

# BioModelos

VERSION 2

Quick guide:  
Expert users • Part II



[biomodelos.humboldt.org.co/en](http://biomodelos.humboldt.org.co/en)

Experts have the same functionalities that registered users (see guide), but also can suggest or join **groups**, and do any of the **following tasks** for the generation of species distribution models ▷

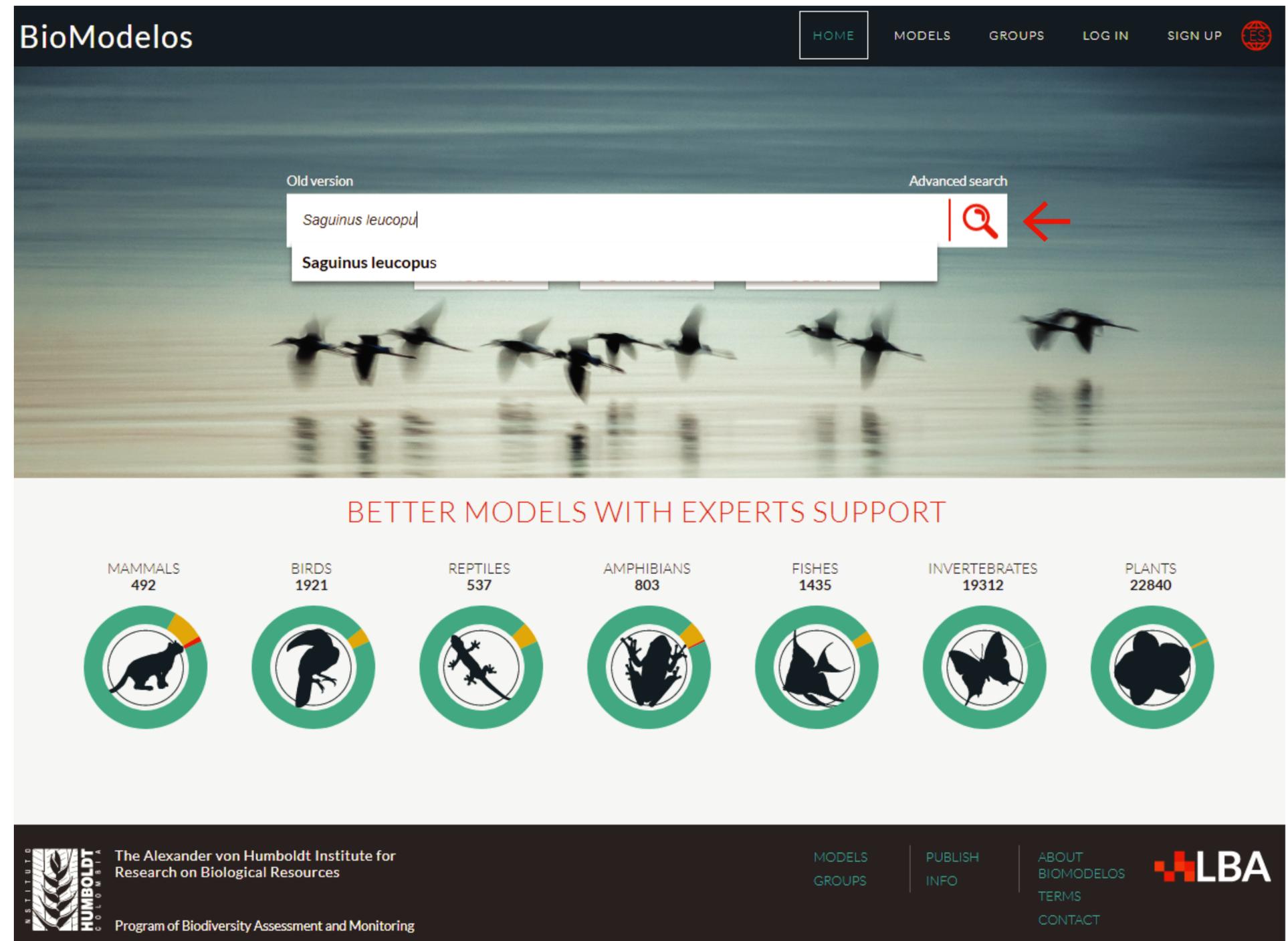
The group moderator ◁ will **add the tasks** you decide to carry out in the group's task panel (see moderator's guide)

- 01  **RECORDS CURATION**  
Collaborative **data cleaning**
- 02  **MODEL EDITING**  
Interactively display and select among several thresholds which best represents suitable environmental conditions for species, and **identify areas** of models over and under-prediction
- 03  **ECOLOGICAL VARIABLES**  
Select suitable species **land covers** types
- 04  **APPROVED MODEL**  
Validation of the **resulting model**, after is scored by the experts (1⊗ to 5⊕) with a higher than 3 score.

