A SUMMARY OF AG ORDER REQUIREMENTS IN THE CENTRAL COAST REGION

Chris Rose

Central Coast Water Board

Background

- March 2012: Ag Order (Waiver) adopted
- Petitioned (appealed) to State Water Board
- September 2013: State Board Order
- Lawsuit filed: Monterey Coastkeeper et al
  - May 2015: preliminary ruling
  - September 2015: draft judgment submitted
  - September 25, 2015: final ruling

Tier Structure of Ag Order

- Tiers: some requirements based on tier
  - Tier-1: lowest risk to water quality
    - Pesticide use, distance to impaired water, size
  - Tier-2: higher risk to water quality
    - Pesticide use, high risk crops, size
  - Tier-3: highest risk to water quality
    - High risk crops, size, pesticide use w/discharge

Enrollment in Ag Order

- Electronic enrollment (online)
  - GeoTracker
  - Online form, data submitted to state dbf
- eNOI (electronic Notice of Intent)
  - Ranch basics
    - Location, contacts, size, crops, discharge and irrigation type, monitoring preference (individual vs cooperative)
  - Information to determine tier
- Annual updates (minimum)

Annual Compliance Form

- Tier 2 and Tier 3 only
- Online submittal
  - GeoTracker database
- Well information
  - Irrigation water N concentration (avg)
- Risk Determination (risk of loading N to gw)
  - Section-C of ACF
  - Triggers requirements
    - Total Nitrogen Applied
    - Irrigation Nutrient Management Planning

Annual Compliance Form

- Discharge Characteristics
  - Stormwater , irrigation, tile
    - Distance to surface water, estimated volume
- Management Practices Implemented*
  - Practice/Assessment/Outcome
  - Checklist categories
    - Nutrient, irrigation, pesticide, sediment
- Annual updates (minimum)

Required Monitoring

- Surface Water and Ground Water
- Cooperative or Individual
- Surface Water
  - 88% select cooperative
  - Central Coast Water Quality Preservation Inc.
    - Subwatershed level: 54 sites
      - Conventional water quality parameters: monthly
      - Water Toxicity: quarterly
      - Sediment Toxicity: annually
      - Bioassessment: once in life of Ag Order
      - Supplemental chemistry: quarterly for one year
    - 2015 Summary available online:
      - http://www.waterboards.ca.gov/centralcoast/board_info/agendas/2015/july/item15/index.shtml

Required Monitoring

- Groundwater
  - 49% select cooperative
  - Individual monitoring requirements
    - Sample twice during first year of enrollment (T1-3)
    - Sample annually thereafter (T3 only)
    - Sampling:
      - Primary irrigation well
      - All drinking water wells
  - Cooperative monitoring requirements
    - Sample per workplan
      - All drinking water wells
      - Sample of irrigation well population

Individual Discharge Monitoring

- Required ranches:
  - Tier-3 w/irrigation or stormwater to surface water
- Sampling and Analysis/Quality Assurance Plan
- What is monitored
  - Nutrients
  - Chlorpyrifos/diazinon
  - Toxicity (*Ceriodaphnia* and *Hyalella*)
  - Flow
  - Physical parameters: temp, EC, TUR
- Iterative process

Total Nitrogen Applied Reporting

- Required ranches
  - T2/T3 “High” risk loading N to groundwater
    - Section-C of Annual Compliance Form
- Annually
- What is reported
  - Irrigation water average NO_3 concentration
  - N applied to ranch in irrigation water
  - N applied to ranch in compost
  - N applied by fertilizer to specific crop (lb/ac)

Irrigation Nutrient Mgmt. Effectiveness Reporting

- Required Ranches
  - T3 with high risk loading to groundwater
  - Irrigation Nutrient Management Plan
    - Must be certified (soil scientist, agronomist, crop advisor, similar)
- October 1, 2016
- What is reported
  - Effectiveness Report of INMP

Water Quality Buffer Plan

- Required ranches
  - Tier 3 ranches adjacent or containing 303d water for temp, TUR, SED
- Due October 1, 2016 (Plan submittal)
- Plan and implementation must include:
  - 30 ft buffer or equivalent
  - Schedule
  - Maintenance plan
  - Photo monitoring

Photo Monitoring

- Required ranches
  - Tier 2 and Tier 3 adjacent to water impaired for temperature, turbidity or sediment
- Due June 1, 2014
  - Held in Farm Plan; not submitted
- Requirement
  - Document condition of surface water
  - Demonstrate how erosion/sediment Basin Plan requirements being implemented

SUMMARY INFORMATION

Enrollment, Tiers and Risk

- 419,525 acres enrolled
- Tier-1 acres: 151,709
- Tier-2 acres: 241,198
- Tier-3 acres: 21,650

- High Risk Acres: 82,500
  - ~31% T2+T3
  - Total Nitrogen Applied Reporting required

Water Quality Management Practices

- Water Quality Management Practices Section has been available to growers since October 2013.

- Staff has two full years of data (October 2014 and October 2015).

- See full presentation at our website:

http://www.waterboards.ca.gov/centralcoast/board_info/agendas/2015/may/item15/index.shtml

Water Quality Management Practices

Four (4) Management Reporting Categories

1. Nutrient
2. Irrigation
3. Pesticide
4. Sediment

Each Management Reporting Category Contains:

- Practice Implementation Selections
- Practice Assessment Selections
- Practice Outcome(s) Selections

Water Quality Management Practices

Section H: Water Quali

Nutrient Management -
Identify nutrient manage

- [ ] None
- [x] Evaluated how r
- [x] Scheduled fertili
- [x] Measured nitrog
- [x] Measured soil n
- [x] Used precision t fertigation).
- [x] Measured nitrog
- [x] Measured phos
- [ ] Measured nitrog
- [x] Mixed and loade
- [ ] Used urease inh
- [ ] Modified crop ro
- [ ] Used treatment
- [ ] Other, describe

Nutrient Management -
Identify methods used t wastes from this ranch /

- [ ] Not Assessed
- [ ] Compared amou
- [ ] Measured nitrat
- [ ] Measured nitrat
- [ ] Estimated/meas
- [ ] Measured nitrat
- [ ] Estimated/meas
- [ ] Estimated/meas
- [x] Measured nitrat
- [ ] Modeled or stud
- [x] Consulted with a other).
- [ ] Other, describe

Nutrient Management -
Identify outcomes that d any.

- [x] None
- [ ] Annual fertilizer
- [ ] Total nitrogen a
- [ ] Reduction in nitr
- [ ] Reduction in nitr
- [ ] Reduction in nitr
- [ ] Reduction in nitr
- [ ] Water quality st
- [ ] Other, describe

Irrigation Manageme
Identify irrigation mar

- [ ] None
- [ ] Determined a
- [ ] Installed mor
- [ ] Improved irri
- [x] Scheduled irr
- [ ] Scheduled irr
- [x] Maintained ir
- [ ] Selected spri rates.
- [ ] Installed a va
- [ ] Recycled or r
- [ ] Contained ar
- [ ] Other, descri

Irrigation Manageme
Identify methods use wastes from this ranc

- [ ] Not Assesse
- [x] Walked the p
- [ ] Recorded an
- [ ] Recorded an
- [ ] Compared ar
- [ ] Estimated/me
- [ ] Conducted fi
- [ ] Conducted la
- [ ] Modeled or s
- [ ] Conducted pi
- [ ] Consulted wi other).
- [ ] Other, descri

Irrigation Manageme
Identify outcomes tha any.

- [ ] None
- [ ] Volume of wa
- [ ] Annual volun
- [ ] Number of ta
- [ ] Reduction in
- [x] Elimination o
- [ ] Reduction in
- [ ] Reduction in
- [ ] Reduction in
- [ ] Water quality
- [ ] Other, descri

Pesticide Management -
Identify pesticide manag

- [ ] None
- [ ] Certified Organi
- [x] Utilized Integrat
- [ ] Selected lower r
- [x] Followed specifi
- [x] Avoided pesticid
- [x] Avoided pesticid
- [ ] Avoided pesticid
- [ ] Eliminated or co
- [ ] Eliminated or co
- [ ] Treated irrigatio
- [ ] Used filter strips
- [ ] Mixed and loade
- [ ] Other, describe

Pesticide Management -
Identify methods used t wastes from this ranch /

- [ ] Not Assessed
- [ ] Conducted field
- [ ] Conducted labor
- [ ] Measured pestic
- [ ] Measured pestic
- [ ] Modeled or stud
- [ ] Conducted phot
- [x] Consulted with a other).
- [ ] Other, describe

Pesticide Management -
Identify outcomes that d any.

- [x] None
- [ ] Annual pesticide
- [ ] Reduction in pes
- [ ] Reduction in pes
- [ ] Water quality sta
- [ ] Other, describe

Sediment Management - Practice Implementation
Identify sediment management measure(s)/practice(s) implemented on this ranch / farm to protect water quality in the last 12 months, if any.

- [ ] None
- [ ] Avoided disturbance of soils adjacent to streams, creeks, and other surface water bodies.
- [x] Minimized presence of bare soil in non-cropped areas.
- [ ] Minimized presence of bare soil in cropped areas.
- [x] Minimized tillage to protect soil structure and cover soil.
- [ ] Used soil amendments to protect soil structure.
- [x] Planted cover crops.
- [x] Aligned rows for proper drainage and to reduce erosion.
- [ ] Diverted runoff and concentrated flows to grassed areas.
- [ ] Controlled concentrated drainage on roads by grading to reduce erosion or installing culverts, rolling dips, underground outlet pipe(s).
- [ ] Installed filter strips, vegetated treatment or other systems to remove sediment and other pollutants from runoff.
- [ ] Installed sediment basin(s), pond(s), reservoir(s) or other sediment trapping structures to remove sediments from discharge
- [ ] Applied Polyacrylamide (PAM) in irrigation water
- [ ] Other, describe in Farm Plan and submit upon request.

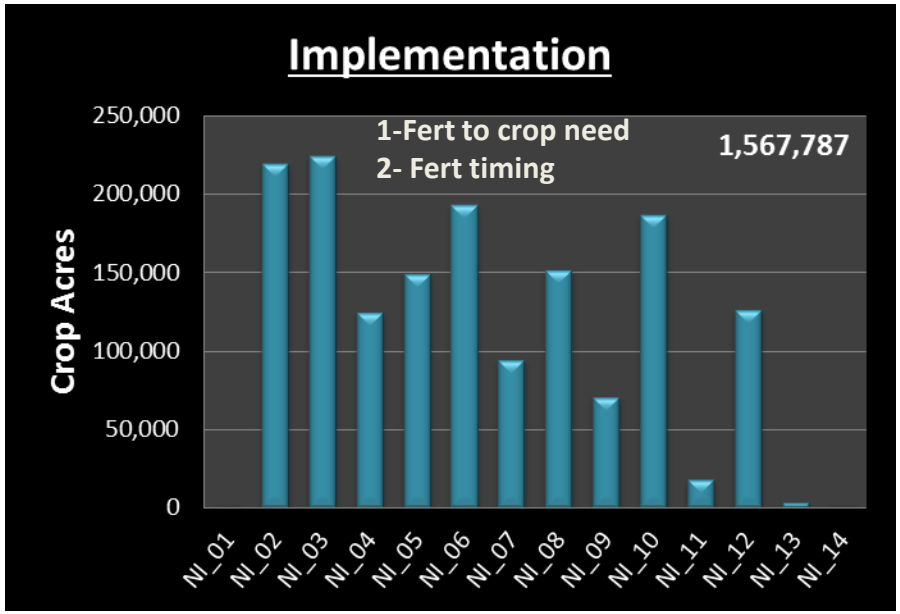
Sediment Management - Practice Assessment
Identify methods used to assess the effectiveness of the implemented management measure(s)/practice(s), to reduce or eliminate the discharge of wastes from this ranch / farm in the last 12 months.

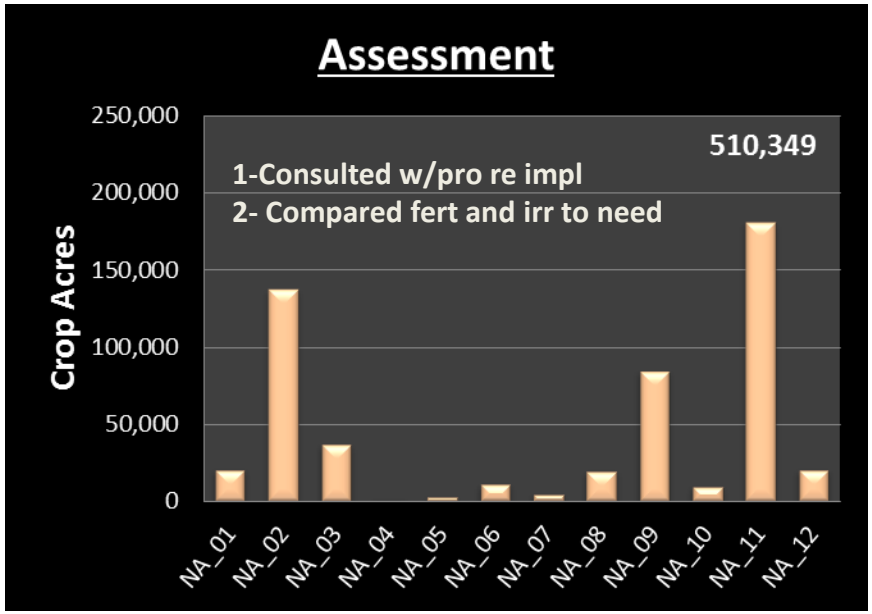
- [ ] Not Assessed
- [x] Walked the perimeter of the property to verify erosion controls and that sediment doesn't leave the ranch/farm during irrigation events and/or storm events.
- [ ] Conducted laboratory analysis, field quick tests or used handheld meters to measure turbidity in irrigation runoff.
- [ ] Estimated sediment load in irrigation and.or stormwater runoff.
- [ ] Conducted laboratory analysis, field quick tests or used handheld meters to measure turbidity in stormwater runoff.
- [ ] Modeled or studied sediment load in surface water.
- [ ] Conducted photo monitoring before and after practice implementation.
- [ ] Consulted with a qualified professional to assess practice implementation (e.g. CCA, PCA, UCCE Specialist, NRCS, RCD, agronomist or other).
- [ ] Other, describe in Farm Plan and submit upon request.

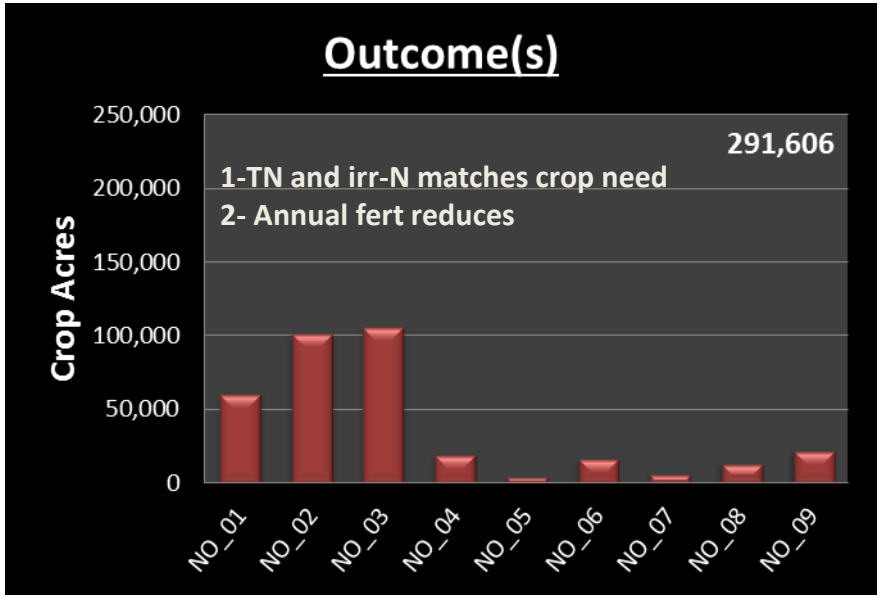
Sediment Management - Practice Outcome(s)
Identify outcomes that demonstrate progress towards reducing or eliminating the discharge of wastes off this ranch / farm in the last 12 months, if any.

- [ ] None
- [x] Soil coverage increased and amount of bare soil reduced.
- [ ] Reduction in turbidity or sediment load in irrigation runoff.
- [ ] Reduction in turbidity or sediment load in stormwater runoff.
- [ ] Reduction in turbidity or sediment load in surface receiving water.
- [ ] Reduction in stormwater flow and/or volume.
- [ ] Water quality standards achieved.
- [ ] Other, describe in Farm Plan and submit upon request.

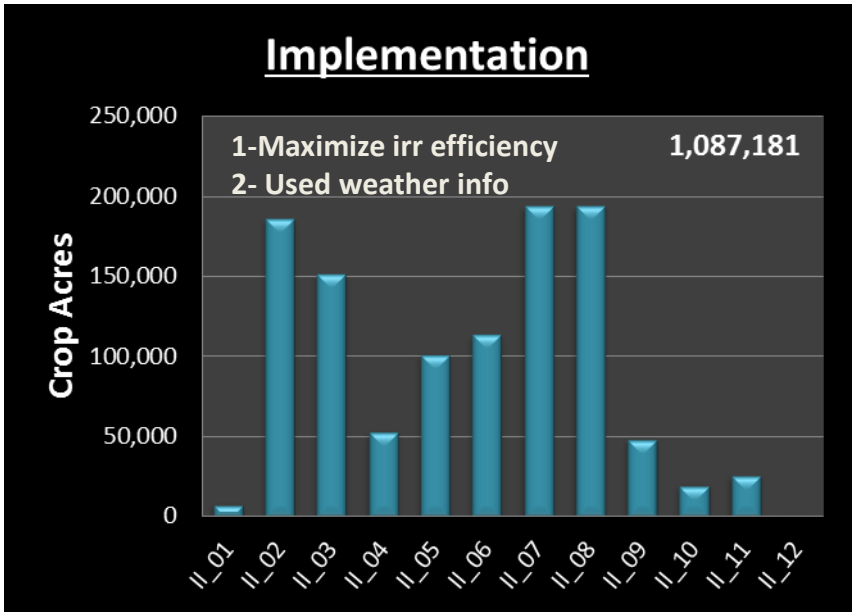
Nutrient Management

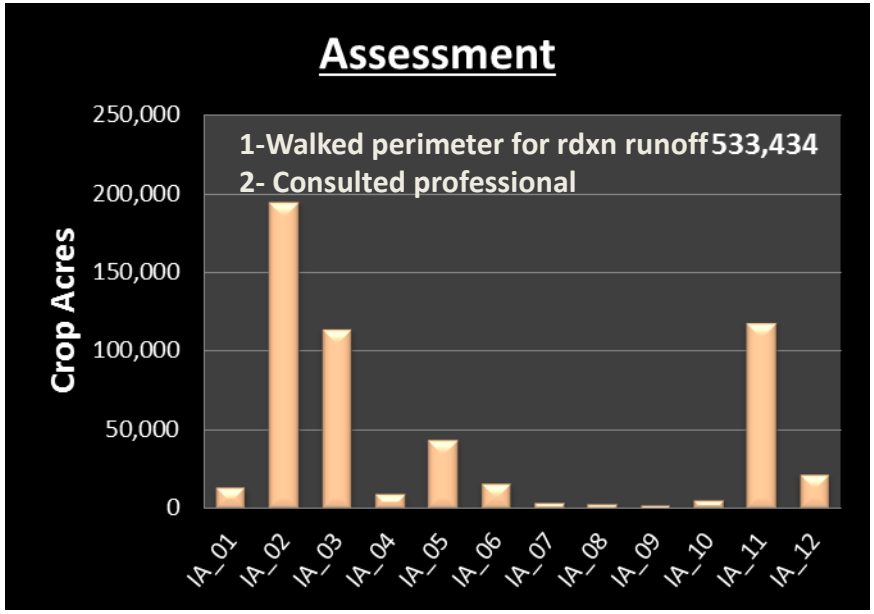


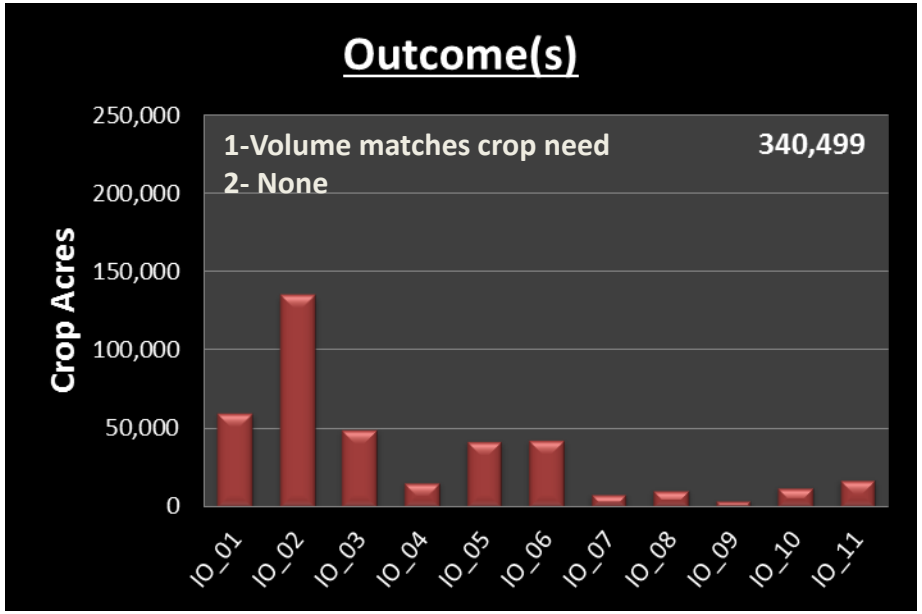




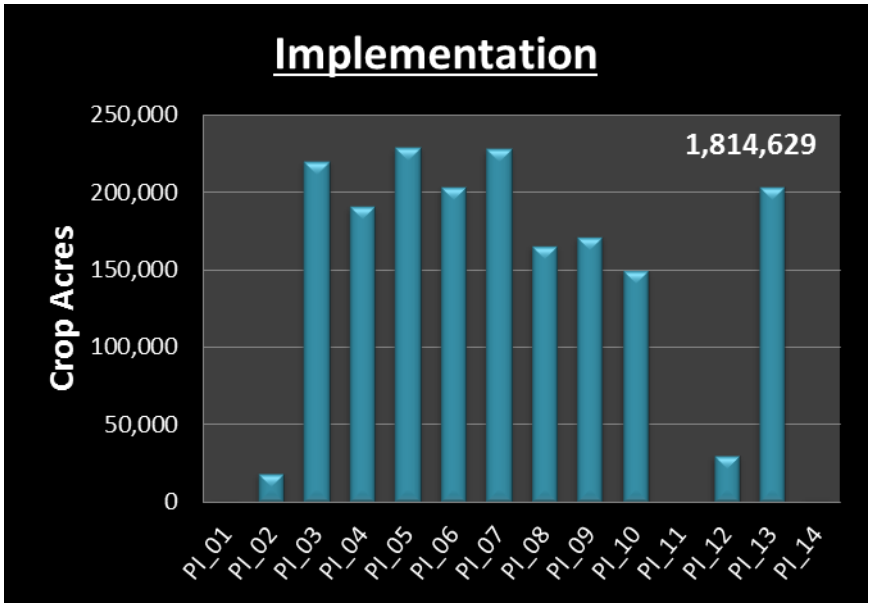
Irrigation Management

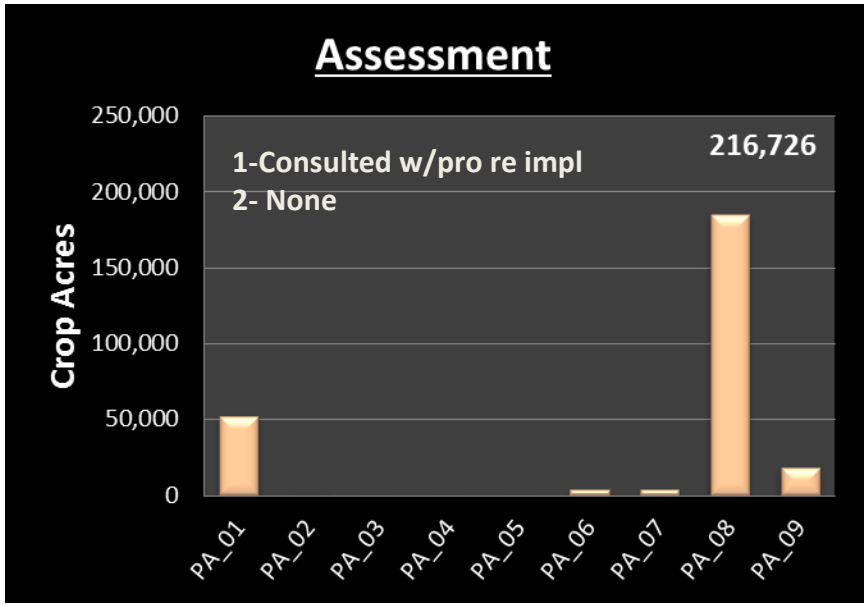




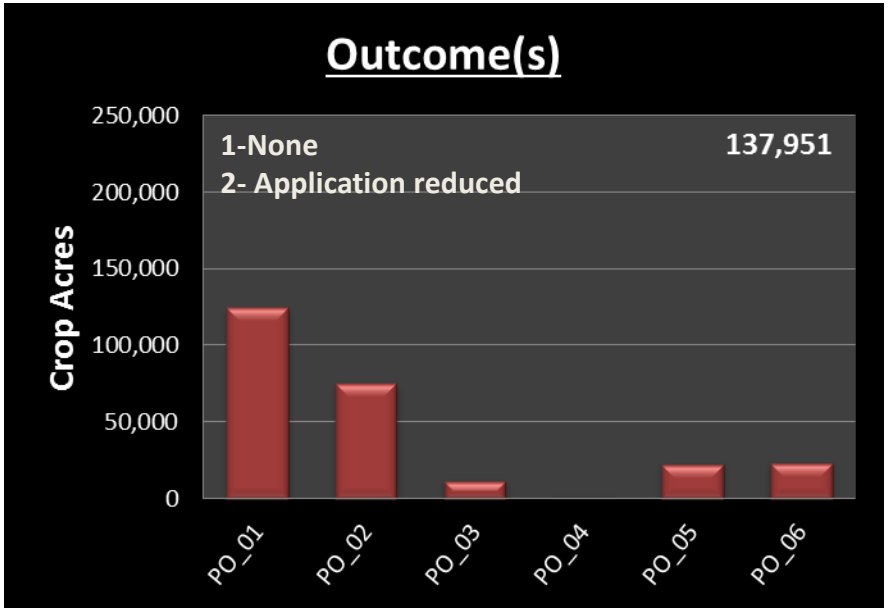


Pesticide Management

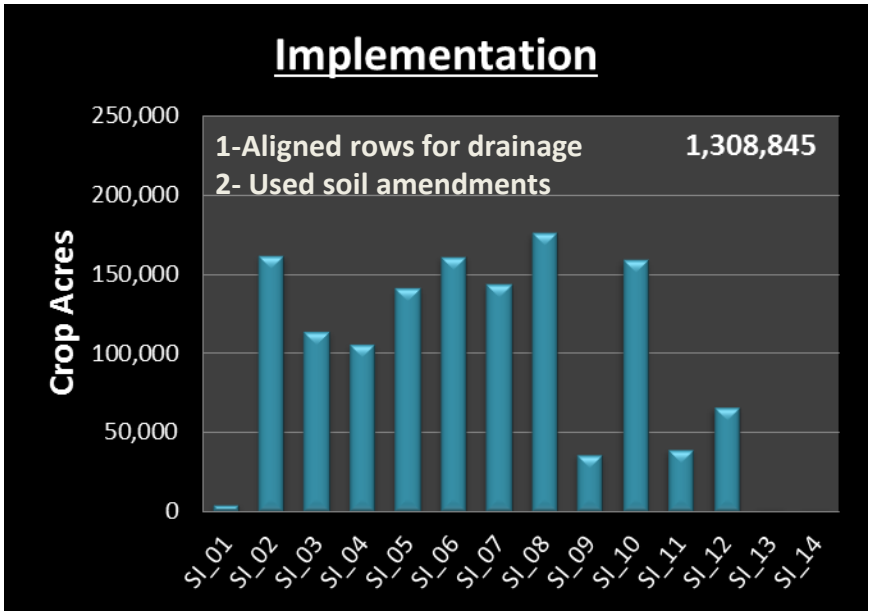


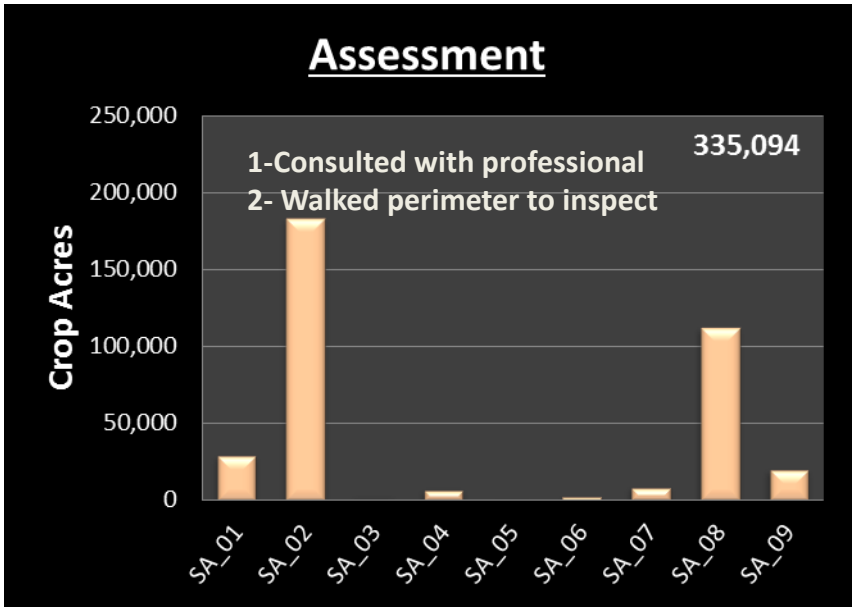


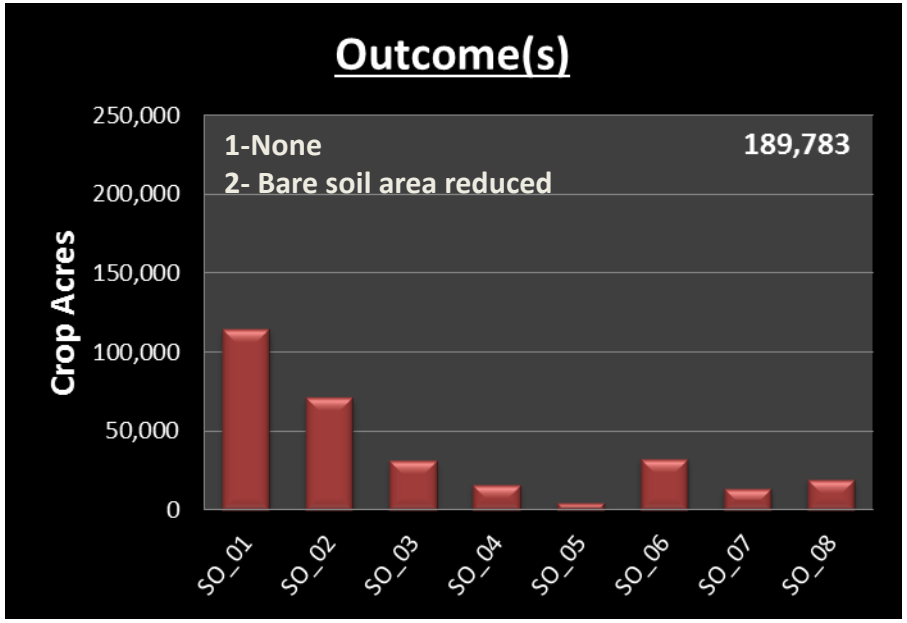
1-Avoided windy conditions
2- Followed label instructions



Sediment Management





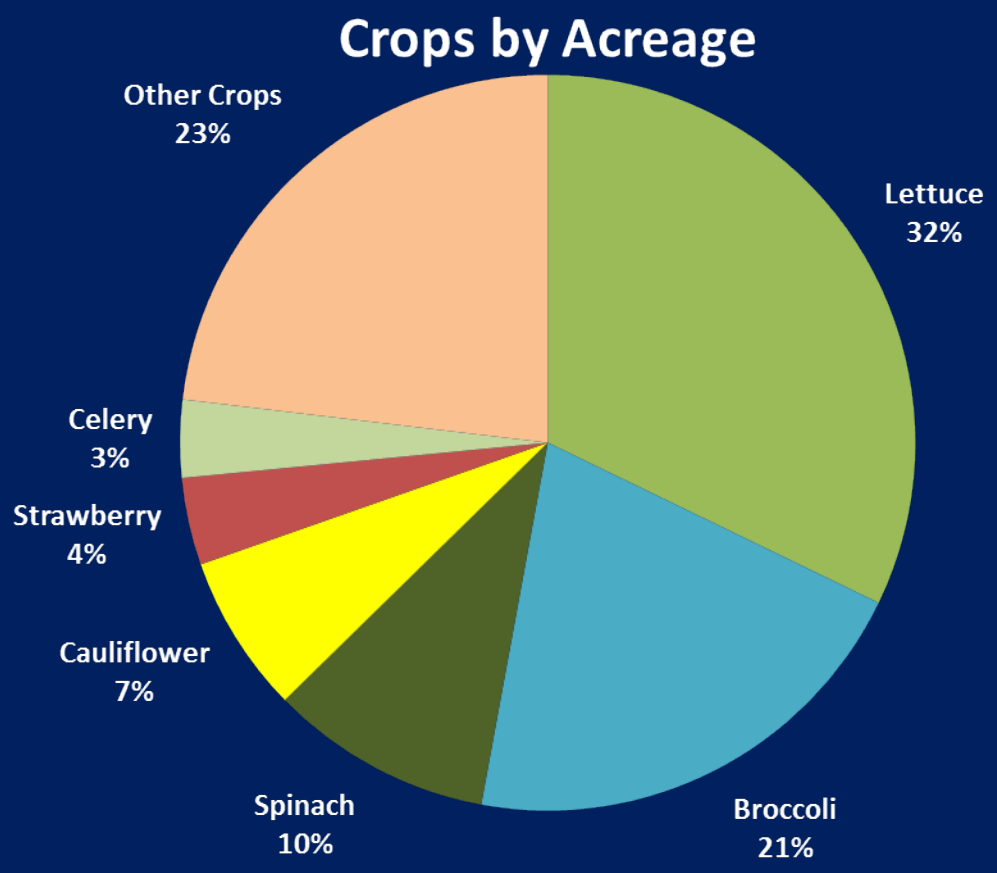


Total Nitrogen Applied Reporting

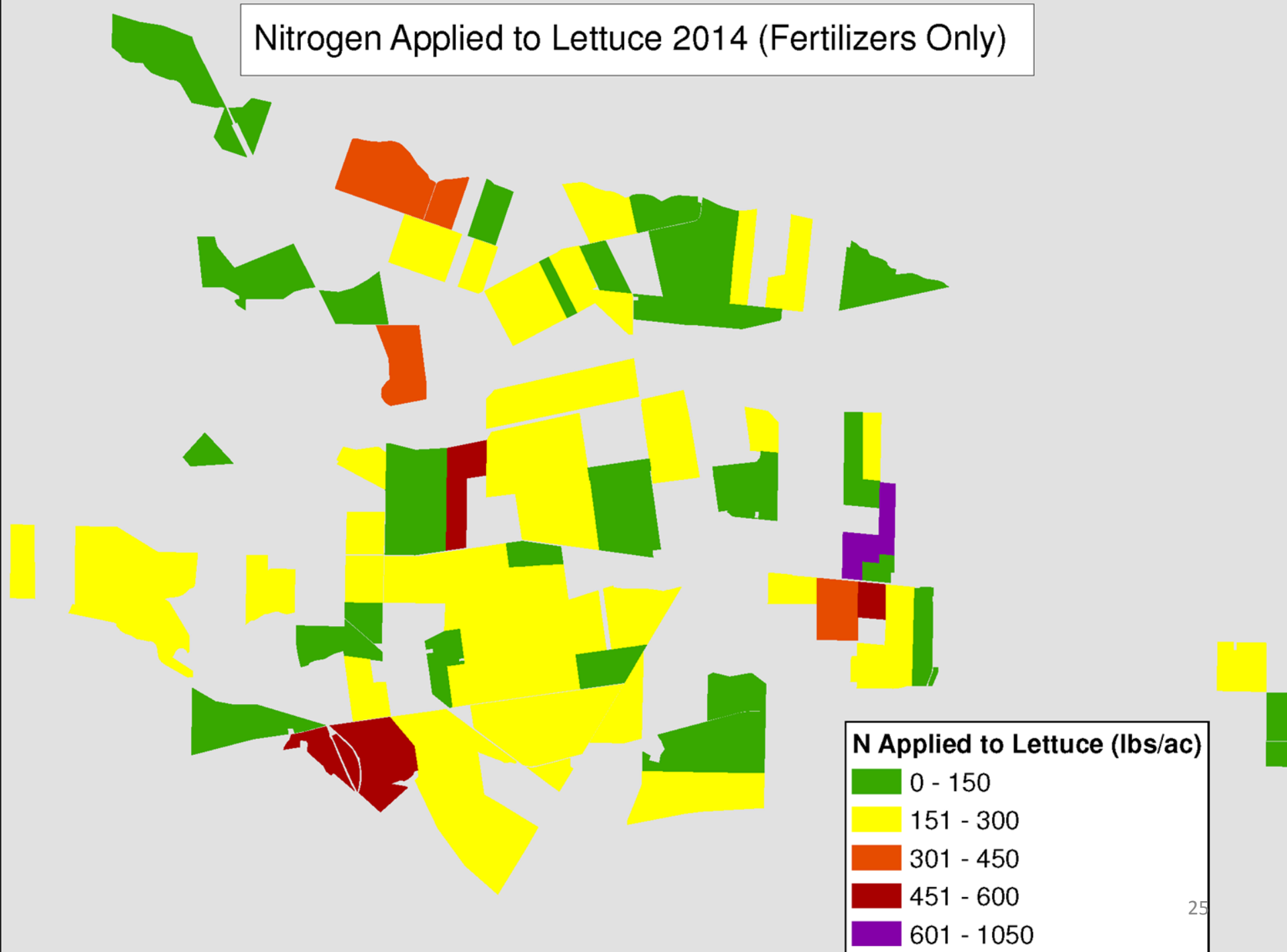
- October 2014 and 2015 data received
- 2014
  - 100% compliance
  - Learning curve for many growers
  - Educational
  - Data received from 600 ranches
    - 2,437 crop records

