

# Mate Matcher

Mating Optimization Software

User Guide

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## Introduction

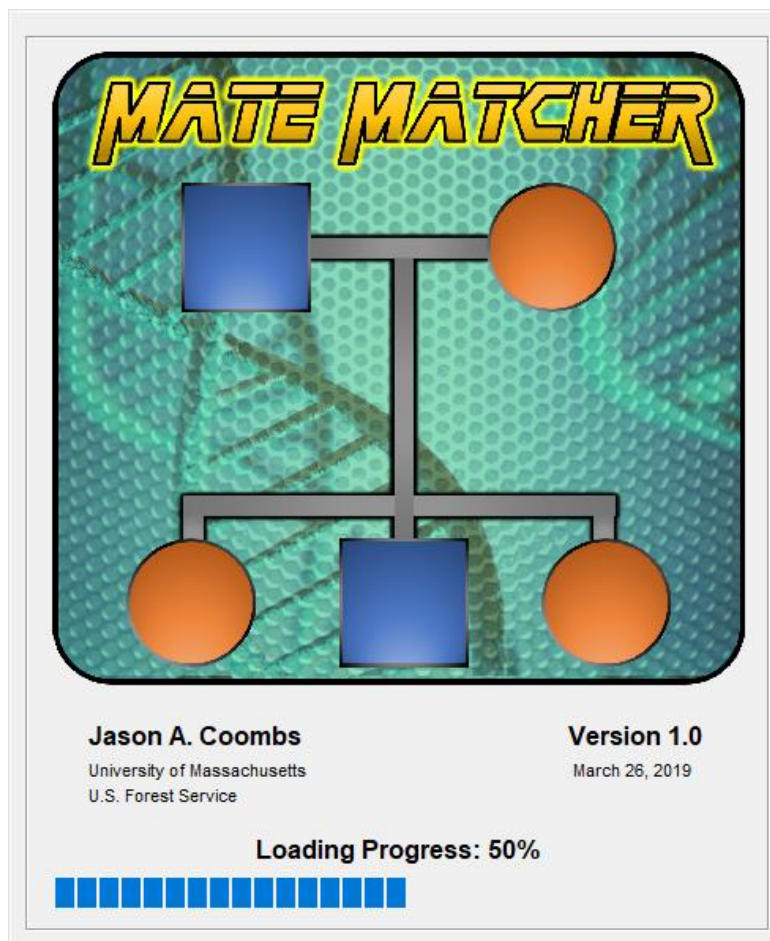
Mate Matcher is a software program used for real-time pairing of mating individuals through optimization of all possible pairings for minimization of genetic relatedness.

## Installation

To install Mate Matcher save the executable, MSCOMM32.OCX, and MSVBVM50.DLL files are saved to the same folder. In some instances, the OCX and DLL files may need to be added to the computer's registry. The following links provide instructions to do so: [MSCOMM32.OCX](#) and [MSVBVM50.DLL](#).

## Start-up

On start-up, Mate Matcher will preload all of the possible mating combinations in order to increase performance during real-time mating optimization. This process takes approximately 30 seconds to complete, and a progress bar on the splash page will inform you of the status.



## Main Form Part I

Upon completion of the mating combination loadings, the main form will open. Hovering the cursor over an item will usually show descriptive text about that item. If this is the first time that Mate Matcher has been used, you will be prompted to specify database settings.

The screenshot shows the 'Mate Matcher: Mating Optimization Software' window. The title bar includes the text 'Mate Matcher: Mating Optimization Software' and a close button. Below the title bar, the word 'Options' is visible. The main area is divided into a left sidebar and a central panel. The sidebar has a red background and contains the 'MATE MATCHER' logo, 'Mating Input Criteria' (with dropdowns for 'Number of Females' set to 5 and 'Number of Males' set to 5), a 'Mating Design' section with radio buttons for '1 to 1', '1 to 2', '2 to 2', '1 to 3', and '3 to 3', a 'Relatedness Metric' dropdown set to 'Proportion of Shared Alleles', and an 'Add Mating Individuals' button. The central panel has a light gray background and features a 'Current ID' input field with a checkmark and the text 'Include Prefix (PIT Tags)'. Below this is a table header with columns: 'Family', 'Female', 'Male', 'Relatedness', 'Flag', 'Mated', 'Released', 'Fem.', and 'Male'. A large green box with blue text in the center of the panel reads 'Specify \'Database Settings\' under the \'Options\' menu'. At the bottom of the window, there are three buttons: 'Exit' and 'Update Matings Table' (both green) and an unlabeled button.