Part I  
Part II

## Using *Saguinus leucopus*

- ▶ Start writing the **name of the species**
- ▶ Select the **correct name** from the drop-down list
- ▶ **Click on** 



The screenshot shows the BioModelos website interface. At the top, there is a navigation bar with links for HOME, MODELS, GROUPS, LOG IN, and SIGN UP. Below the navigation bar is a search bar with the text "Saguinus leucopus" entered. A red arrow points to the search icon. Below the search bar, a dropdown menu shows the selected name "Saguinus leucopus". Below the search bar, there is a section titled "BETTER MODELS WITH EXPERTS SUPPORT" with seven categories: MAMMALS (492), BIRDS (1921), REPTILES (537), AMPHIBIANS (803), FISHES (1435), INVERTEBRATES (19312), and PLANTS (22840). Each category has a corresponding icon. At the bottom, there is a footer with the logo of The Alexander von Humboldt Institute for Research on Biological Resources, the Program of Biodiversity Assessment and Monitoring, and the LBA logo.

## Using *Saguinus leucopus*

- ▶ Go to the “**edition and contribution**” section and choose a contribution method
- ▶ 1. From **statistical model**
- ▶ 2. **Create** your map
- ▶ 3. **Publish** your map (see publication guide)

The screenshot shows the 'EDITION AND CONTRIBUTION' section of the BioModelos website. The page title is 'EDITION AND CONTRIBUTION' with a close button (X). Below the title, a paragraph states: 'BioModelos offers you three options to help document the distributions of species: editing the statistical model developed by BioModelos, creating an expert map in the application or publishing a model that you developed.'

The main content is under the heading 'MODEL DEVELOPMENT' and is divided into three numbered steps:

- 1. From statistical model**: This section includes a map of South America with a highlighted area in Peru. To the right of the map are three tool sections: 'THRESHOLD' (with a slider icon), 'POLYGON TOOLS' (with a polygon icon), and 'ECOLOGICAL VARIABLES' (with a tree icon). Below the map is an 'EDIT' button. A red arrow labeled '1' points to the '1. From statistical model' heading.
- 2. Create your map**: This section includes a 'CREATE' button. A red arrow labeled '2' points to the '2. Create your map' heading.
- 3. Publish your map**: This section includes a red arrow icon and text: 'This link will take you to the form that describes the procedure to publish your models in BioModelos.' A red arrow labeled '3' points to the '3. Publish your map' heading.

On the right side of the interface, there is a vertical toolbar with several icons. A red circle highlights the pencil icon, and a red arrow points to it from the right edge of the screenshot.

# MODEL EDITING

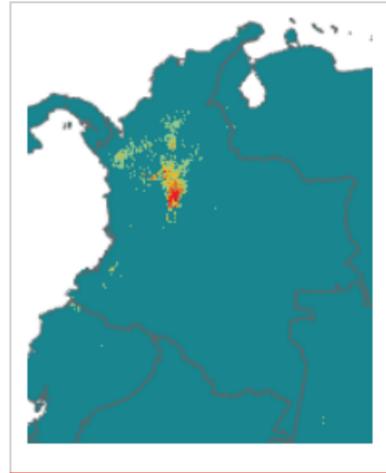
## From statistical model

### EDITION AND CONTRIBUTION

BioModelos offers you three options to help document the distributions of species: editing the statistical model developed by BioModelos, creating an expert map in the application or publishing a model that you developed.

#### MODEL DEVELOPMENT

##### 1. From statistical model



**THRESHOLD**  
Use the slider to identify the model that best represents the climate of the species (the distribution limits are defined with the polygon tool). For more information about the definition of the threshold, consult the manual of BioModelos.

**POLYGON TOOLS**  
The first button creates polygons, you can draw an area you wish to include in the distribution, as well as add areas that are not shown in the statistical model. The other two buttons allow you to modify the drawn polygons.

**ECOLOGICAL VARIABLES**  
Select the adequate land cover that supports the species population according to the national legend of land cover.

