

California Rice 2020 Report

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Outline

- Overview of California rice production system
- California rice exports
- 2020 rice season
- Sustainability practices

Rice fields provide valuable waterfowl habitat for migrating birds along the Pacific Flyway.

At the end of January, fields are drained and allowed to dry.

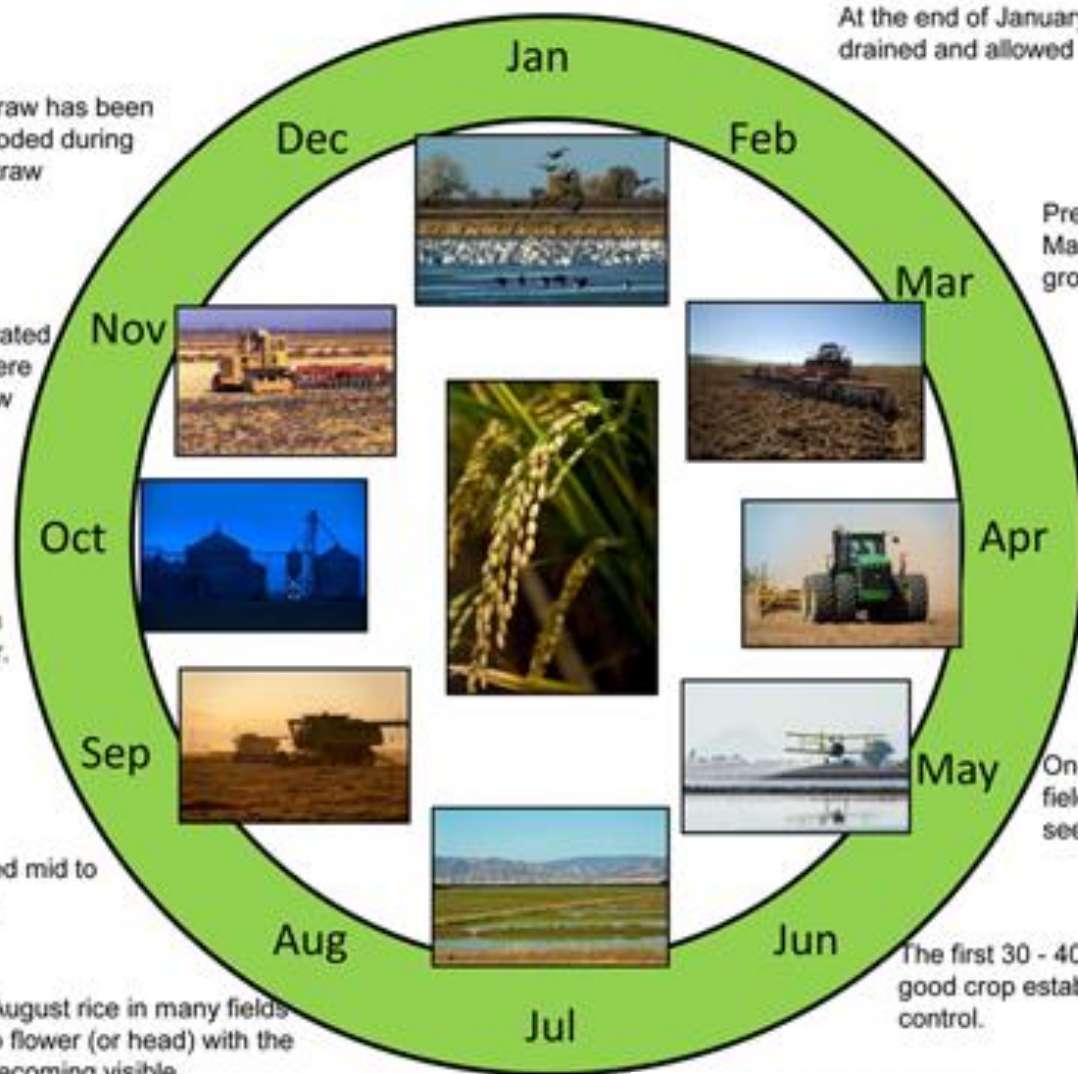
Fields where rice straw has been incorporated are flooded during winter to facilitate straw decomposition.

Rice straw is generally incorporated into the field after harvest. If there are disease problems, rice straw may be burned.

The crop is harvested in September and October.

Fields drained mid to late August.

By early August rice in many fields will start to flower (or head) with the panicles becoming visible.



Preparing fields for planting begins in March by plowing to "open-up" the ground to facilitate faster drying.

Seed bed preparation begins in late March /early April using discs to break clods.