On subsequent opening of Mate Matcher, attempts will be made to connect to the previously used database.

## Database Specifications

Open the database specifications window by clicking 'Options' on the top menu of the main form and selecting 'Database Settings'. On your initial usage of Mate Matcher, you will be required to do the following:

1. Select a mating database
2. Select the table in the database that contains genotypes of individuals to be used for mating (genetics table)
3. Map columns in the genetics table to their associated field
  - a. Unique Identifier, Sex, Number of Loci, First Locus, and Comments are required
  - b. Population, Cohort, and Flag are optional and will only be used when checked
4. Select the table in the database where the mating pairs will be recorded
  - a. The user can either select an existing table or create a new table
    - i. An existing table requires the mapping of all fields to columns in the table
      1. If a field does not currently exist in the table it will need to be added
      2. See the below table for required data types of each field
    - ii. A new table requires the user to enter in a table name
      1. All fields are auto populated with column headings
5. Click 'Save' button to store the database settings

Database Specifications
Mating Database
new\_database.accdb

**Genetics Table**
Genetics\_New

Unique Identifier
ID

Sex
Sex

Number of Loci
18

First Locus
197 1

Comments
Comments

☒ Population
Pop

☒ Cohort
Cohort

☒ Flag
Flag

Clear Fields

**Matings Table**
Open Existing
Create New

Matings

Batch
Batch

Family ID
Family

Metric
Metric

Relatedness
Relatedness

**Dam Information**

ID
Dam

Population
Dam\_Pop

Cohort
Dam\_Cohort

Scored Loci
Dam\_Scored\_Loci

Released
Dam\_Released

Clear Fields

Optimized
Optimized

Date
Date

Time
Time

Comments
Comments

**Sire Information**

ID
Sire

Population
Sire\_Pop

Cohort
Sire\_Cohort

Scored Loci
Sire\_Scored\_Loci

Released
Sire\_Released

Clear Fields

Cancel
Save

## Genetics Table

Field	Description
Unique Identifier	The unique identifier of the individual
Sex	The gender of the individual (e.g. M, F, U)
Number of Loci	The number of loci comprising the genotypes of all individuals
First Locus	The column corresponding to the first locus reading from left to right in the table
Comments	Any comments about the individual, included when adding new individuals to the table
Population	The population of the individual
Cohort	The cohort of the individual
Flag	Warning flags about the individual that will be displayed if used for mating

## Matings Table

Field	Allowed Data Type	Description
Batch	Long, Single, Double, Decimal	Auto assigned unique identifier of mating pairs matched under the same optimization
Family ID	Text	User supplied identifier of the mating pair
Metric	Text	The relatedness metric used for optimization
Relatedness	Single, Double, Decimal	The relatedness value of the mating pair
Optimized	Text	Whether the mating pairs were matched using relatedness optimization; can be yes, no, or reoptimized
Date	Date/Time	The date the mating pair reproduced
Time	Date/Time	The time the mating pair reproduced
Comments	Text	Notes regarding the mating pair, specifically any mating flags violated
ID	Text	The identifier of the dam/sire

Population	Text	The population of the dam/sire
Cohort	Long, Single, Double, Decimal	The cohort of the dam/sire
Scored Loci	Long, Single, Double, Decimal	The number of loci scored for the dam/sire genotype
Released	Yes/No	Whether the dam/sire was released into the wild after mating

## Warning Flag Settings

Open the warning flag settings window by clicking 'Options' on the top menu of the main form and selecting 'Warning Flag Settings'. These settings provide options for raising warning flags if mating pairs meet flag specifications. Any raised flags will appear on the main form after mating pairs have been assigned.

