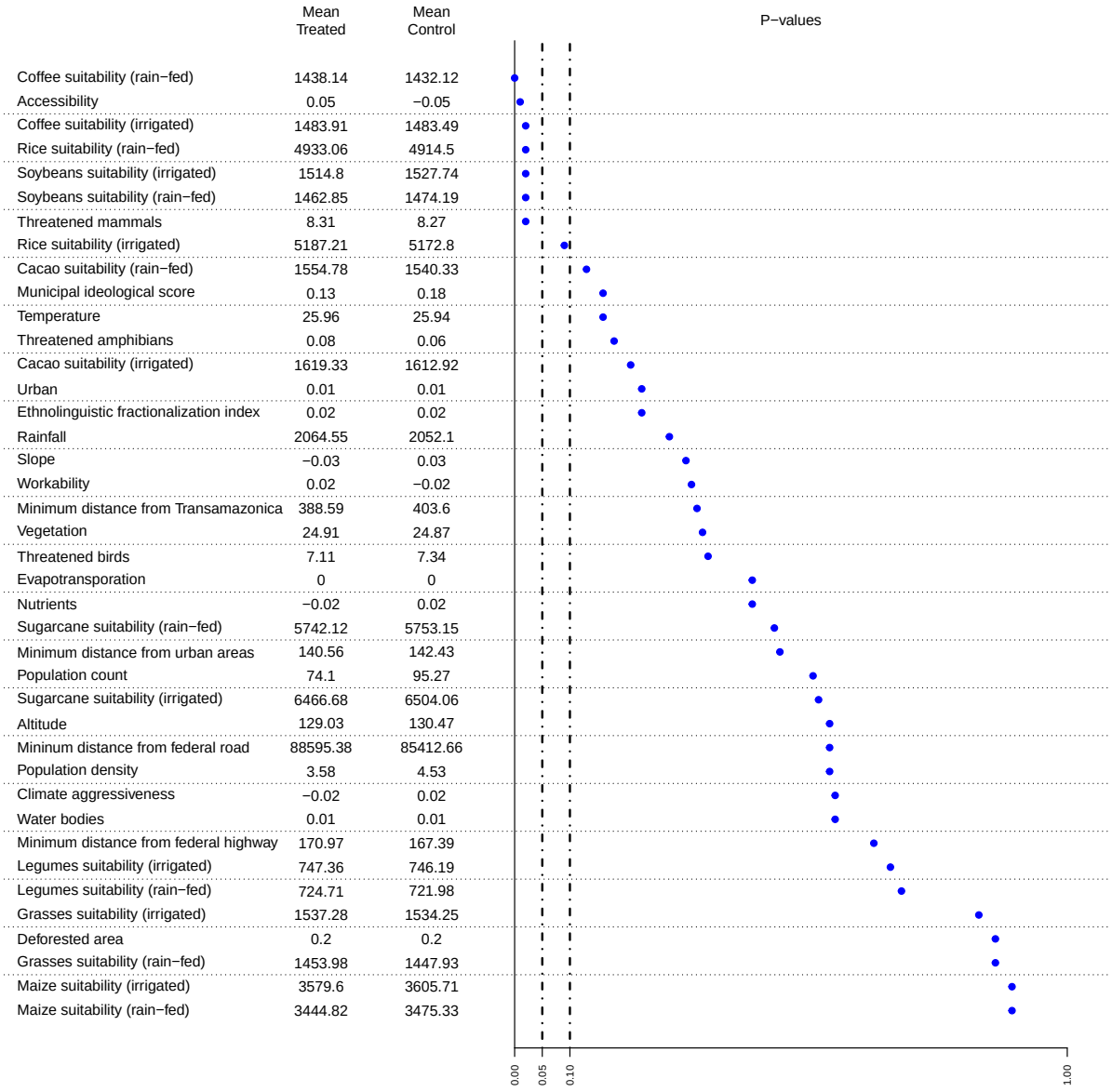

Figure A3: Balance test for Coalition Alignment on 40 pre-treatment covariates in the 1996 mayoral election. The sample are all the grid cells in 1996 that are less than 25 kilometers away from municipal borders and that are of a different treatment condition from their neighboring grid cells. Covariates that fail the test ($p < 0.05$) are coffee and soybean suitability (both rain-fed and irrigated), rice suitability (only rain-fed), accessibility, and threatened mammals.

Table A3: Balance Test for Coalition Alignment on 40 Pre-Treatment Covariates in the 2000, 2004, and 2008 Mayoral Elections. The samples are all the grid cells in 2000, 2004, and 2008 that are less than 25 kilometers away from municipal borders and that are of a different treatment condition from their neighboring grid cells. Covariates that fail the test ($p < 0.05$) are population count and density (2000); temperature, workability, and population count and density (2004); and deforested area (2008).

	2000		2004		2008	
	diff.	p-val.	diff.	p-val.	diff.	p-val.
Municipal ideological score	-0.003	0.856	-0.021	0.102	-0.022	0.083
Deforested area	-0.012	0.083	0.007	0.226	0.012	0.022
Rainfall	2.121	0.565	0.084	0.975	-1.709	0.608
Evapotranspiration	-0.001	0.879	-0.006	0.345	0.007	0.378
Temperature	0.012	0.344	-0.024	0.042	0.015	0.238
Climate aggressiveness	-0.019	0.206	-0.012	0.290	-0.006	0.621
Altitude	2.185	0.284	1.807	0.356	0.260	0.880
Slope	-0.031	0.137	-0.027	0.162	0.026	0.178
Accessibility	0.049	0.050	-0.018	0.402	-0.027	0.167
Workability	0.051	0.078	-0.043	0.041	0.029	0.257
Nutrients	0.006	0.810	0.015	0.421	-0.026	0.278
Water bodies	0.000	0.886	-0.003	0.064	0.002	0.168
Vegetation	-0.005	0.841	-0.010	0.657	-0.014	0.414
Cacao suit. (irrigated)	-4.699	0.286	4.820	0.226	-9.162	0.174
Cacao suit. (rain-fed)	-3.631	0.420	4.091	0.328	-10.964	0.107
Coffee suit. (irrigated)	-1.176	0.561	2.003	0.274	0.177	0.942
Coffee suit. (rain-fed)	0.111	0.959	1.210	0.539	-1.072	0.673
Pasture grasses suit. (irrigated)	0.052	0.973	0.930	0.510	-2.448	0.118
Pasture grasses suit. (rain-fed)	0.715	0.738	1.414	0.462	-3.032	0.129
Pasture legumes suit. (irrigated)	-0.090	0.915	0.953	0.208	-1.340	0.120
Pasture legumes suit. (rain-fed)	0.198	0.844	1.202	0.187	-1.457	0.130
Maize suit. (irrigated)	-7.050	0.283	-0.134	0.981	4.731	0.433
Maize suit. (rain-fed)	-5.294	0.398	-0.601	0.912	4.137	0.475
Rice suit. (irrigated)	0.195	0.980	-3.958	0.549	0.168	0.985
Rice suit. (rain-fed)	0.275	0.971	-4.534	0.446	-1.280	0.875
Soybeans suit. (irrigated)	-1.166	0.659	-0.218	0.942	0.697	0.806
Soybeans suit. (rain-fed)	-0.909	0.728	-0.122	0.967	0.464	0.869
Sugarcane suit. (irrigated)	10.655	0.568	32.216	0.072	-2.246	0.908
Sugarcane suit. (rain-fed)	11.364	0.506	25.948	0.124	-8.859	0.631
Threatened amphibians	-0.003	0.695	-0.005	0.385	0.010	0.110
Threatened birds	-0.049	0.268	0.010	0.813	-0.054	0.134
Threatened mammals	-0.014	0.441	-0.005	0.787	0.012	0.493
Min. dist. from urban areas	1.773	0.279	-1.037	0.511	0.970	0.546
Urban	-0.003	0.051	0.001	0.361	0.001	0.702
Min. dist. from Transamazonica	-0.842	0.583	-1.483	0.333	1.167	0.491
Min. dist. from federal highway	-0.034	0.981	0.848	0.504	-0.259	0.878
Min. dist. from federal road	-938.224	0.478	1610.662	0.176	-225.178	0.862
Ethnolinguistic fractionalization index	-0.000	0.981	-0.001	0.548	0.002	0.086
Population count	-46.757	0.009	42.220	0.009	25.060	0.051
Population density	-2.179	0.009	2.010	0.009	1.166	0.051
N	52918		64194		64664	

Table A4: Moran's I Test for Coalition Alignment on 40 Pre-Treatment Covariates in the 1996, 2000, 2004, and 2008 Mayoral Elections. The samples are all the grid cells in 2000, 2004, and 2008 that are less than 25 kilometers away from municipal borders and that are of a different treatment condition from their neighboring grid cells. Covariates that fail the test (Moran's I ≤ 0) are population density (1996).