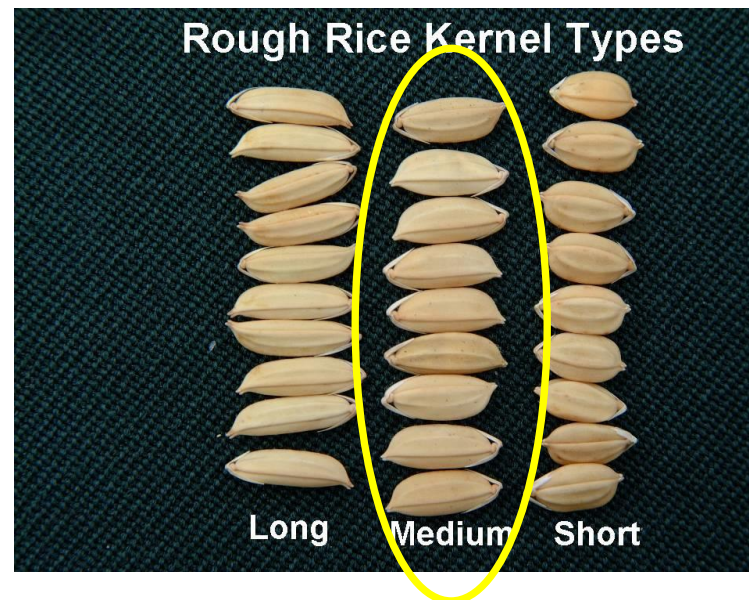
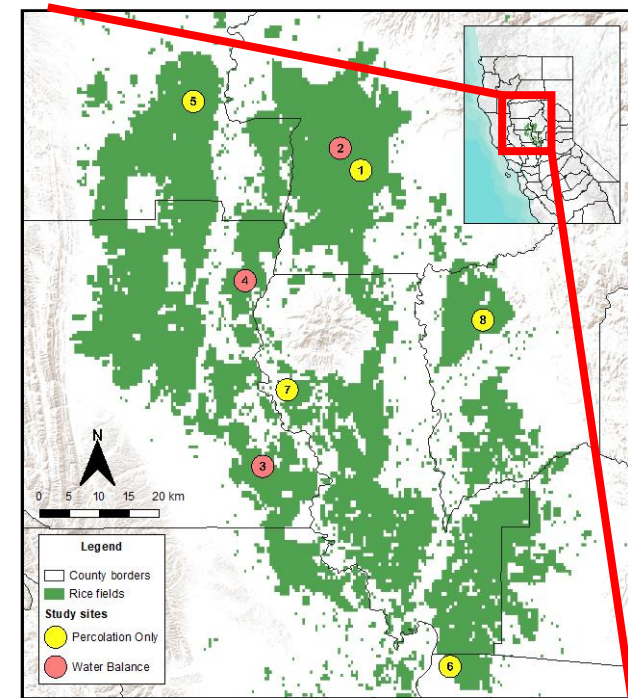
The final steps of seedbed preparation take place in late April/early May: fields are leveled, rolled and fertilizer applied.

Once the seedbed is ready, the fields are flooded and aerially seeded with presoaked rice seed.

The first 30 - 40 days the focus is good crop establishment and pest control.

CA rice system

- Growing season
 - April through Oct
 - About 150 days from planting to harvest
- Water-seeded system
- Medium grain
- High yielding
- Highly regulated
- All rice is non-GMO



California rice

- Grain types
 - Medium (90%)
 - Short, long, and specialty (10%)
- California focuses on high quality medium grain rice
- About 5% of area is organic