Available flags include:

- A mating pair has a genetic relatedness value greater than the specified maximum
  - To use this flag pairwise relatedness values must be calculated first
    - Calculations are performed separately for each population
    - Only individuals present in the specified 'Cohorts to go Back' are included
    - The pairwise relatedness value corresponding to the specified maximum percentile can be viewed by clicking on 'View Values'
- One or both mating individuals has allelic information present at less than the specified minimum number of loci
- Individuals in a mating pair have previously reproduced
- Individuals in a mating pair are from different populations
- Individuals in a mating pair are from different cohorts

Mate Matcher: Mating Optimization Software

Options

Current ID  ☒ Include Prefix (PIT Tags)

**MATE MATCHER**

Family Female Male Relatedness Flag Mated Released  
Fem. Male

**Mating Input Criteria**

Number of Females

Number of Males

**Mating Design**

☒ 1 to 1  
☐ 1 to 2  
☐ 2 to 2  
☐ 1 to 3  
☐ 3 to 3

**Relatedness Metric**

**Specify 'Flag Settings' under the 'Options' menu**

Warning Flag Settings

**Warn me if:**

☒ Individuals in a mating pair have a genetic relatedness above the specified percentile among all mating pairs in the population

Maximum Percentile  Cohorts to go Back

☒ One or both individuals in a mating pair have not been scored for less than the minimum number of loci specified

Minimum Number of Loci

☒ Individuals in a mating pair have previously reproduced

☒ Individuals in a mating pair are from different populations

☒ Individuals in a mating pair are from different cohorts

## Mating Design

Mate Matcher allows for five mating designs:

- 1 to 1 (1 Female mated with 1 Male)
- 1 to 2 (1 Female mated with 2 Males)
- 2 to 2 (2 Females each mated with 2 Males)
- 1 to 3 (1 Female mated with 3 Males)



- 3 to 3 (3 Females each mated with 3 Males)

The number of females and males that can be optimized at one time (batch) is dependent upon the mating design, but the upper limit is 10 of each sex. Users are allowed to specify a greater number of males than females to attempt to reduce pairwise relatedness through optimization.

## Relatedness Metric

The relatedness metric is the value that is optimized when matching mating pairs. For now, the sole option is the Proportion of Shared Alleles which is the count of identical alleles shared between two individuals divided by  $2 * \text{number of loci with allelic information present}$ . Therefore, it is assumed that the lower the shared proportion the less likely these two individuals are to share common ancestry.

Additional relatedness measures can be incorporated in the future if demand is present.

## Individual Input Form

To add individuals for mating optimization, click on the 'Add Mating Individuals' button on the main form which opens the individual input window. The number of slots for each sex is dependent upon the mating design and number of females and males specified on the main form.

**Individual Input** 1 to 1 Mating Design

**Current ID**  
   
☐ Use ID Input Template  
   
**Sex**  
   
**Population**  
   
**Cohort**  
   
**Prior Matings**

Family ID	Females	Use	Males
<input type="text"/>	<input type="text"/> <input type="button" value="Clear"/>	<input checked="" type="checkbox"/> 1	<input type="text"/> <input type="button" value="Clear"/>
<input type="text"/>	<input type="text"/> <input type="button" value="Clear"/>	<input checked="" type="checkbox"/> 2	<input type="text"/> <input type="button" value="Clear"/>
<input type="text"/>	<input type="text"/> <input type="button" value="Clear"/>	<input checked="" type="checkbox"/> 3	<input type="text"/> <input type="button" value="Clear"/>
<input type="text"/>	<input type="text"/> <input type="button" value="Clear"/>	<input checked="" type="checkbox"/> 4	<input type="text"/> <input type="button" value="Clear"/>
<input type="text"/>	<input type="text"/> <input type="button" value="Clear"/>	<input checked="" type="checkbox"/> 5	<input type="text"/> <input type="button" value="Clear"/>

☒ Optimize Matings

Individual identifiers can be added by either scanning in a PIT tag, copying and pasting, or typing in directly. When typing, it is recommended that you use an ID input template otherwise you will be asked after each keystroke if you want to add the current ID to the genetics table if it isn't present already. If a template is used, you will only be asked once the entered ID matches the template. To enter a template, check the 'Use ID Input Template' box, click in the dropdown box beneath it, and type the template. The rules for entering a template are:

- Numbers and letters are represented by the # symbol
  - To add a template for a 5 digit alphanumeric ID you would enter #####
- Symbols are represented by the symbol itself
  - To add a period as the third character in the above template example you would enter ##.##

Individual Input

Current ID

44-56.ER

Clear

☒ Use ID Input Template

##.##.##

Clear Templates

Sex

Update

Population

Update

Cohort

Update

Prior Matings

Add Current ID

1 to 1 Mating Design

Family ID	Females		Use		Males	
		Clear	<input checked="" type="checkbox"/>	1		Clear
		Clear	<input checked="" type="checkbox"/>	2		Clear
		Clear	<input checked="" type="checkbox"/>	3		Clear
		Clear	<input checked="" type="checkbox"/>	4		Clear
		Clear	<input checked="" type="checkbox"/>	5		Clear

Cancel

Clear All IDs

☒ Optimize Matings

Proceed

Once your template is matched (if you are using a template) or a character is typed (if you are not using a template), a query is performed on the genetics table to see if that ID is present.

