Mobile App for Recreational Angler Intercept Survey

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Benefits

Angler intercept surveys currently collect data by paper and pencil format. Benefits of adopting an electronic approach:
- Immediate error detection and correction
- More timely data collection
- Eliminates data entry cost

Requirements

➢ Multiple platform: Android, iOS (Apple), others
➢ Not dependent on internet connection
➢ Ease of Use/Navigability: easy as paper and pencil
➢ Resource Efficiency: prolong battery life
➢ Accuracy: Built in data checks
➢ Data Storage: Hold one day of interviews on device
➢ Data Transfer: Upload data to a server

Data Model

Transactional: Data for each angler interview stored on completion of interview
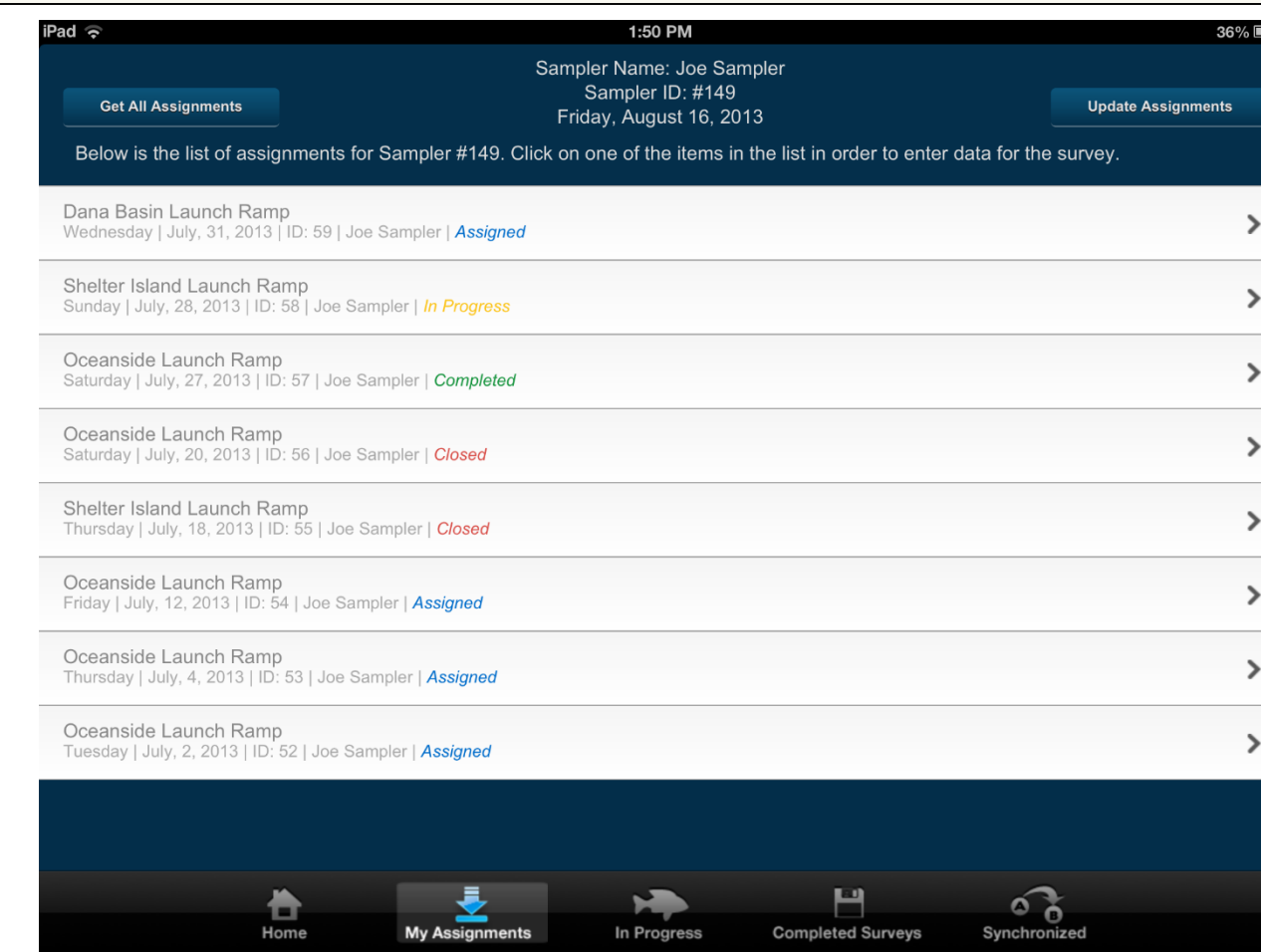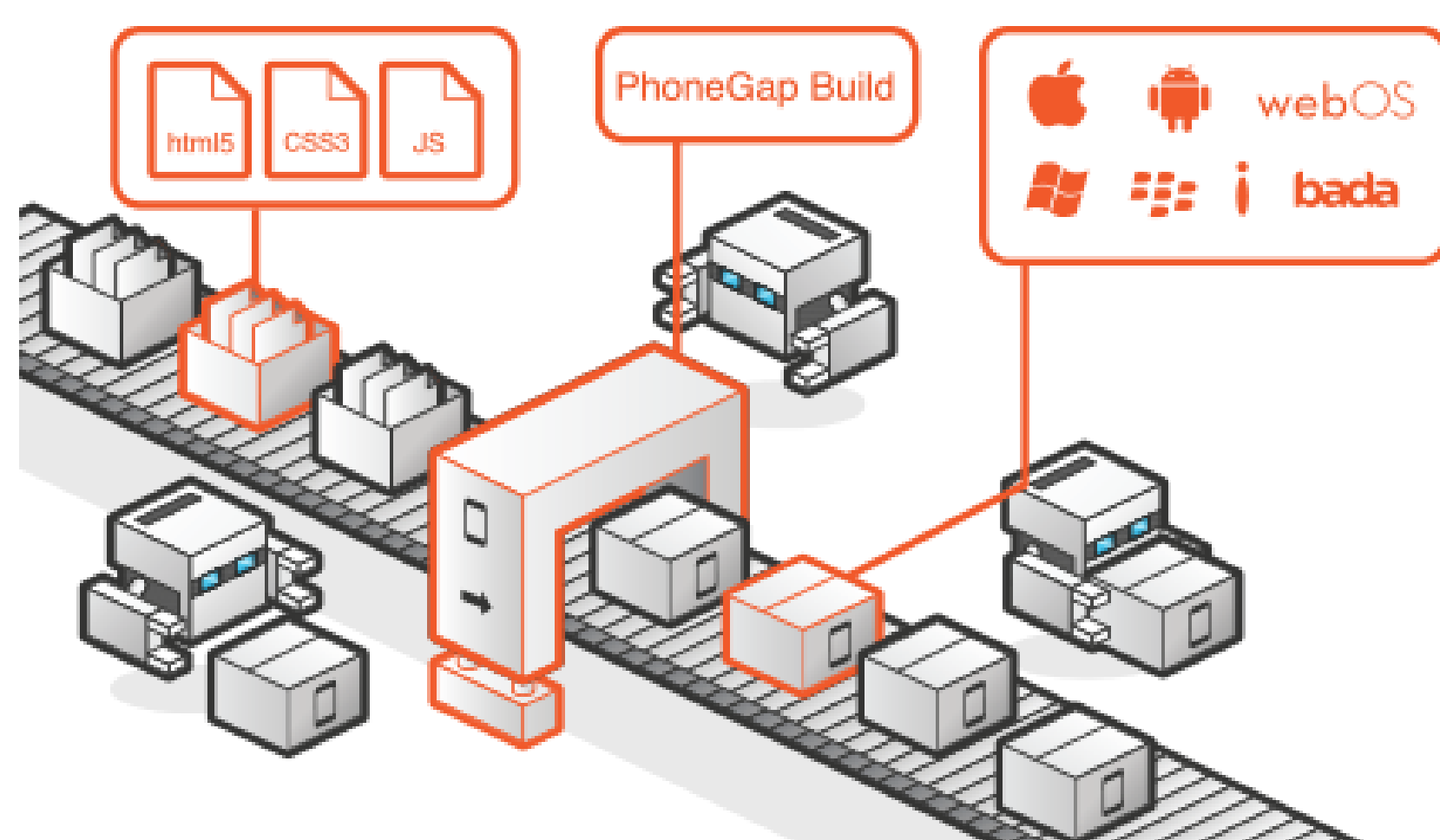Tiered: Series of one-to-many relationships
➢ Assignment: Date, Sampler, Site
  ➢ Trip: Angler, Trip details
    ➢ Species: Counts of retained/released
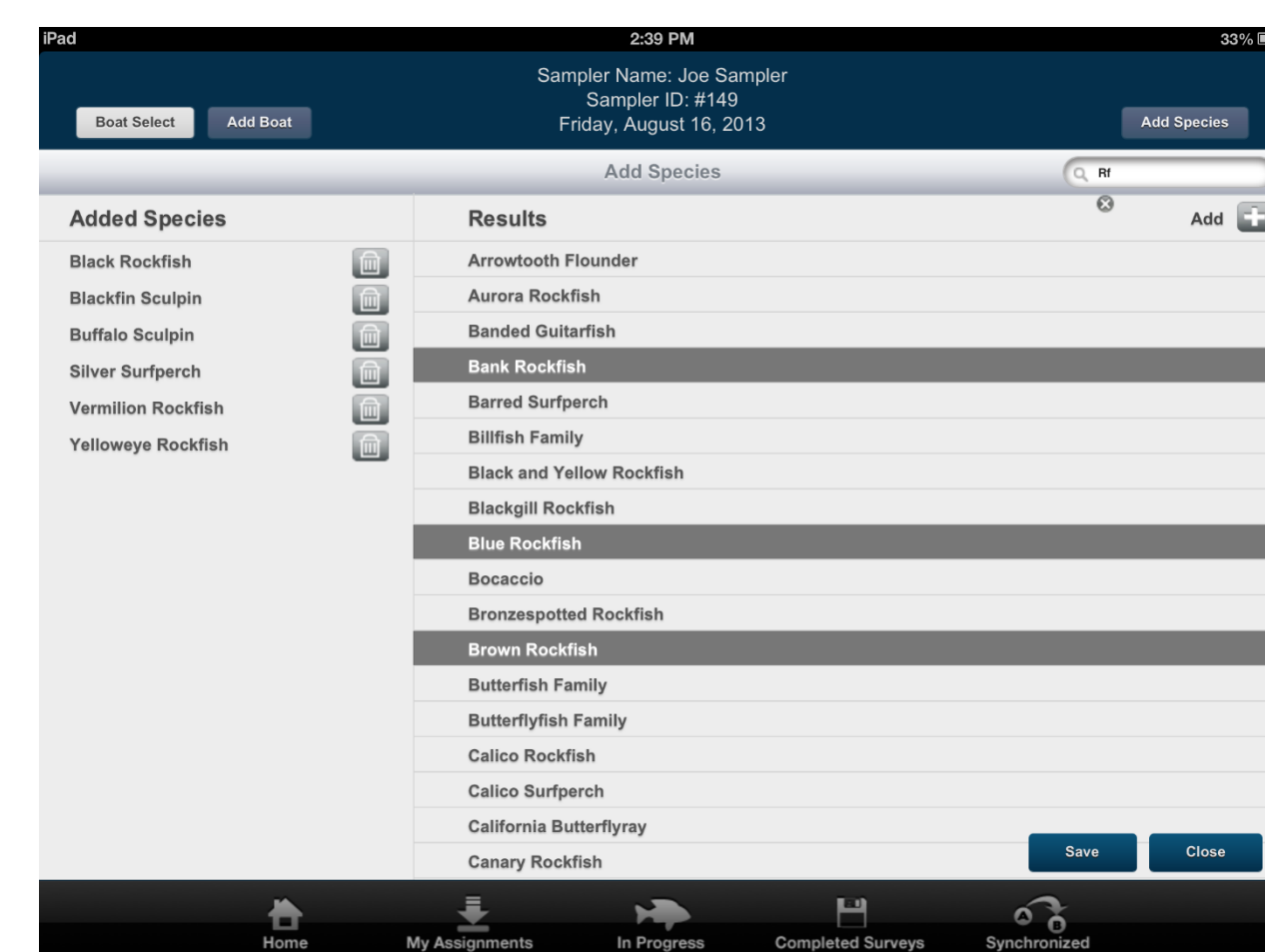   ➢ Biological: Length/Weight measures