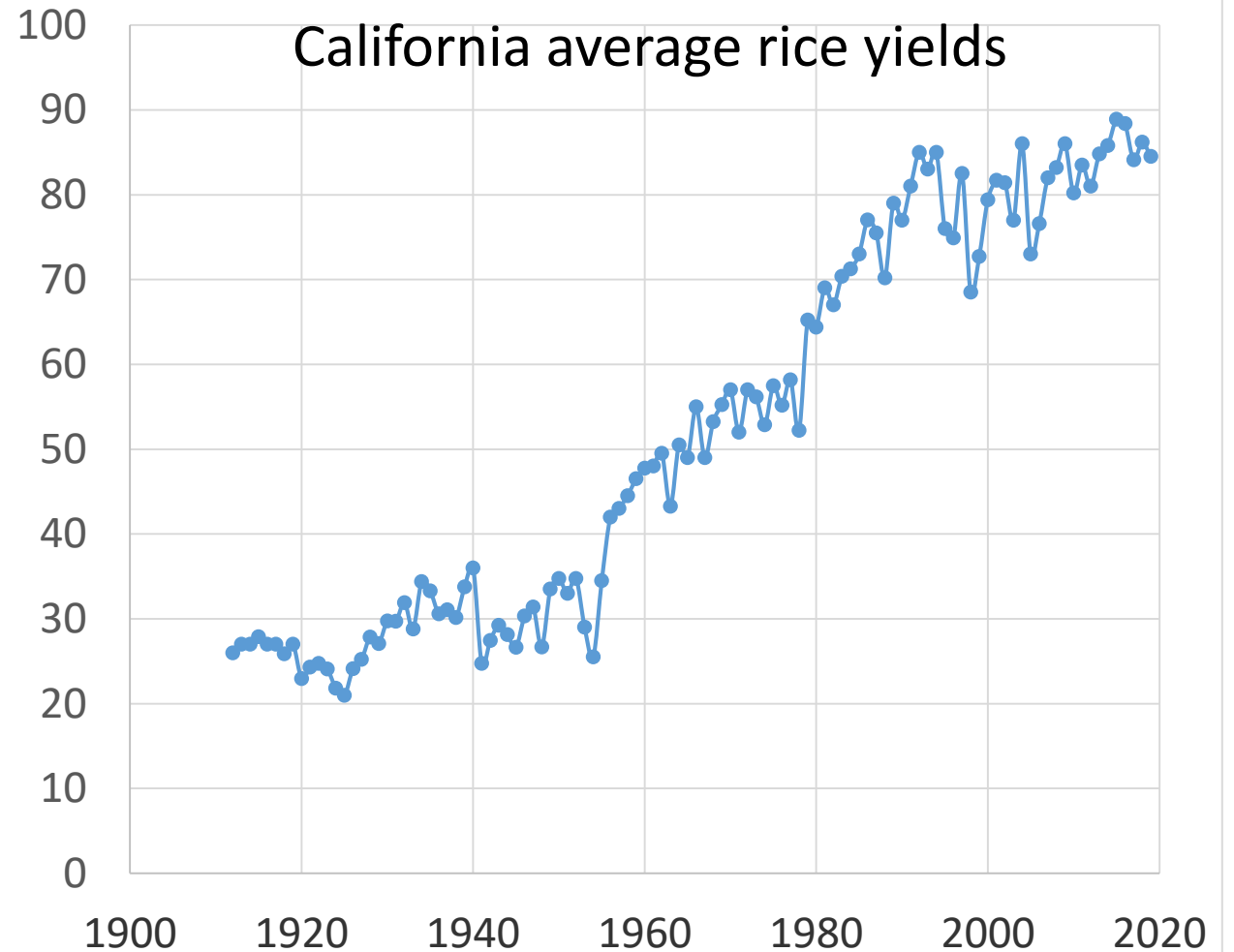


California rice yields

- Yields:
 - average 8500 lb/ac (9.5 metric ton/ha)
 - High was in 2015
 - 88.4 lb ac (9.9 t/ha)

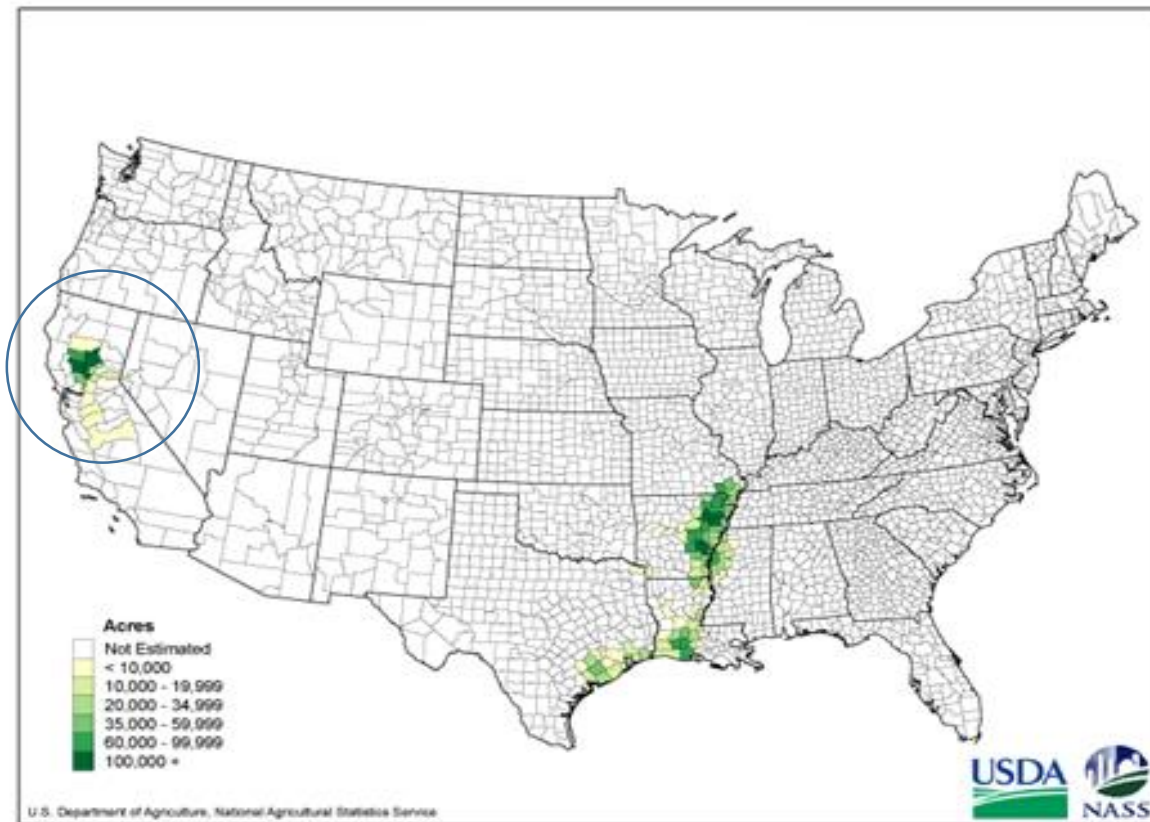


Yield (100 lb/ac)