If the ID is present, the sex, population (if specified), and cohort (if specified) information will be queried from the genetics table, and the individuals involvement in any prior matings will be queried from the matings table.

If the ID is not present, the user will be asked if they would like to add it to the genetics table

ID Not Present

?

The ID '3' is not present in the genetics table (Genetics\_New).  
Would you like to add this individual to the genetics table?

Yes

No

If Yes is selected, the user will be required to supply additional information. Sex information is always required, while population and cohort information is dependent upon whether these optional fields were checked for the genetics table on the database settings form.

Add Individual

ID

3

Sex

Male

Population

Greenfield

Cohort

2019

Comment

Needed another male to fill the mating pool

Cancel

Add Individual

Adding the individual populations the information into the fields on the input form and enables the use of this individual for mating optimization.

Individual Input

Current ID

3

Clear

☐ Use ID Input Template

Clear Templates

Sex

Male

Update

Population

Greenfield

Update

Cohort

2019

Update

Prior Matings

Add Current ID

1 to 1 Mating Design

Family ID	Females		Use	Males	
		Clear	<input checked="" type="checkbox"/>	1	Clear
		Clear	<input checked="" type="checkbox"/>	2	Clear
		Clear	<input checked="" type="checkbox"/>	3	Clear
		Clear	<input checked="" type="checkbox"/>	4	Clear
		Clear	<input checked="" type="checkbox"/>	5	Clear

Cancel


Clear All IDs

☒ Optimize Matings

Proceed

If you choose to not add it to the genetics table you will then be asked if you wish to use the ID without recording it to the genetics table.

ID Fate


Do you still wish to use this tag without entering it into the genetics table?

Yes
No

If you choose Yes, then you will be required to enter in information about the individual so that it can be used to evaluate any warning flags if it ends up being used in a mating pair.

Add Individual

ID
Sex
Population
Cohort

4
Male
Gill
2018

Cancel
Add

Individual Input

Current ID
4
Clear

☐ Use ID Input Template

### #####

Clear Templates

Sex
Male
Update

Population
Gill
Update

Cohort
2018
Update

Prior Matings

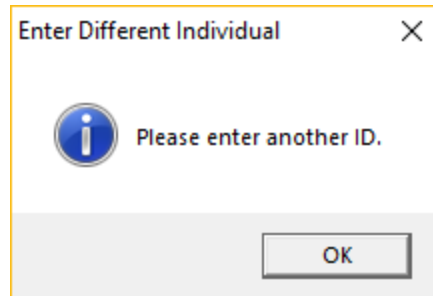
Add Current ID

1 to 1 Mating Design

Family ID	Females	Use	Males
		<input checked="" type="checkbox"/>	1
		<input checked="" type="checkbox"/>	2
		<input checked="" type="checkbox"/>	3
		<input checked="" type="checkbox"/>	4
		<input checked="" type="checkbox"/>	5

Cancel
Clear All IDs
☒ Optimize Matings
Proceed

If you choose No, the user will be prompted to enter another ID.



## Updating Individual Information

Once an individual has either been queried or added to the genetics table or used without recording to the genetics table, its information is populated into the sex, population (if specified), and cohort (if specified) fields. To accommodate issues that may arise from incorrect data, these three fields are able to be updated at this stage, with any changes automatically being updated in the genetics table if the individual was already present or just added.

A dialog box titled "Gender Update" with a close button (X) in the top right corner. It contains the text "Please enter in a sex for this ID." and "'M' for male, 'F' for female". On the right side, there are "OK" and "Cancel" buttons. At the bottom, there is a text input field with the letter "M" entered and highlighted.A dialog box titled "Population Update" with a close button (X) in the top right corner. It contains the text "Please enter in a population for this ID." On the right side, there are "OK" and "Cancel" buttons. At the bottom, there is an empty text input field.A dialog box titled "Cohort Update" with a close button (X) in the top right corner. It contains the text "Please enter in a cohort for this ID (must be a number)." On the right side, there are "OK" and "Cancel" buttons. At the bottom, there is a text input field with the number "2019" entered and highlighted.

