

Near Shore Water Quality

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Kallestad

Near Shore is important because:



Aesthetics:

Clarity is most obvious near the shore.

Management:

Fast and local response to pollutant loading.

Indicators of Near Shore Water Quality

Clarity
Optical properties



Attached Algae
Periphyton



Periphyton Sampling

Scrape algae off rock and measure dry weight. UC Davis



Allen

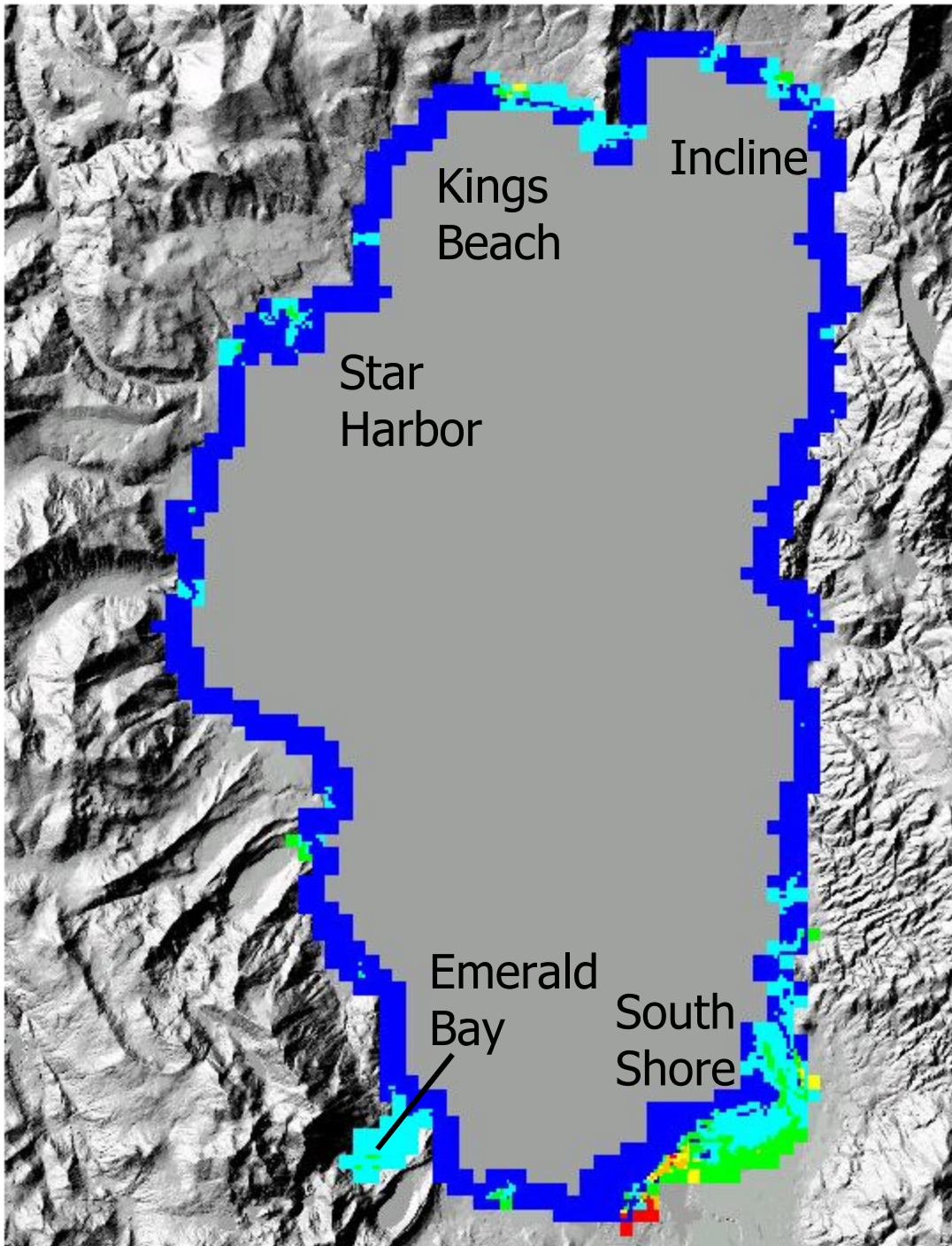
Optical Properties

Pump water through optical instruments on a moving boat: Turbidity, Chlorophyll.

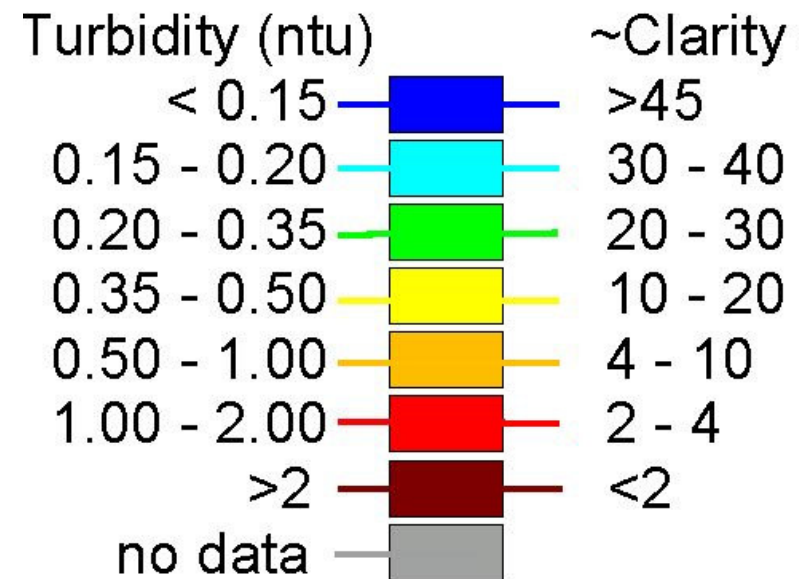
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Sample inlet
2 feet below
surface