	1996		2000		2004		2008	
	diff.	p-val.	diff.	p-val.	diff.	p-val.	diff.	p-val.
Municipal ideological score	0.995	0.000	0.996	0.000	0.996	0.000	0.995	0.000
Deforested area	0.838	0.000	0.844	0.000	0.850	0.000	0.854	0.000
Rainfall	0.983	0.000	0.984	0.000	0.978	0.000	0.980	0.000
Evapotranspiration	0.990	0.000	0.992	0.000	0.992	0.000	0.991	0.000
Temperature	0.983	0.000	0.984	0.000	0.978	0.000	0.980	0.000
Climate aggressiveness	0.982	0.000	0.975	0.000	0.980	0.000	0.977	0.000
Altitude	0.778	0.000	0.771	0.000	0.780	0.000	0.776	0.000
Slope	0.905	0.000	0.911	0.000	0.897	0.000	0.911	0.000
Accessibility	0.889	0.000	0.888	0.000	0.894	0.000	0.896	0.000
Workability	0.745	0.000	0.725	0.000	0.738	0.000	0.725	0.000
Nutrients	0.741	0.000	0.725	0.000	0.729	0.000	0.720	0.000
Water bodies	0.637	0.000	0.662	0.000	0.668	0.000	0.676	0.000
Vegetation	0.387	0.000	0.459	0.000	0.414	0.000	0.415	0.000
Cacao suit. (irrigated)	0.969	0.000	0.973	0.000	0.983	0.000	0.979	0.000
Cacao suit. (rain-fed)	0.968	0.000	0.974	0.000	0.983	0.000	0.978	0.000
Coffee suit. (irrigated)	0.995	0.000	0.996	0.000	0.993	0.000	0.996	0.000
Coffee suit. (rain-fed)	0.992	0.000	0.993	0.000	0.992	0.000	0.993	0.000
Pasture grasses suit. (irrigated)	0.990	0.000	0.990	0.000	0.990	0.000	0.990	0.000
Pasture grasses suit. (rain-fed)	0.992	0.000	0.992	0.000	0.992	0.000	0.992	0.000
Pasture legumes suit. (irrigated)	0.989	0.000	0.989	0.000	0.988	0.000	0.988	0.000
Pasture legumes suit. (rain-fed)	0.991	0.000	0.991	0.000	0.991	0.000	0.991	0.000
Maize suit. (irrigated)	0.988	0.000	0.990	0.000	0.990	0.000	0.990	0.000
Maize suit. (rain-fed)	0.989	0.000	0.991	0.000	0.991	0.000	0.991	0.000
Rice suit. (irrigated)	0.995	0.000	0.992	0.000	0.993	0.000	0.991	0.000
Rice suit. (rain-fed)	0.995	0.000	0.995	0.000	0.995	0.000	0.994	0.000
Soybeans suit. (irrigated)	0.991	0.000	0.993	0.000	0.993	0.000	0.993	0.000
Soybeans suit. (rain-fed)	0.991	0.000	0.993	0.000	0.993	0.000	0.993	0.000
Sugarcane suit. (irrigated)	0.967	0.000	0.968	0.000	0.959	0.000	0.962	0.000
Sugarcane suit. (rain-fed)	0.965	0.000	0.963	0.000	0.957	0.000	0.958	0.000
Threatened amphibians	0.964	0.000	0.959	0.000	0.961	0.000	0.958	0.000
Threatened birds	0.987	0.000	0.985	0.000	0.987	0.000	0.987	0.000
Threatened mammals	0.964	0.000	0.959	0.000	0.961	0.000	0.958	0.000
Min. dist. from urban areas	0.993	0.000	0.994	0.000	0.994	0.000	0.995	0.000
Urban	0.612	0.000	0.609	0.000	0.602	0.000	0.584	0.000
Min. dist. from Transamazonica	0.995	0.000	0.996	0.000	0.996	0.000	0.996	0.000
Min. dist. from federal highway	0.993	0.000	0.995	0.000	0.996	0.000	0.996	0.000
Min. dist. from federal roads	0.993	0.000	0.994	0.000	0.993	0.000	0.995	0.000
Ethnolinguistic fractionalization index	0.294	0.000	0.363	0.000	0.338	0.000	0.340	0.000
Population count	0.069	0.000	0.816	0.000	0.793	0.000	0.801	0.000
Population density	0.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
N	45420		52918		64194		64664	

A5 Time Series

- Figure A4 shows the evolution of protected areas over 1997-2012 for each type (federal, indigenous, and state). The graph shows that protected areas have grown over time, with indigenous lands being the largest type.
- Figure A5 shows a time series of shifts in coalition alignments between the president and mayors over 1997-2012 for the 790 unique municipalities. The graph shows that every election except 2010 saw considerable movement in or out of the presidential coalition.

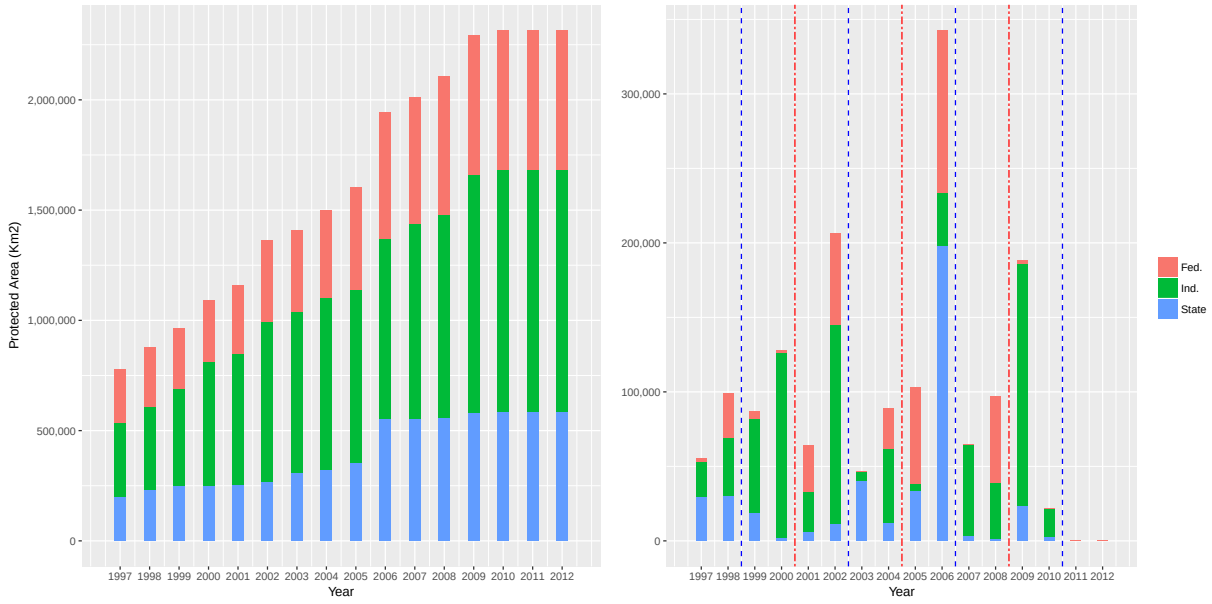

Figure A4: Protected Areas by Type, 1997-2012. Protected areas declared in the Legal Amazon (in squared kilometers) by federal, indigenous, and state. *Left:* cumulative count of protected hectares. *Right:* only newly-declared protected areas for that year. Blue dashed lines represent years of presidential elections and red dashed lines years of municipal elections.

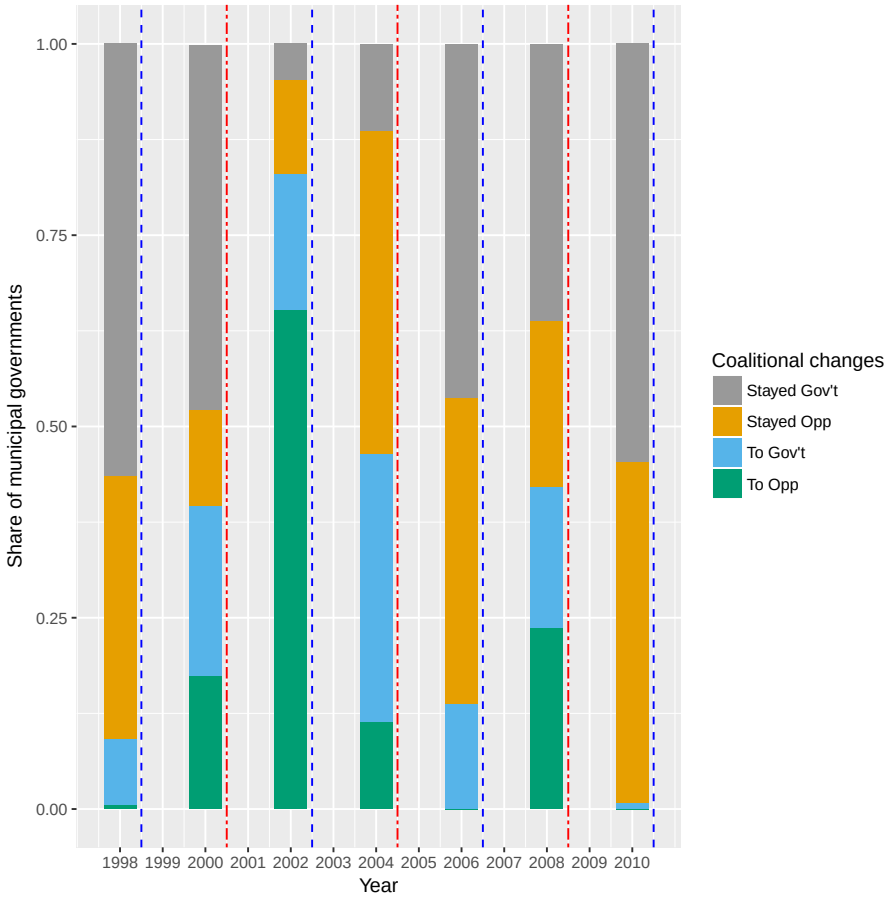

Figure A5: Time-series shifts in coalition alignment between president and mayors, 1997-2012. Observations are the 790 unique municipalities of the dataset. Blue dashed lines represent years of presidential elections and red dashed lines years of municipal elections. Realignments usually occur every two years when either national or local elections take place.