## Creating Mating Pairs

To add individuals to the mating pool, click on the 'Add Current ID' button after you have scanned or entered an ID. The individual will automatically be added to the first available slot under the corresponding sex.

Individual Input

Current ID

3D6.001805FA9F

Clear

☒ Use ID Input Template

### #####

Clear Templates

Sex

Female

Update

Population

Penobscot

Update

Cohort

2015

Update

Prior Matings

05/03/2018 3D6.001805FA19

05/03/2018 3D6.001805F9F0

05/03/2018 3D6.001805FA19

Add Current ID

1 to 1 Mating Design

Family ID	Females	Use	Males
		<input checked="" type="checkbox"/>	1
		<input checked="" type="checkbox"/>	2
		<input checked="" type="checkbox"/>	3

Cancel

Clear All IDs

☒ Optimize Matings

Proceed

Individual Input

×

Current ID

Clear

☒ Use ID Input Template

### #####

▼

Clear Templates

Sex

Update

Population

Update

Cohort

Update

Prior Matings

Add Current ID

1 to 1 Mating Design

Family ID	Females		Use		Males	
<input type="text"/>	3D6.001805FA9F	Clear	<input checked="" type="checkbox"/>	1	<input type="text"/>	Clear
<input type="text"/>	<input type="text"/>	Clear	<input checked="" type="checkbox"/>	2	<input type="text"/>	Clear
			<input checked="" type="checkbox"/>	3	<input type="text"/>	Clear

Cancel

Clear All IDs


☒ Optimize Matings

Proceed

Continue to add individuals until all of the available slots are filled. An added individual can be removed at any time by clicking on the 'Clear' button located to the right of the ID number. If this happens you will be asked if you wish to supply a reason for removing the individual.

Reason for Clearing

×



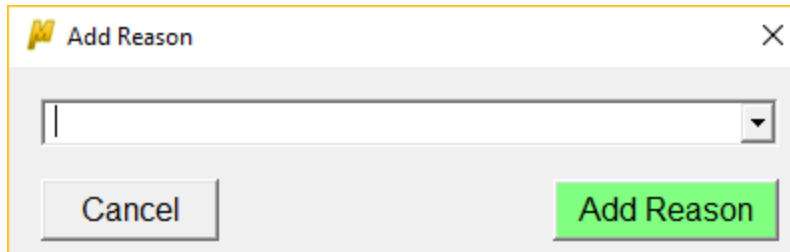
Would you like to provide a reason for clearing this individual?

