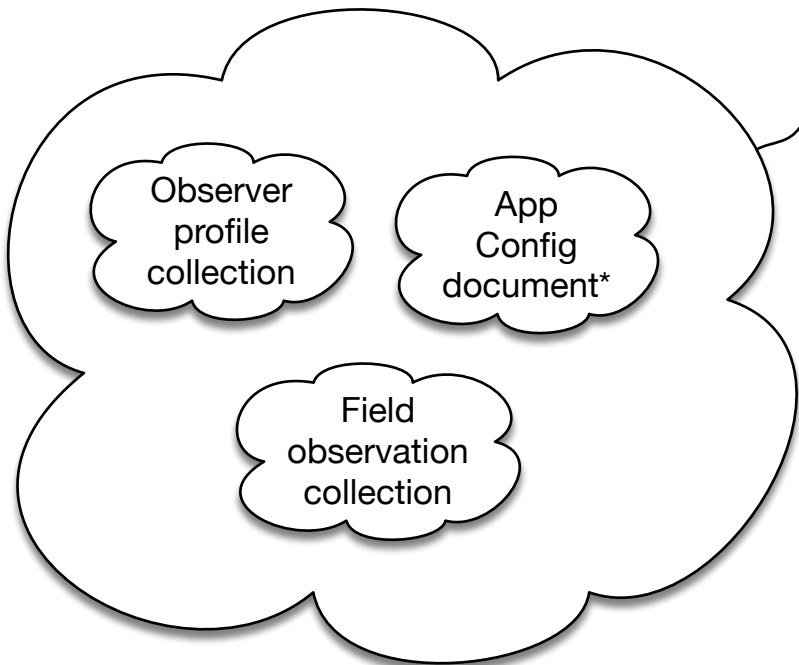


ETL Overview

PostgreSQL / PostGIS
Backroom

MongoDB Cloud



* Common set for all observers. It's essentially the menu entries for the app.

Extract schema

Copy documents from each collection to target tables, as unnormalized data. Retrieve per date range.

- App config
- Observer profiles
- Field observations

Transform schema

1. Normalize the app configuration data; merge with historic data tables and compute SCDs, which feed SCDs in the EDW. Examples:

- species
- calling codes, noise levels, etc
- observer profiles

2. Normalize and standardize the "sites."

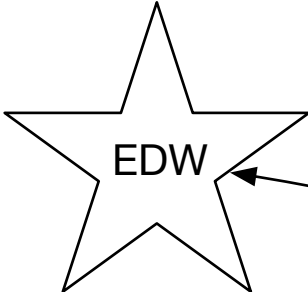
- spatialize the sites; eliminate "suspect" sites.
- smooth the sites (to avoid excessive duplication)
- enhance sites with spatial attributes (e.g., watershed)

3. Normalize and standardize the field observations.

- flag suspect or thin observations.

Load schema

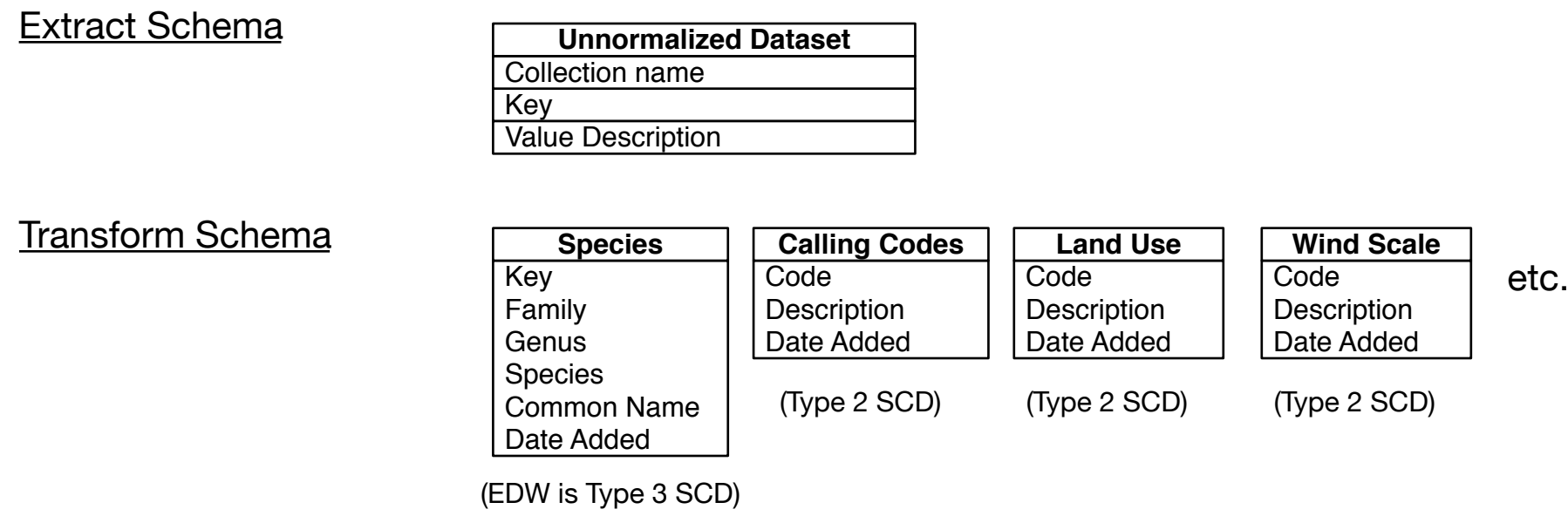
Views corresponding to the SCD dimensions in the EDW.
View corresponding to the Fact table
Work table of new date records to add to date dim.



