

# Package: bboudata (via r-universe)

September 17, 2024

**Title** Data for bbou Project

**Version** 0.3.1

**Description** This package contains boreal caribou demographic data which can be used as validation for the associated shiny-app and analysis. The overall goal of the bbou packages is to develop a more standardized and consistent method for the comparison of boreal caribou survival rates, recruitment and population dynamics across Canada.

**License** Apache License ( $\geq 2$ )

**URL** <https://poissonconsulting.github.io/bboudata/>,  
<https://github.com/poissonconsulting/bboudata>

**BugReports** <https://github.com/poissonconsulting/bboudata/issues>

**Depends** R ( $\geq 3.4$ )

**Imports** chk, tibble

**Suggests** bbousims, testthat ( $\geq 3.0.0$ )

**Remotes** poissonconsulting/bbousims

**Config/testthat/edition** 3

**Encoding** UTF-8

**LazyData** true

**Roxygen** list(markdown = TRUE)

**RoxygenNote** 7.3.1

**Repository** <https://poissonconsulting.r-universe.dev>

**RemoteUrl** <https://github.com/poissonconsulting/bboudata>

**RemoteRef** HEAD

**RemoteSha** bf967a7efb783a811730353195c161e708aa9ea9

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bbd\_chk\_data\_recruitment

*Check recruitment data structure*

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### Description

The data must follow all requirements to not error. This format is required for usage of the bbou suite of tools.

### Usage

```
bbd_chk_data_recruitment(data, x_name = deparse(substitute(data)))
```

### Arguments

data	The data frame check.
x_name	Name of data frame.

### Format

The data must follow the requirements:

**PopulationName** Name of the herd or population

**Year** The calendar year the observation occurred. Must be a positive integer.

**Month** The calendar month the observation occurred. Must be an integer between 1 and 12.

**Day** The day the observation occurred. Must be an integer between 1 and 31.

**Cows** The total number of cows counted in each group in a survey/year. Must be a positive integer.

**Bulls** The total number of bulls counted in each group in a survey/year. Must be a positive integer

**UnknownAdults** The total number of adults counted that the sex could not be identified in each group in a survey/year. Must be a positive integer.

**Yearlings** The total number of yearlings that did not have the sex identified in each group in a survey/year. Must be a positive integer.

**Calves** The total number of calves counted in each group in a survey/year. Must be a positive integer.

### Value

An invisible copy of the original data frame.

### Examples

```
bbd_chk_data_recruitment(bbourecruit_a)
bbd_chk_data_recruitment(bbourecruit_b)
bbd_chk_data_recruitment(bbourecruit_c)
# this example will error as it doesn't follow the requirements
x <- bbourecruit_a
x[1, 4] <- 32L
try(bbd_chk_data_recruitment(x))
```

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bbd\_chk\_data\_survival *Check survival data structure*

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### Description

The data must follow all requirements to not error. This format is required for usage of the bbou suite of tools.

### Usage

```
bbd_chk_data_survival(data, x_name = deparse(substitute(data)))
```

### Arguments

<code>data</code>	The data frame check.
<code>x_name</code>	Name of data frame.

### Format

The data must follow the requirements:

**PopulationName** Name of the herd or population

**Year** The calendar year the observation occurred. Must be a positive integer.

**Month** The calendar month the observation occurred. Must be an integer between 1 and 12.

**StartTotal** The total number of collared caribou at the start of the month. Must be a positive integer.

**MortalitiesCertain** The total number of confirmed mortalities in that month. Must be a positive integer.

**MortalitiesUncertain** The total number of mortalities that were not confirmed in that month. Must be a positive integer.

### Value

An invisible copy of the original data frame.

### Examples

```
bbd_chk_data_survival(bbousurv_a)
bbd_chk_data_survival(bbousurv_b)
bbd_chk_data_survival(bbousurv_c)

# this example will error as it doesn't follow the requirements
x <- bbousurv_c
x[1, 3] <- 14L
try(bbd_chk_data_survival(x))
```

---

bbourecruit\_a

*Sample Data for Population A*

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### Description

The data contains recruitment information for boreal caribou population B which spans 27 years.