Yes

No

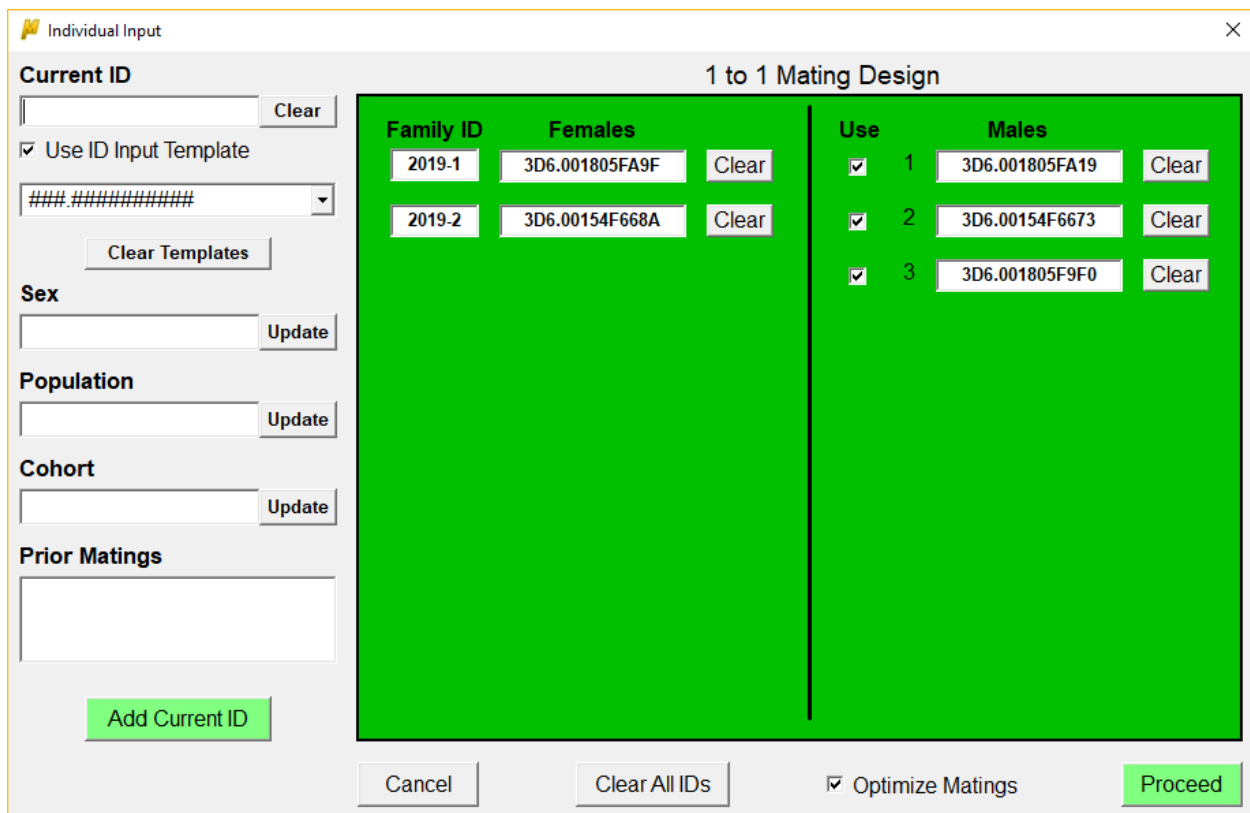
If you choose Yes, the user can either select from a list of reasons queried from the genetics table 'Comments' field or type a new one. The reason will then be added to the comments field for the genetics table record of that individual.





A small dialog box titled "Add Reason" with a close button (X) in the top right corner. It contains a single-line text input field and two buttons at the bottom: "Cancel" on the left and "Add Reason" on the right.

Once all of the mating pool slots have been filled, the user must fill in the Family ID values located to the left of each female before proceeding. The user also has the option to 'Use' male candidates. This option is only viable if there is a surplus of male candidates. To exclude a male from being used uncheck the 'Use' box to the left of its ID slot.



A larger dialog box titled "Individual Input" with a close button (X) in the top right corner. It features a sidebar on the left with various input fields and a main area on the right titled "1 to 1 Mating Design".

**Left Sidebar:**

- Current ID:** A text input field with a "Clear" button.
- ☒ Use ID Input Template
- A dropdown menu showing "###.#####".
- "Clear Templates" button.
- Sex:** A text input field with an "Update" button.
- Population:** A text input field with an "Update" button.
- Cohort:** A text input field with an "Update" button.
- Prior Matings:** A multi-line text input field.
- "Add Current ID" button.

**Main Area: 1 to 1 Mating Design**

Family ID	Females	Use	Males
2019-1	3D6.001805FA9F	<input checked="" type="checkbox"/>	3D6.001805FA19
2019-2	3D6.00154F668A	<input checked="" type="checkbox"/>	3D6.00154F6673
		<input checked="" type="checkbox"/>	3D6.001805F9F0

Each ID slot in the table has a "Clear" button next to it. At the bottom of the dialog are four buttons: "Cancel", "Clear All IDs", ☒ Optimize Matings, and "Proceed".

When this is complete, Mate Matcher is ready to create mating pairs. The default is for genetic optimization to be used when creating pairs. However, if the user just wants to use Mate Matcher to record mating pairs and is not interested in optimization or does not have the necessary genetic data to perform optimization, then the 'Optimize Matings' check box at the bottom of the form may be unchecked, in which case mating pairs are matched by the order in which they were entered. Finally, click the 'Proceed' button to create mating pairs.

## Main Form Part II

After hitting the 'Proceed' button, the matched mating pairs will be listed on the main form.