May 10,11,12 2003



Jan 20
2003

Calm

Edgewood

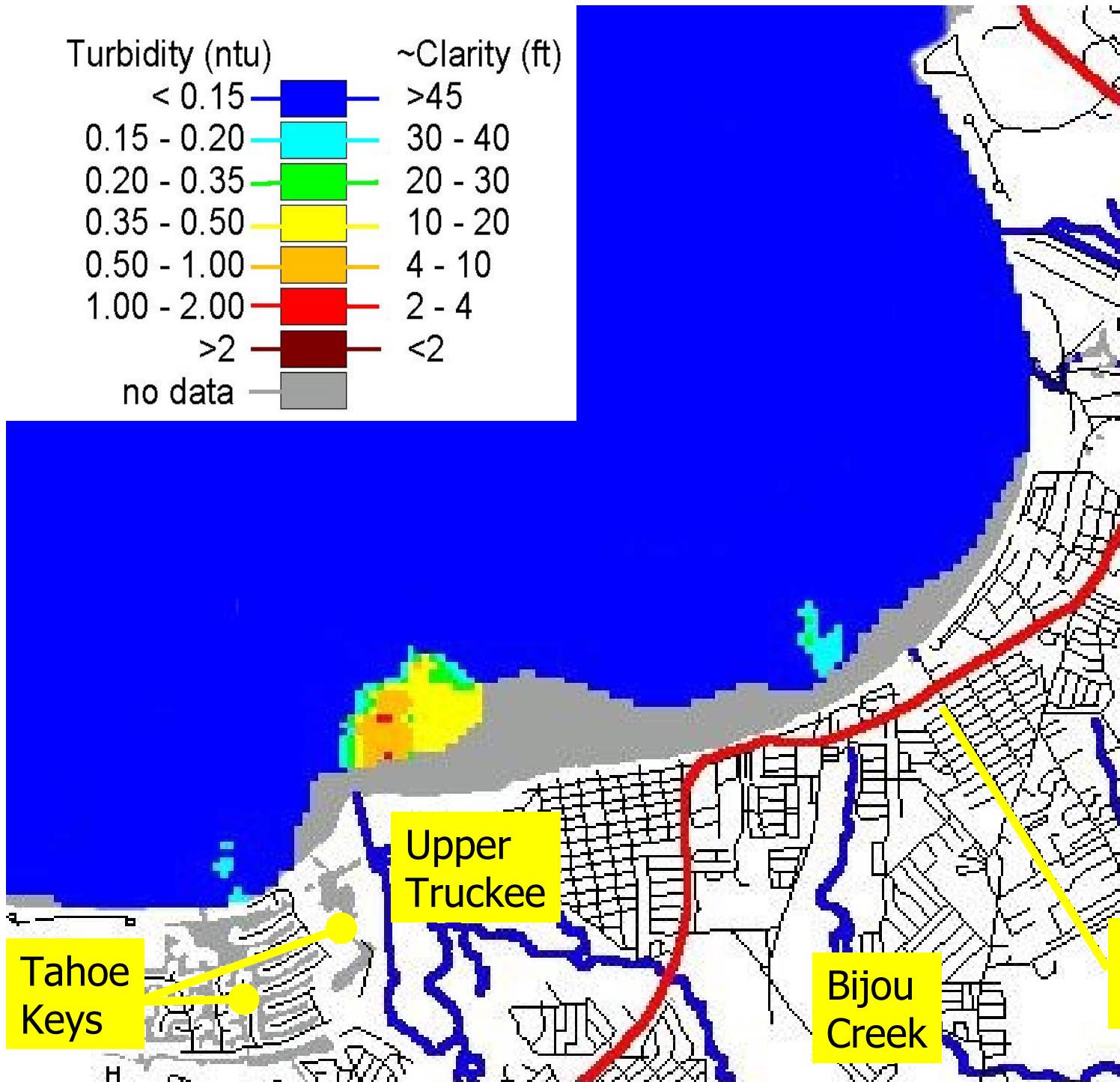
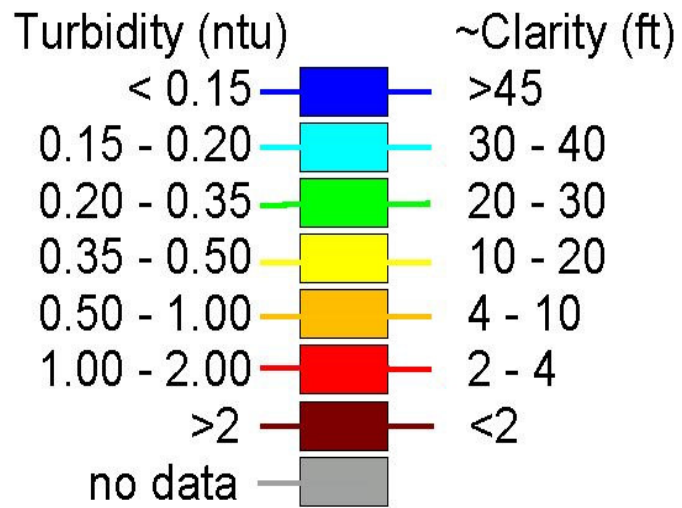
State
Line