A6 Exploratory Analyses

- Table A5 shows results for a border segment-level of analysis comparing the extensive and intensive margins of Coalition Alignment. The negative coefficient of Coalition Alignment is statistically significant only for the continuous measure (Models 4-6).

- Table A6 shows results for interaction between Coalition Alignment and incumbent president's party vote share. Coalition Alignment has a negative and statistically significant coefficient for high levels of incumbent president's party vote share (Models 2-3).

- Figure A6 plots nonlinear estimates of the marginal effects of Coalition Alignment at different levels of presidential vote share in 10-point bins.

- Table A7 shows results for interaction between Coalition Alignment and incumbent president's party margin of victory. Coalition Alignment has a negative and statistically significant coefficient for high levels of margin of victory (Models 2-3). Figure A7 plots the marginal effect of the incumbent's party margin of victory on the impact of Coalition Alignment.

- Table A8 shows results for a difference-in-differences estimation of the effect of protected areas (pre-1997) on soybean production and mining leases at the municipal level before and after the beginning of the 2000s commodities boom at the municipal level. Protected Areas have a negative and statistically significant effect on local extraction in the post-2001 period (Models 1-2 and 4-5).

- Table A9 shows results for interactions between Coalition Alignment and deforested grid cells, soybean suitability, and cattle pasture (pre-1997). Coalition Alignment has a negative and statistically significant coefficient for low levels of prior deforestation (Model 1). Figure A8 plots the marginal effect of prior deforestation on the impact of Coalition Alignment.

- Table A10 shows results for interactions between Coalition Alignment and distances from federal roadways (pre-1997). Coalition Alignment has a negative and statistically significant coefficient for closer distances to Transamazônica and any of the main five federal highways (Models 1-2). Figure A9 plots the marginal effect of distance from the Transamazônica highway on the impact of Coalition Alignment. Figure A10 plots the marginal effect of minimum distance from any of the main five federal roadways on the impact of Coalition Alignment.

Table A5: Comparison of Extensive and Intensive Margins of Coalition Alignment. This analysis tests whether the president is able to reduce the impact of protected areas for political allies or avoid declarations altogether. The unit of analysis is a municipality-border segment. The dependent variables are coded as having any federal protected area declared along a border segment (Models 1-3) and the share of area covered by federal protected areas (Models 4-6). All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair.

	Dependent variable:					
	Federal Protected Area (Dummy)			Federal Protected Area (Proportion)		
	(1)	(2)	(3)	(4)	(5)	(6)
Coalition Alignment	0.0005	-0.004^{+}	-0.004^{+}	-0.003^{*}	-0.004^{**}	-0.004^{**}
	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
Dummy Fed. Prot. Area ('97)	-0.029					
	(0.021)					
Prop. Fed. Prot. Area ('97)				-0.082^{+}		
				(0.046)		
Muni. Pair FE	Yes	Yes	Yes	Yes	Yes	Yes
Muni. FE	-	Yes	Yes	-	Yes	Yes
State-Year FE	-	-	Yes	-	-	Yes
Muni. Pairs	2075	2075	2075	2075	2075	2075
Unique Border Seg.	3,768	3,768	3,768	3,768	3,768	3,768
Observations	25,793	25,793	25,793	25,793	25,793	25,793
Adjusted R^2	0.584	0.649	0.681	0.537	0.619	0.645

Note: $^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001

Table A6: Interaction between Coalition Alignment and Presidential Vote Share. This analysis tests whether the effect of Coalition Alignment varies depending on the level of support for the incumbent president's party in the prior election. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. The moderator of interest is the vote share of the incumbent president's party in the first round of the previous presidential election. All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair.

	Dependent variable:		
	Federal Protected Area		
	(1)	(2)	(3)
Coalition Alignment	0.001	0.011	0.008
	(0.010)	(0.009)	(0.007)
Fed. Prot. Area ('97)	-0.027^{**}		
	(0.010)		
Pres. Vote Share	-0.008	-0.002	0.002
	(0.022)	(0.018)	(0.031)
Alignment:Vote Share	-0.020	-0.041^{*}	-0.036^{*}
	(0.019)	(0.020)	(0.017)
Muni. Pair FE	Yes	Yes	Yes
Grid FE	-	Yes	Yes
State-Year FE	-	-	Yes
Muni. Pairs	2068	2068	2068
Unique Grids	121,141	121,141	121,141
Observations	865,137	865,137	865,137
Adjusted R^2	0.310	0.643	0.683

Note: $^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001

Presidential vote share is the incumbent president's party vote share in the previous election.

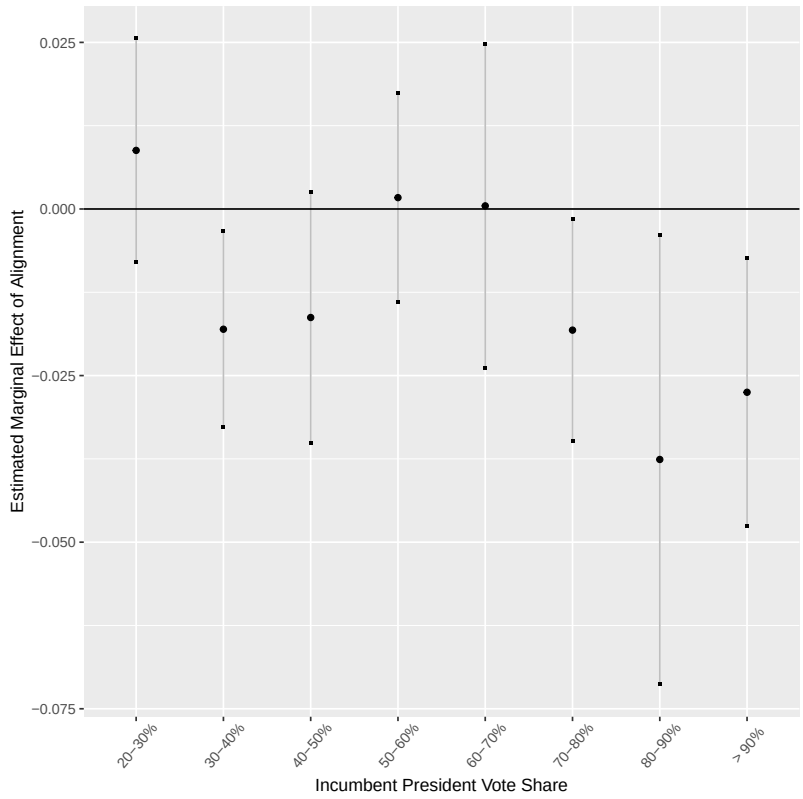

Figure A6: Nonlinear marginal effects of Coalition Alignment at different levels of presidential vote share. Points represent the marginal effect of treatment for different 10-point bins of vote share for the incumbent president's party in the previous election. Grey bands show 95%-confidence intervals (baseline comparison group are districts with < 20% vote share).

Table A7: Interaction between Coalition Alignment and Margin of Victory. This analysis tests whether the effect of Coalition Alignment varies depending on the level of support for the incumbent president's party in the prior election. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. The moderator of interest is the margin of victory of the incumbent president's party in the first round of the previous presidential election. All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair.

