

KICK-OFF MEETING

Development of a Biostimulatory Substances TMDL

for the Elkhorn Slough Watershed

February 19, 2015

Steven Saiz & Jennifer Epp
Central Coast Water Board TMDL Program



Today's Goal

Discuss water quality concerns and the future development of a TMDL for biostimulatory substances in the Elkhorn Slough watershed.

Today's Objectives

- **Present info on the Water Board.**
- **Present info on water quality impairments and the TMDL process.**
- **Opportunity for stakeholder comments to assist in the TMDL development.**

What the Water Board Does

Mission Statement:

To preserve, enhance, and restore
the quality of CA's water resources...
surface and ground waters

Laws to Protect Water Quality

- CA Water Code (State)
- Clean Water Act (Fed)



Why are We Here?...

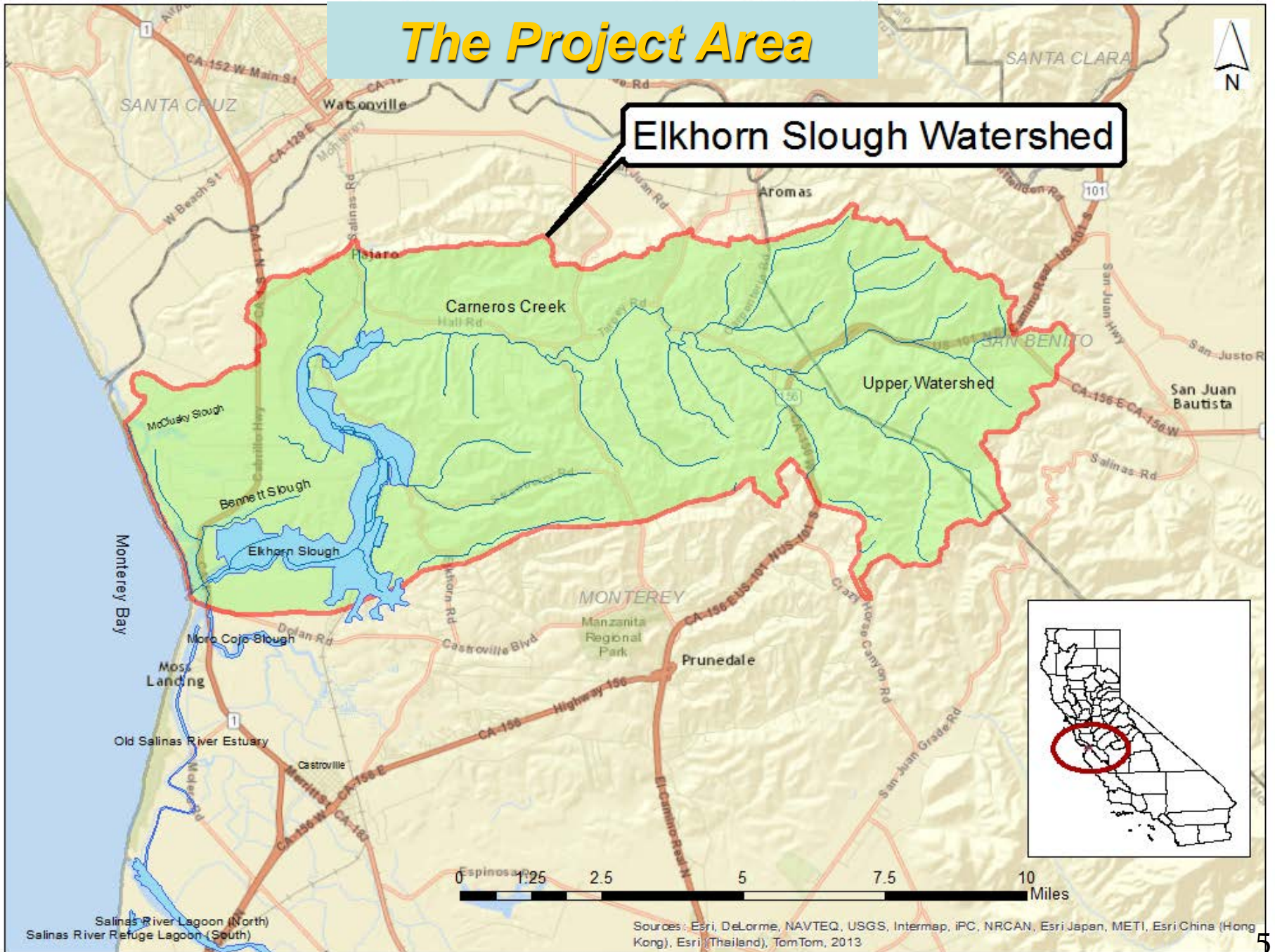
Exceedances of water quality standards in Elkhorn Slough, Bennett Slough, Moss Landing Harbor, Los Carneros Creek:

- ✓ **dissolved oxygen**
- ✓ **pH**
- ✓ **un-ionized ammonia**
- ✓ **chlorophyll-a**

Above are indicators of biostimulatory substances in concentrations that promote aquatic growth and adversely affect beneficial uses.

