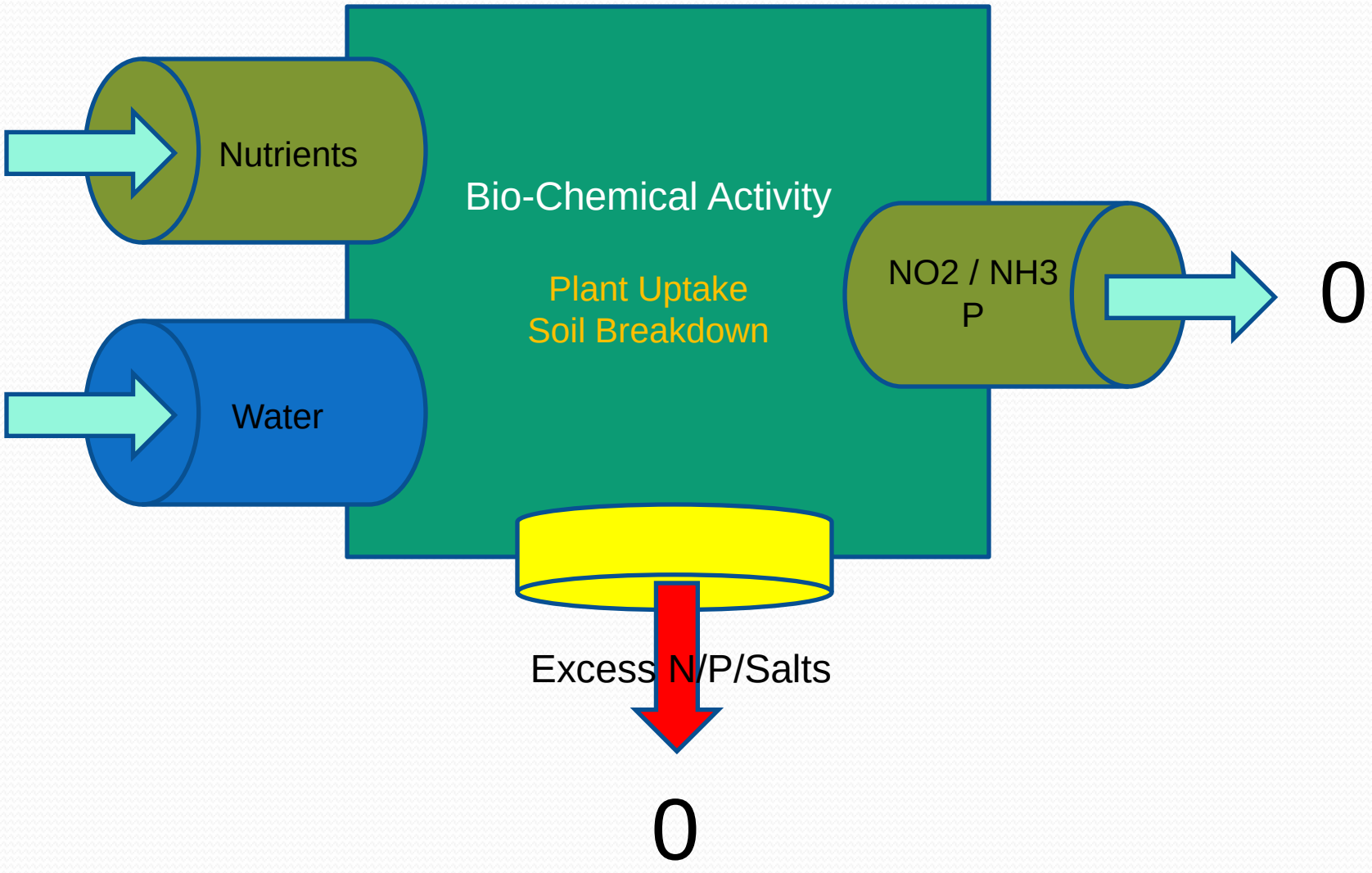
# Nutrient Loading Assessment for the Lower Yakima Valley Groundwater Management Area

Concept Presentation
October 17, 2013

GWMA Advisory Board

Washington State Department of Agriculture
WSDA
100 YEARS

# Basic Nutrient Loading Assessment



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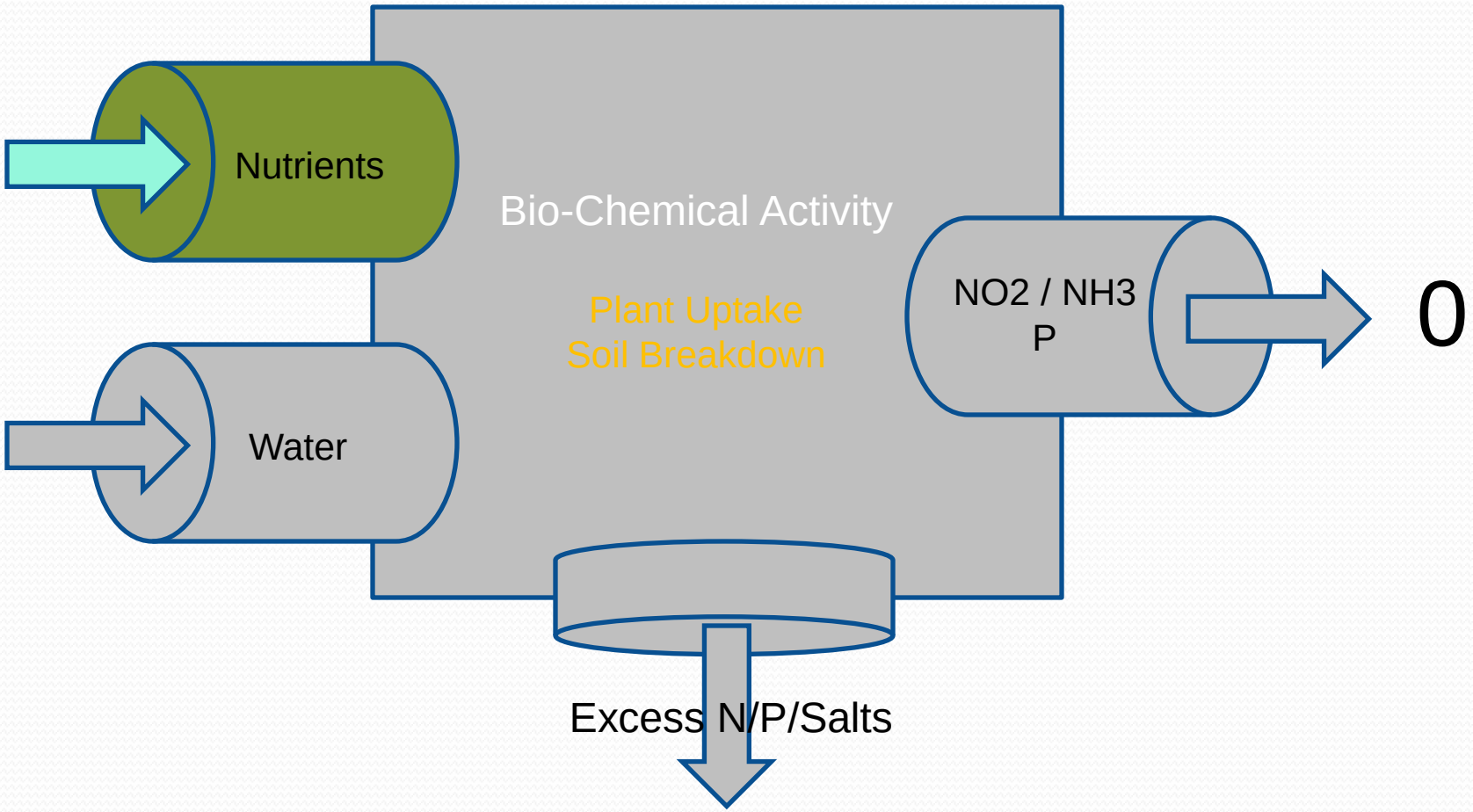

# Basic Nutrient Loading Assessment

1) Where is application taking place ?
2) How much is being applied ?
3) When is it being applied
4) What form is the nutrient in ? (manure, comm., green manure)
5) What is the rate of uptake?
6) **What is the rate of loss, (soil, surface water, air)**

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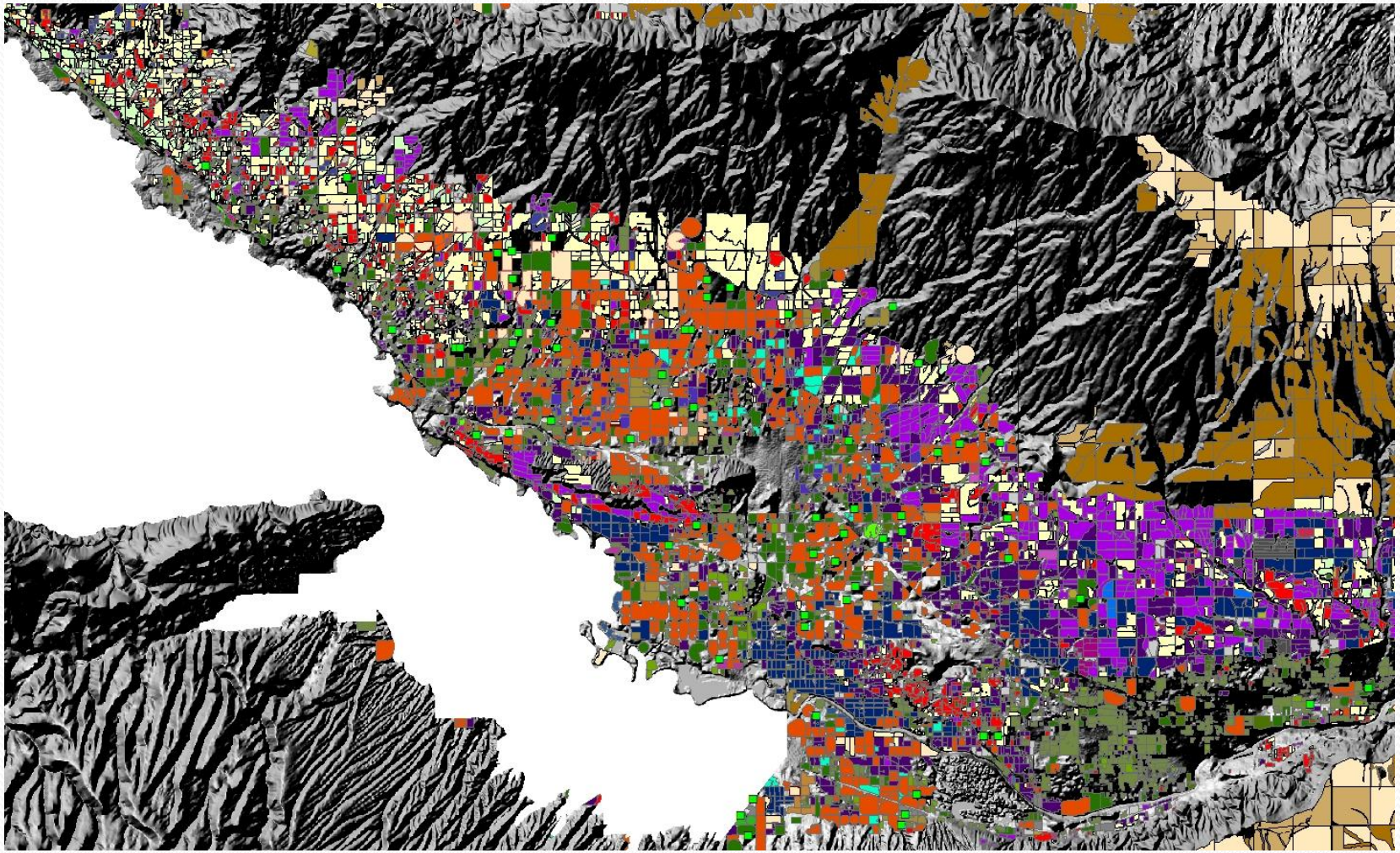

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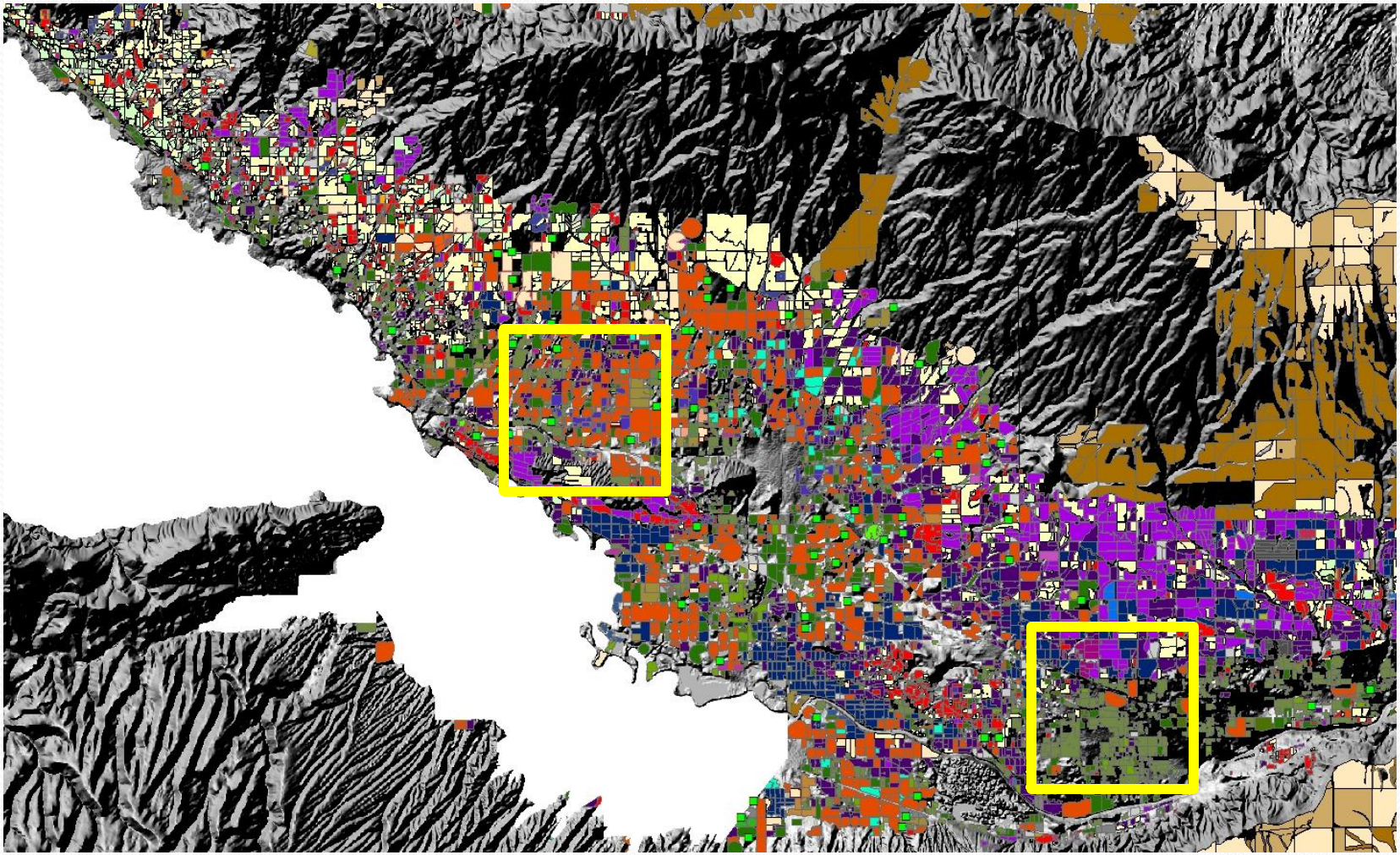


# Basic Nutrient Loading Assessment

1) Where is application taking place ?

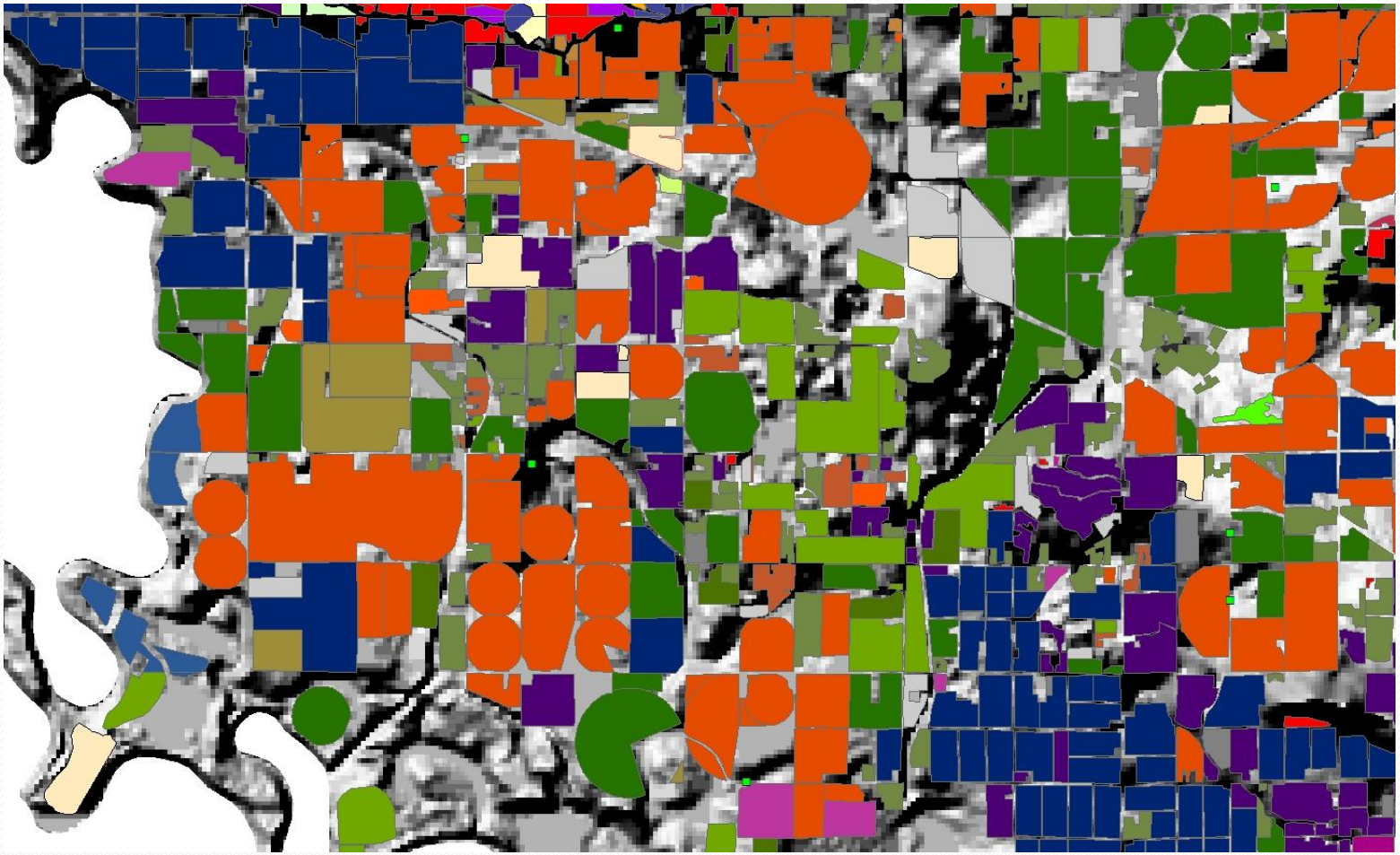
2) How much is being applied ?

3) When is it being applied

4) What form is the nutrient in ? (manure, comm., green manure)

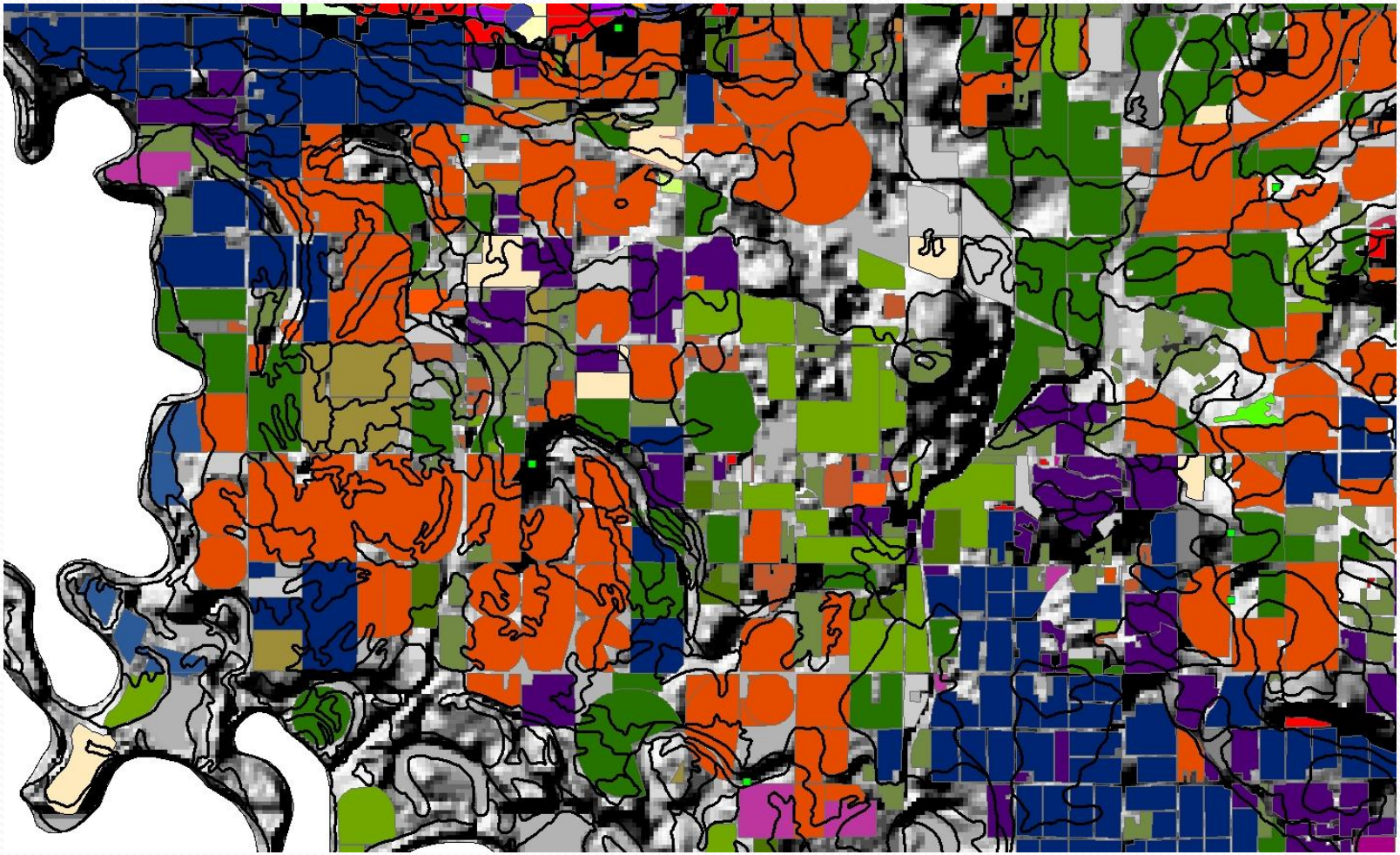
**5) Data collected in representative areas – extrapolated over area of concern**

Basic Nutrient Loading Assessment



# Basic Nutrient Loading Assessment

## Crop Location & Soils



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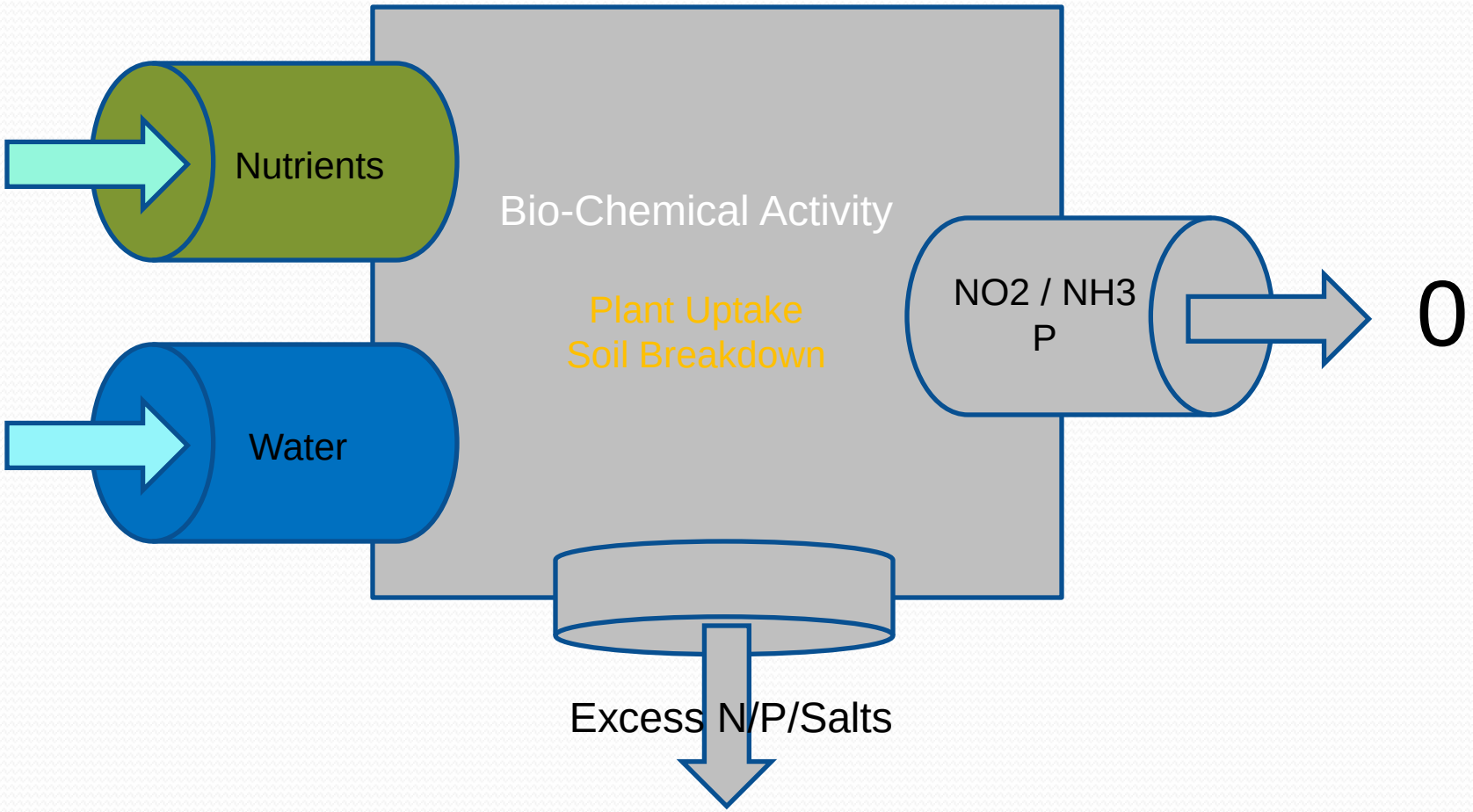


# Basic Nutrient Loading Assessment

## Irrigation / Soils

1) What is irrigation application (applied and rainfall) ?

2) Method of Irrigation ?

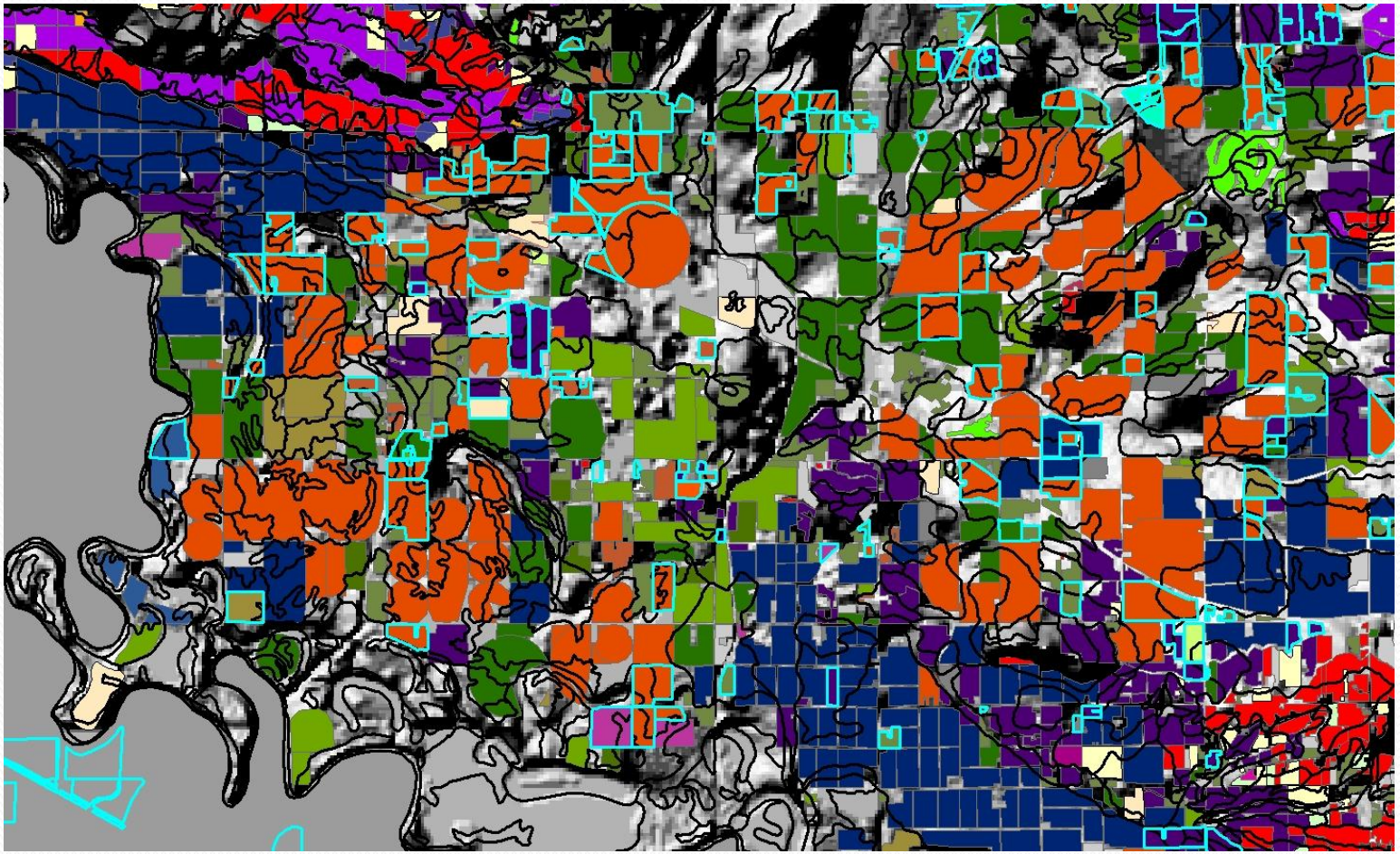
3) What are soil type(s) ?