Upper
Truckee

Tahoe
Keys

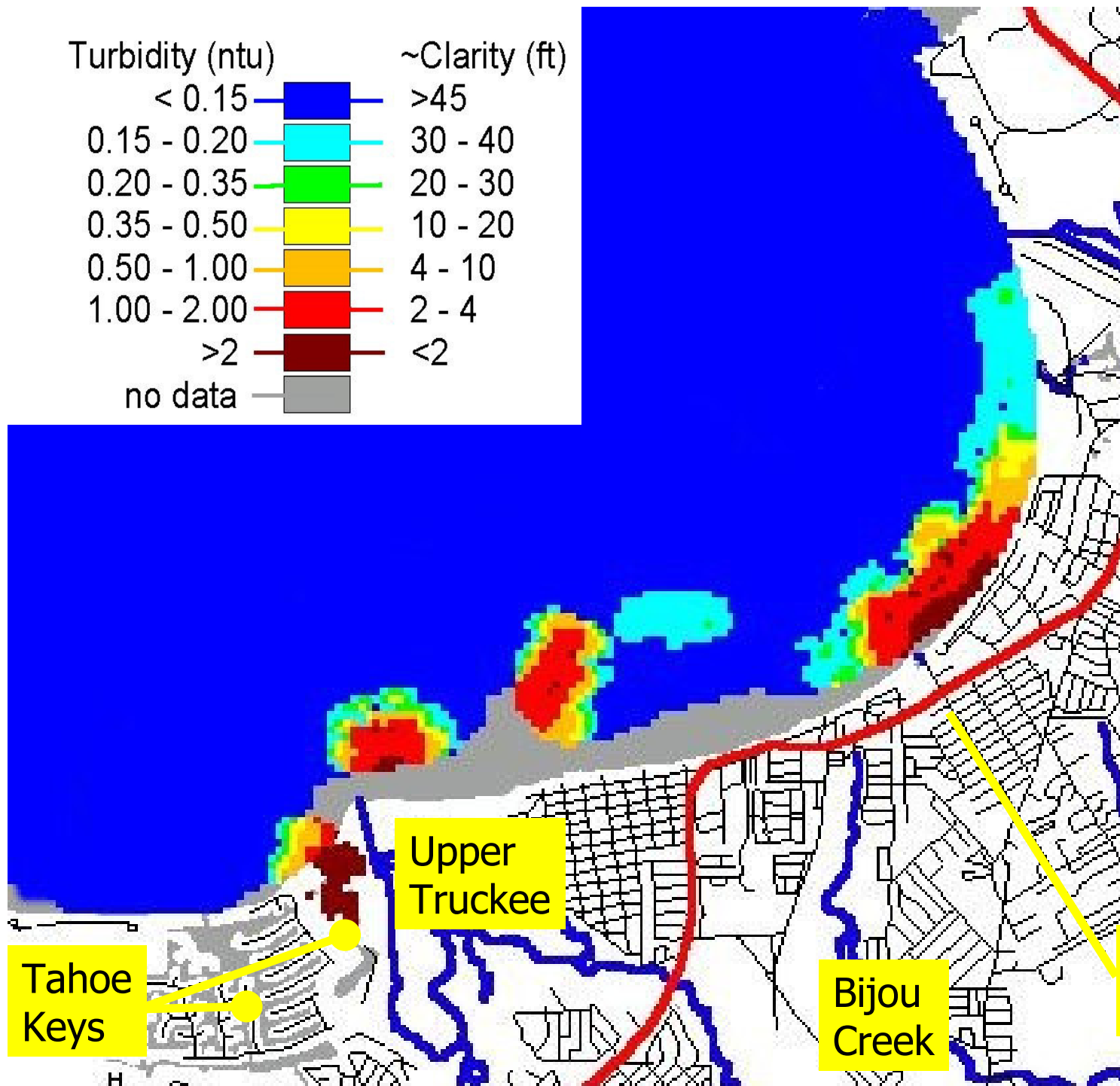
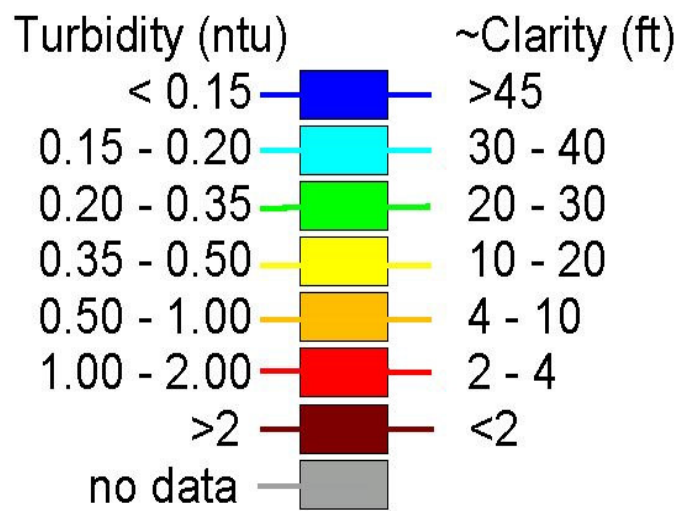
Bijou
Creek