### Usage

```
bbourecruit_a
```

### Format

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**Day** The day the observation occurred

**Cows** The number of cows counted in the group

**Bulls** The number of bulls counted in the group

**UnknownAdults** The number of adults which could not be sexed in the group

**Yearlings** The number of yearlings counted in the group

**Calves** The number of calves counted in the group

**Details**

The data is released under the [Open Government Licence - Alberta](#)

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bbourecruit_b	<i>Sample Data for Population B</i>
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**Description**

The data contains recruitment information for boreal caribou population B which spans 15 years.

**Usage**

bbourecruit\_b

**Format**

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**Day** The day the observation occurred

**Cows** The number of cows counted in the group

**Bulls** The number of bulls counted in the group

**UnknownAdults** The number of adults which could not be sexed in the group

**Yearlings** The number of yearlings counted in the group

**Calves** The number of calves counted in the group

**Details**

The data is released under the [Open Government Licence - Alberta](#)

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bbourecruit_c	<i>Sample Data for Population C</i>
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### Description

The data contains recruitment information for boreal caribou population C which spans 9 years.

### Usage

bbourecruit\_c

### Format

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**Day** The day the observation occurred

**Cows** The number of cows counted in the group

**Bulls** The number of bulls counted in the group

**UnknownAdults** The number of adults which could not be sexed in the group

**Yearlings** The number of yearlings counted in the group

**Calves** The number of calves counted in the group

### Details

The data is released under the [Open Government Licence - Alberta](#)

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bbourecruit_sim1	<i>Simulated Data for Scenario 1</i>
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### Description

Data are simulated with `bbousims` package. This is a stable population spanning 20 years with annual variation on female adult survival and female calf survival. Coverage is low, with 20% of groups observed and 10 collars.

### Usage

bbourecruit\_sim1

**Format**

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**Day** The day the observation occurred

**Cows** The number of cows counted in the group

**Bulls** The number of bulls counted in the group

**UnknownAdults** The number of adults which could not be sexed in the group

**Yearlings** The number of yearlings counted in the group

**Calves** The number of calves counted in the group

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bbourecruit_sim2	<i>Simulated Data for Scenario 2</i>
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**Description**

Data are simulated with `bbousims` package. This is a stable population spanning 20 years with annual variation on female adult survival and female calf survival. Coverage is high, with 70% of groups observed and 40 collars.

**Usage**

bbourecruit\_sim2

**Format**

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**Day** The day the observation occurred

**Cows** The number of cows counted in the group

**Bulls** The number of bulls counted in the group

**UnknownAdults** The number of adults which could not be sexed in the group

**Yearlings** The number of yearlings counted in the group

**Calves** The number of calves counted in the group

---

bbourecruit\_sim3      *Simulated Data for Scenario 3*

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### Description

Data are simulated with `bbousims` package. This is a population spanning 20 years with negative trend on female adult survival and additional annual variation on female adult survival and female calf survival. Coverage is medium, with 50% of groups observed and 25 collars.

### Usage

```
bbourecruit_sim3
```

### Format

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**Day** The day the observation occurred

**Cows** The number of cows counted in the group

**Bulls** The number of bulls counted in the group

**UnknownAdults** The number of adults which could not be sexed in the group

**Yearlings** The number of yearlings counted in the group

**Calves** The number of calves counted in the group

---

bbourecruit\_sim4      *Simulated Data for Scenario 4*

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### Description

Data are simulated with `bbousims` package. This is a stable population spanning 20 years with small population size (50 initial adult females) and annual variation on female adult survival and female calf survival. Coverage is medium, with 40% of groups observed and 20 collars.