**Records and Filters**

**EDIT**

Select Threshold

C 0 10 20 30

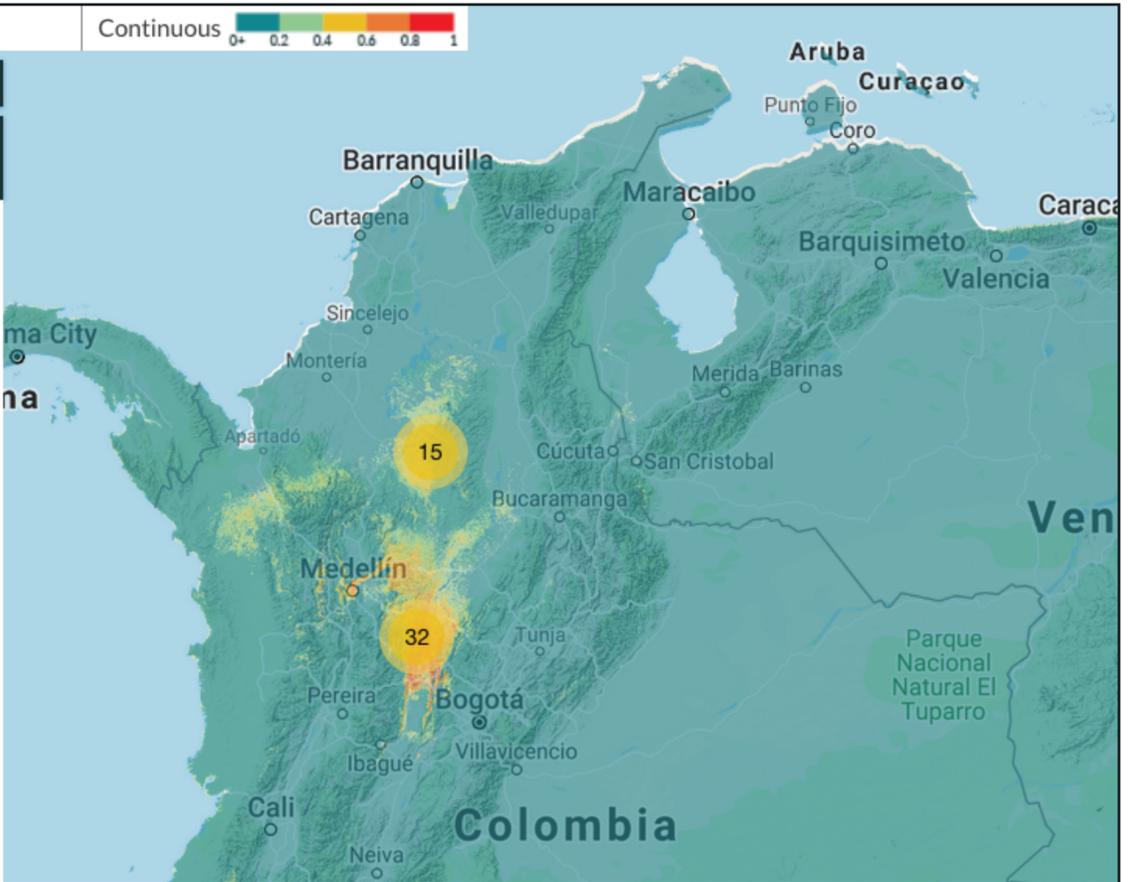
Polygon tool

Land Covers

- TERRITORIOS ARTIFICIALIZADOS +
- TERRITORIOS AGRÍCOLAS +
- BOSQUES Y ÁREAS SEMINATURALES +
- ÁREAS HÚMEDAS +
- SUPERFICIES DE AGUA +

PAUSE SEND

Continuous 0+ 0.2 0.4 0.6 0.8 1



EDIT

▶ Will load the continuous model of the species

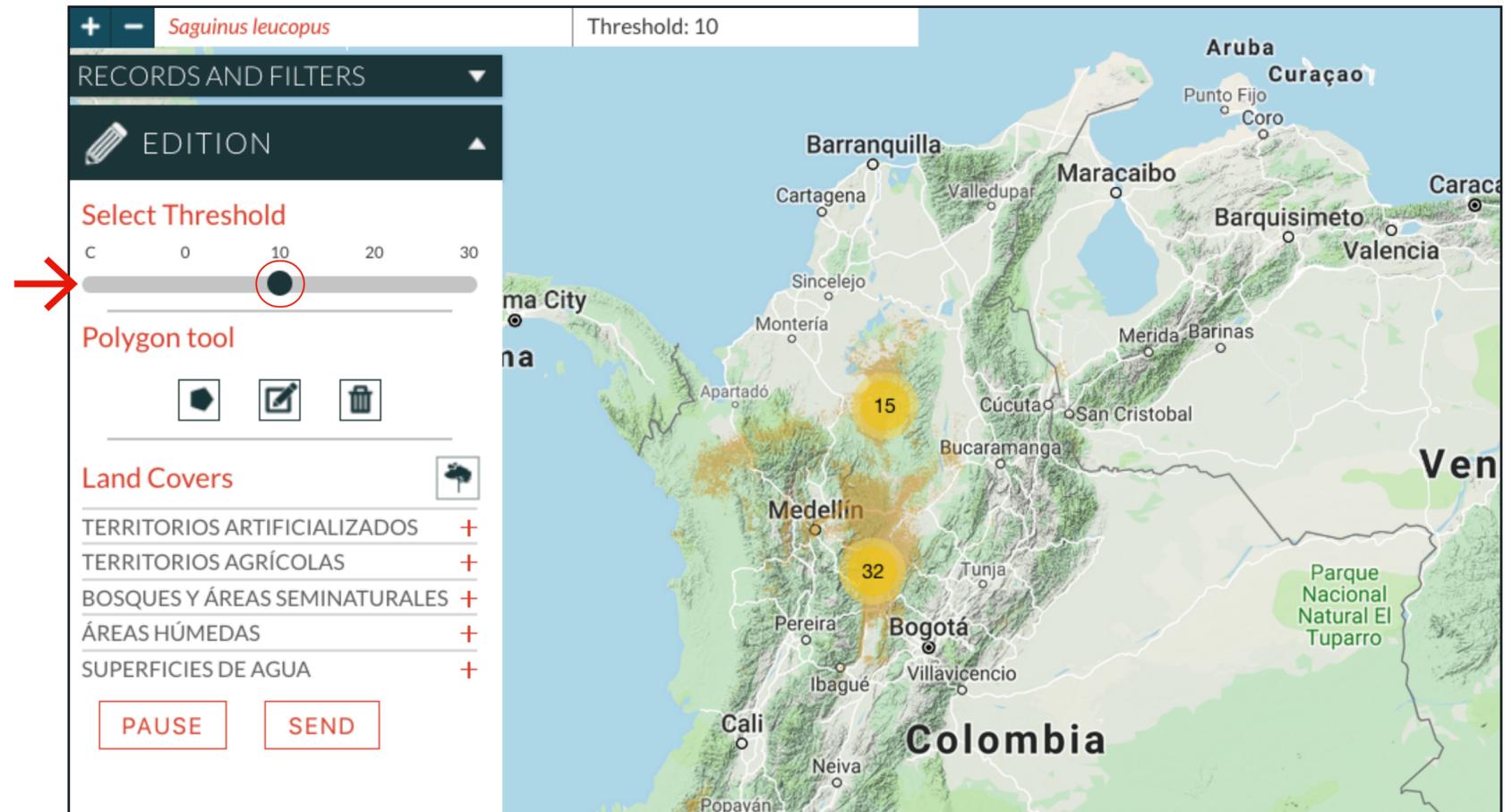
▶ You can download or view continuous model metadata