Ski
Run



Jan 29
2003

2 days
after
rain on
lake
shore
snow



Tahoe
Keys

Upper
Truckee

Bijou
Creek

Ski
Run

March 19
2003

After
lake
level
rain

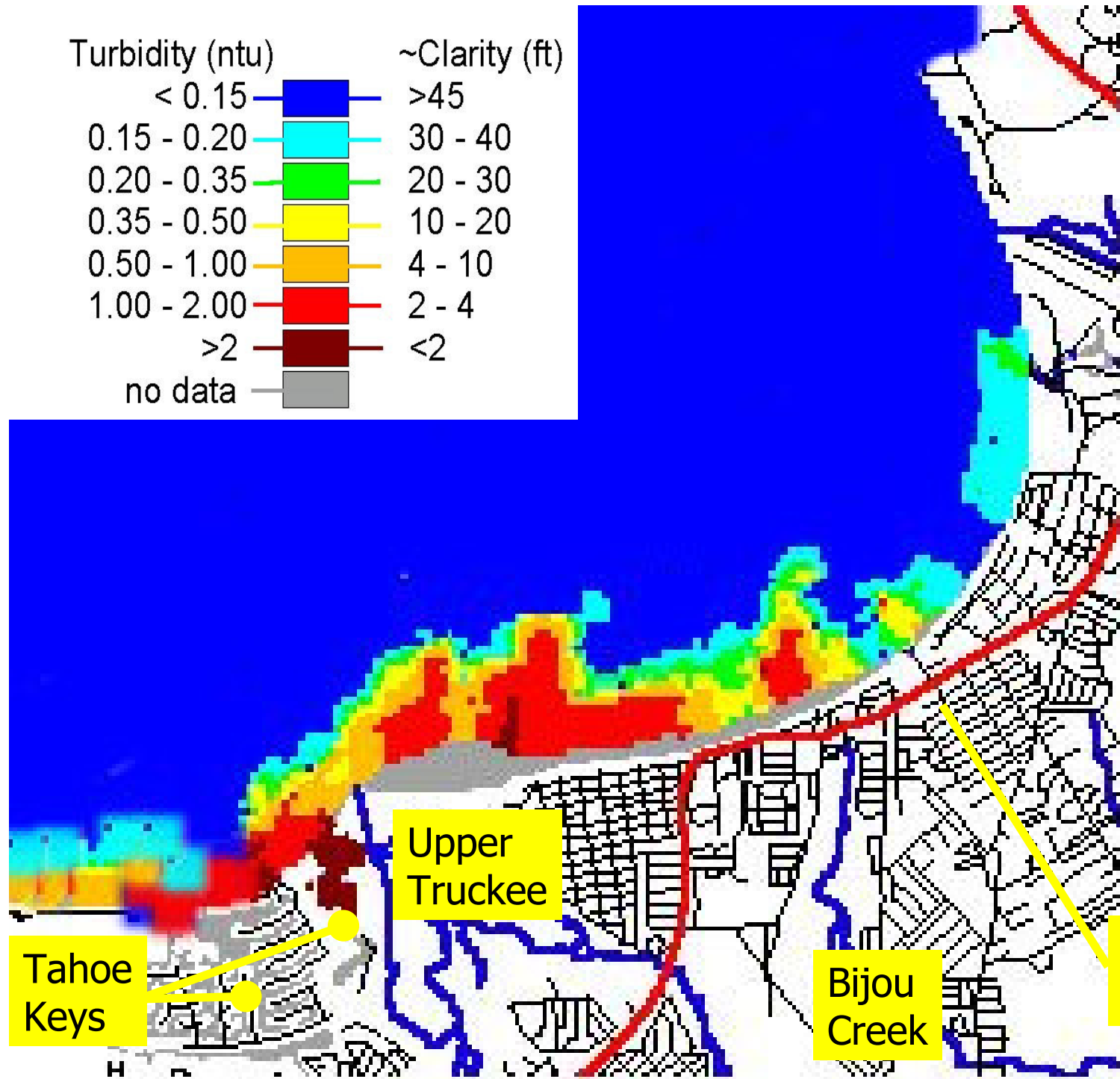
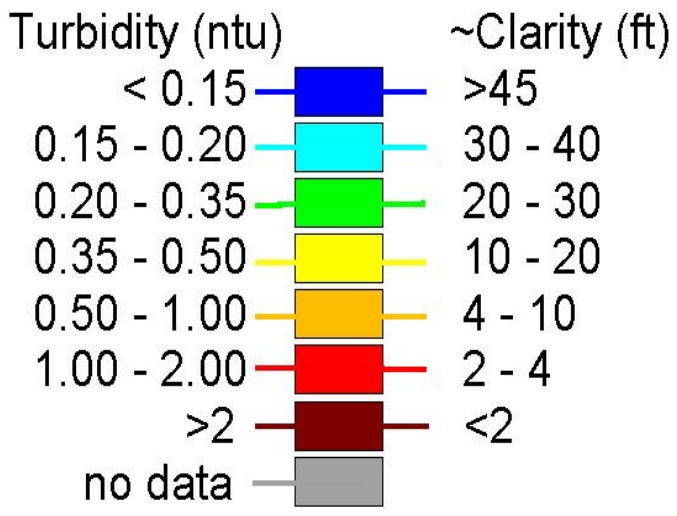
State
Line

Ski
Run

Bijou
Creek

Upper
Truckee

Tahoe
Keys



April 5
2003

calm

Edgewood

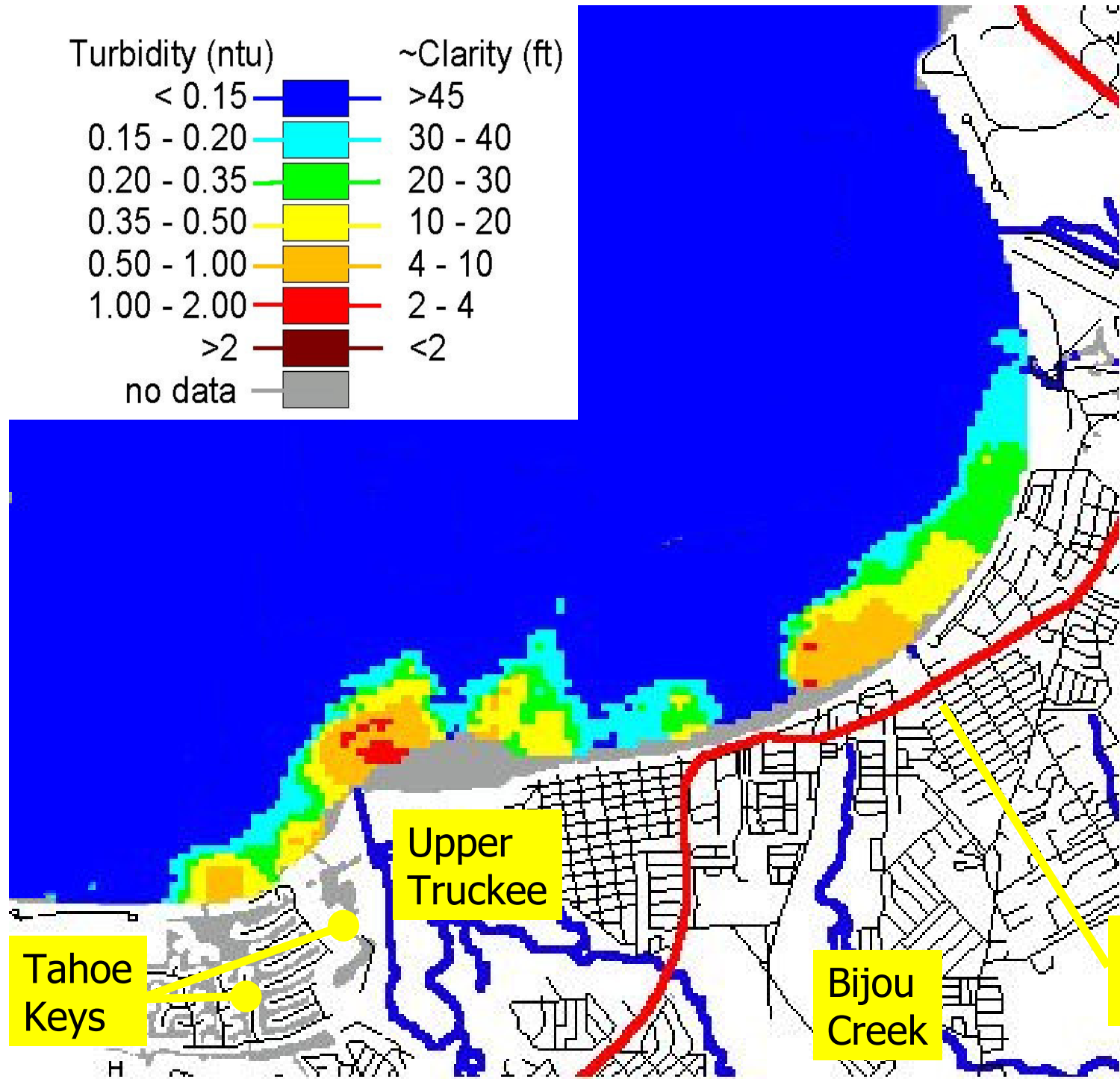
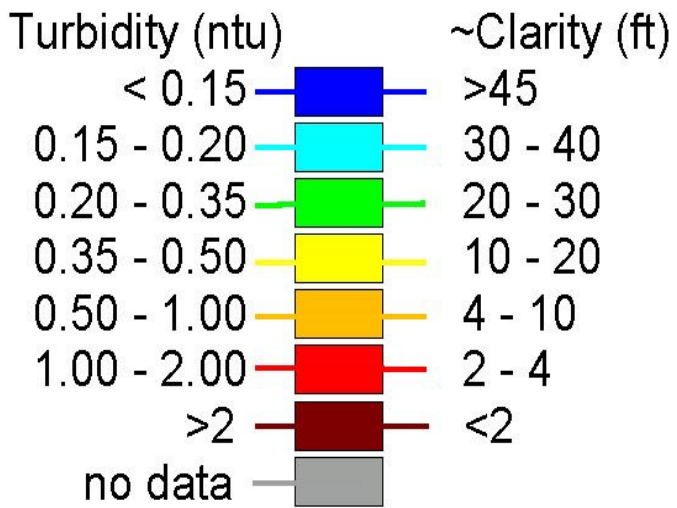
State
Line

Ski
Run

Bijou
Creek

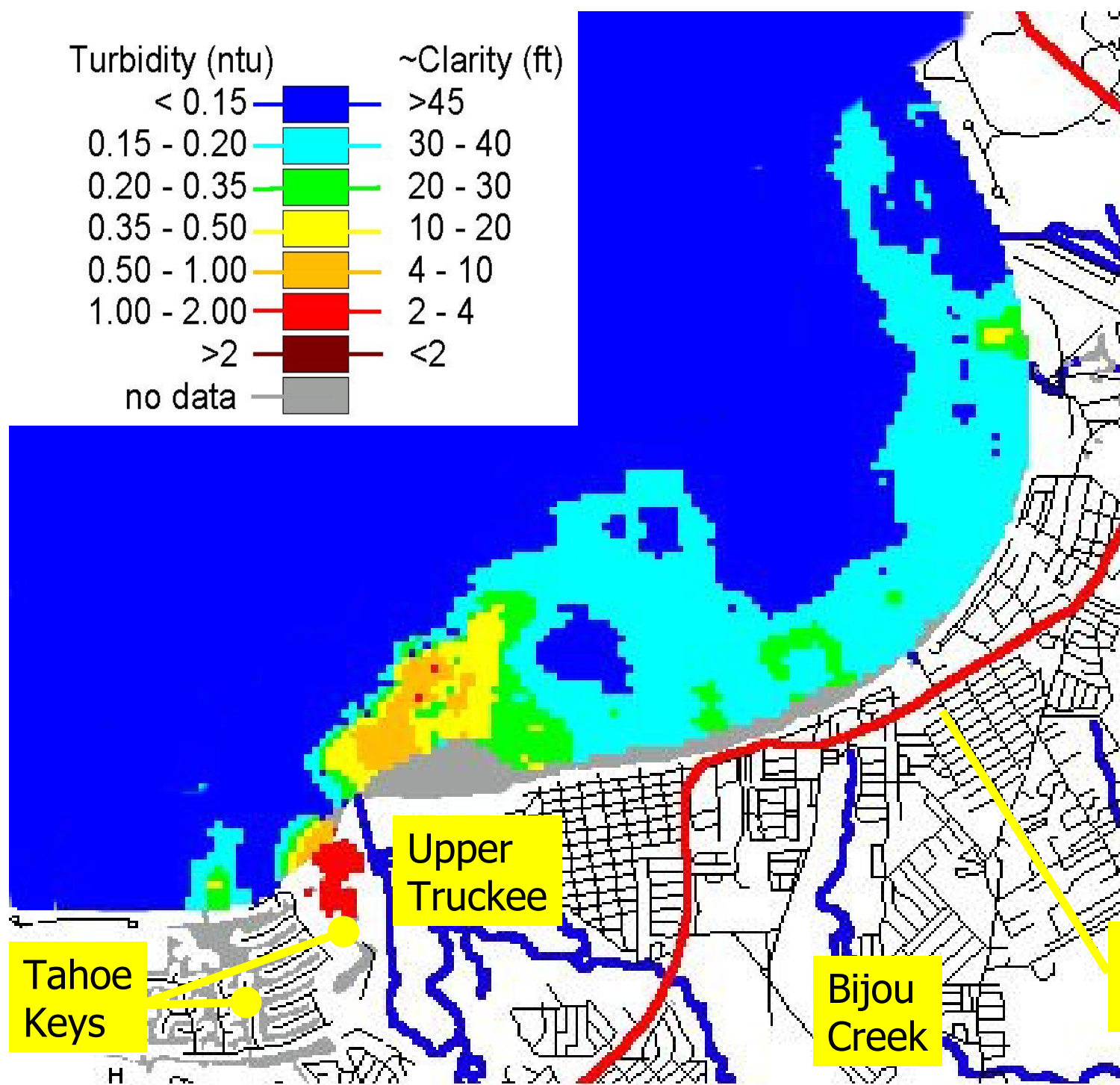
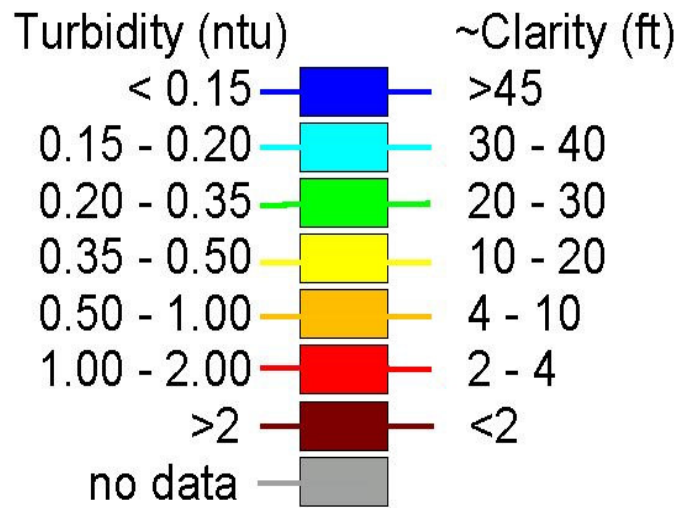
Upper
Truckee

