Technology Needs from Jason and Skye

* PostgreSQL
* PostGIS
* R and R Studio
* R Studio Server
* Rules engine might have to be a google earth engine or something similar or more flexible.
* Platform to tie everything together (most important but still TBD)
* GDAL
* Shiny Server
* Crunchy Data
* Linux Red hat Server

The platform has to allow for the data stewards to do the following:

1. Platform must support robust geospatial analysis
2. Data visualization needs to be included in every part of the process (loading, analysis, testing statistical models and algorithms)
3. Platform has to be able to ingest/import raw data and allow for tagging and processing of data, adding additional data such as chain of custody, data source information, and other metadata. Some of this should be automated but need flexibility to do manually. Chain of custody should include a quality check/approvals for upload.
4. Platform has to support developing statistics/algorithms/rules to perform analysis on existing reference data and raw data
5. Tool needs to support manual querying and filtering to curate and aggregate data
6. Tool needs to support automated data mining and machine learning
7. Ability to aggregate and analyze data for some simple quick summaries (counts, averages, quick stats) from the database
8. Data unification and joining from multiple data sets to create new datasets and performing spatial and tabular joins
9. Ability to create and attribute data products (outputs) sets that will be used in various models
10. Analysis tools that allows for complex statistical framework (building and developing new models)
11. The tool includes a “test mode” with data visualization (charts, graphs, maps) to develop and test statistical models and algorithms
12. Tool needs to support generating and providing different output types, including customization of outputs
13. Data curation for external users allows for automated decision-making on systems that an organization uses to manage its interactions with customers, employees and suppliers.
14. The tool should allow for users to perform the above without doing scripting
15. Options to use R Studio server and publish to shiny app
16. Options for Python and SQL
17. API services
18. Predictive modeling