The screenshot displays the 'Mate Matcher: Mating Optimization Software' window. On the left, a red sidebar contains the 'Mating Input Criteria' section with the following settings: Number of Females set to 2, Number of Males set to 3, Mating Design set to 1 to 1, and Relatedness Metric set to Proportion of Shared Alleles. A green 'Add Mating Individuals' button is at the bottom of this sidebar. The main area features a table of mating pairs. Above the table, there is a 'Current ID' text box and a checked 'Include Prefix (PIT Tags)' checkbox. The table has columns for Family, Female, Male, Relatedness, Flag, Mated, and Released (subdivided into Fem. and Male). Two rows of data are shown, both with a yellow flag icon. At the bottom of the main area, an 'Average' value of 0.375 is displayed, along with 'Exit' and 'Update Matings Table' buttons.

Family	Female	Male	Relatedness	Flag	Mated	Released	
						Fem.	Male
2019-1	3D6.001805FA9F	3D6.001805FA19	0.361		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2019-2	3D6.00154F668A	3D6.001805F9F0	0.389		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To quickly locate an individual, the user can scan or enter an ID into the 'Current ID' text box and the associated tag will be highlighted.

Mate Matcher: Mating Optimization Software

Options

**MATE MATCHER**

Current ID: 3D6.001805FA19 ☒ Include Prefix (PIT Tags)

Family	Female	Male	Relatedness	Add Comment	Flag	Mated	Released	
							Fem.	Male
2019-1	3D6.001805FA9F	3D6.001805FA19	0.361	Add Comment		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2019-2	3D6.00154F668A	3D6.001805F9F0	0.389	Add Comment		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Average: 0.375

Exit Update Matings Table

**Mating Input Criteria**

Number of Females: 2

Number of Males: 3

Mating Design:

- ☒ 1 to 1
- ☐ 1 to 2
- ☐ 2 to 2
- ☐ 1 to 3
- ☐ 3 to 3

Relatedness Metric:

Proportion of Shared Alleles

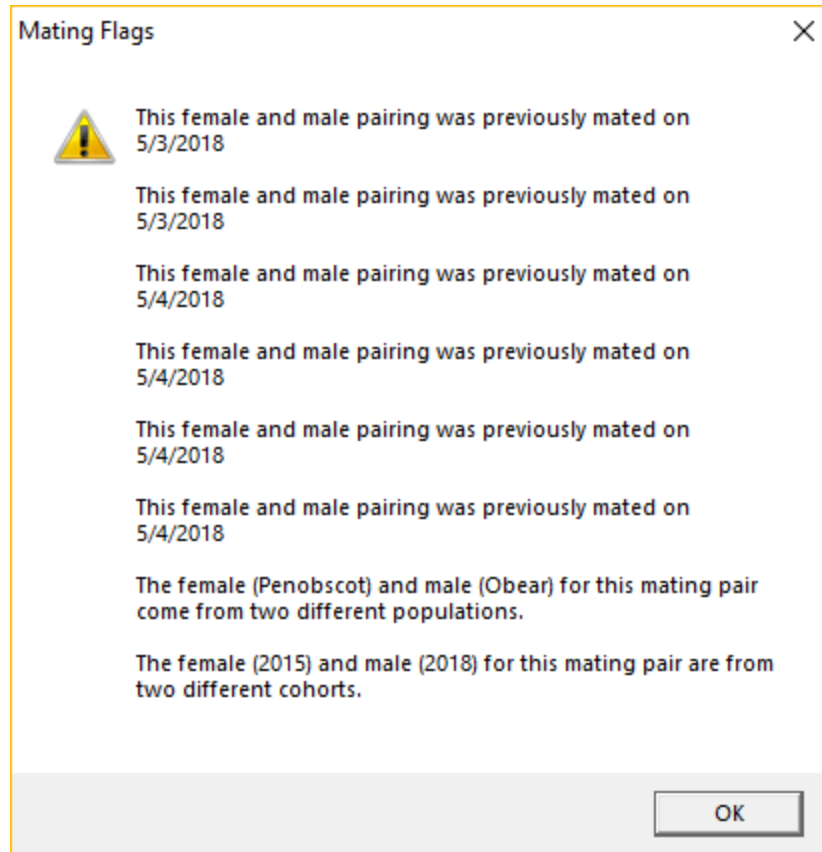
Add Mating Individuals

To add any comments about the mating pair, click the 'Add Comment' button and enter the text in the pop-up window.