4) What is irrigation recommendation (for crop)?

**5) What is total ( + / - ) to the crop system?**

# Basic Nutrient Loading Assessment

Crop Location / Soils / Irrigation



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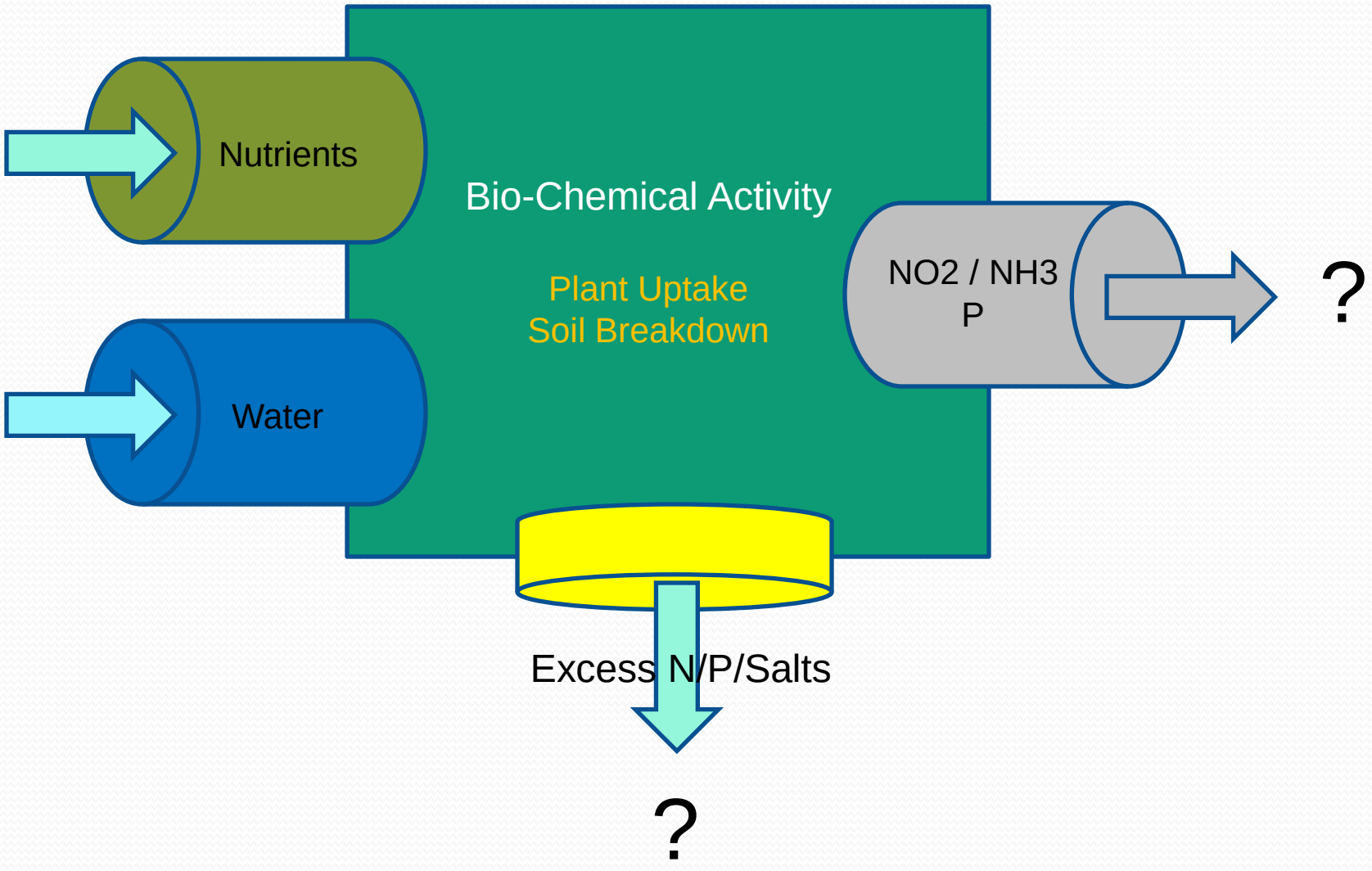
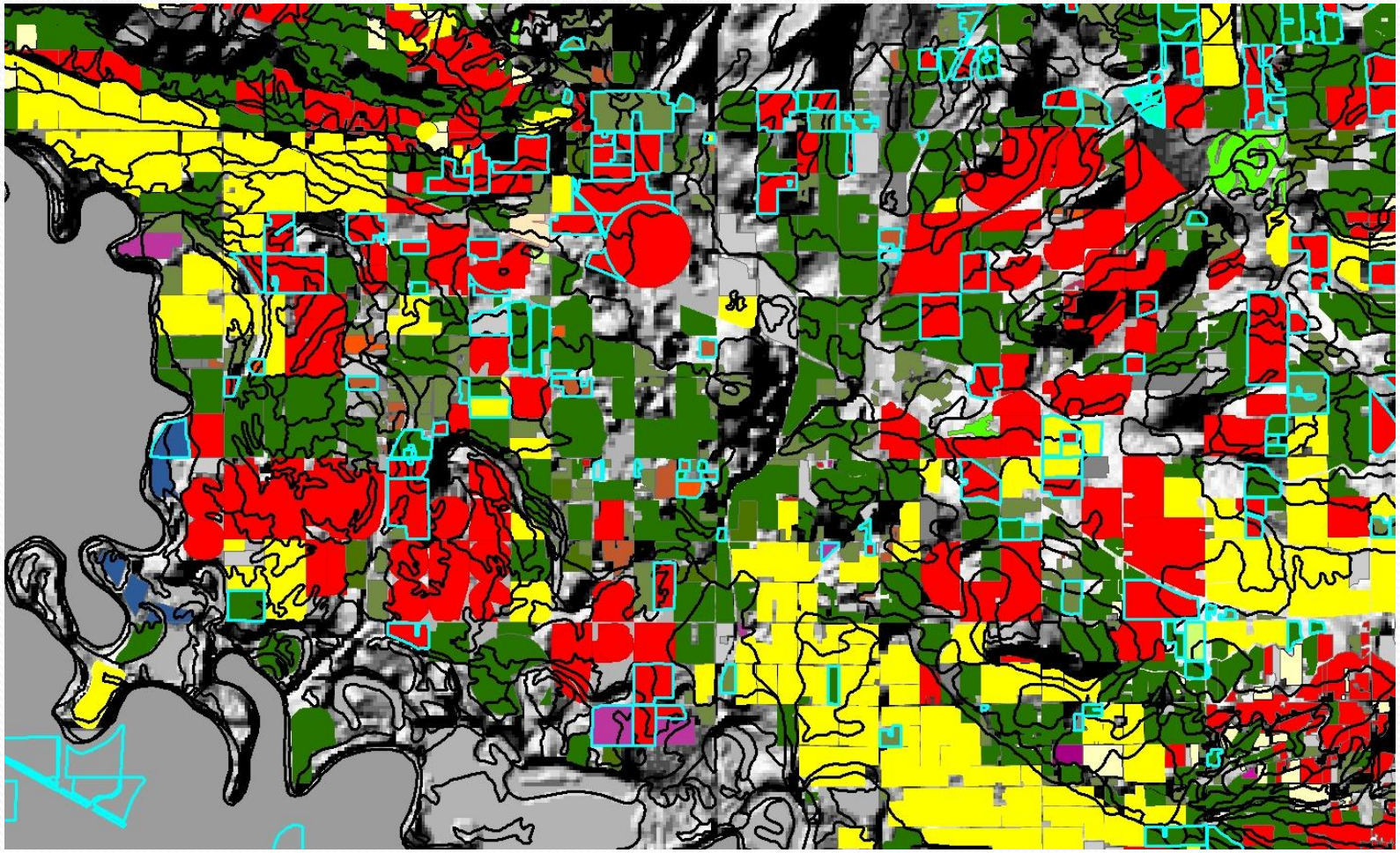


# Basic Nutrient Loading Assessment

## Relative Nutrient Load



# Basic Nutrient Loading Assessment

Nutrient Load Assessment:

Will provide technically based accounting (est.) of all nutrient inputs

Will provide crop specific nutrient loading data

Will allow for loading estimates by agricultural activity

Will provide technically based assessment of loading to groundwater

Will provide measure as to whether we are overloading or under-loading crops and where that maybe occurring

Will provide additional basis for BMP selection

Will not provide for estimate related to groundwater concentrations in the future

## Basic Nutrient Loading Assessment

| | | |
|---|---|---|
| Time: | 3 – 4 months for basic data collection and analysis | |
| | 2 – months to develop report to GWMA | |
| Cost: | Basic Level | $ 40 – 50 K |
| | Medium Level | $ 60 – 65 K |
| | High Level | $ 65 – 100 K |
| Basic: | Survey of crop types, nutrient application schedules, irrigation practices, three representative areas | |
| Medium: | (Basic), compare with DSS, five representative areas, soil type assessment | |
| High: | (Basic) (Medium), vadose zone monitoring, additional DSS | |