Tahoe
Keys



May 13,
2003

Calm,
spring
run off



State
Line

Upper
Truckee

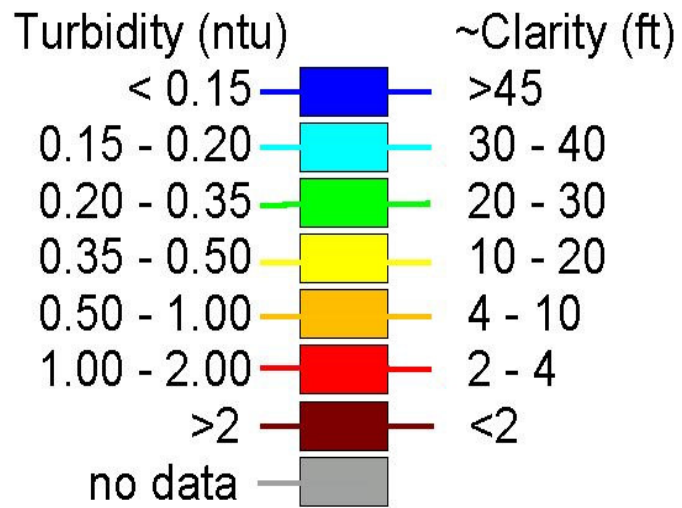
Tahoe
Keys

Bijou
Creek

Ski
Run

May 22
2003

Calm,
spring
run off



State
Line

Upper
Truckee

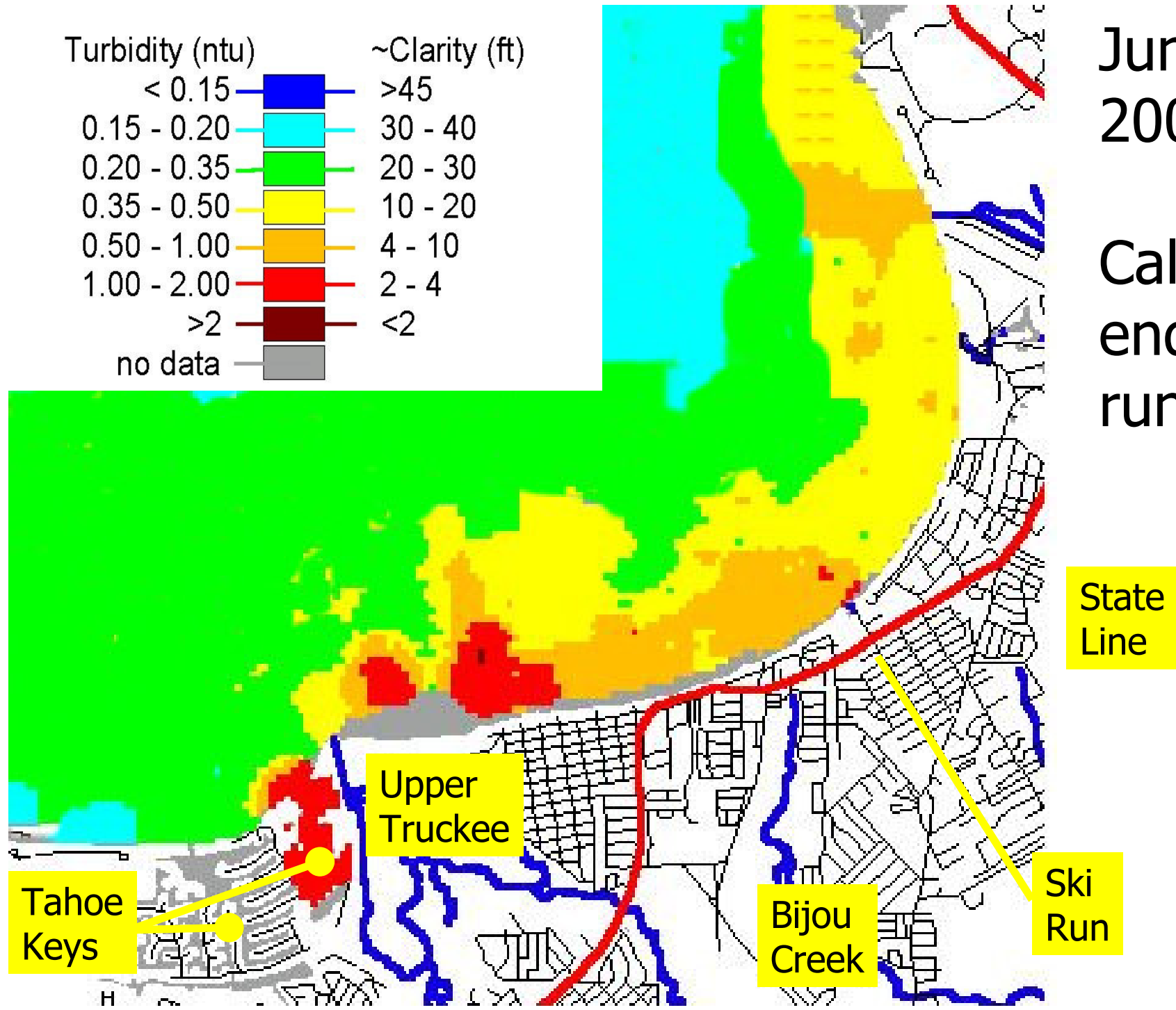
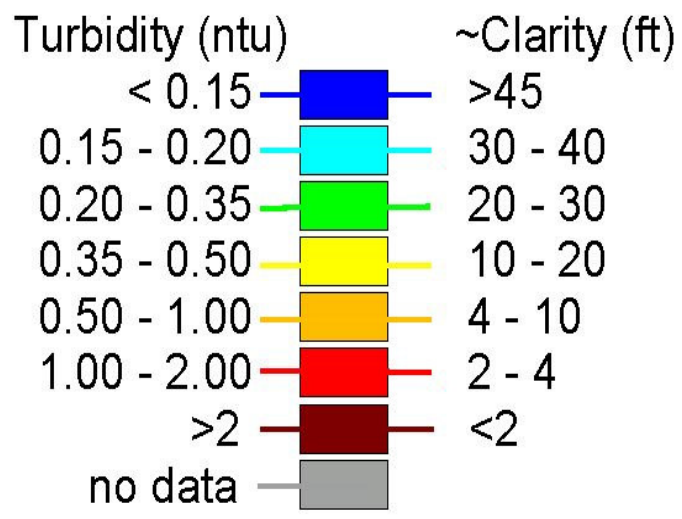
Tahoe
Keys

Bijou
Creek

Ski
Run

June 5
2003

Calm,
end of
run off



State
Line

Upper
Truckee

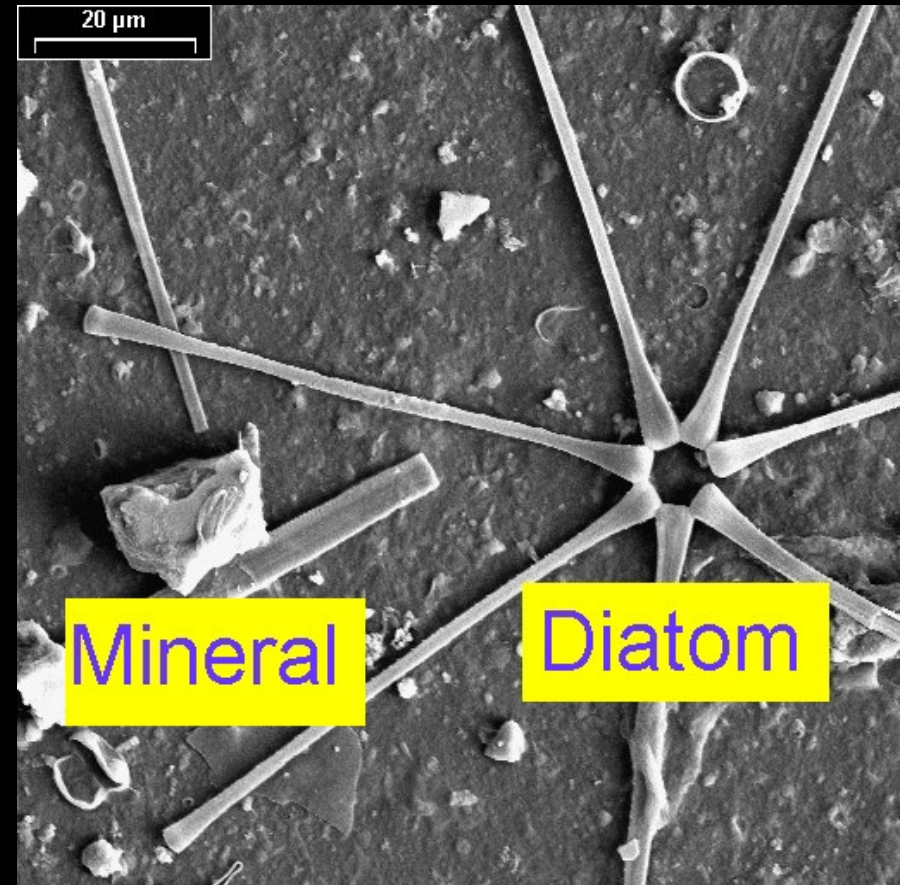
Tahoe
Keys

Bijou
Creek

Ski
Run



Mineral particles
are the cause of
high turbidity in
the near shore



Mineral

Diatom

Near Shore Zone



Mineral particles from some, but not all, developed watersheds are the biggest problem.

Worst area is Upper Truckee to Ski Run.

Near Shore Zone



Biggest problems occur during lake level snow melt and spring run off.

Near shore management challenge: Keep the small mineral particles out of the lake.

Littoral Zone Turbidity Threshold

Threshold values of turbidity correspond to:

- **a Secchi clarity of 5 ft for areas not influenced by a stream**
- **a Secchi clarity of 2 ft for areas influenced by a stream**

Ambiguous and inconsistent

Current monitoring program inadequate

Near Shore Conclusions

Several problem areas, caused by mineral particles from developed areas

Ineffective regulatory threshold

Cannot demonstrate effectiveness of management actions on near shore clarity



Reports and powerpoint shows:

<http://tahoenearshore.dri.edu>

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