Data transformations, in PostgreSQL

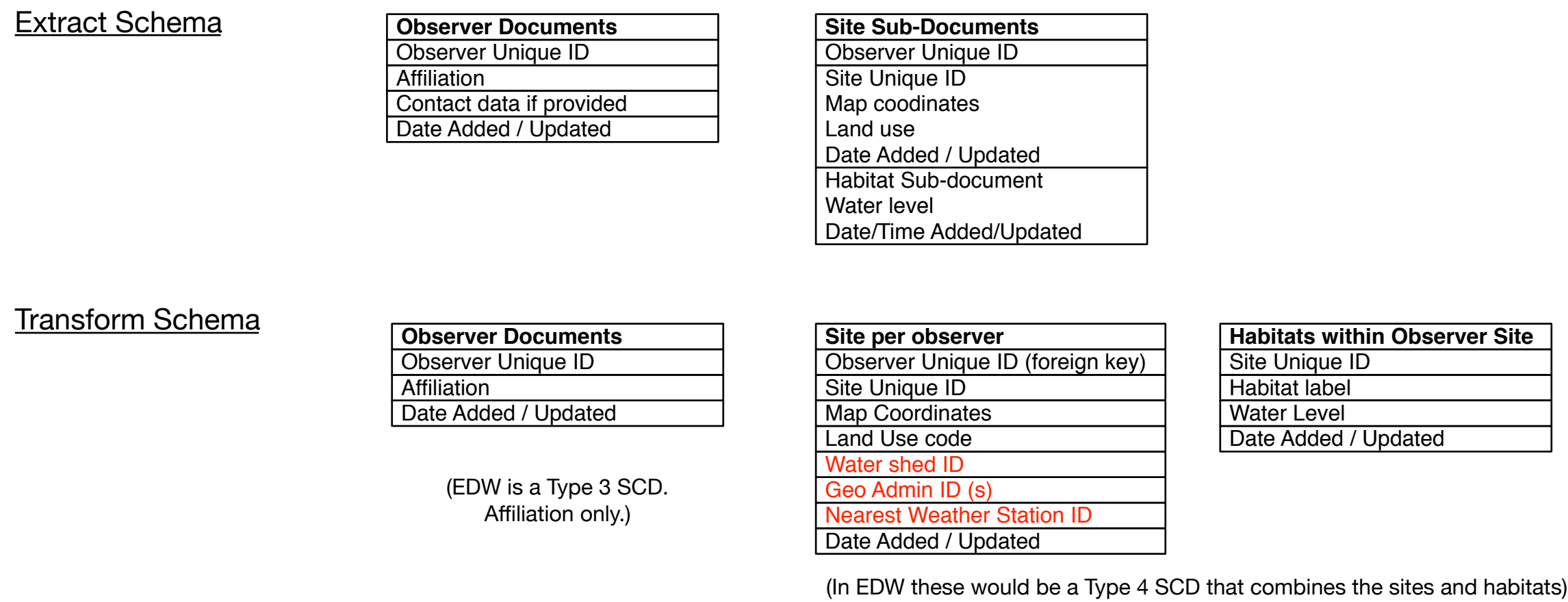
1. App Data Synchronization

The Cloud collection of App Data contains one document per value picker (e.g., calling codes, wind scale, land use type, etc.). It’s the current, official dataset, used by the application. For the ETL and EDW, it’s been “downloaded” to the Extract schema in PostgreSQL as an unnormalized table. The “previous copy” is in the Transform schema. Sync it with the Cloud copy just downloaded to the Extract schema.