# MODEL EDITING

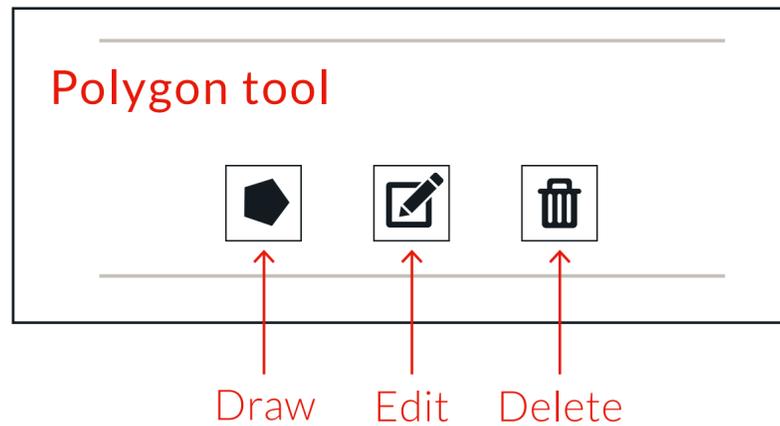
## From statistical model

- ▶ Select the **threshold value\*** that better represents the species distribution

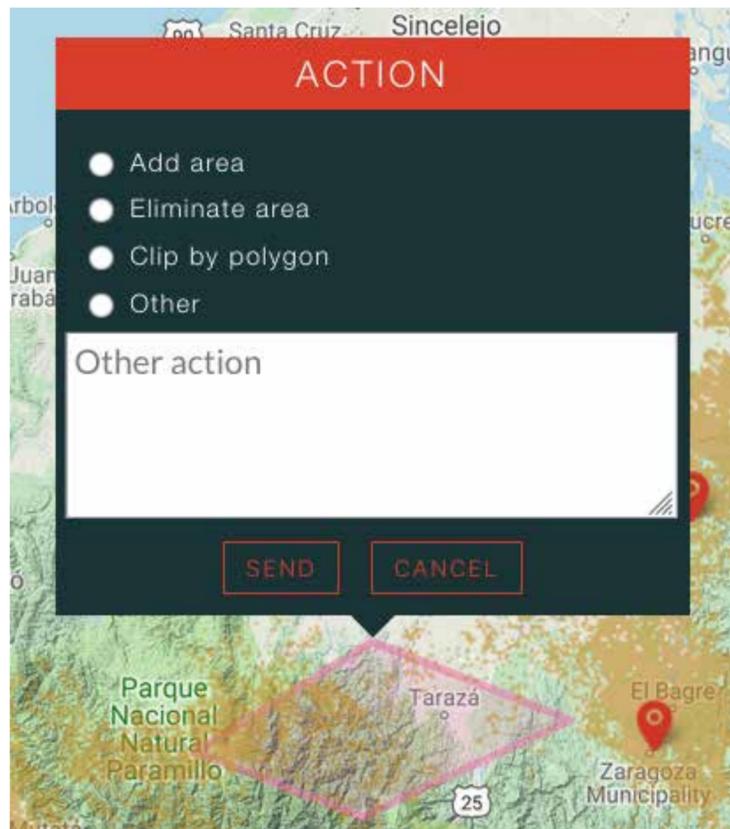
\*Proportion of a model on which the species is considered to have potential presence



## From statistical model



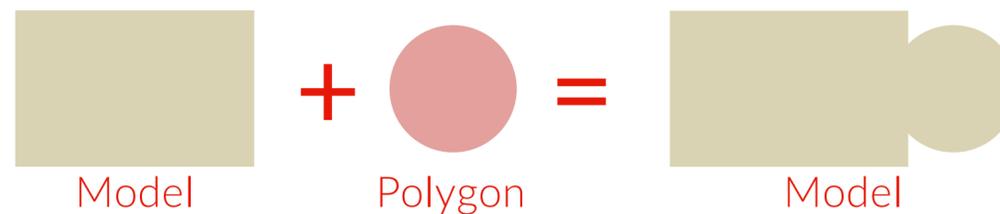
Polygon possible actions:



Editions will be processed by **BioModelos core team**

### ▷ Add area

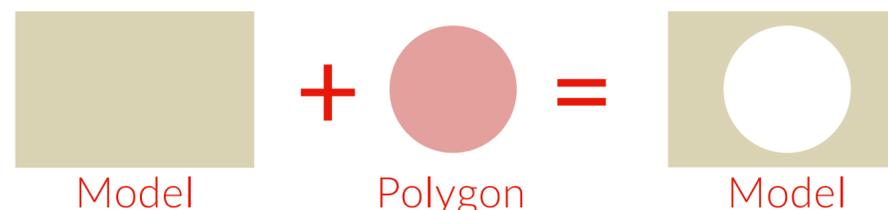
Add distribution areas of the species not predicted by the model



Recommendation:  
Add records as well

### ▷ Eliminate area

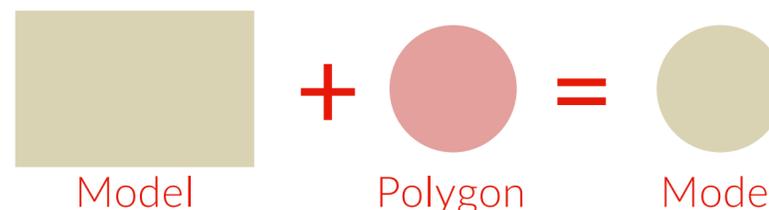
Removes areas of prediction where the species is not found



Recommendation:  
Evaluate first clip by polygon

### ▷ Clip by polygon

Equivalent to SIG "clip" operation. Used to define the extent of occurrence of a species



# MODEL CONTRIBUTION

## Create your map

- ▶ 1. The **create button** allows you to draw on an empty map
- ▶ 2. Activate the **polygon** option
- ▶ 3. **Draw** the desired distribution area
- ▶ 4. You can **PAUSE** to work later on
- ▶ 5. Click **SEND** when the map is finished

2. Create your map  
Using the polygon tool you can delineate the areas that correspond to the distribution range of a species.

CREATE

EDITION

Polygon tool

2 → [Polygon tool icon] [Line tool icon] [Erase tool icon]

Land Covers

- TERRITORIOS ARTIFICIALIZADOS +
- TERRITORIOS AGRÍCOLAS +
- BOSQUES Y ÁREAS SEMINATURALES +
- ÁREAS HÚMEDAS +
- SUPERFICIES DE AGUA +