	Dependent variable:		
	Federal Protected Area		
	(1)	(2)	(3)
Coalition Alignment	-0.009^{+}	-0.006	-0.009^{*}
	(0.005)	(0.004)	(0.004)
Fed. Prot. Area ('97)	-0.027^{**}		
	(0.010)		
Pres. Vote Margin	-0.022	-0.017	-0.005
	(0.016)	(0.014)	(0.019)
Alignment:Vote Margin	-0.002	-0.017	-0.014
	(0.011)	(0.011)	(0.009)
Muni. Pair FE	Yes	Yes	Yes
Grid FE	-	-	-
State-Year FE	-	-	-
Muni. Pairs	2068	2068	2068
Unique Grids	121,141	121,141	121,141
Observations	865,137	865,137	865,137
Adjusted R^2	0.311	0.644	0.683
Note:	$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001		

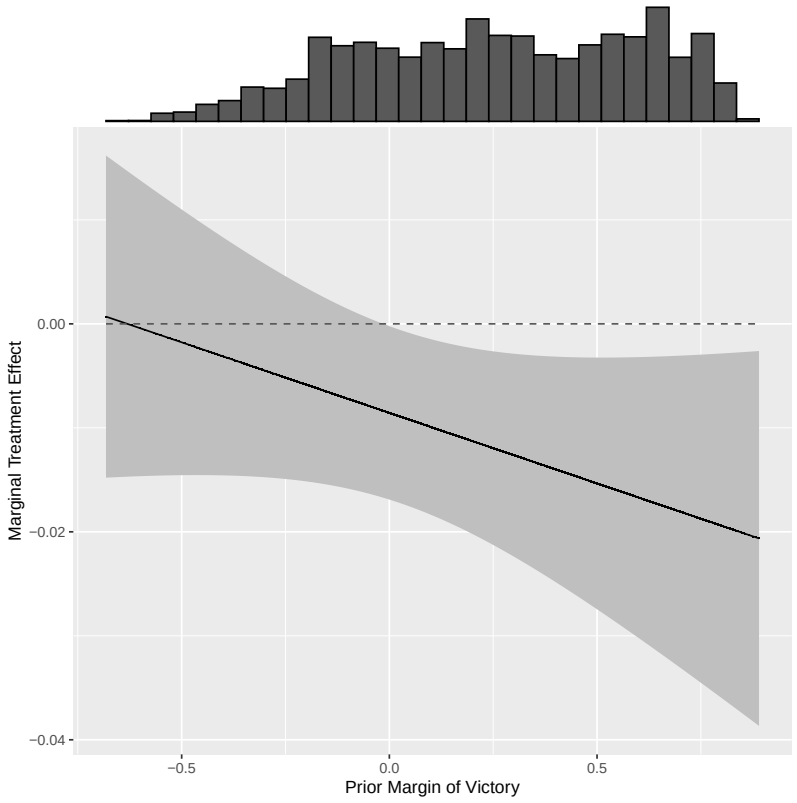

Figure A7: Marginal effect of district-level margin of victory for the incumbent's president party on the impact of Coalition Alignment. Grey bands represent 95% confidence intervals. The histogram represents the distribution of observations at different levels of margin of victory.

Table A8: Difference-in-Differences Estimation of the Effect of Protected Areas on Local Extractive Industries. This analysis tests whether existing protected areas are associated with less agro-industrial production and mining activity in a period of high international prices of commodities. The unit of analysis is a municipality-year. The dependent variables are logged number of metric tons of produced soybeans (Models 1-3) and leases for extracting minerals (Models 4-6). The explanatory variable is the proportion of a municipality's area covered by protected areas (pre-1997). The moderator of interest is a dummy indicating years after 2001, when China entered the WTO. Models 2-3 and 5-6 include municipality and state-year fixed effects. The linear regressions have standard errors clustered by municipality.

	Dependent variable:					
	Soybean Production			Mining Leases		
	(1)	(2)	(3)	(4)	(5)	(6)
Protected Area ('97)	0.197			-0.024^{*}		
	(0.275)			(0.010)		
Post 2001	1.262^{***}	1.262^{***}		0.134^{***}	0.134^{***}	
	(0.098)	(0.098)		(0.015)	(0.015)	
Protected Area ('97):Post 2001	-0.624^{***}	-0.624^{***}	-0.104	-0.058^{*}	-0.058^{*}	-0.038^{+}
	(0.152)	(0.152)	(0.140)	(0.023)	(0.023)	(0.023)
Muni. Pair FE	-	-	-	-	-	-
Muni FE	-	Yes	Yes	-	Yes	Yes
State-Year FE	-	-	Yes	-	-	Yes
Observations	10,556	10,556	10,556	10,556	10,556	10,556
Adjusted R^2	0.017	0.812	0.837	0.018	0.559	0.596

Note: $^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001

Base terms omitted in Models 2-3 and 5-6 as they are absorbed by state-year and municipality fixed effects.

Table A9: Interaction between Coalition Alignment and Potential for Economic Exploitation. This analysis tests whether the potential for large-scale economic exploitation moderates the effect of Coalition Alignment. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. The moderators are the proportion of a grid cell's deforested area (Model 1) and the potential yield, in metric tons per hectare, of soybeans (Model 2) and pastures (Model 3). All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair.

	Dependent variable:		
	Federal Protected Area		
	(1)	(2)	(3)
Coalition Alignment	-0.013^{*}	0.023	-0.018
	(0.006)	(0.023)	(0.011)
Fed. Prot. Area ('97)	-0.029^{**}	-0.027^{**}	-0.028^{**}
	(0.010)	(0.010)	(0.010)
Deforested	-0.029^{***}		
	(0.008)		
Alignment:Deforested	0.015^{*}		
	(0.007)		
Pastures		0.0001	
		(0.0002)	
Alignment:Pastures		-0.00003	
		(0.00002)	
Soybean			-0.00004
			(0.0001)
Alignment:Soybean			0.00001
			(0.00000)
Muni. Pair FE	Yes	Yes	Yes
Grid FE	-	-	-
State-Year FE	-	-	-
Muni. Pairs	2075	2075	2075
Unique Grids	121,141	121,141	121,141
Observations	870,719	870,719	870,719
Adjusted R^2	0.310	0.310	0.310
Note:	$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001		

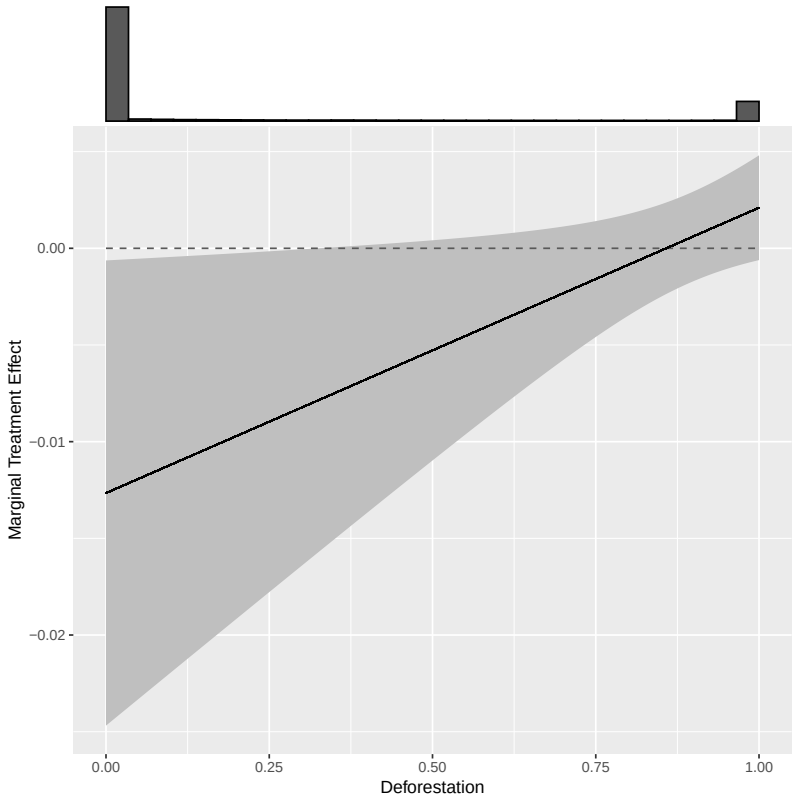

Figure A8: Marginal effect of prior deforestation on the impact of Coalition Alignment. Grey bands represent 95% confidence intervals. The histogram represents the distribution of observations at different levels of prior deforestation. The full regression results are presented in Table A9, (Model 1).

Table A10: Interaction between Coalition Alignment and Federal Roadways. This analysis tests whether proximity to federal roadways (a proxy of potential for economic exploitation) moderates the effect of Coalition Alignment. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. The moderator of interest is distance from a roadway, in kilometers. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. The linear regressions have standard errors clustered by municipality-pair.

	Dependent variable:		
	Federal Protected Area		
	(1)	(2)	(3)
Coalition Alignment	-0.013^{+}	-0.013^{+}	-0.010
	(0.008)	(0.007)	(0.007)
Fed. Prot. Area ('97)	-0.027^{**}	-0.027^{**}	-0.026^{**}
	(0.010)	(0.009)	(0.010)
Transamazônica	-0.00002		
	(0.0001)		
Alignment:Transamazônica	0.00001		
	(0.00001)		
Main Federal Highway		-0.00003	
		(0.0001)	
Alignment:Main Federal Highway		0.00002	
		(0.00002)	
Federal Road			0.00000
			(0.00000)
Alignment:Federal Road			-0.000
			(0.00000)
Muni. Pair FE	Yes	Yes	Yes
Grid FE	-	-	-
State-Year FE	-	-	-
Muni. Pairs	2075	2075	2075
Unique Grids	121,141	121,141	121,141
Observations	870,719	870,719	870,719
Adjusted R^2	0.310	0.310	0.311
Note:	$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001		

Roadways includes federal roadways and roads prior to 1997, using data from Walker, Reis, and Caldas (2011). Main federal highways are Belém-Brasília, Cuiabá-Porto Velho, Cuiabá-Santarem, Porto Velho-Manaus, and Transamazônica (Almeida, 1992).