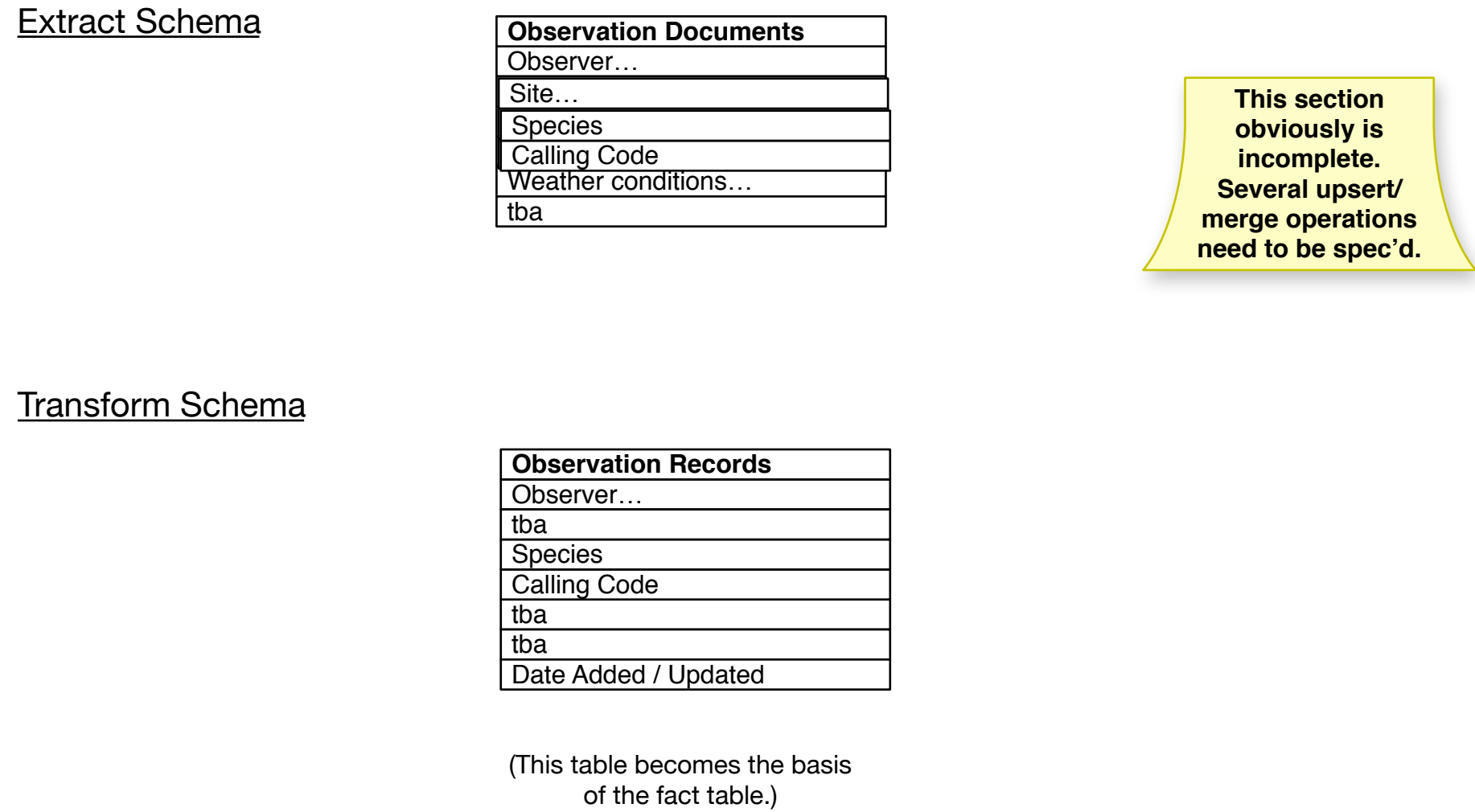
2. Observer Profile Synchronization

The cloud collection contains one document per unique observer (named or anonymous). Each observer document also contains a sub-document of the geographic sites that have been observed by this observer.



Elements in red
require spatial
processing

3. Observations Synchronization



App Overview

(Next step. Enhance to standard iOS 9 symbology.)

Home

FrogTalk

Menu

-sign in

-profile

-setting

Observation History

Site A

date ...

date ...

Site B

date ...

date ...

New Session

New Sesson

Pick Site

+

Started

date

time

Weather Conditions

-current condition selection

-wind scale selection

-rain last 48 hours selection

-current temperature (C/F)

Weather Station ID*

Observations Collected

+

-Habitat 1, species list

-Habitat 2, species list

- ...

Done

Define New Site

Name

(Instructions: The site is the general location. It might contain multiple habitats, or multiple observer points. Example: Robinson Lake.)

(map view)

Centroid of the map view is stored.

-land use code selection

-water source selection

Save

Record Observation

Pick Habitat (within site)

(Examples: Damn side of lake. Outlet end of lake.)

+

Water level selection

Notable changes at habitat

Species observed at this habitat

Species selection

Calling Code

Species selection

Calling Code

Species selection

Calling Code

Species selection

Calling Code

+

Fire trigger if location services indicates a move

Save and Change Habitat

Done

Save: clear, reset habitat list

Back to landing

* might move this to ETL processing.