Solution

Developed by Vitasys using standard web programming protocol and Phonegap.
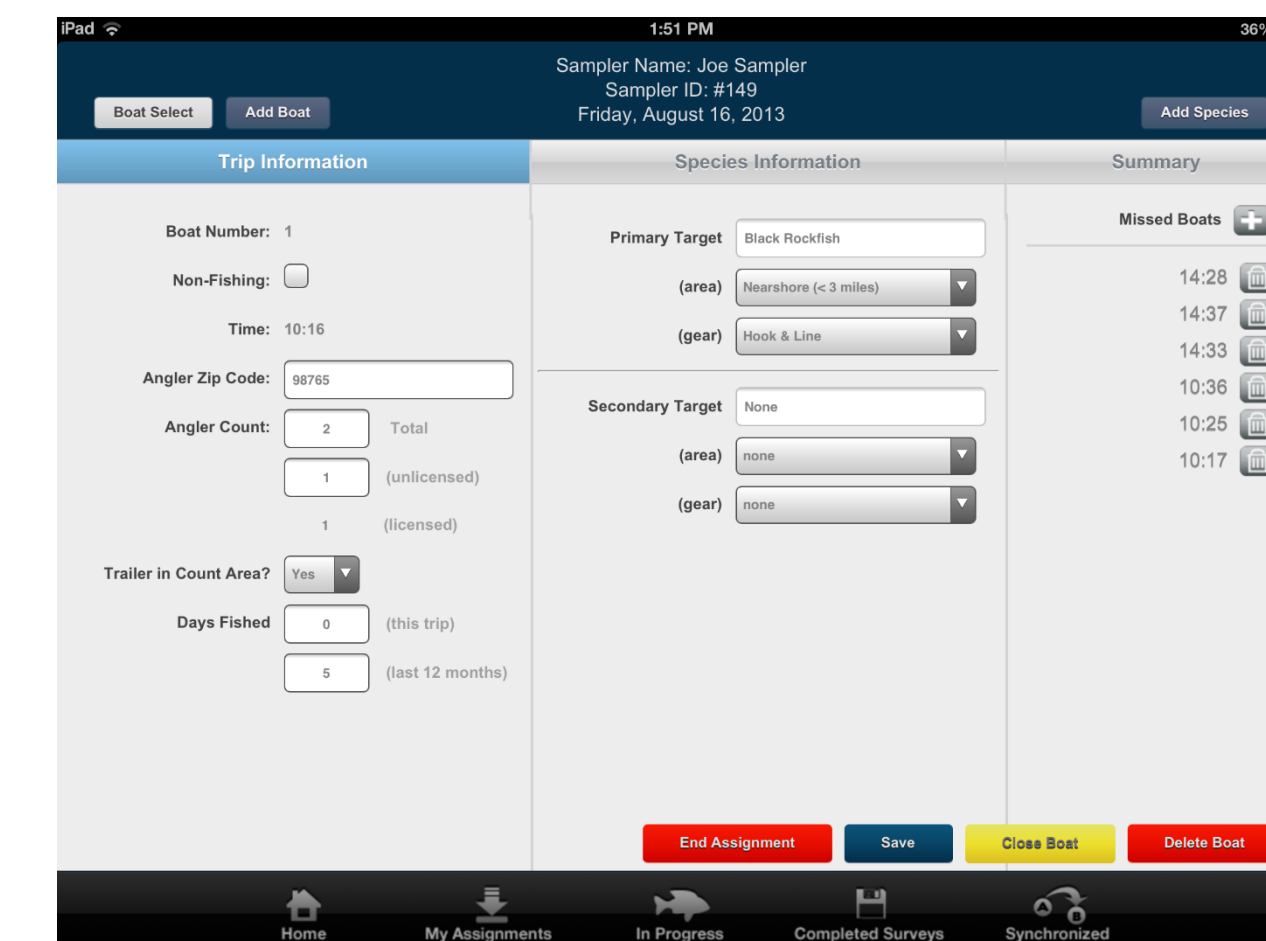
PhoneGap is an open source framework that will take mobile application code written in HTML, CSS and JavaScript ,and convert it to multiple platforms such as Apple's iOS, Android and Windows. This allows for maximum flexibility in the types of tablets deployed to the field.
