Table

Table 1: Estimated parameters of linear regression models explaining fish species richness in Hokkaido (Japan) and Midwest (US) regions. The 95% confidence intervals are shown in parenthesis. Dependent variables were log-10 transformed. Environmental variables (air temperature, precipitation, logit % forest, dam density) are deviations from the regional averages and were standardized to a mean of zero and a standard deviation of one prior to the analysis.

	Dependent variable:		
	α diversity	β diversity	γ diversity
log_{10} Watershed area	0.07***	0.10***	0.16***
	(0.02, 0.11)	(0.04, 0.15)	(0.12, 0.21)
log_{10} Branching probability	−0.26	0.92**	0.66**
	(−0.84, 0.32)	(0.22, 1.63)	(0.05, 1.27)
Region (Midwest vs. Hokkaido)	0.45***	−0.09***	0.35***
	(0.40, 0.50)	(−0.15, −0.04)	(0.30, 0.41)
Air temperature	0.10***	−0.09***	0.01
	(0.07, 0.13)	(−0.12, −0.05)	(−0.02, 0.04)
Precipitation	−0.04***	0.07***	0.03**
	(−0.06, −0.01)	(0.04, 0.10)	(0.003, 0.06)
Logit % forest	−0.004	−0.01	−0.02
	(−0.03, 0.02)	(−0.04, 0.01)	(−0.04, 0.01)
Dam density	0.01	−0.01	−0.001
	(−0.01, 0.02)	(−0.03, 0.02)	(−0.02, 0.02)
Intercept	0.31**	0.82***	1.13***
	(0.01, 0.60)	(0.46, 1.18)	(0.82, 1.44)
R^2	0.80	0.27	0.78
Note:			*p<0.1; **p<0.05; ***p<0.01

```r
source(here::here("/theory/analysis_sensitivity.R"))
```

```
## Warning: Missing column names filled in: 'X1' [1]
```

```
##
## -- Column specification --------------------------------------------------------
## cols(
##   .default = col_double(),
##   spatial_env_cor = col_logical()
## )
## i Use `spec()` for the full column specifications.
```

```
## Warning: Problem with `mutate()` input `group_id`.
## i The `...` argument of `group_keys()` is deprecated as of dplyr 1.0.0.
## Please `group_by()` first
## This warning is displayed once every 8 hours.
## Call `lifecycle::last_warnings()` to see where this warning was generated.
## i Input `group_id` is `group_indices(., sd_env_source)`.
```

```
## Warning: The `...` argument of `group_keys()` is deprecated as of dplyr 1.0.0.
## Please `group_by()` first
## This warning is displayed once every 8 hours.
## Call `lifecycle::last_warnings()` to see where this warning was generated.
```

```
## `summarise()` ungrouping output (override with `.groups` argument)
```

```
## Warning: Missing column names filled in: 'X1' [1]
```

```
##
## -- Column specification --------------------------------------------------------
## cols(
##   .default = col_double(),
##   spatial_env_cor = col_logical()
## )
## i Use `spec()` for the full column specifications.
```

```
## `summarise()` ungrouping output (override with `.groups` argument)
```

```r
stargazer::stargazer(fit$fit[1], fit$fit[2],
                     fit$fit[3], fit$fit[4],
                     fit$fit[5], fit$fit[6],
                     header = FALSE,
                     type = "latex",
                     title = "",
                     covariate.labels = c("$\\sigma_{h}$",
                                          "$\\sigma_{l}$",
                                          "$\\sigma_{z}$",
                                          "$\\phi$",
                                          "$\\nu$",
                                          "$\\alpha_{max}$",
                                          "$\\theta$",
                                          "$p_{d}$",
                                          "Intercept"),
                     single.row = FALSE,
                     digits = 2,
                     dep.var.labels.include = FALSE,
                     column.labels = c("Effect of $N_{p}$ on $\\alpha$ diversity", "Effect of $P_{b}$ on
                                       "Effect of $N_{p}$ on $\\beta$ diversity", "Effect of $P_{b}$ on
```

```
                                         "Effect of $N_{p}$ on $\\gamma$ diversity", "Effect of $P_{b}$ or
                        keep.stat = c("rsq"),
                        model.numbers = FALSE)
```

Table 2:

	Dependent variable:			
	Effect of N_p on α diversity	Effect of P_b on α diversity	Effect of N_p on β diversity	Effect of P_b on β di
σ_h	0.01***	0.01***	−0.002	0.01***
	(0.002)	(0.003)	(0.001)	(0.002)
σ_l	−0.01***	0.06***	−0.01***	−0.05***
	(0.002)	(0.003)	(0.001)	(0.002)
σ_z	−0.001	−0.004	−0.01***	−0.004**
	(0.002)	(0.003)	(0.001)	(0.002)
ϕ	0.001	0.002	−0.0000	0.001
	(0.002)	(0.003)	(0.001)	(0.002)
ν	−0.001	−0.001	−0.01***	−0.001
	(0.002)	(0.003)	(0.001)	(0.002)
α_{max}	0.02***	−0.003	0.03***	0.004**
	(0.002)	(0.003)	(0.001)	(0.002)
θ	−0.03***	0.02***	0.03***	−0.02***
	(0.002)	(0.003)	(0.001)	(0.002)
p_d	0.02***	0.01***	−0.01***	−0.01***
	(0.002)	(0.003)	(0.001)	(0.002)
Intercept	0.18***	0.17***	0.11***	−0.11***
	(0.002)	(0.003)	(0.001)	(0.002)
R^2	0.50	0.49	0.73	0.63

Note: