CALIFORNIA NITROGEN

CALIFORNIA NITROGEN ASSESSMENT

A PROJECT OF

THE AGRICULTURAL SUSTAINABILITY INSTITUTE AT UC DAVIS

SUSTAINABLE AGRICULTURE RESEARCH AND EDUCATION PROGRAM (SAREP)

AGRICULTURAL ISSUES CENTER

KEARNEY FOUNDATION OF SOIL SCIENCE

FORUM PARTNERS

SUSTAINABLE CONSERVATION, ROOTS OF CHANGE

MAJOR FUNDING

DAVID AND LUCILE PACKARD FOUNDATION

CALIFORNIA NITROGEN

Why Nitrogen?

- Nitrogen plays a key role in agricultural production.
  - Increased yields
- There are also costs associated with nitrogen application.
  - Water & Air Quality
  - Climate Change
  - Human Health
- Nitrogen provides an important link between air, water, and climate concerns

CALIFORNIA NITROGEN

About the Agricultural Sustainability Institute

Our mission is to ensure access to good food and to promote the vitality of agriculture today and for future generations. We do this through integrative research, education, communication and early action on big, emerging issues.

http://asi.ucdavis.edu

CALIFORNIA NITROGEN

Top 10 Priorities of ASI Constituents

1. **Competition for water**
2. Farmland preservation
3. Food systems
4. **Climate Change**
5. Viability of small- and medium-sized farms
6. **Water use efficiency**
7. **Public understanding**
8. Habitat preservation
9. **Petroleum dependence**
10. **Air and water pollution**

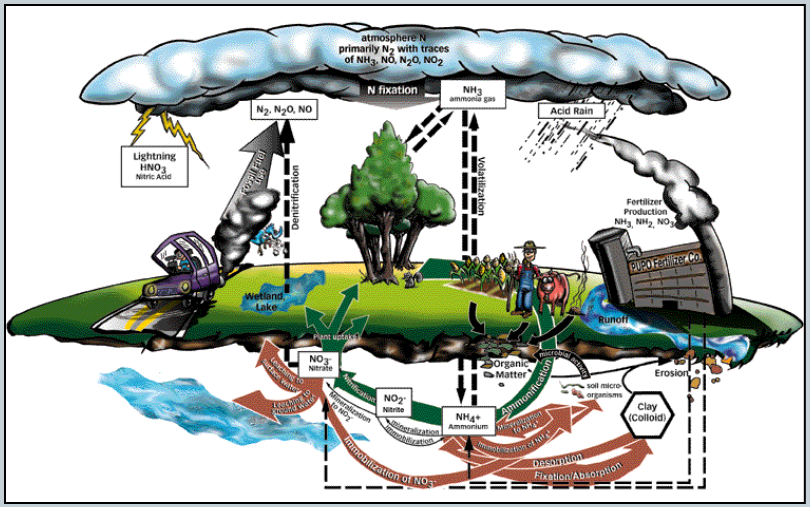
What Is the California Nitrogen Assessment?

- **Goal:** To gain a more comprehensive view of the state's nitrogen systems and to provide insights for stakeholders into the balance between the **benefits** of agricultural nitrogen and the **effects** of surplus nitrogen in the environment.
- **Multi-disciplinary Team**: Three postdoctoral fellows, two communications fellows, AIC analysts, SAREP academic coordinator and other UC researchers.
- **Two-year project** funded by $1.5 million from David and Lucile Packard Foundation.

CALIFORNIA NITROGEN

What is an Assessment?

- Looks at current knowledge, scientific literature, and data.
- Generates results that can only be produced when a large body of existing information is examined together.



CALIFORNIA NITROGEN

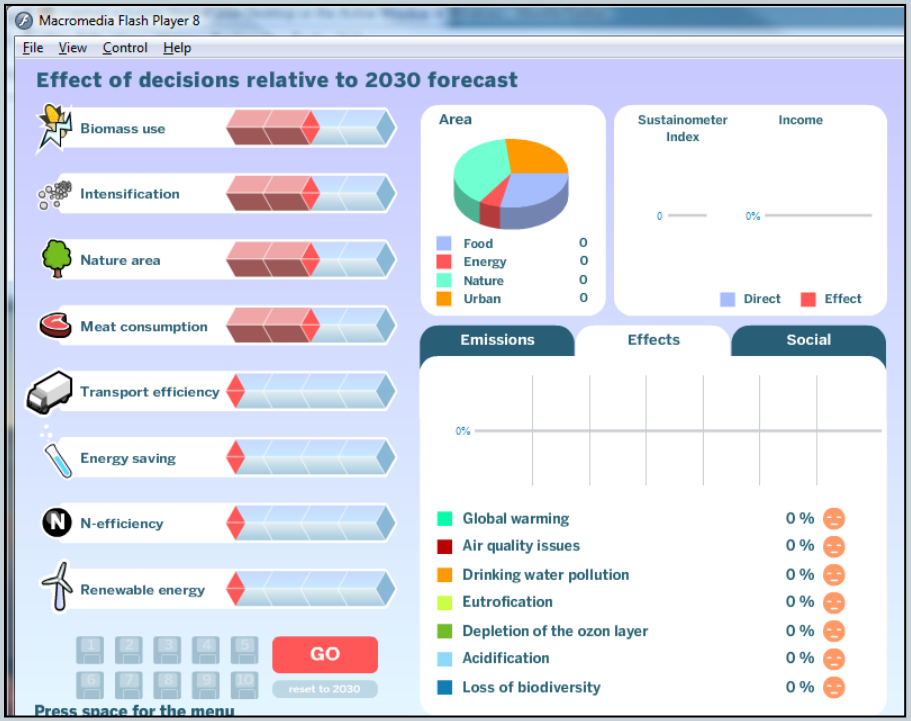
What is an Assessment?

- Purpose: **guide decisions** on a complex, public issue.
- **Critical evaluation** of information.
- Conducted in a **credible, useful, legitimate** (open, transparent) process.
- **Engages key stakeholders and responds to users' needs**.
- **Adds value by sorting, summarizing, synthesizing, translating and communicating** what is known and widely accepted from what is not known (or not well established); includes evaluation of uncertainty.
- **Policy relevant, but not prescriptive.** (Assesses options; "if, then" approach)
- **Peer reviewed** (by stakeholders and researchers).

CALIFORNIA NITROGEN

Examples of Potential Products

- **Tools for farmers** that will allow them to develop more efficient nitrogen management strategies, saving them money on inputs;
- **Metrics** that policymakers and others can use to assess practices and options;
- **Outreach tools** that help the public understand nitrogen's importance in agricultural systems and its impact on society and environment;
- Scientific **publications**;
- Identification of **knowledge gaps** for future investigation.



Sample Nitrogen Calculator

CALIFORNIA NITROGEN

Assessment Forums

- Collect stakeholder input
  - Nitrogen Questions
  - Desired outcomes/products
- Listening to:
  - Producers
  - Policy makers
  - Commodity groups
  - Non-governmental organizations
  - Researchers
- Use feedback to shape work plan

- Stakeholder Roles:
  Your Part in the Assessment
  - Set N Assessment Priorities
  - Identify questions assessment aims to answer
  - Provide input on outcomes and products that meet your needs and are in a form you can use
  - Give guidance on communication and outreach
  - Peer review