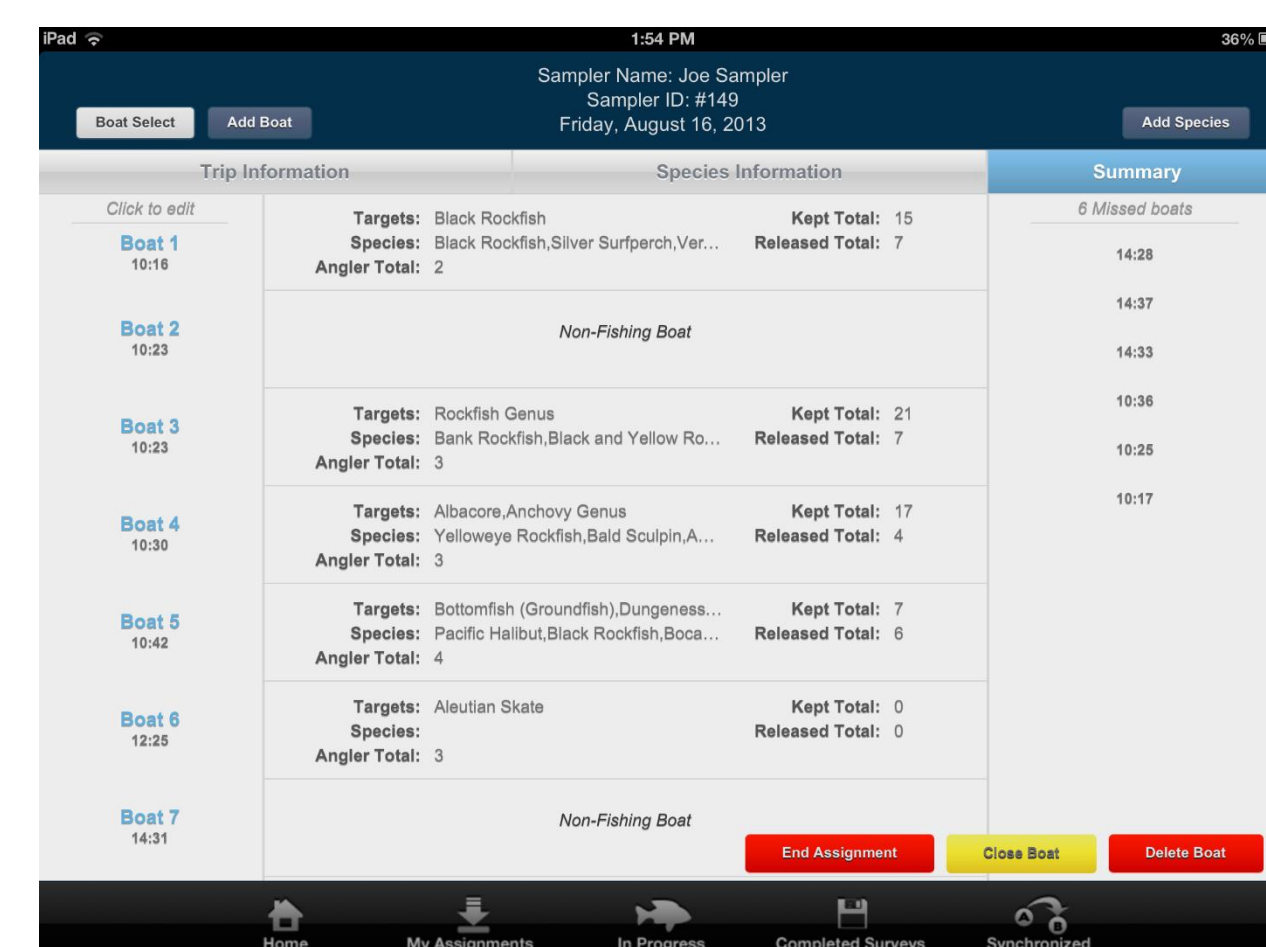
Samplers log in to the application with a wireless internet connection using a secured sign-on. They select their assignment for the day and disconnect from the internet. The tablet will retain the survey script while they travel to their sampling site. Upon arrival, they begin the survey by entering the starting trailer count.