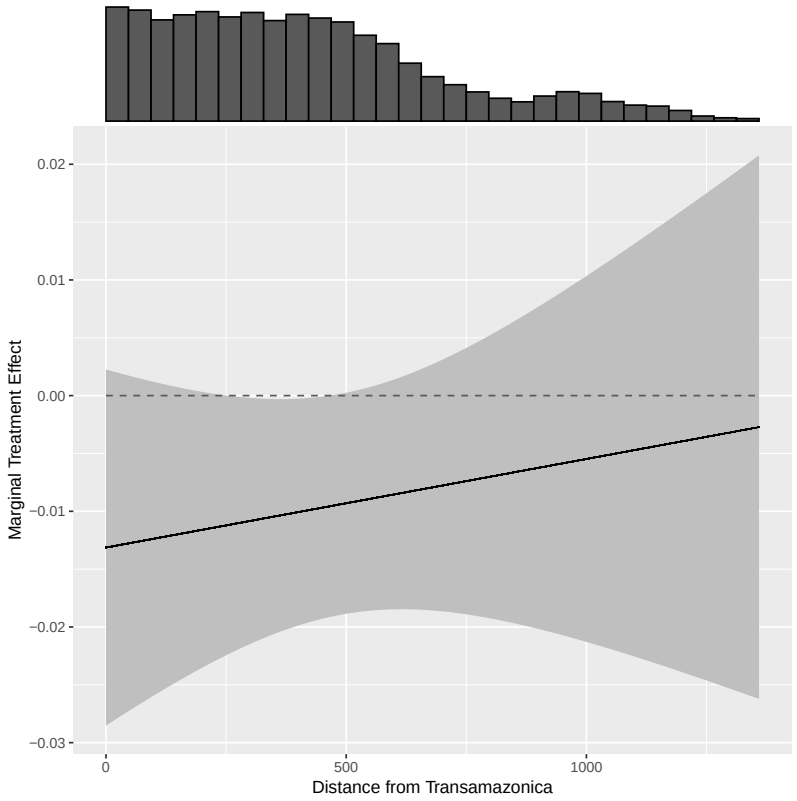

Figure A9: Marginal effect of distance from Transamazônica on the impact of Coalition Alignment. Grey bands represent 95% confidence intervals. The histogram represents the distribution of observations at different distances from Transamazônica. The full regression results are presented in Table A10 (Model 1).

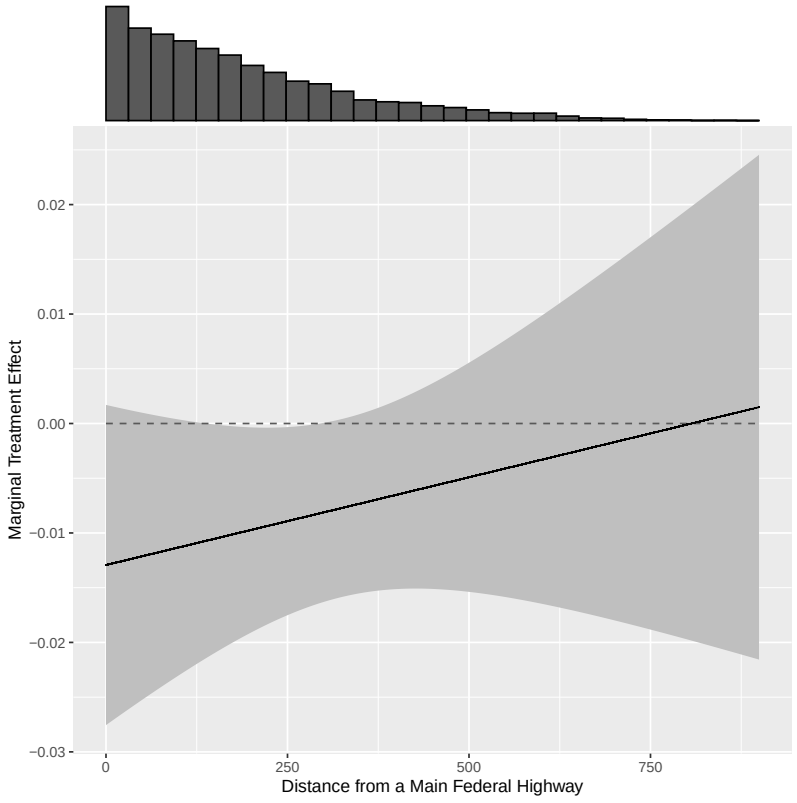

Figure A10: Marginal effect of the minimum distance from any of the Amazon's five main federal roadways on the impact of Coalition Alignment. Main federal highways are Belém-Brasília, Cuiabá-Porto Velho, Cuiabá-Santarem, Porto Velho-Manaus, and Transamazônica (Almeida, 1992). Grey bands represent 95% confidence intervals. The histogram represents the distribution of observations at different minimum distances from any of the main federal roadways. The full regression results are presented in Table A10 (Model 2).

A7 Placebo Tests and Robustness Checks

- Table A11 compares the effect of Coalition Alignment on federal protected areas to the effect on indigenous lands and state protected areas. The effect of Coalition Alignment is only statistically significant on federal protected areas (Models 1-3).
- Table A12 shows results for the effects of governor-mayor Party and Coalition Alignment on state protected areas. Most coefficients have the opposite sign and none of them are statistically significant.
- Table A13 shows an alternative specification of the RD design that controls for distance to border, the running variable. Coalition Alignment has negative and statistically significant effect (Model 1), and a negative and statistically significant effect at farther distances from the border (Model 2).
- Table A14 shows an alternative specification of the RD design that controls for linear, quadratic, and cubic polynomials of longitude and latitude. The coefficient of Coalition Alignment remains negative and statistically significant.
- Table A15 shows a nonparametric estimation of the RD design in which the functional form of longitude and latitude is not assumed. The coefficient of Coalition Alignment remains negative and statistically significant.
- Table A16 shows the main results for different bandwidths (20, 15, and 10 kilometers). The negative coefficient of Coalition Alignment is statistically significant in most specifications (Models 2-3, 5-6, and 7-8).
- Table A17 shows the main results using a full panel of grid-cell year observations. The negative effect of Coalition Alignment is statistically significant only in Model 3.
- Table A18 shows the main results without those subsequent grid-cell year observations of a grid cell that becomes fully covered by a federal protected area. The negative coefficient of Coalition Alignment is statistically significant in Models 2-3.
- Table A19 shows the main results controlling for those pre-treatment covariates that were imbalanced ($p < 0.1$) in Figure A3 and Table A3. Coalition Alignment still has a negative and statistically significant effect on federal protected areas.

Table A11: Effect of Coalition Alignment on Federal Protected Areas, State Protected Areas, and Indigenous Lands. This analysis is a placebo test for our main results, testing the effect of Coalition Alignment on other protected areas that are not fully controlled by the president. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area (Models 1-3), state protected area (Models 4-6), and indigenous lands (Models 7-9). All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair.

	Dependent variable:								
	Federal Protected Area			Indigenous Lands			State Protected Area		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Coalition Alignment	-0.010^{*}	-0.011^{*}	-0.012^{*}	0.001	0.002	0.004	-0.001	0.005	0.004
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)	(0.005)	(0.004)	(0.004)
Fed. Prot. Area ('97)	-0.027^{**}								
	(0.010)								
Indigenous Lands ('97)				-0.111^{***}					
				(0.028)					
State Prot. Area ('97)							-0.044^{*}		
							(0.020)		
Muni. Pair FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Grid FE	-	Yes	Yes	-	Yes	Yes	-	Yes	Yes
State-Year FE	-	-	Yes	-	-	Yes	-	-	Yes
Muni. Pairs	2075	2075	2075	2075	2075	2075	2075	2075	2075
Unique Grids	121,141	121,141	121,141	121,141	121,141	121,141	121,141	121,141	121,141
Observations	870,719	870,719	870,719	870,719	870,719	870,719	870,719	870,719	870,719
Adjusted R^2	0.310	0.644	0.683	0.377	0.723	0.764	0.326	0.733	0.754

Note: $^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001

Table A12: State Protected Areas and Governor-Mayor Alignment. This analysis is placebo test for our main results, testing whether a similar political alignment (between governors and mayors) affects the designation of state protected areas. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by state protected area. The treatment is the Coalition and Party Alignment between the governor and the mayor. All models include municipality-pair (only within state borders) fixed effects. The linear regressions have standard errors clustered by municipality-pair only within state borders.

