SLIDExCELL

Improving Data Collection of Environmental Observations in Any Weather

Background

Swim Drink Fish (SDF) is an organization that monitors recreational water quality across Canada to connect communities to their local waters. As part of their water sampling process, SDF collects **environmental observations data**, which include the following:

- water rangers data
- water quality
- wildlife count
- weather conditions
- contamination sources
- water users

SDF staff currently record these data on paper and manually enter them into Excel to upload to and store in their database, which is time-consuming and inconvenient.

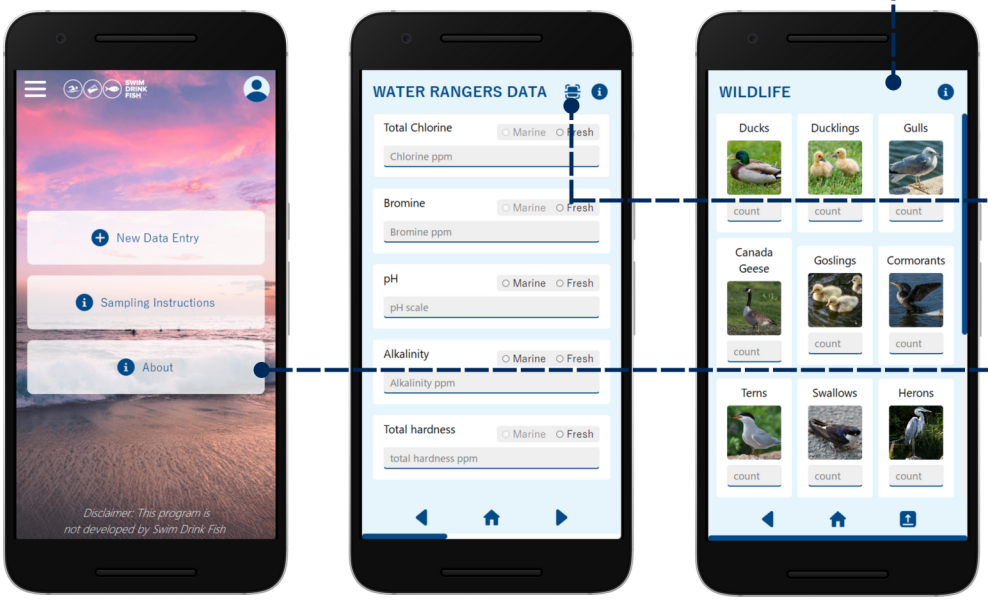
Opportunity

Develop a time-efficient and reliable data collection system for SDF to record and upload environmental observations

Our Design: The SlidexCell

The SlidexCell is a combined slider and app system designed for SDF to collect environmental observations data with speed and ease across different weather conditions. It records and automatically uploads data to a spreadsheet.

Key App Features



Data Fields
Collects all fields in SDF's environmental observations charts

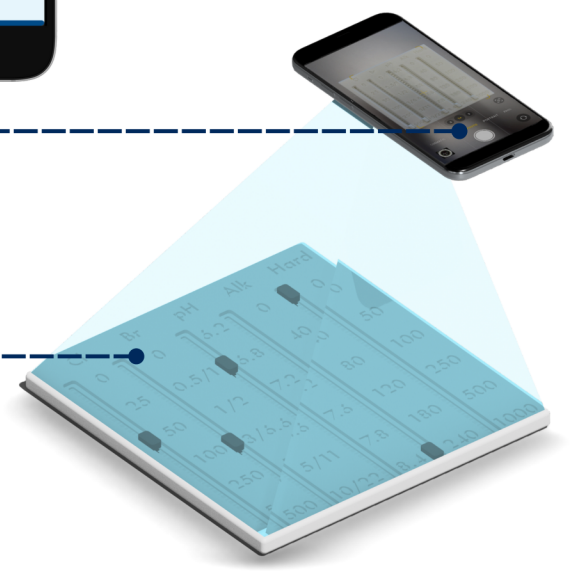
Scanning Button
Click it to scan the slider

Home Screen
Create a new data entry and access instructions

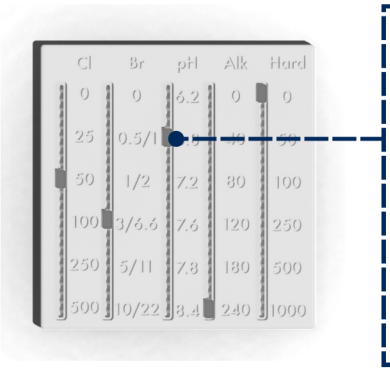
Key Slider Features

Scanning
Click the app's scanning button and hold the phone above the slider. Slider buttons are darkly coloured to ensure easy and accurate scanning.

Data Fields
Collects all water rangers data, which are derived from water testing kits (e.g., pH, alkalinity, etc.)



Key Slider Features (Continued)



Sliding and Locking Button: Ensures reliable and comfortable sliding

Spring Mechanism
Allows the button to slide while being pressed

Wedge Base and Groove
Wedge allows for easy assembly, groove locks the button in place

Curved Edges
Allows for smooth sliding and increases user comfort

Design Objectives

Compatibility
The design can modify any field in SDF's spreadsheet database

Time Efficiency
The design reduces the time required to record and upload data

Reliability
The design is functional in cold and rainy weather conditions

User Friendliness
The design is easy to use for those collecting data

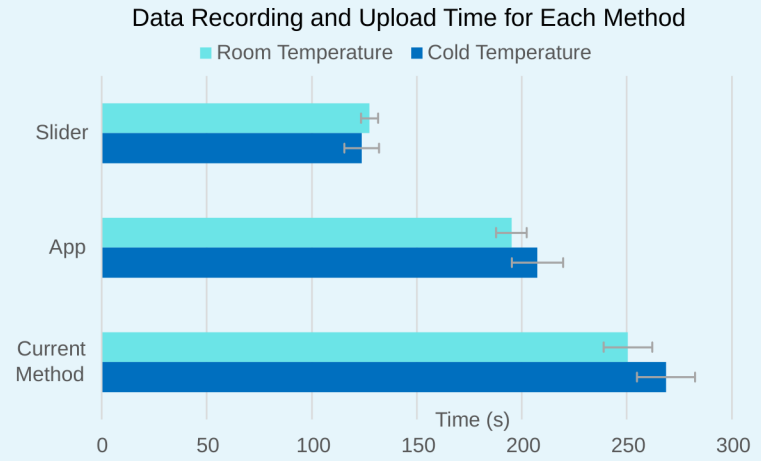
Sustainability
The design is safe for wildlife and uses eco-friendly materials

Safety
The design reduces exposure to hazards for those collecting data

Cost Efficiency
The design reduces manufacturing and maintenance costs

Test Results

We conducted testing to compare data collection times between the slider, app, and SDF's current method at room versus cold temperatures to emulate different weather conditions



Results showed that:

1. The app and slider collect data significantly faster than the current method
2. The slider shows the least change in time from room to cold temperatures

The slider and app were combined, as the slider best collects data that require direct contact with water (i.e., water rangers data)

Recommendations & Next Steps

Based on test results, research, and stakeholder engagement, we recommend the SlidexCell. We will consider the following next steps to further improve our product:

- Reduce slider size for increased portability
- Smoothen slider button movement
- Finalize design materials for slider
- Improve scanning feature accuracy
- Communicate with SDF staff to implement the SlidexCell within their organization

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SWIM DRINK FISH
Connecting people with water