**Add Comment**

Remove Comment Cancel Add Comment


If any of the warning flag settings specified by the user have been violated then a flag will be displayed for the mating pair under the 'Flag' column. Clicking on the flag will display a list of the violated flags.



Once a matched pair has been mated, the user should check the associated box under the 'Mated' column. When checked, both the female and male will be highlighted in red to indicate that the mating has been completed.

Mate Matcher: Mating Optimization Software

Options



Current ID

☒ Include Prefix (PIT Tags)

Family	Female	Male	Relatedness	Flag	Mated	Released	
						Fem.	Male
2019-1	3D6.001805FA9F	3D6.001805FA19	0.361		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2019-2	3D6.00154F668A	3D6.001805F9F0	0.389		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Mating Input Criteria**

Number of Females

Number of Males

Mating Design

- ☒ 1 to 1
- ☐ 1 to 2
- ☐ 2 to 2
- ☐ 1 to 3
- ☐ 3 to 3

Relatedness Metric

Average

A checked 'Mated' box also locks in these individuals and precludes them from being removed if re-optimization becomes necessary.

## Re-optimization

Re-optimization takes place when at least one of the originally optimized mating pairs has been successfully mated, but one or more individuals from the remaining mating pairs needs to be replaced. To re-optimize, the user clicks the 'Add Mating Individuals' button to reopen the Individual Input form. Individuals from pairs that are checked as having been mated will be greyed out, disabling the ability to remove them from the parent pool.

Individual Input

×

Current ID

Clear

☒ Use ID Input Template

### #####

▼

Clear Templates

Sex

Update

Population

Update

Cohort

Update

Prior Matings

Add Current ID

1 to 1 Mating Design

Family ID	Females		Use		Males	
2019-1	3D6.001805FA9F	Clear	<input checked="" type="checkbox"/>	1	3D6.001805FA19	Clear
2019-2	3D6.00154F668A	Clear	<input checked="" type="checkbox"/>	2	3D6.00154F6673	Clear
			<input type="checkbox"/>	3	3D6.001805F9F0	Clear

Cancel

Clear All IDs


☒ Optimize Matings

Proceed

At this point the user can clear and replace any necessary individuals, or if it is a male and there are surplus individuals present in the pool then they have the option of unchecking the 'Use' box for that male. Once this is complete the user would then click on the 'Proceed' button and mating pair matching occurs again for all of the individuals that aren't greyed out.

Mate Matcher: Mating Optimization Software

Options



Mating Input Criteria

Number of Females

Number of Males

Mating Design

- ☒ 1 to 1
- ☐ 1 to 2
- ☐ 2 to 2
- ☐ 1 to 3
- ☐ 3 to 3

Relatedness Metric

Proportion of Shared Alleles

Add Mating Individuals

Current ID 
☒ Include Prefix (PIT Tags)

Family	Female	Male	Relatedness		Flag	Mated	Released	
							Fem.	Male
2019-1	3D6.001805FA9F	3D6.001805FA19	0.361	Add Comment		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2019-2	3D6.00154F668A	3D6.00154F6673	0.472	Add Comment		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Average

Exit


Update Matings Table

## Appending Mating Pairs

When all of the matching pairs have been mated, the user can specify if the female, male, or both are going to be released into the wild after mating. Once this is complete, the user needs to record the matings and all of the associated information to the matings table. This is done by clicking on the 'Update Matings Table' button. Only mating pairs with the 'Mated' box checked will be added to the table. A message will pop-up when the update is complete.

Mate Matcher: Mating Optimization Software

Options



Current ID

☒ Include Prefix (PIT Tags)

Family	Female	Male	Relatedness		Flag	Mated	Released	
							Fem.	Male
2019-1	3D6.001805FA9F	3D6.001805FA19	0.361	Add Comment		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2019-2	3D6.00154F668A	3D6.00154F6673	0.472	Add Comment		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Mating Input Criteria

Number of Females
2

Number of Males
3

Mating Design

- ☒ 1 to 1
- ☐ 1 to 2
- ☐ 2 to 2
- ☐ 1 to 3
- ☐ 3 to 3

Relatedness Metric
Proportion of Shared Alleles


Add Mating Individuals

Exit

Average
0.417

Update Matings Table

Update Complete


The selected matings have been added to the table 'Matings'.

OK