PAUSE 4 ↑

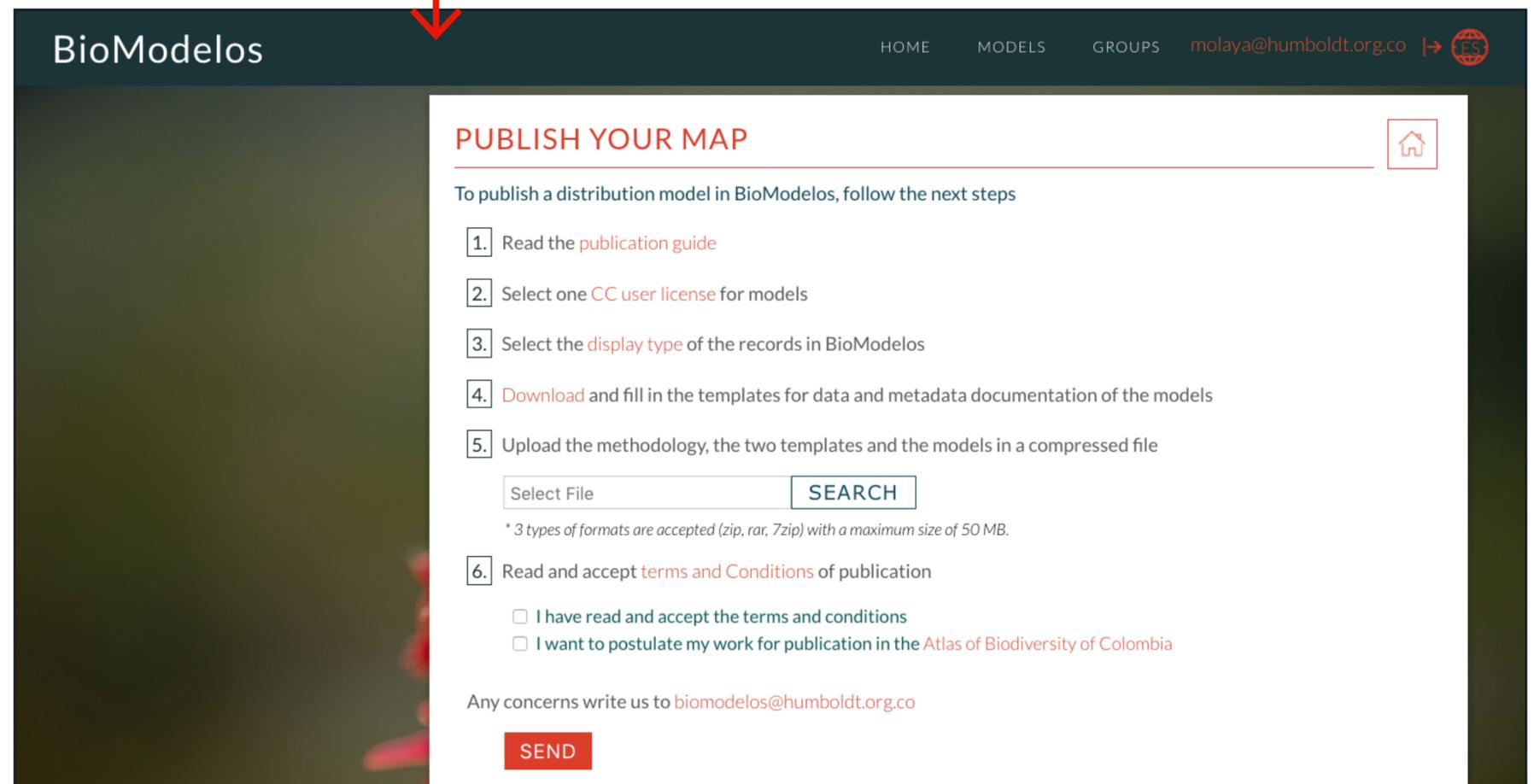
SEND 5 ↑

## Publish your map

▷ This option will take you to the “**publication form**”, where you can find all the information needed to publish your maps (see publication guide)

### 3. Publish your map

This link will take you to the form that describes the procedure to publish your models in BioModelos.



BioModelos

HOME MODELS GROUPS molaya@humboldt.org.co

### PUBLISH YOUR MAP

To publish a distribution model in BioModelos, follow the next steps

1. Read the [publication guide](#)
2. Select one [CC user license](#) for models
3. Select the [display type](#) of the records in BioModelos
4. [Download](#) and fill in the templates for data and metadata documentation of the models
5. Upload the methodology, the two templates and the models in a compressed file

Select File

\* 3 types of formats are accepted (zip, rar, 7zip) with a maximum size of 50 MB.

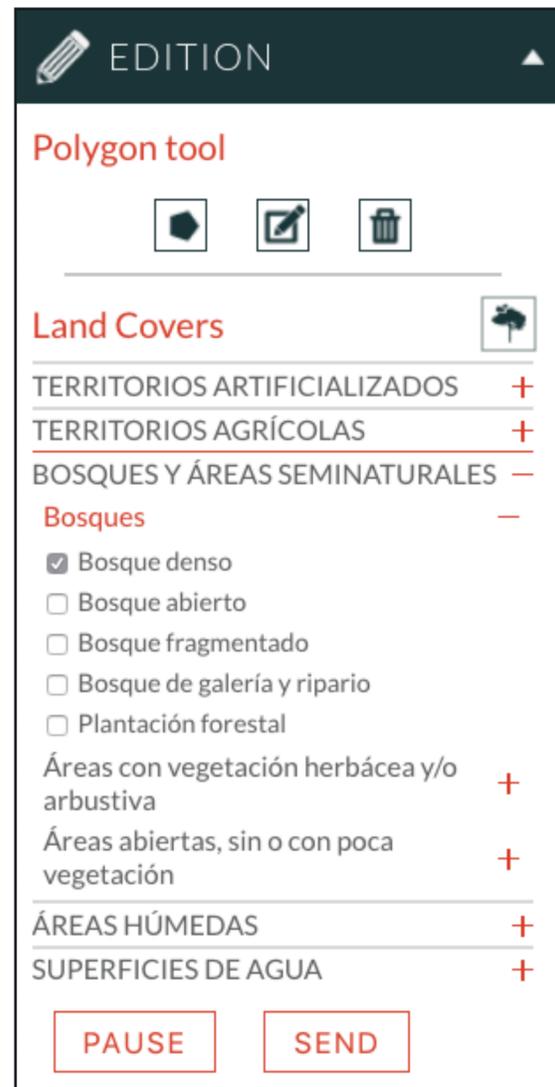
6. Read and accept [terms and Conditions](#) of publication

I have read and accept the terms and conditions

I want to postulate my work for publication in the [Atlas of Biodiversity of Colombia](#)

Any concerns write us to [biomodelos@humboldt.org.co](mailto:biomodelos@humboldt.org.co)