	Dependent variable:					
	State Protected Area			State Protected Area		
	(1)	(2)	(3)	(4)	(5)	(6)
State Coalition Alignment	−0.004	0.002	0.002			
	(0.004)	(0.002)	(0.002)			
State Party Alignment				−0.003	0.001	0.001
				(0.004)	(0.002)	(0.002)
State. Prot. Area ('97)	−0.044			−0.039*		
	(0.030)			(0.019)		
Muni. Pair FE	Yes	Yes	Yes	Yes	Yes	Yes
Grid FE	-	Yes	Yes	-	Yes	Yes
State-Year FE	-	-	Yes	-	-	Yes
Muni. Pairs	2001	2001	2001	1777	1777	1777
Unique Grids	112,587	112,587	112,587	103,071	103,071	103,071
Observations	706,651	706,651	706,651	505,990	505,990	505,990
Adjusted R^2	0.347	0.733	0.754	0.398	0.800	0.815
Note:						$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001

Table A13: Controlling for Distance to the Border. This analysis checks whether the main results are robust to including distance to the border, the forcing variable. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. The moderator of interest is distance to the municipal border, in kilometers. All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair

	Dependent variable:	
	Federal Protected Area	
	(1)	(2)
Coalition Alignment	-0.012^{**}	-0.006^{+}
	(0.004)	(0.003)
Fed. Prot. Area ('97)	-0.026^{**}	-0.026^{**}
	(0.010)	(0.010)
Distance	0.00005	0.0004^{+}
	(0.0002)	(0.0002)
Distance:Alignment		-0.001^{*}
		(0.0003)
Muni. Pair FE	Yes	Yes
Grid FE	-	-
State-Year FE	-	-
Muni. Pairs	2075	2075
Unique Grids	121,141	121,141
Observations	870,719	870,719
Adjusted R^2	0.390	0.390
Note:	$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001	

Table A14: Controlling for Geographic Coordinates. This analysis checks whether the main results are robust to including geographic coordinates, the forcing variable. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. Controls are the geographic coordinates of grid cells, in longitude and latitude. All models include municipality-pair and state-year fixed effects. The linear regressions have standard errors clustered by municipality-pair

	Dependent variable:			
	Federal Protected Area			
	(1)	(2)	(3)	(4)
Coalition Alignment	-0.008^{*}	-0.008^{*}	-0.008^{*}	-0.008^{*}
	(0.004)	(0.004)	(0.004)	(0.004)
Fed. Prot. Area ('97)	-0.026^{**}	-0.027^{**}	-0.027^{**}	-0.026^{**}
	(0.009)	(0.010)	(0.010)	(0.010)
x-coord.		0.003	-0.179	0.011
		(0.012)	(0.111)	(0.737)
y-coord.		0.014	0.101	0.451
		(0.015)	(0.107)	(0.773)
x^2			-0.002^{+}	0.001
			(0.001)	(0.012)
y^2			0.0002	0.007
			(0.001)	(0.014)
$x \cdot y$			0.001	0.012
			(0.002)	(0.025)
x^3				0.00001
				(0.0001)
y^3				0.00001
				(0.0002)
$x^2 \cdot y$				0.0001
				(0.0002)
$x \cdot y^2$				0.0001
				(0.0002)
Muni. Pair FE	Yes	Yes	Yes	Yes
State-Year FE	Yes	Yes	Yes	Yes
Muni. Pairs	2075	2075	2075	2075
Unique Grids	121,141	121,141	121,141	121,141
Observations	870,719	870,719	870,719	870,719
Adjusted R^2	0.352	0.353	0.354	0.354
Note:				$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001

Geographic coordinates include linear, quadratic, and cubic polynmials for longitude and latitude as forcing variables, as suggested by Dell (2010).

Table A15: Nonparametric Estimation of the Effect of Coalition Alignment. This analysis checks whether the main results are robust to a nonparametric procedure that does not assume the functional form of the geographic location. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area.

	Dependent variable:		
	Federal Protected Area		
	Conventional	*Bias-Corrected*	*Robust*
	(1)	(2)	(3)
Coalition Alignment	-0.002^{**}	-0.006^{***}	-0.006^{***}
	(0.001)	(0.001)	(0.001)
Bandwidth	25	25	25
Lower C.I.	-0.004	-0.007	-0.008
Upper C.I.	-0.001	-0.004	-0.004
Treated obs.	381864	381864	381864
Control obs.	488855	488855	488855

Note: $^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001

Conventional: OLS estimation using a local linear polynomial. *Bias-corrected*: corrects the misspecification bias of the conventional distributional approximation. *Robust*: incorporates new variance generated by the bias-corrected procedure. See Cattaneo, Idrobo, and Titiunik (2019). We do not use optimal bandwidths based on the mean-squared error because it results in distances larger than 25 kilometers (Keele and Titiunik, 2015).

Table A16: Comparison of Main Models at Different Bandwidths. This analysis checks whether our main results are robust to different bandwidths around municipal borders. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair

	Dependent variable:								
	20km Bandwidth			15km Bandwidth			10km Bandwidth		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Coalition Alignment	-0.008^{+}	-0.010^{*}	-0.011^{*}	-0.007^{+}	-0.009^{*}	-0.010^{*}	-0.006^{+}	-0.008^{*}	-0.009^{**}
	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)
Fed. Prot. Area ('97)	-0.027^{**}			-0.027^{*}			-0.025^{*}		
	(0.010)			(0.011)			(0.012)		
Muni. Pair FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Grid FE	-	Yes	Yes	-	Yes	Yes	-	Yes	Yes
State-Year FE	-	-	Yes	-	-	Yes	-	-	Yes
Muni. Pairs	2067	2067	2067	2060	2060	2060	2048	2048	2048
Unique Grids	109,381	109,381	109,381	93,630	93,630	93,630	72,228	72,228	72,228
Observations	784,767	784,767	784,767	669,861	669,861	669,861	514,224	514,224	514,224
Adjusted R^2	0.314	0.646	0.685	0.321	0.648	0.686	0.325	0.650	0.686

Note: $^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001

Bandwidths of running variable are at 20, 15, and 10 kilometers of distance from neighboring municipality.

Table A17: Main Models with Full Panel of Grid Cell-Year Observations. This analysis checks whether our main results are robust to using all grid cells, regardless of whether they form a treatment-control pair for a given year. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair.

	Dependent variable:		
	Federal Protected Area		
	(1)	(2)	(3)
Coalition Alignment	-0.006^{+}	-0.006^{+}	-0.009^{**}
	(0.004)	(0.003)	(0.003)
Fed. Prot. Area ('97)	-0.028^{**}		
	(0.009)		
Muni. Pair FE	Yes	Yes	Yes
Grid FE	-	Yes	Yes
State-Year FE	-	-	Yes
Muni. Pairs	2367	2367	2367
Unique Grids	131,175	131,175	131,175
Observations	1,966,155	1,966,155	1,966,155
Adjusted R^2	0.303	0.634	0.651
Note:	$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001		

Table A18: Main Models without Fully Saturated Grid Cells. This analysis checks whether our main results are robust to dropping the subsequent grid-cell year observations of a grid cell once it becomes fully covered by a federal protected area and can no longer be protected in the following years. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair.

	Dependent variable:		
	Federal Protected Area		
	(1)	(2)	(3)
Coalition Alignment	-0.007^{+}	-0.008^{*}	-0.009^{*}
	(0.005)	(0.004)	(0.004)
Fed. Prot. Area ('97)	-0.023^{*}		
	(0.009)		
Muni. Pair FE	Yes	Yes	Yes
Grid FE	-	Yes	Yes
State-Year FE	-	-	Yes
Muni. Pairs	2075	2075	2075
Unique Grids	121,141	121,141	121,141
Observations	864,917	864,917	864,917
Adjusted R^2	0.297	0.624	0.665
Note:	$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001		

Table A19: Main Models with Imbalanced Pre-treatment Covariates as Control Variables. This analysis checks whether our main results are robust to including those pre-treatment covariates that failed the balance test in Figure A3. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. Imbalanced covariates ($p < 0.1$) are coffee, rice, and soybean suitability (both irrigated and rain-red), sugar suitability (only irrigated), accessibility, threatened mammals, municipal ideology, deforested area, urban area, and ethnolinguistic fractionalization. All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair.

	Dependent variable:	
	Federal Protected Area	
	(1)	(2)
Coalition Alignment	-0.011^{*}	-0.009^{*}
	(0.005)	(0.004)
Fed. Prot. Area ('97)	-0.030^{**}	-0.027^{**}
	(0.010)	(0.010)
Covariates	Yes	Yes
Muni. Pair FE	Yes	Yes
Grid FE	-	-
State-Year FE	-	Yes
Muni. Pairs	1924	1927
Unique Grids	121,141	121,141
Observations	808,390	810,868
Adjusted R^2	0.313	0.357
Note:	$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001	

Coffee, rice, soybean, and sugar agro-climatic suitability are measured as the potential yield (in metric tons per hectare) of each crop. Land accesibility is a FAO-GAEZ index normalized in z-scores. Threatened mammals is the mean number of threatened species. Municipal ideology is a left-right score by Power and Rodrigues-Silveira (2019). Deforested area is the share of a grid cell that has been deforested. Urban area is a dummy variable. Ethnolinguistic fractionalization is the ELF index.

A8 Extensions

- Table A20 shows results for environmental embargoes (a measure of environmental enforcement) as the dependent variable. All the coefficients of political alignment, both Coalition and Party, are not statistically significant.