### Usage

```
bbourecruit_sim4
```



**Format**

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**Day** The day the observation occurred

**Cows** The number of cows counted in the group

**Bulls** The number of bulls counted in the group

**UnknownAdults** The number of adults which could not be sexed in the group

**Yearlings** The number of yearlings counted in the group

**Calves** The number of calves counted in the group

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 bbousurv\_a

*Sample Data for Population A*


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**Description**

The data contains survival information for boreal caribou population A which spans 31 years.

**Usage**

bbousurv\_a

**Format**

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**StartTotal** The total number of collared caribou at the start of the month

**MortalitiesCertain** The number of confirmed caribou mortalities in the month

**MortalitiesUncertain** The total number of mortalities that were not confirmed in that month

**Details**

The data is released under the [Open Government Licence - Alberta](#)

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bbousurv_b	<i>Sample Data for Population B</i>
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**Description**

The data contains survival information for boreal caribou population B which spans 18 years.

**Usage**

bbousurv\_b

**Format**

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**StartTotal** The total number of collared caribou at the start of the month

**MortalitiesCertain** The number of confirmed caribou mortalities in the month

**MortalitiesUncertain** The total number of mortalities that were not confirmed in that month

**Details**

The data is released under the [Open Government Licence - Alberta](#)

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bbousurv_c	<i>Sample Data for Population C</i>
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**Description**

The data contains survival information for boreal caribou population C which spans 11 years.

**Usage**

bbousurv\_c

**Format**

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**StartTotal** The total number of collared caribou at the start of the month

**MortalitiesCertain** The number of confirmed caribou mortalities in the month

**MortalitiesUncertain** The total number of mortalities that were not confirmed in that month

**Details**

The data is released under the [Open Government Licence - Alberta](#)

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bbosurv_sim1	<i>Simulated Data for Scenario 1</i>
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**Description**

Data are simulated with `bbosims` package. This is a stable population spanning 20 years with annual variation on female adult survival and female calf survival. Coverage is low, with 20% of groups observed and 10 collars.

**Usage**

bbosurv\_sim1

**Format**

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**StartTotal** The total number of collared caribou at the start of the month

**MortalitiesCertain** The number of confirmed caribou mortalities in the month

**MortalitiesUncertain** The total number of mortalities that were not confirmed in that month

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bbosurv_sim2	<i>Simulated Data for Scenario 2</i>
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**Description**

Data are simulated with `bbosims` package. This is a stable population spanning 20 years with annual variation on female adult survival and female calf survival. Coverage is high, with 70% of groups observed and 40 collars.

**Usage**

bbosurv\_sim2

**Format**

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**StartTotal** The total number of collared caribou at the start of the month

**MortalitiesCertain** The number of confirmed caribou mortalities in the month

**MortalitiesUncertain** The total number of mortalities that were not confirmed in that month

---

bbousurv\_sim3

*Simulated Data for Scenario 3*

---

**Description**

Data are simulated with `bbousims` package. This is a population spanning 20 years with negative trend on female adult survival and additional annual variation on female adult survival and female calf survival. Coverage is medium, with 50% of groups observed and 25 collars.

**Usage**

bbousurv\_sim3

**Format**

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**StartTotal** The total number of collared caribou at the start of the month

**MortalitiesCertain** The number of confirmed caribou mortalities in the month

**MortalitiesUncertain** The total number of mortalities that were not confirmed in that month

---

`bbosurv_sim4`*Simulated Data for Scenario 4*

---

**Description**

Data are simulated with `bbosims` package. This is a stable population spanning 20 years with small population size (50 initial adult females) and annual variation on female adult survival and female calf survival. Coverage is medium, with 40% of groups observed and 20 collars.

**Usage**`bbosurv_sim4`**Format**

A tibble with columns:

**PopulationName** Name of the population

**Year** The year the observation occurred

**Month** The month the observation occurred

**StartTotal** The total number of collared caribou at the start of the month

**MortalitiesCertain** The number of confirmed caribou mortalities in the month

**MortalitiesUncertain** The total number of mortalities that were not confirmed in that month

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