- Recall: What is reported
  - Irrigation water average NO_3 concentration
  - N applied to ranch in irrigation water
  - N applied to ranch in compost
  - N applied by fertilizer to specific crop (lb/ac)

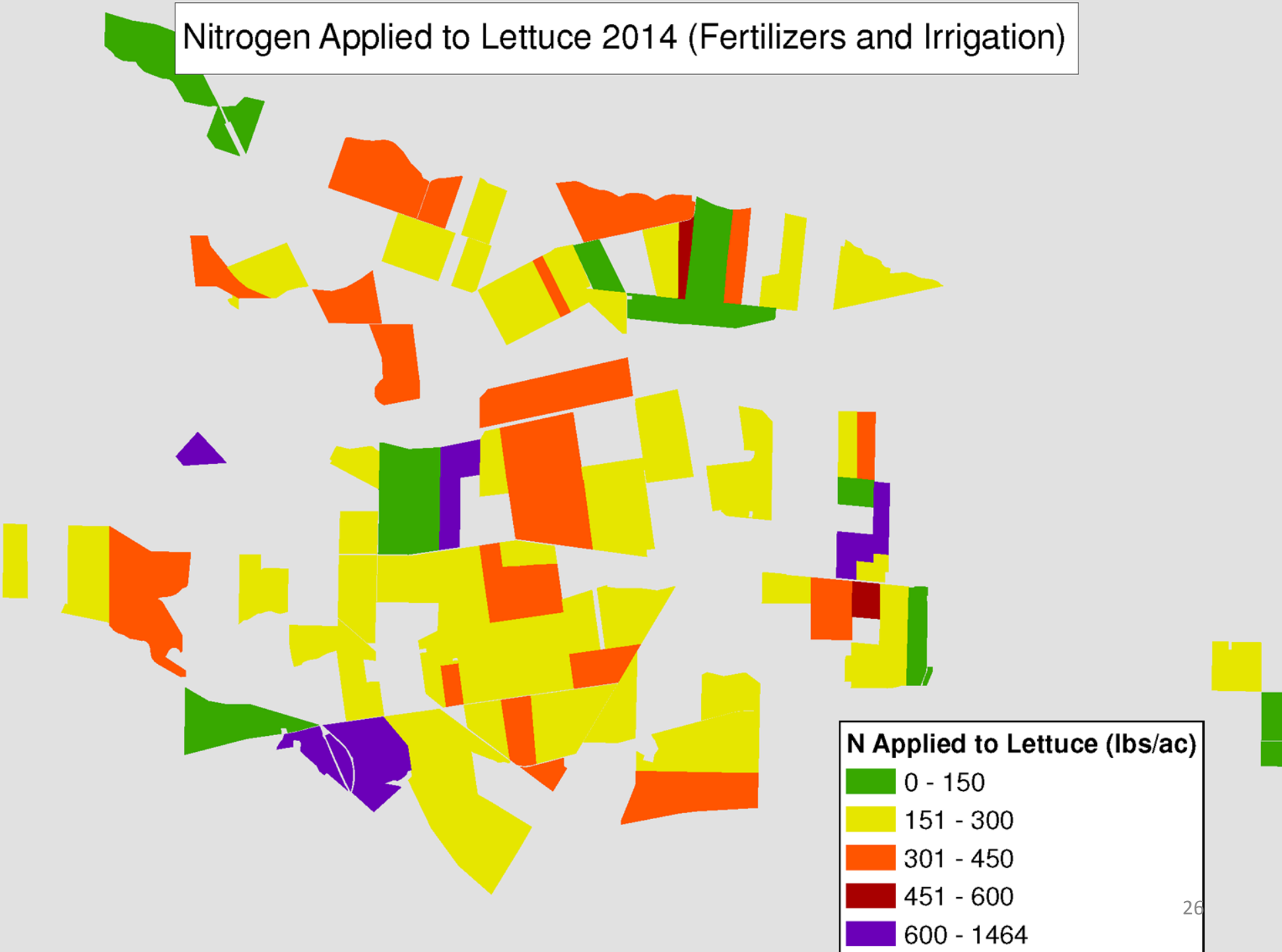
Summary of reported Nitrogen Applications
(fertilizers and amendments)



Nitrogen Applied to Lettuce 2014 (Fertilizers Only)



Nitrogen Applied to Lettuce 2014 (Fertilizers and Irrigation)



Total Nitrogen Applied Opportunities

- Apply within range of crop need
  - N and water usage variable
    - Needed education
  - FREP recommendations
  - Consultants/researchers

- Pump and fertilize
  - Fact: N in irrigation water available
  - Irrigation water
    - 75% reported exceeds 10 mg/L NO_3-N
  - Opportunity

Conclusion

- Central Coast Water Board Ag Order
  - Fully implemented less than two years
    - Some requirements not yet due
  - Opportunities
    - Growers: educational
      - Planning (Farm Plans)
      - BMP tracking
      - Nitrogen and water usage tracking (new for many growers)
      - Effectiveness assessment (outfall and RW monitoring)
    - Water Board
      - Prioritization for follow-up

Discussion

Thank You