- Tables A21 and A22 show results for a restricted subset for just years corresponding to the governments of the PSDB (Fernando Henrique Cardoso 1997-2002) and the PT (Luiz Inácio Lula da Silva and Dilma Rousseff 2003-2012), respectively. The coefficient of Coalition Alignment is not statistically significant in five out of six models (only significant in Model 1 for the PT presidencies).

- Table A23 shows linear regression analysis for the effect of federal protected area designation on the incumbent mayor's vote share. The effect on federal protected areas is not statistically significant in four out of six models (only significant in Models 1 and 4).

- Table A24 shows results for a difference-in-differences estimation of the effect of protected areas (pre-1997) on peasant agriculture at the municipal level before and after the beginning of the 2000s commodities boom. Protected Areas have a positive and statistically significant effect on the number of peasant families in the post-2001 period (Models 1-2). Figure A11 plots the parallel trends.

- Table A25 shows results for interactions between Coalition Alignment and municipal deforestation and critical areas of deforestation (pre-1997), respectively. Coalition Alignment has a negative and statistically significant coefficient for low levels of municipal deforestation and municipalities that are not critical areas. Figure A12 and A13 plot the marginal effect of prior municipal deforestation and critical areas on the impact of Coalition Alignment, respectively.

- Table A26 shows results for the effect of president-governor Coalition Alignment on federal protected areas. The coefficient of this type of alignment is statistically insignificant.

Table A20: Environmental Embargoes and Political Alignment. This analysis explores whether opposition mayors increase the cost of environmental enforcement because are less likely to cooperate with the president's conservation commitments (see, e.g. Amengual, 2016). The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal environmental embargoes. All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair.

	Dependent variable:					
	Environmental Embargoes			Environmental Embargoes		
	(1)	(2)	(3)	(4)	(5)	(6)
Coalition Alignment	0.00001	−0.00001	−0.00001			
	(0.00002)	(0.00002)	(0.00002)			
Party Alignment				0.00001	0.00002	0.00003
				(0.00002)	(0.00003)	(0.00002)
Fed. Prot. Area ('97)	−0.00003			0.00001		
	(0.0001)			(0.00005)		
Muni. Pair FE	Yes	Yes	Yes	Yes	Yes	Yes
Grid FE	-	Yes	Yes	-	Yes	Yes
State-Year FE	-	-	Yes	-	-	Yes
Muni. Pairs	2075	2075	2075	1245	1245	1245
Unique Grids	121,141	121,141	121,141	78,265	78,265	78,265
Observations	870,719	870,719	870,719	364,213	364,213	364,213
Adjusted R^2	0.004	0.033	0.034	0.003	−0.027	−0.026

Note: $^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001

Environmental embargos are punitive actions that include fines, bans, and the forfeiture of assets due to illegal deforestation or other harzardous activities. The data come from IBAMA's geocoded database of environmental embargoes: `https://dados.gov.br/dataset/areas-embargadas-pelo-ibama`

Table A21: Federal Protected Areas and Coalition Alignment in the PSDB Presidential Term (1997-2002). This analysis explores whether the effect of Coalition Alignment is restricted to the Cardoso presidency. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair.

	Dependent variable:		
	Fed. Protected Area		
	(1)	(2)	(3)
Coalition Alignment	0.004	0.002	−0.00001
	(0.004)	(0.006)	(0.004)
Fed. Prot. Area ('97)	−0.009*		
	(0.004)		
Muni. Pair FE	Yes	Yes	Yes
Grid FE	-	Yes	Yes
State-Year FE	-	-	Yes
Muni. Pairs	1508	1508	1508
Unique Grids	83,598	83,598	83,598
Observations	282,943	282,943	282,943
Adjusted R^2	0.242	0.391	0.486
Note:	$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001		

Table A22: Federal Protected Areas and Coalition Alignment in the PT Presidential Terms (2003-2012). This analysis explores whether the effect of Coalition Alignment is restricted to the da Silva and Rousseff presidencies. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair.

	Dependent variable:		
	Fed. Protected Area		
	(1)	(2)	(3)
Coalition Alignment	-0.016^{*}	-0.003	-0.003
	(0.007)	(0.005)	(0.005)
Fed. Prot. Area ('97)	-0.036^{**}		
	(0.013)		
Muni. Pair FE	Yes	Yes	Yes
Grid FE	-	Yes	Yes
State-Year FE	-	-	Yes
Muni. Pairs	1710	1710	1710
Unique Grids	109,195	109,195	109,195
Observations	587,776	587,776	587,776
Adjusted R^2	0.406	0.876	0.882
Note:	$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001		

Table A23: Incumbent Mayor's Vote Share and Federal Protected Areas. This analysis explores whether the designation of protected areas affects the incumbent mayor's vote share. The unit of analysis is a municipality-year observation. The dependent variable is the vote share for the incumbent mayor. The explanatory variable is the share of the municipality covered by federal protected areas. Models 2-3 and 5-6 include municipality and state-year fixed effects. The linear regressions have standard errors clustered by municipality.

	Dependent variable:					
	Mayor's Vote Share					
	(1)	(2)	(3)	(4)	(5)	(6)
Fed. Prot. Area	-0.036^{**}	-0.010	-0.017	-0.062^{***}	-0.011	-0.015
	(0.012)	(0.012)	(0.011)	(0.015)	(0.015)	(0.014)
Fed. Prot. Area ('97)	-0.023^{*}			-0.023^{*}		
	(0.009)			(0.009)		
Coalition Alignment				-0.012^{+}	-0.001	-0.003
				(0.007)	(0.008)	(0.008)
Alignment:Prot. Area.				0.055^{*}	0.003	-0.005
				(0.022)	(0.023)	(0.022)
Muni. Pair FE	-	-	-	-	-	-
Muni FE	-	Yes	Yes	-	Yes	Yes
State-Year FE	-	-	Yes	-	-	Yes
Observations	4,362	4,362	4,362	4,362	4,362	4,362
Adjusted R^2	0.005	0.418	0.434	0.008	0.417	0.434
Note:				$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001		

Table A24: Difference-in-Differences Estimation of the Effect of Protected Areas on Local Peasant Agriculture. This analysis explores whether existing protected areas are associated with less peasant agricultural activity in a period of high international prices of commodities. The unit of analysis is a municipality-year. The dependent variables are the logged number of peasant families (Models 1-3) and peasant farmsteads (Models 4-6). The explanatory variable is the proportion of a municipality's area covered by protected areas (pre-1997). The moderator of interest is a dummy indicating years after 2001, when China entered the WTO. Models 2-3 and 5-6 include municipality and state-year fixed effects. The linear regressions have standard errors clustered by municipality-pair

	Dependent variable:					
	Peasant Families			Peasant Farmsteads		
	(1)	(2)	(3)	(4)	(5)	(6)
Protected Area ('97)	0.258^{*}			0.052^{*}		
	(0.115)			(0.024)		
Post 2001	-0.351^{***}	-0.351^{***}		-0.054^{***}	-0.054^{***}	
	(0.046)	(0.046)		(0.009)	(0.009)	
Protected Area ('97):Post 2001	0.230^{*}	0.230^{*}	0.160	0.038^{+}	0.038^{+}	0.027
	(0.109)	(0.109)	(0.113)	(0.021)	(0.021)	(0.022)
Muni. Pair FE	-	-	-	-	-	-
Muni FE	-	Yes	Yes	-	Yes	Yes
State-Year FE	-	-	Yes	-	-	Yes
Observations	10,556	10,556	10,556	10,556	10,556	10,556
Adjusted R^2	0.018	0.110	0.161	0.013	0.129	0.176

Note: $^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001

The dependent variables are the number of peasant families and peasant farmsteads (known as *assentamentos rurais*) settled by the Ministry of Agricultural Development as part of its land reform and public land colonization projects. Data come from: `http://www.ipeadata.gov.br/Default.aspx`.

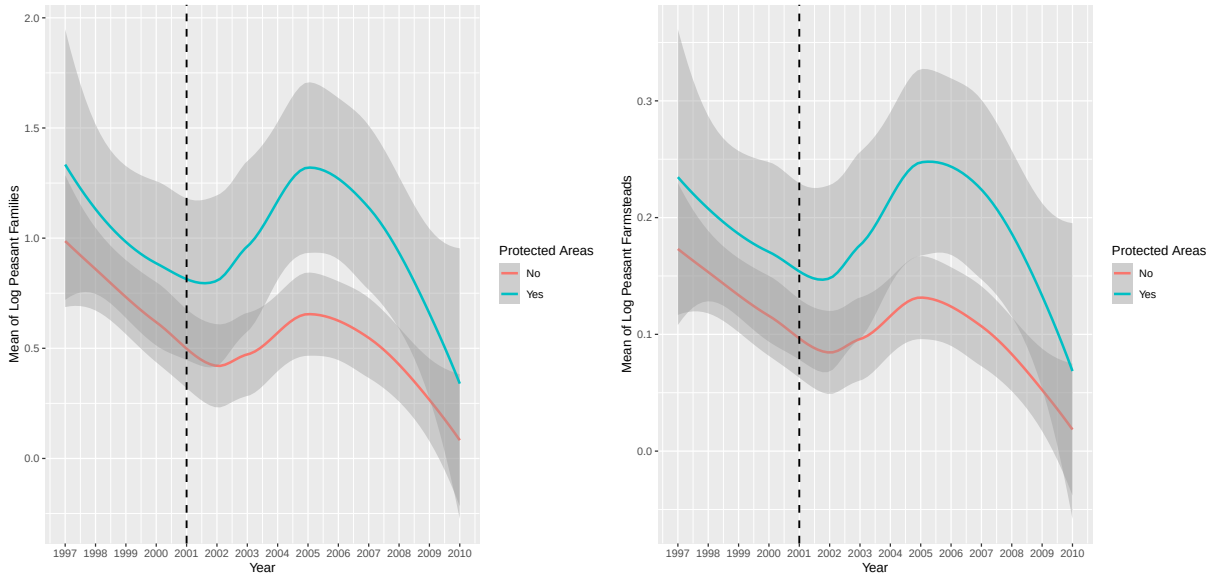

Figure A11: Average annual peasant agriculture by municipalities with and without protected areas before and after the commodities boom. Groups with and without protected areas consists of municipalities with below- and above-median proportions of their areas covered with protected areas prior to 1997.

