

# Spotify Data

Yanzun Jiang,

October 10, 2024

## Table of contents

<b>1</b>	<b>Introduction</b>	<b>2</b>
<b>2</b>	<b>Data</b>	<b>2</b>
2.1	Overview . . . . .	2
2.2	Preview of the Dataset . . . . .	2
<b>3</b>	<b>Discussion</b>	<b>3</b>
<b>A</b>	<b>Appendix</b>	<b>4</b>
A.1	Data Cleaning . . . . .	4
A.2	Summary Statistics of the Data . . . . .	4
	<b>References</b>	<b>5</b>

# 1 Introduction

To conduct the analysis of songs on Spotify, a dataset downloaded from Spotify (2024) was utilized, as described in Section 2. Based on the initial findings, it was observed that higher air temperatures are correlated with higher water temperatures, while higher water temperatures coincided with an increase in waterfowl activity in some extent(Section 3). Also, supplementary insights are provided in Section A.

## 2 Data

### 2.1 Overview

The dataset used in this analysis is the songs of David Tao sourced from Spotify (Spotify (2024)). It records various aspects of the songs by David from 1997 to present.

The variables analyzed in this study are listed below:

**album\_release\_date**: the date that the album was released.

**energy**: the energy of the song.

**key**: the main key of the song.

**valence**: the degree of happiness of the song.

**tempo**: the pace of the song.

The dataset was accessed using the `spotifyr` package (Thompson et al. (2022)). For the analysis, the R programming language was employed (R Core Team (2023)), utilizing the `tidyverse` (Wickham et al. (2019)) package for data cleaning, transformation, visualization, the `knitr` package to visualize the data, and the `here` package (Müller (2020)) accessing the data in this analysis. Afterward, the cleaned dataset was processed and tested using additional functions from the `tidyverse` package (Wickham et al. (2019)).

### 2.2 Preview of the Dataset

This (Table 1) is the preview of the dataset.

Table 1: Preview of Data

album_release_date	energy	key	valence	tempo
2017-06-08	0.693	8	0.293	115.875
2017-06-08	0.770	6	0.480	110.940

Table 1: Preview of Data

album_release_date	energy	key	valence	tempo
2017-06-08	0.726	1	0.637	94.983
2017-06-08	0.717	6	0.650	187.903
2017-06-08	0.661	6	0.411	96.011
2017-06-08	0.807	2	0.533	121.067

### 3 Discussion

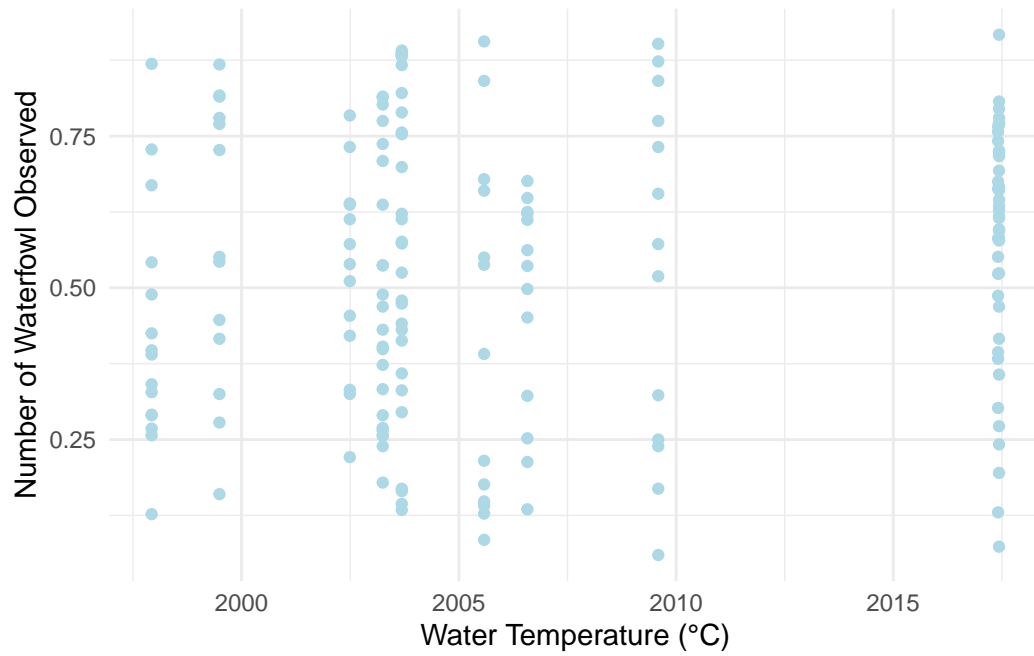


Figure 1: Relationship Between Water Temperature and Waterfowl Observations at Toronto Beaches

## A Appendix

### A.1 Data Cleaning

The data cleaning process involved tidying the dates, filtering out useless columns from the raw dataset, and filtering out observations with NAs.

### A.2 Summary Statistics of the Data

The summary statistics provides key statistical insights into the environmental variables analyzed at Toronto beaches. For each variable, the summarize tables (**?@tbl-summarise-air**, **?@tbl-summarise-water**, and **?@tbl-summarise-fowl**) reports the mean, median, variance, minimum value, maximum value, and interquartile range of those variables, offering a concise overview of range, central tendencies, and variability in the data.

## References

- Müller, Kirill. 2020. *Here: A Simpler Way to Find Your Files*. <https://CRAN.R-project.org/package=here>.
- R Core Team. 2023. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.
- Spotify. 2024. “Spotify Music Data.” Data retrieved from <https://open.spotify.com>.
- Thompson, Charlie, Daniel Antal, Josiah Parry, Donal Phipps, and Tom Wolff. 2022. *Spotifyr: R Wrapper for the 'Spotify' Web API*. <https://github.com/charlie86/spotifyr>.
- Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D’Agostino McGowan, Romain François, Garrett Golemund, et al. 2019. “Welcome to the tidyverse.” *Journal of Open Source Software* 4 (43): 1686. <https://doi.org/10.21105/joss.01686>.