## Using *Saguinus leucopus*



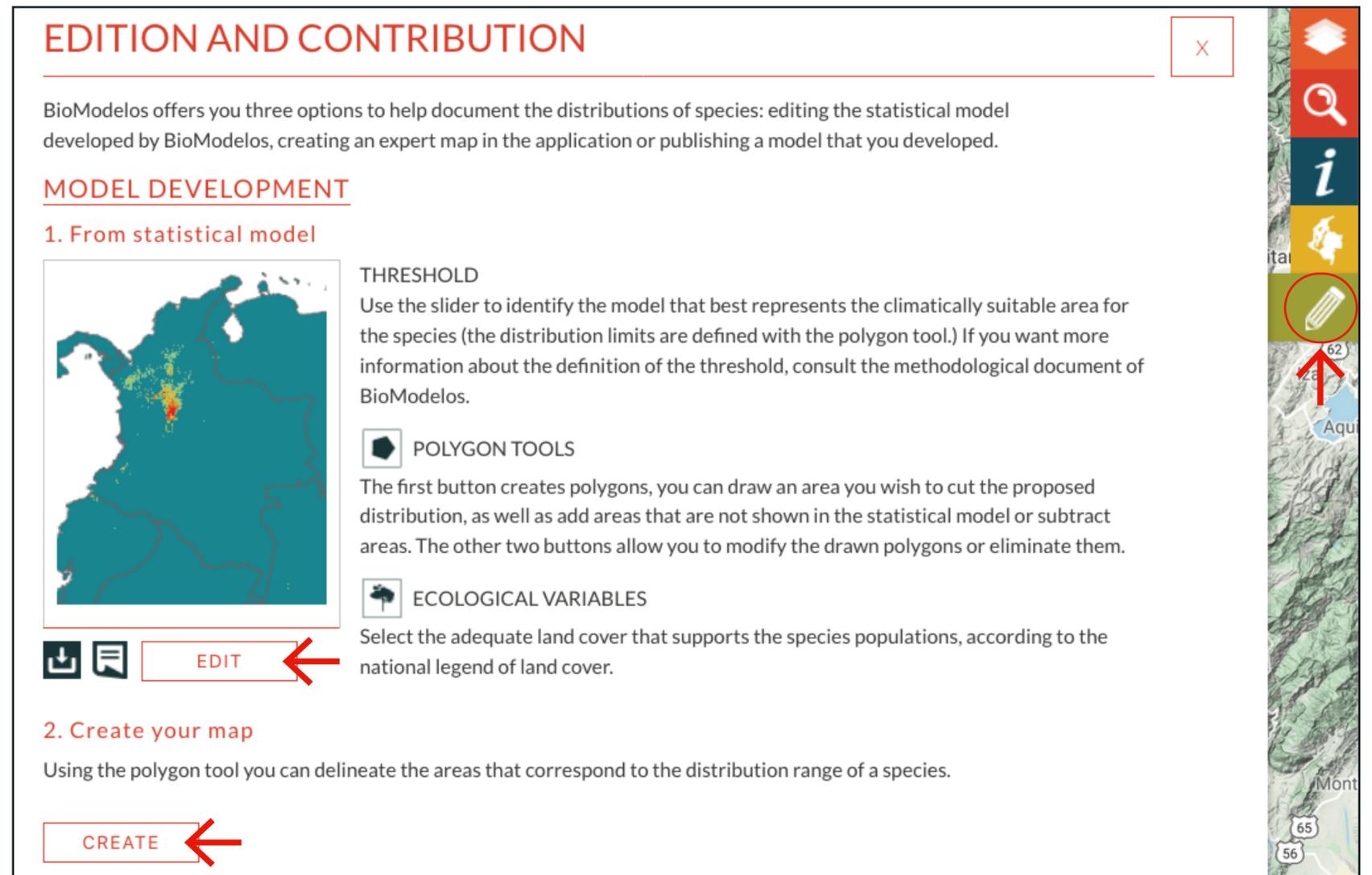
**EDITION**

**Polygon tool**

**Land Covers**

- TERRITORIOS ARTIFICIALIZADOS +
- TERRITORIOS AGRÍCOLAS +
- BOSQUES Y ÁREAS SEMINATURALES -
- Bosques** -
  - Bosque denso
  - Bosque abierto
  - Bosque fragmentado
  - Bosque de galería y ripario
  - Plantación forestal
- Áreas con vegetación herbácea y/o arbustiva +
- Áreas abiertas, sin o con poca vegetación +
- ÁREAS HÚMEDAS +
- SUPERFICIES DE AGUA +

**PAUSE** **SEND**



**EDITION AND CONTRIBUTION**

BioModelos offers you three options to help document the distributions of species: editing the statistical model developed by BioModelos, creating an expert map in the application or publishing a model that you developed.

**MODEL DEVELOPMENT**

1. From statistical model

**THRESHOLD**  
Use the slider to identify the model that best represents the climatically suitable area for the species (the distribution limits are defined with the polygon tool.) If you want more information about the definition of the threshold, consult the methodological document of BioModelos.

**POLYGON TOOLS**  
The first button creates polygons, you can draw an area you wish to cut the proposed distribution, as well as add areas that are not shown in the statistical model or subtract areas. The other two buttons allow you to modify the drawn polygons or eliminate them.

**ECOLOGICAL VARIABLES**  
Select the adequate land cover that supports the species populations, according to the national legend of land cover.

2. Create your map  
Using the polygon tool you can delineate the areas that correspond to the distribution range of a species.