Table A25: Interaction between Coalition Alignment and Municipal Deforestation. This analysis explores whether environmental risks at the municipal level moderate the effect of Coalition Alignment. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. The moderators of interests are the proportion of a municipality's area that has been deforested prior to 1997 (Models 1-3) and a dummy indicating if the municipality is a critical area of deforestation (Models 4-5). All models include municipality-pair fixed effects. The linear regressions have standard errors clustered by municipality-pair

	Dependent variable:					
	Federal Protected Area			Federal Protected Area		
	(1)	(2)	(3)	(4)	(5)	(6)
Coalition Alignment	-0.012^{*}	-0.013^{*}	-0.014^{*}	-0.014^{+}	-0.012^{*}	-0.015^{*}
	(0.006)	(0.005)	(0.006)	(0.007)	(0.006)	(0.007)
Fed. Prot. Area ('97)	-0.027^{**}			-0.027^{**}		
	(0.010)			(0.009)		
Deforested Municipal	-0.014	-0.008	-0.029^{+}			
	(0.010)	(0.008)	(0.015)			
Alignment:Deforested Municipal	0.023^{+}	0.019	0.025^{+}			
	(0.013)	(0.013)	(0.014)			
Critical Area				-0.002	0.004	-0.008
				(0.012)	(0.007)	(0.008)
Alignment:Critical Area				0.010	0.002	0.007
				(0.012)	(0.013)	(0.013)
Muni. Pair FE	Yes	Yes	Yes	Yes	Yes	Yes
Grid FE	-	Yes	Yes	-	Yes	Yes
State-Year FE	-	-	Yes	-	-	Yes
Muni. Pairs	2075	2075	2075	2075	2075	2075
Unique Grids	121,141	121,141	121,141	121,141	121,141	121,141
Observations	870,719	870,719	870,719	870,719	870,719	870,719
Adjusted R^2	0.310	0.644	0.684	0.310	0.644	0.684

Note: $^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001

Critical Areas are municipalities that have been declared as "critical areas of deforestation" according to the federal government's Basin Restoration Program, or PRODES. These are districts whose deforestation rates (in squared kilometers) account for 75 percent of the Legal Amazon's total gross deforestation (see Becker, 1982; INPE-IBAMA, 1995).

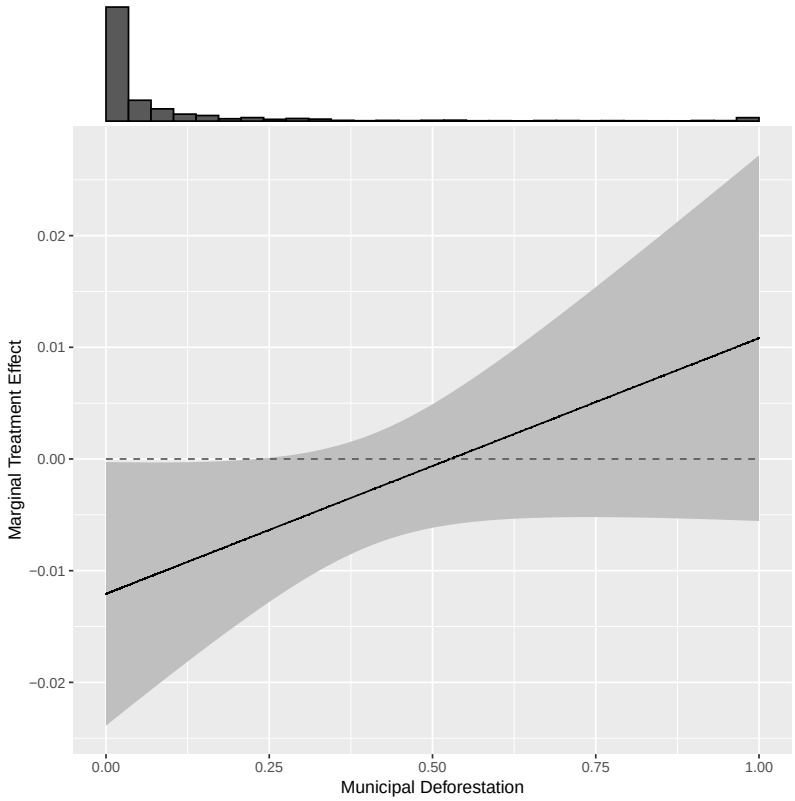

Figure A12: Marginal effect of prior municipal deforestation on the impact of Coalition Alignment. Grey bands represent 95% confidence intervals. The histogram represents the distribution of observations at different levels of prior municipal deforestation. The full regression results are presented in Table A25 (Model 3).

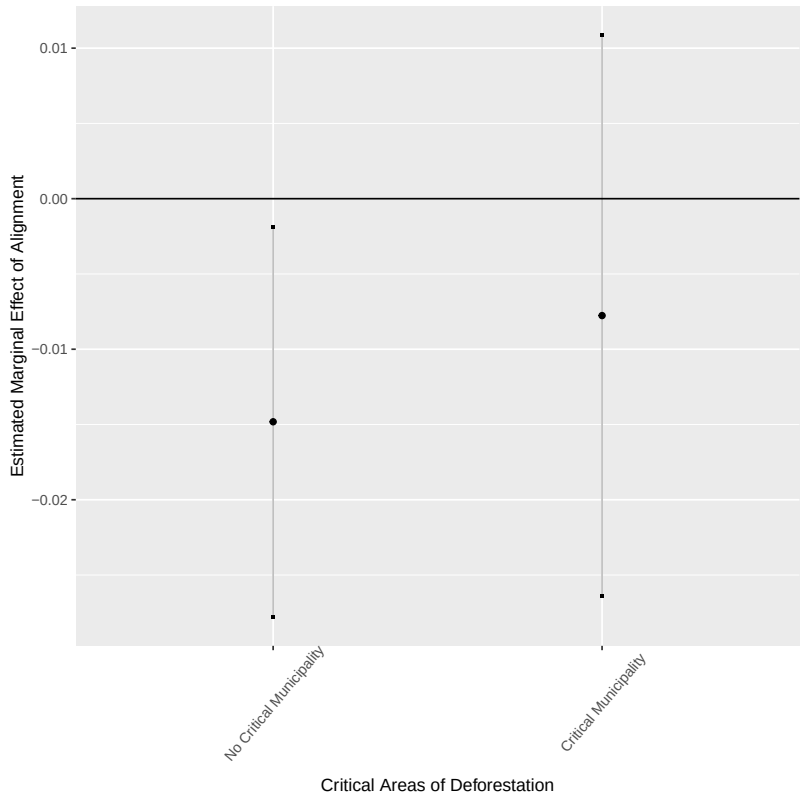

Figure A13: Marginal effect of critical areas of deforestation on the impact of Coalition Alignment. Points represent the marginal effect of treatment for municipalities whose deforestation that have been deemed critical or non-critical. Grey bands show 95% confidence intervals. The full regression results are presented in Table A25 (Model 6).

Table A26: Federal Protected Areas and President-Governor Alignment. This analysis explores whether a similar political alignment (between president and state governor) affects the designation of state protected areas. The unit of analysis is a cell-year. The dependent variable is the share of a grid cell covered by federal protected area. The treatment is Coalition Alignment between the president and the state governor. All models include state-pair fixed effects. The linear regressions have standard errors clustered by state-pair.

	Dependent variable:		
	Federal Protected Area		
	(1)	(2)	(3)
President-Governor	0.054	0.054	0.061^{+}
	(0.044)	(0.044)	(0.035)
Fed. Prot. Area ('97)	−0.051		
	(0.041)		
State Pair FE	Yes	Yes	Yes
Grid FE	-	Yes	Yes
Year FE	-	-	Yes
State Pairs SE	28	28	28
Unique Grids	13,231	13,231	13,231
Observations	94,353	94,353	94,353
Adjusted R^2	0.157	0.542	0.586
Note:	$^{+}$p<0.1; *p<0.05; **p<0.01; ***p<0.001		

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