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# ABOUT

## OVERVIEW

The Seedlot Selection Tool (SST) is a GIS mapping program designed to help forest managers match seedlots with planting sites based on climatic information. The climates of the planting sites can be chosen to represent current climates, or future climates based on selected climate change scenarios.

The Seedlot Selection Tool involves the following steps.

1. Select Objective
  2. Select Location
  3. Select Climate Scenarios
  4. Select Transfer Limit Method
  5. Select Climate Variables
  6. Map your Results
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# TOOL



## 1. SELECT OBJECTIVE

### 1.1. FIND SEEDLOTS FOR MY PLANTING SITE

Click on the **Find seedlots** button if you have a planting site for which you want to find adapted seedlots.

### 1.2. FIND PLANTING SITES FOR MY SEEDLOT

Click on the **Find planting sites** button if you have a seedlot and you want to know where you can plant it.



## 2. SELECT LOCATION

You can either **enter coordinates** or use the **map** to indicate the location of your seedlot or planting site. The 'location' of a seedlot represents the geographic location where it is best adapted—that is, the center of its adaptive climate space.

### 2.1. ENTER YOUR LOCATION AS COORDINATES

You can enter the latitude and longitude of your location in **decimal degrees**.

### 2.1. USE THE MAP TO SELECT YOUR LOCATION

Use the pan and zoom tools to navigate to your area of interest, and then 'click' on the map. This will show your location's latitude, longitude, and elevation, and if you have already selected climate variables in Step 5, the values for the climate variables.

If you click on the **Set Point** button, your current coordinates and other location information will be automatically set for use by the program. If you click outside of the areas covered by the SST, you will see "NA" listed for elevation.

**Note:** North America is divided into regions to reduce processing time. When you use the **Set Point** button, the SST automatically shows the options associated with your selected region. If you click in a new region, new options become available. **Currently, the SST has a single region, the Western Region.**



### 3. SELECT CLIMATE SCENARIOS

#### 3.1. WHICH CLIMATE ARE THE SEEDLOTS ADAPTED TO?

**Select time period** – The first step is to identify which climate the seedlots are adapted to, which is typically assumed to be the climate having the greatest influence on the seedlot's parents. Using the drop-down menu, select either:

- 1961 – 1990
- 1981 – 2010

#### 3.2. WHEN SHOULD TREES BE BEST ADAPTED TO THE PLANTING SITE?

**Select time period** – The next step is to choose when you want the planted trees to be optimally adapted to their planting site. Typical choices are the 'current' climate (e.g., 1981–2010), or if you want to account for climate change, some future time period. Using the drop-down menu, select either:

- 1961 – 1990
- 1981 – 2010
- 2011 – 2040
- 2041 – 2070
- 2071 – 2100

**Select relative concentration pathway (RCP)** – For future climates (i.e., 2011 to 2100), also select the RCP, which is associated with different levels of atmospheric greenhouse gases and climate change. According to IPCC AR5, the RCP4.5 “stabilization” scenario has a projected increase in mean annual temperature of 1.8°C by 2100 (range = 1.1–2.6°C), whereas the RCP8.5 “business as usual” scenario has a projected increase of 3.7°C by 2100 (range = 2.6–4.8°C). Using the drop-down menu, select either:

- RCP4.5
- RCP8.5



### 4. SELECT TRANSFER LIMIT METHOD

Select either the **Custom** or **Zone** method to enter your own custom transfer limit, or use an existing zone to calculate a transfer limit.

#### 4.1. CUSTOM METHOD

Click on the **Custom** button to enter your own transfer limits for one or more climate variables. If this approach is chosen, skip to Step 5.

## 4.2. ZONE METHOD

Click on the **Zone** button to use an existing zone to calculate transfer limits for one or more climate variables. Using the zone approach involves three steps.

### 4.2.1. SELECT THE CLIMATIC CENTER FOR MAPPED OUTPUT

When you choose to find **planting sites for a seedlot**, you need to specify the climatic center of the mapped output. If you have a seedlot from a specific known location, you would typically use that specific location (i.e., your selected coordinates). If you have a seedlot that represents an entire seed zone, it is probably more appropriate to use the climatic center of your chosen zone. Thus, for finding planting sites, you must choose between the following two alternatives:

- **The value at the selected location** – If you choose this option, your current coordinates (selected in Step 2) will be used as the climatic center of your mapped output.
- **The climatic center of the zone** – If you choose this option, the calculated climatic center of the selected zone is used as the climatic center of your mapped output.

### 4.2.2. SELECT A SPECIES

Select among the list of **species for which seed zones are available** for your selected location (Step 2). The **generic** option returns seed zones that are not species-specific. Once selected, only seed zones that are either generic or specific for the selected species will show up in the subsequent drop-down menu (4.2.3).

### 4.2.3. SELECT A SEED ZONE

**Select a seed zone** from the available options. Only seed zones that correspond to your selected species (4.2.2) and location (Step 2) will be shown. If no zones are available (e.g., the location is outside the region or species range), then the SST will indicate that there are **no zones at this location**.



## 5. SELECT CLIMATE VARIABLES

Sequentially select one or more climate variables. The resulting table of climate variables has the following:

- **Name** – The abbreviated name of the ClimateNA variable.
- **Center** – The climate value at the climatic center of the mapped output. For the **custom method** (4.1), the climatic center occurs at the location selected in Step 2. For the **zone method** (4.2), the climatic center depends on the choice made in Step 4.2.1, and may not occur at the geographic location selected in Step 2.
- **Transfer limit** – The transfer limit used for creating the mapped output. For the **custom method** (4.1), an initial value of zero is shown. For the **zone method** (4.2), this is the transfer limit calculated from the selected zone. For both methods, the user can then adjust the transfer limits.



## 6. MAP YOUR RESULTS

To view your results, click on the **Run Tool** button. The map will show where you can find appropriate seedlots or planting sites, now or in the future.

### 6.1. SAVE LAST RUN

If you are signed in, you can save your inputs by clicking on the **Save Last Run** button. You will be asked to provide a name for the saved run. Once saved, the saved run will show up in the **Saved Runs** window (see below). These saved inputs can then be reloaded or deleted in the future. See below if you need to create an account.

### 6.2. EXPORT PDF

Use this button to produce a printable map and summary of the corresponding data inputs.

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## SAVED RUNS

### SAVED RUNS

The **Saved Runs** window will list each of your saved runs. Click on the name of the saved run to **Load** or **Delete** the inputs. Once a saved run is loaded, you can recreate the map by clicking on the **Run Tool** button in the **Tool** window.

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## ACCOUNT

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Use the **Account** tab in the upper right corner of the web site to create or sign into an account. Use an email address and password to create an account. We will use this email address only if you lose your password. If you want to receive updates on the SST, sign up for our newsletter under the **News & Updates** tab.

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## OTHER FUNCTIONS