When the first boat returns to the dock, the sampler begins an interview. The first screen gathers information about the anglers' trip. Interview number and start time are automatically generated and displayed. Data includes: angler zip code, number of anglers, whether trailer is in count area, and number of days fished in this trip and last 12 months. Primary and secondary targeted species, fishing area and gear are also captured. If a boat leaves the site while another interview is being conducted, a "missed boat" is tallied with a single touch.
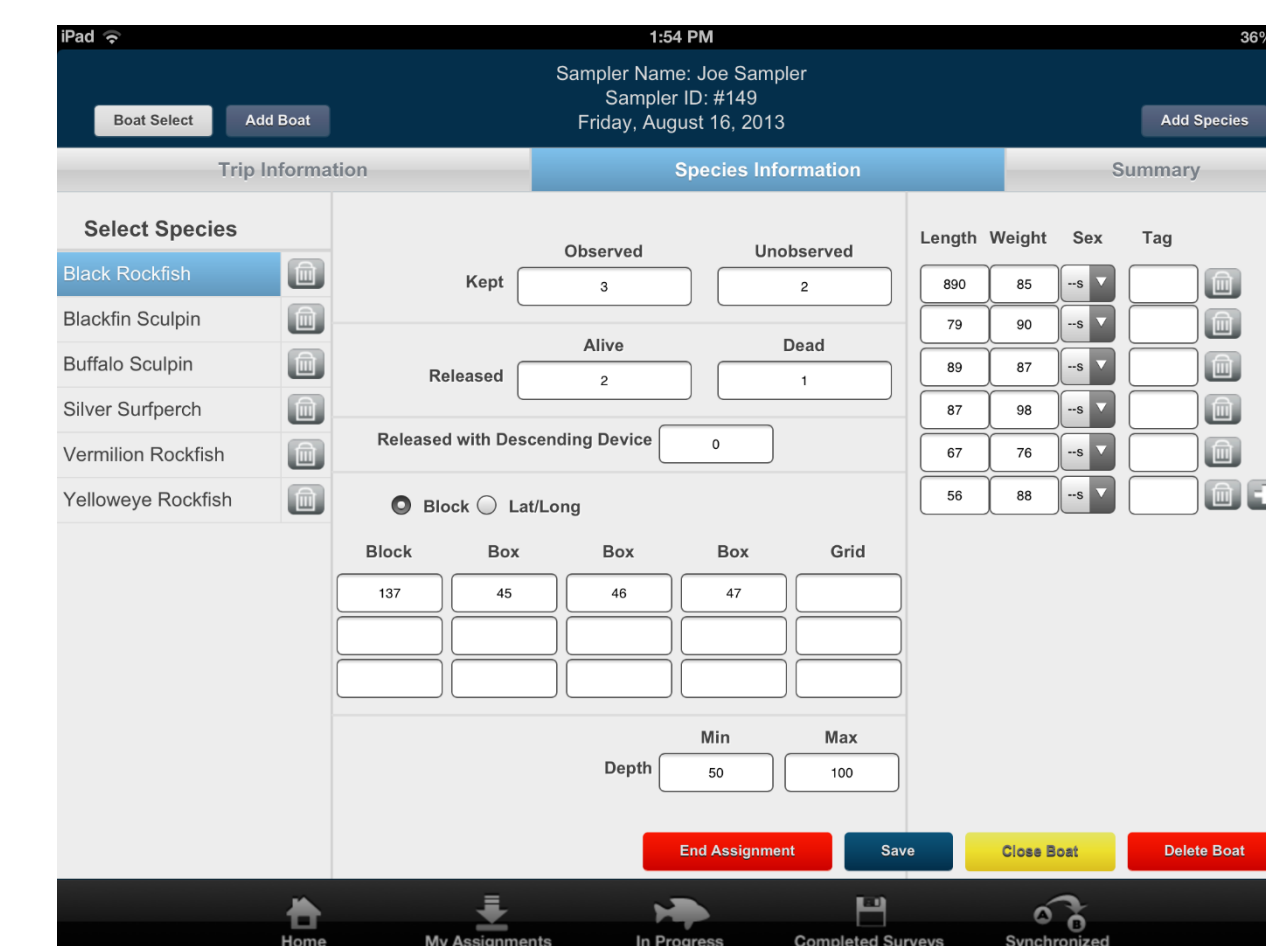
Species information is gathered next, starting by pressing the "Add Species" button. A smart search utility enables the sampler to quickly find a species on the list by searching for common name or species code. Multiple species can be tagged and then saved to the species encountered list to continue adding more data.