The Project Area

Elkhorn Slough Watershed



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan (Hong Kong), Esri (Thailand), TomTom, 2013

What is a Total Maximum Daily Load (TMDL)?

“The maximum amount of a pollutant that a surface waterbody can assimilate while still meeting water quality standards.”

- State Water Board Guidance (2005)

Steps in the TMDL Process

TMDL projects are strategies to restore water quality

**Identify
Probable
Sources**

**Identify
Waterbody
Loading Capacity**

**Identify Pollution
Reductions Needed**

**Develop Plan to
Achieve
Reductions**

Why Do a TMDL?...

Clean Water Act 303(d)

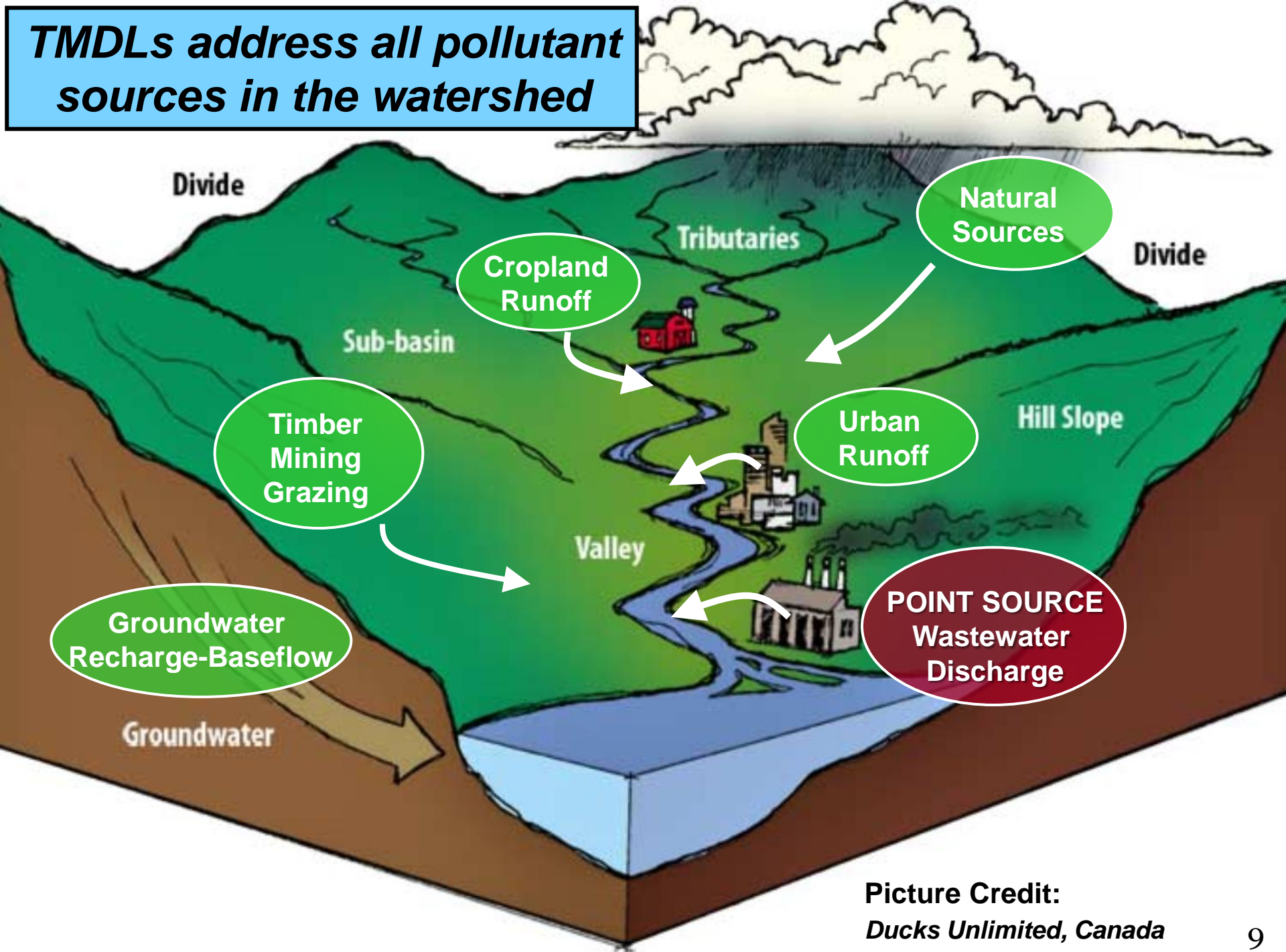
States must create a “list” of impaired waters that do not meet WQ standards

Clean Water Act 303(d)(1)(C)

For impaired waters, states must establish the **total maximum daily load** for pollutants to implement the applicable WQ standards with **seasonal variations** and a **margin of safety** which takes into account any lack of knowledge.

CA State TMDL Policy

TMDLs address all pollutant sources in the watershed



Picture Credit:
Ducks Unlimited, Canada

What TMDLs Do and Do NOT Do....

TMDLs Do Not...

- Require immediate compliance with water quality objectives
- Imply enforcement actions are imminent
- Mandate specific management practices
- Presume every landowner is contributing to pollution
- Presume all pollution is from human activities (natural sources too)
- TMDL itself not directly enforceable (existing permits are)

What TMDLs DO and DO NOT Do....

TMDLs Do...

- Often rely on existing permits to implement TMDL objectives
- Create a “plan” for monitoring and implementation
- Require feedback mechanisms to evaluate progress
- Generally have long-term timeframes to achieve goals
- Create an expectation and responsibility to achieve goals

WHAT ARE THE EFFECTS OF BIOSTIMULATION?

Excess algal biomass

Degradation of aquatic habitat

Altered dissolved oxygen and pH balance

Decreased biological diversity

DO crashes (hypoxia), fish kills, disruption of aquatic food web

Public nuisance – public health risks

Conceptual Model

Increased Nutrient/Organic Loads:

- Agricultural & Dairy activities
- Urban & runoff
- Groundwater (baseflow)
- Septic Systems
- Natural sources (atmospheric, geologic)

Co-Factors:

- Hydraulic residence time
- Water circulation
- Water Stratification
- Suspended Sediment
- Sunlight
- Climate

Ecological Response:

- Primary Producers (algae)
- Water/Sediment Chemistry
- Consumers (invertebrates, fish, birds, mammals)

How can you contribute to the TMDL?

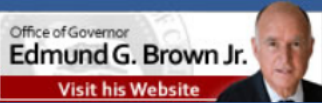
Please contact or email us with...

- **Relevant scientific literature or technical reports**
- **Water management in the watershed**
- **Nutrient and/or irrigation management**
- **Photographs**
- **Success stories**
- **Watershed studies, pilot studies, grant projects**
- **Historical perspectives**
- **Other??? Anything you think would be helpful or relevant**

Next Steps...

- **Draft Report for your review – Late Spring 2015**
- **Additional Stakeholder meeting – June 2015**

Welcome to the Central Coast Regional Water Quality Control Board |



- Cal/EPA
- State & Regional Water Boards
- Laws/Regulations
- Plans/Policies
- Programs
- Decisions Pending and Opportunities for Public Participation



- Our Vision
- Board Meeting Calendar
- Basin Plan
- Programs
- Drought Year Info
- Total Maximum Daily Load
- Impaired Waterbodies
- Success Stories
- Ambient Monitoring Program (CCAMP)
- Storm Water
- Watershed Management Initiative
- Enforcement
- 401/404 Water Quality Certifications
- Underground Storage Tanks
- Wastewater Permitting
- Reporting a Sewage Spill
- Agriculture

RESOURCES

- **Email Subscriptions**
- Data & Databases
- Business Help
- Public Records Center
- Grants & Loans
- Fees
- Customer Service Survey
- File an Environmental Complaint
- Employment
- Useful Links
- Website Index

ANNOUNCEMENTS

- Central Coast Regional Water Board Act
- Information Request
- State Water Board
- The 2012 Accounting
- New! Ex Parte Comments
- Water Board contracts with U.S. Geological Survey to test domestic wells in Salinas and Pajaro Valleys
- Water Board launches Groundwater Assessment and Protection (GAP) program webpage
- "Sampling My Private Well"
- Nitrate in Domestic Drinking Water Wells
- Current Water Purveyors Report
- More announcements ...

www.waterboards.ca.gov/centralcoast

Subscribe to our "Elkhorn Slough Biostim TMDL" email subscription list to be notified of TMDL progress and meetings

Questions & Comments...

Staff Contact (Elkhorn Slough Watershed TMDL)

Steven Saiz

Central Coast Water Board TMDL Unit

Steve.Saiz@waterboards.ca.gov

(805) 549-3879