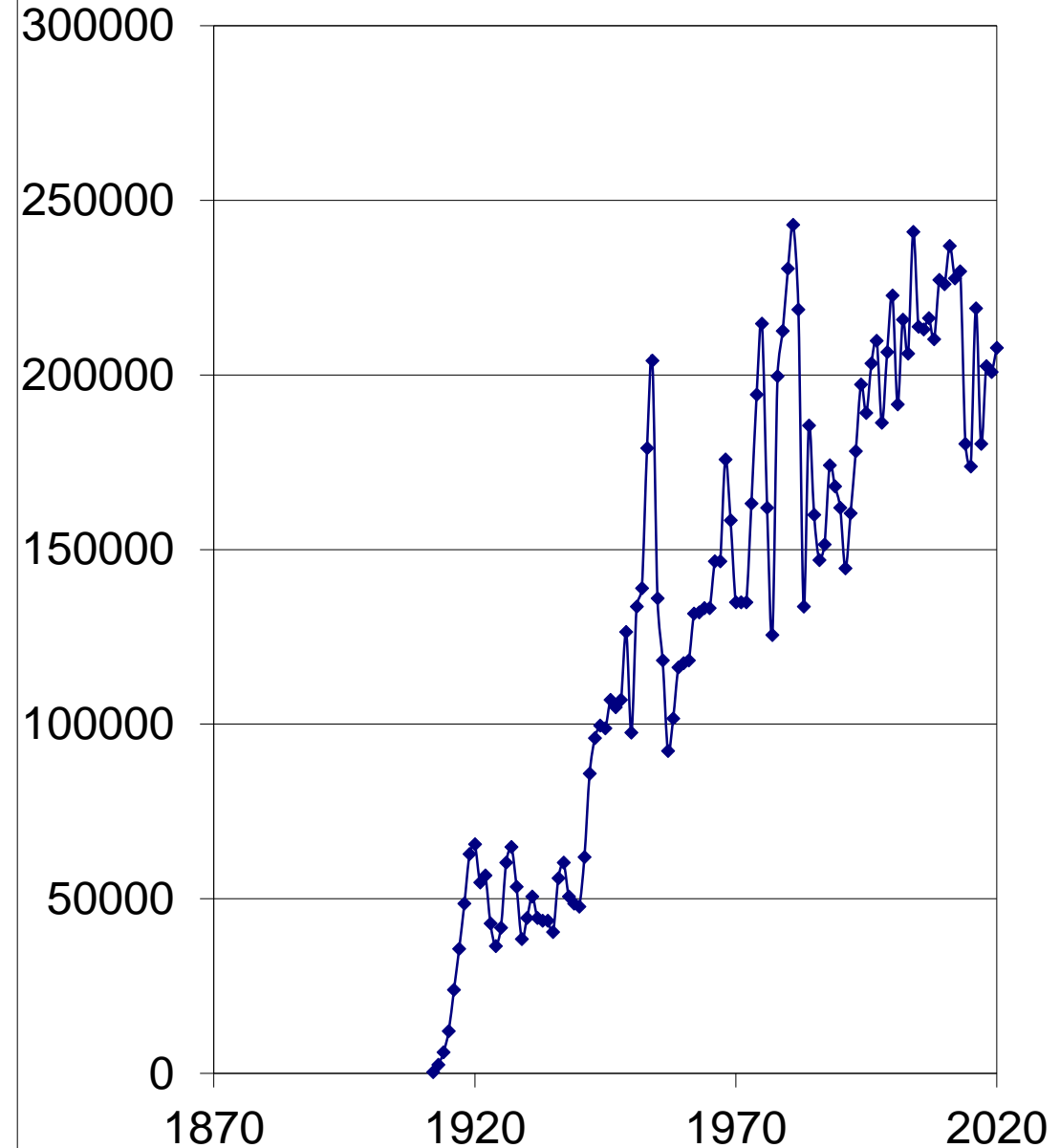


Rice area

- California: 2nd largest rice area in US
- Average: ~500,000 acres (202,000 ha)



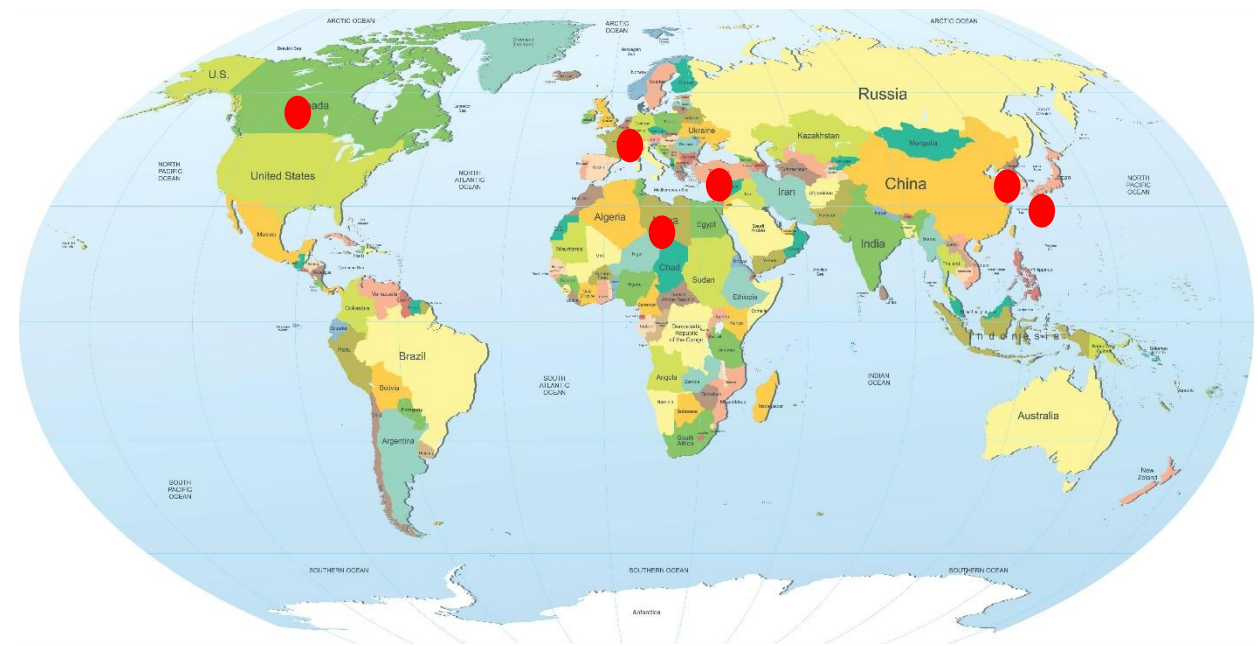
CA planted ha



California rice exports

Typical

- Domestic use -50%
- Japan – 25%
- S. Korea – 12.5%
- Turkey/Middle East – 7.5%
- Canada/EU – 5%



2019-actual

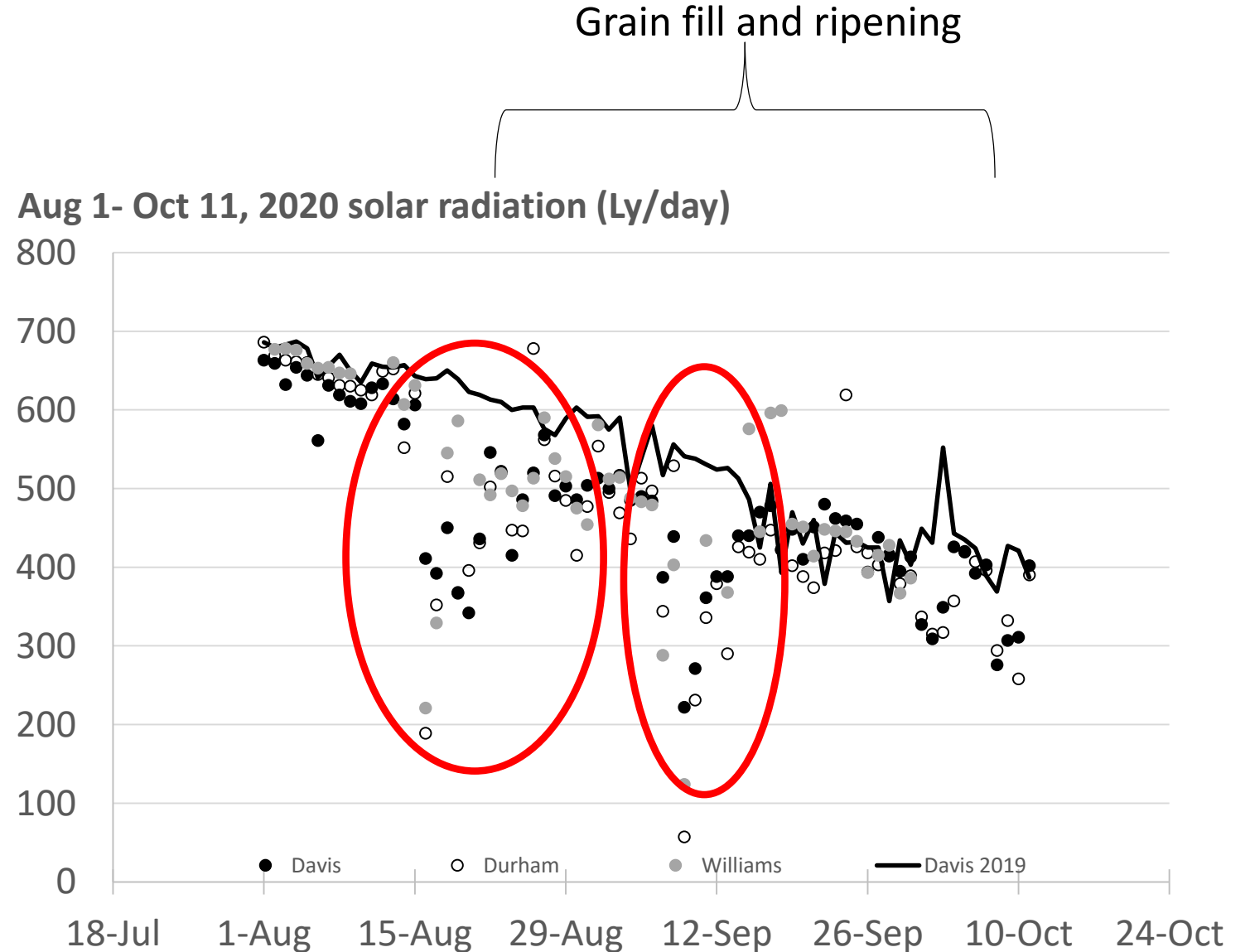
- Domestic Use - 42%
- Japan - 26%
- S. Korea - 11%
- Middle East and North Africa - 15.5%
- Oceania/EU/Other - 3.5%
- Seed - 2%

2020 Season

- COVID had a relatively small impact
 - Aqua-ammonia shortage early in season.
 - Delayed fertilization/planting
- Rice area
 - 513,000 acres (208,000 ha)
 - 17% of US rice area
- 2020 harvest
 - The harvest period was dry
 - Yields: guessing will be average (9.5 t/ha)
 - Milling quality:
 - During harvest - two periods of hot dry winds followed by cool periods with a lot of dew
- Wildfires and smoke

2020 Wildfires

- Smoke from wild fires reduced solar radiation during heading and grain filling.
- Did not appear to have a large effect on yield and quality



Sustainability practices

- Air quality
- Water quality
- N management
- Water use
- Habitat

Air Quality

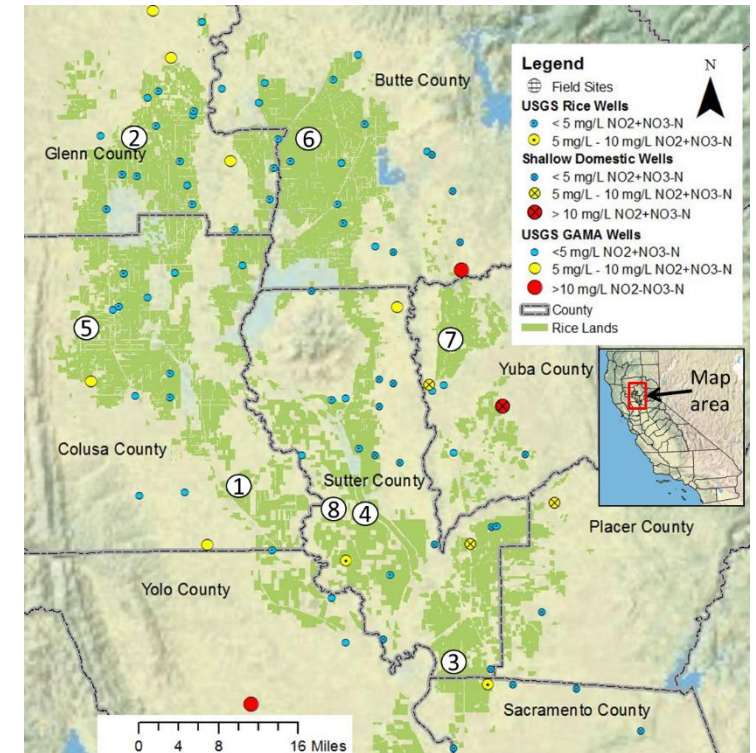
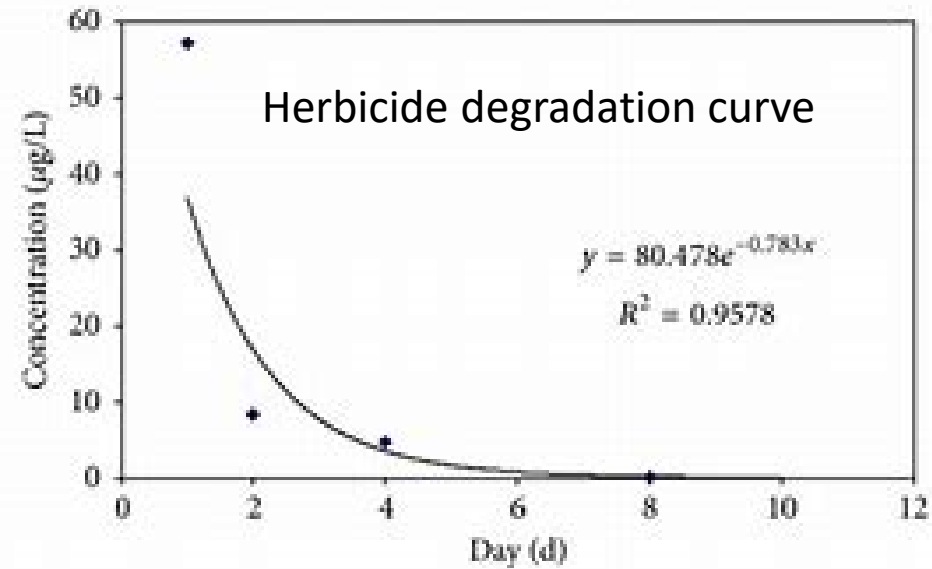
- Drift control
 - Granular herbicides
 - Strict wind restrictions
 - No-fly zones
 - Increased use of in-field applicators
- Restrictions of burning straw in winter
 - Limited to max of 25% of area
 - Actual – about 10-12%
 - Discuss later



Steel wheeled tractor

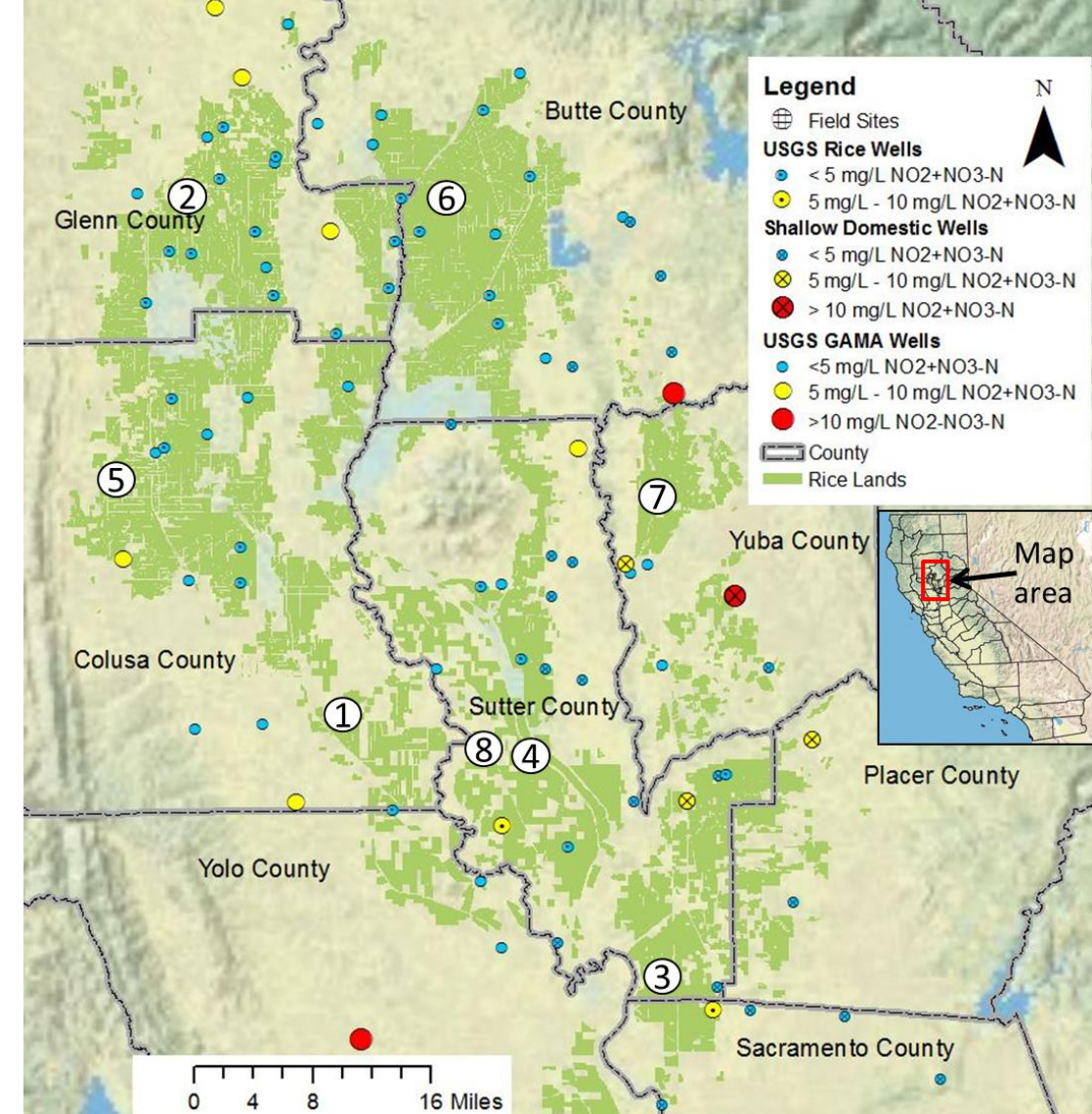
Water quality

- Pesticide applications
 - Hold times (water can not be released from field after pesticide applications)
 - Based on degradation curves
 - Increased use of granular herbicides
 - reduce drift to near by water canals
- Nitrate in ground water
 - Monitoring of ground wells



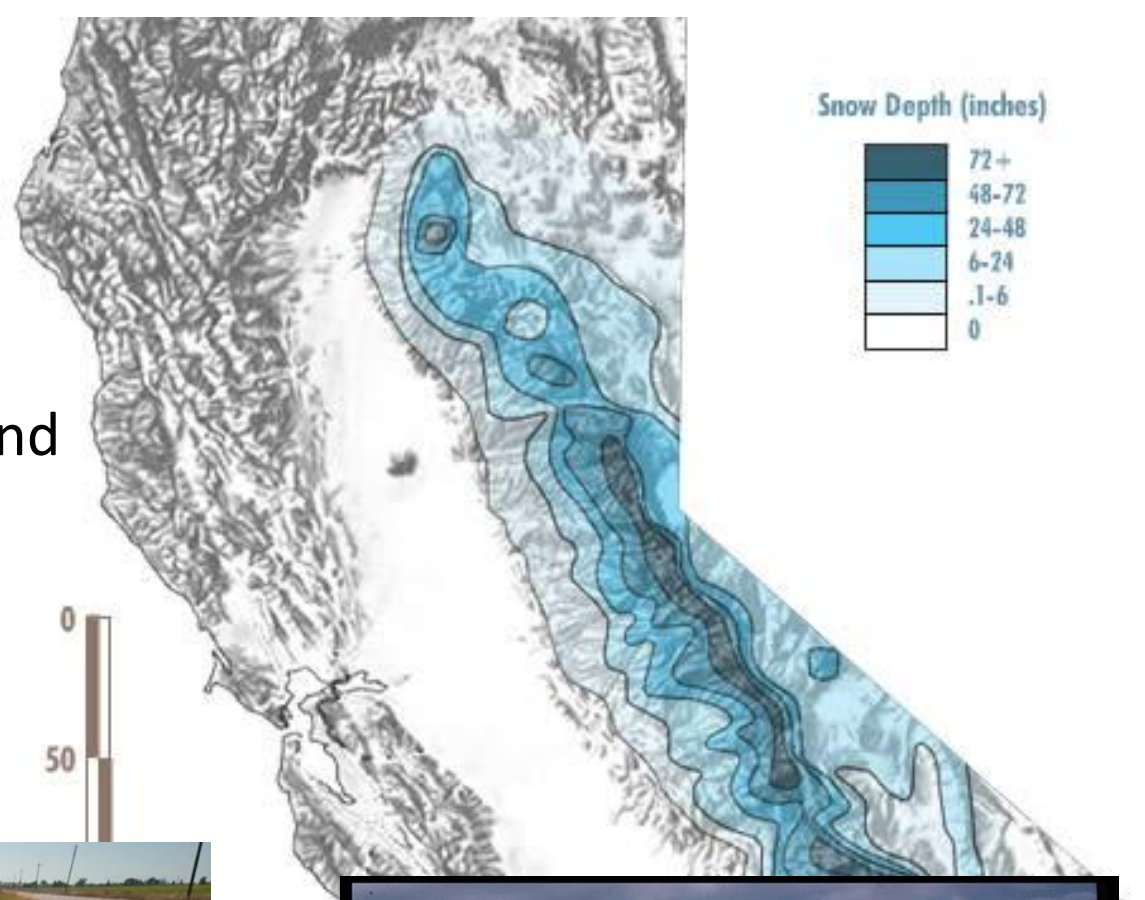
Nitrogen management

- Nitrate leaching
 - Farm level N management plans
 - Ground water monitoring for nitrate
 - (already mentioned)
- Decision aides
 - Determining when N fertilizer is needed



Water use

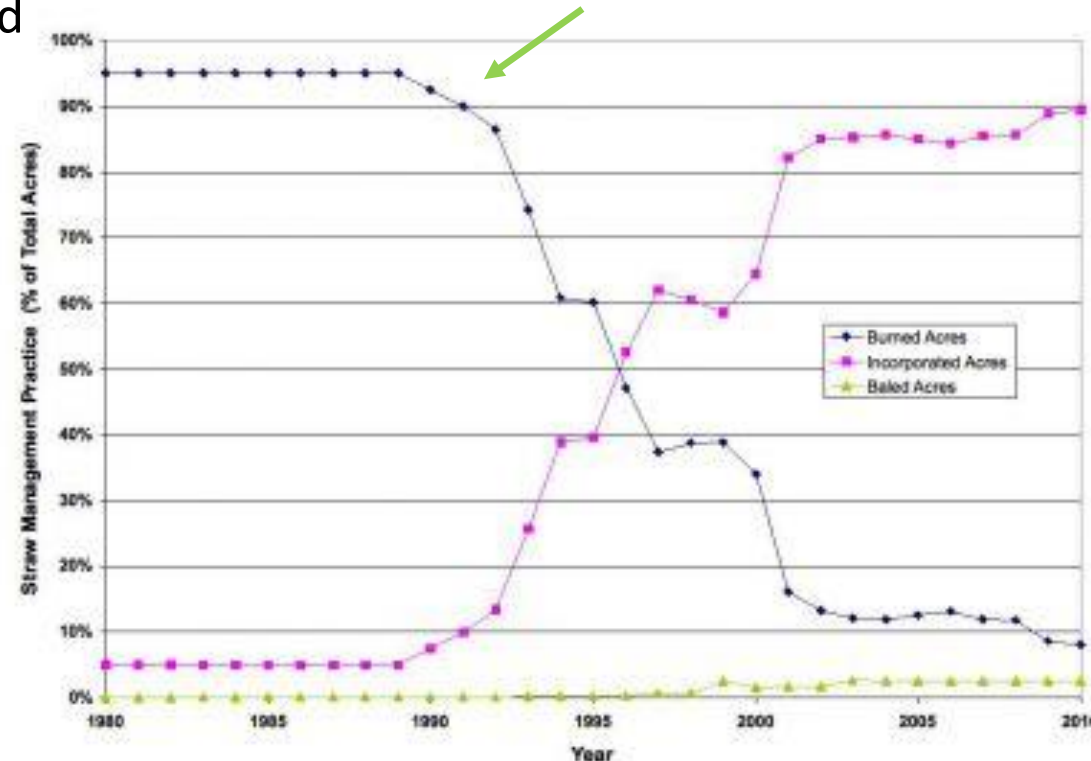
- Rice water use is high in California
 - No growing season rainfall
 - 95% of irrigation is captured snow melt and winter rainfall
- Field level monitoring of water use is increasing



Rice Straw Management

- Rice straw burning is strictly enforced/limited
 - About 80-90% incorporated during winter
 - Many of these fields are intentionally flooded
 - 8-12% of fields are burned
 - Permits required
 - < 10% of straw is baled
- Benefits
 - Air quality
 - Wildlife

**Phased enforcement began
in the early 1990s**



Winter straw management



Rice fields as wildlife habitat

- **Winter water fowl**
 - Over 12 million migrating waterfowl use CA rice lands
- **Habitat for many other shore and water birds throughout year.**
- **Numerous water fowl programs with NGOs, state and federal agencies**



Thank you