For each species, numbers of retained and released catch are entered, along with location and depth of catch. Biological measurements and tag information are captured with the ability to add fields for as many observations are required.

The Summary tab allows the samplers to view all of the interviews conducted during the day's assignment and select any one of them for editing if necessary.

After completing the sampling assignment for the day, all of the interview data is stored to the tablet. The sampler is directed to a screen listing completed assignments. At this point, the sampler leaves the sampling site, and when reestablishing a wifi connection, can select the completed assignment and sync the data to a PSMFC server. Data stored on the server is saved into a Microsoft SQL database. Data can now be viewed using the report feature of the web site and is available to any other software process.

Assessment

Internal evaluation determined that the iOS version provided easier navigation and less touch events.
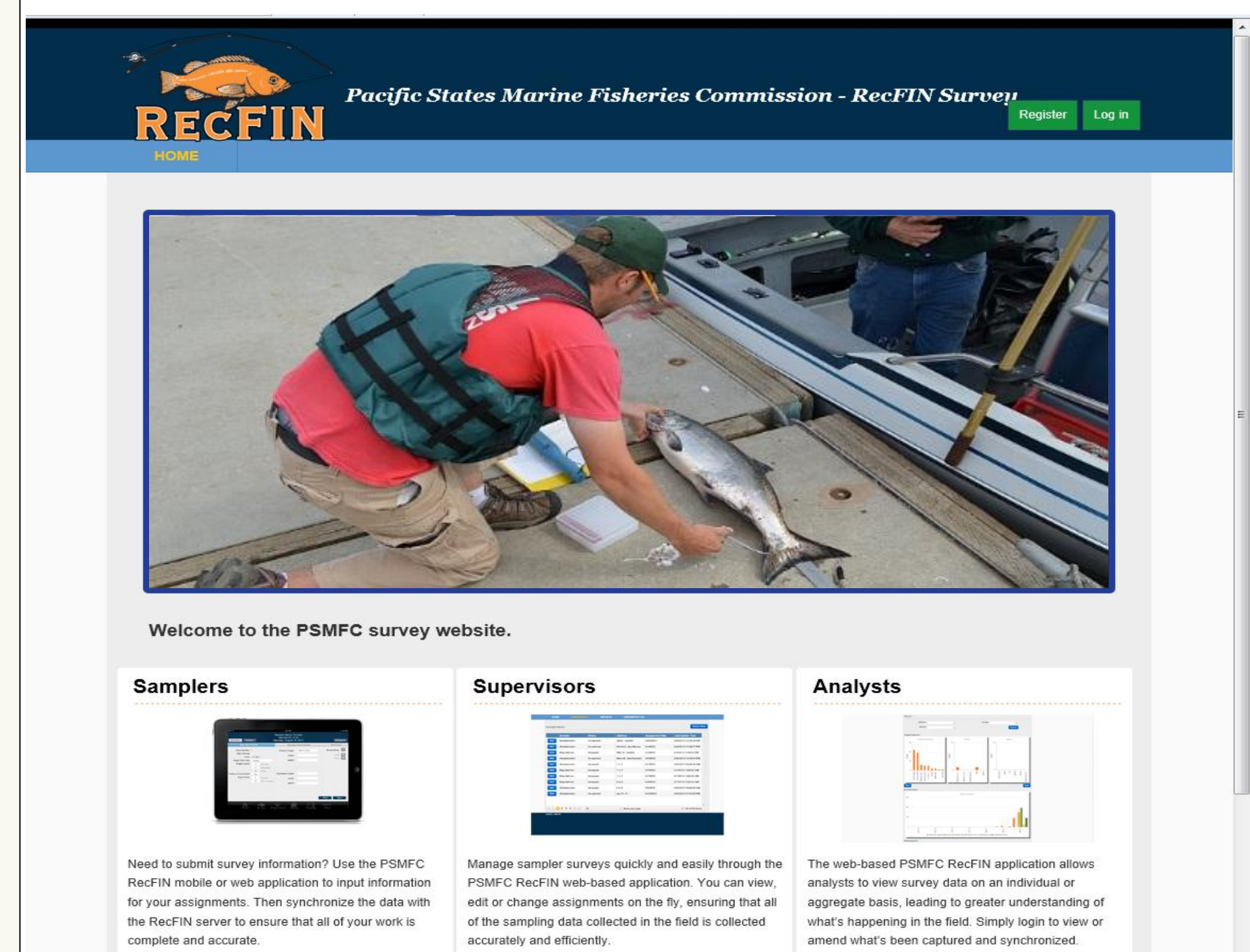
Highest quality cases by Lifeproof are exclusively made for Apple products. Cases are shock resistant and waterproof.

Decided to field test using only Apple iPads in Lifeproof cases.

Administration Web Site

Companion web site developed for several purposes:
➢ Adding samplers as users of the application and managing their passwords.
➢ Loading sampling assignments for supervisors to schedule and manage.
➢ Accessing reports of the data that has been collected. Managers and supervisors have the ability to view data in aggregate or one assignment at a time with a variety of filters and selection criteria.

Current Status

Field testing underway with ten iPads in California. Washington version under development. Four iPads to be deployed for testing in Washington. Feedback from the samplers is being gathered to make modifications. Development will soon be underway for a Puget Sound version.

Technology