**EDIT** **CREATE**

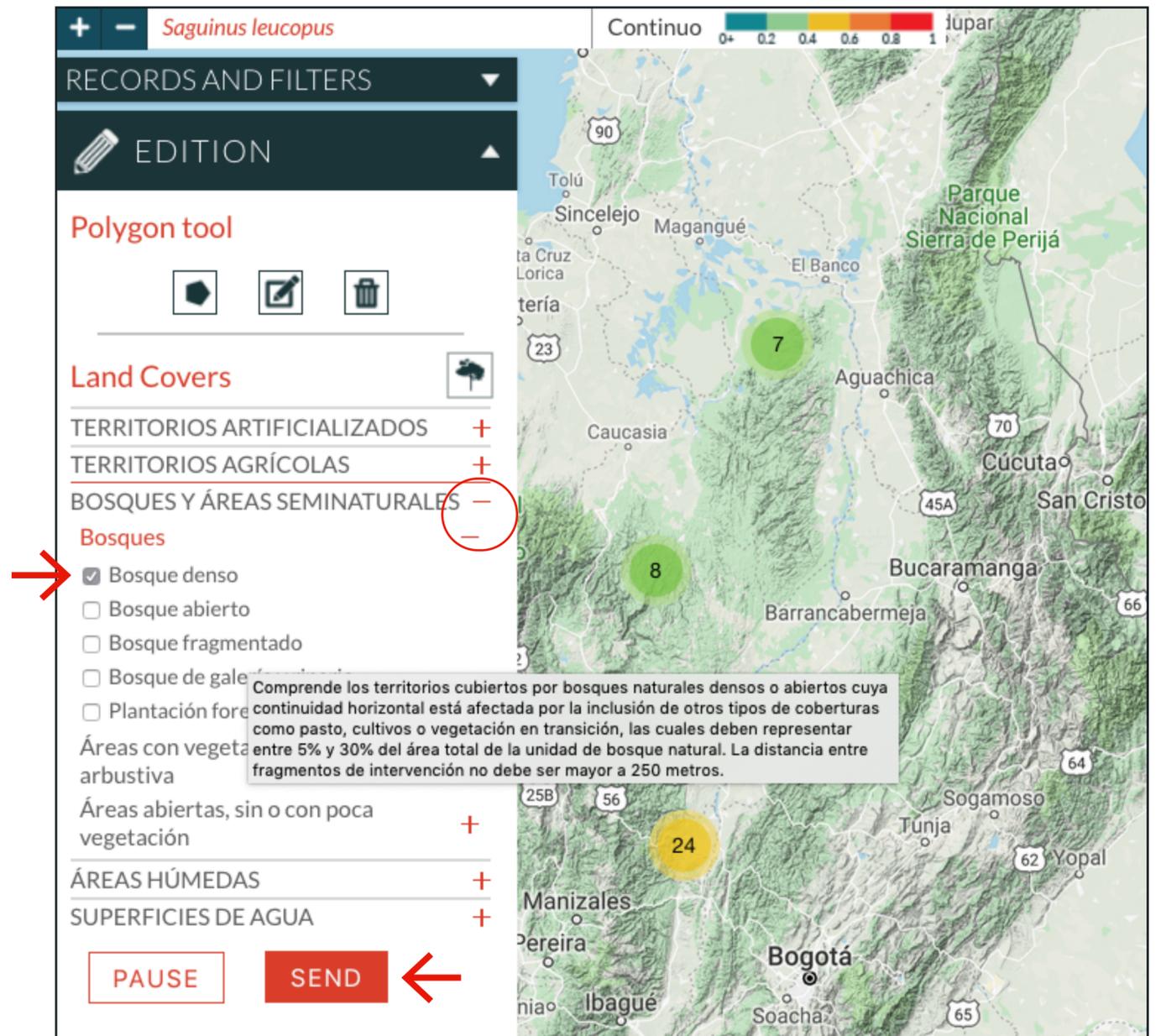
- ▶ You can go to the “**Ecological Variables**” form from the “**Edit**” or “**Create**” options in the “Edit model” section

# ECOLOGICAL VARIABLES

## Select land cover

▶ Select land cover categories (**Corine Land Cover** level 3) where you consider the species can maintain **viable populations**

▶ When you finish entering the information for a species, select the **“SEND”** button



Each cover description appears with a mouse over

## Scoring

- ▶ A “pending validation” model (after records curation and editions), needs a score of 3+ to become validated. In the “Distribution hypotheses” option you can **check and qualify** all available hypotheses

Each map has an average score, number of downloads, authors, year of publication and Creative Commons license

**AVAILABLE HYPOTHESES**

Maps in this section are either validated models or pending validation models. They may be rated according to how well they reflect species distribution by experts belonging to the species group. The first model displayed in the viewer corresponds to the map with the highest rating. Registered users may download models and their metadata.

The screenshot shows three maps of a region with yellow/orange spots representing species distribution. Below each map is a set of icons: a download icon, a metadata icon, a minus sign, and a five-star rating system. Red arrows point from the text 'Download' and 'Metadata' to the respective icons on the first map. Another red arrow points from the text 'Scoring' to the star rating system on the first map.

Download

Metadata

Scoring

- ★ : Not representative. Do not use
- ★★ : Not representative. Needs major revisions
- ★★★ : Moderately good representation. Use with caution
- ★★★★ : Good representation. It can be used
- ★★★★★ : Very good representation. Recommended use

climatically appropriate conditions for the species

# APPROVED MODEL

## Finishing the process

▶ You can check the **approved model** column in the task panel of your profile, or ask the moderator to do it in the group tasks, to **complete the validation** of the species distribution model

	STATISTICS	TASKS	ACTIVITY	SPECIES	EXPERTS	
<i>Aotus nancymae</i>						100%
<i>Aotus brumbacki</i>						100%
<i>Lagothrix lagothricha</i>						100%
<i>Alouatta palliata</i>						100%
<i>Cheracebus medemi</i>						100%
<i>Saguinus leucopus</i>						100%
Lina M Valencia	—	—	—	✓		100%
Néstor Javier Roncancio Duque	—	—	—	✓		100%
	—	—	—	✓		100%
						100%

STATISTICS TASKS

### TASKS

Species	📍	✎	🌳	✓	%
<i>Saguinus leucopus</i>	—	—	—	✓	100%

### Lina M Valencia

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Universidad de Texas en Austin  
Bogota

