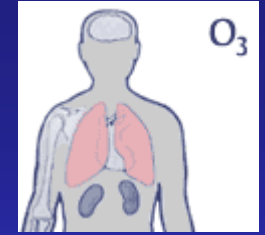


OZONE IN NEVADA COUNTY AIR

**PRESENTATION PRODUCED 2006 BY
NEVADA COUNTY BREATHERS
WITH ASSISTANCE FROM**

NORTHERN SIERRA AIR QUALITY MANAGEMENT DISTRICT

(530) 274-9360



**MOST INFLUENTIAL
AIR POLLUTANT:**

OZONE

OZONE IS INVISIBLE

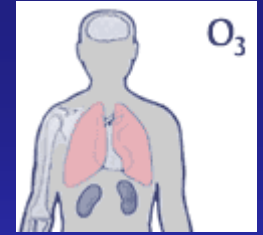


OZONE COUNT 30
("GOOD")



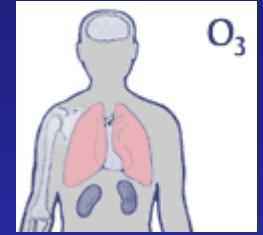
OZONE COUNT 180
("UNHEALTHY")

OZONE (O_3)



**OZONE IS TOXIC TO HUMANS
IN CONCENTRATIONS AS SMALL AS
ONE MOLECULE
IN ONE MILLION AIR MOLECULES**

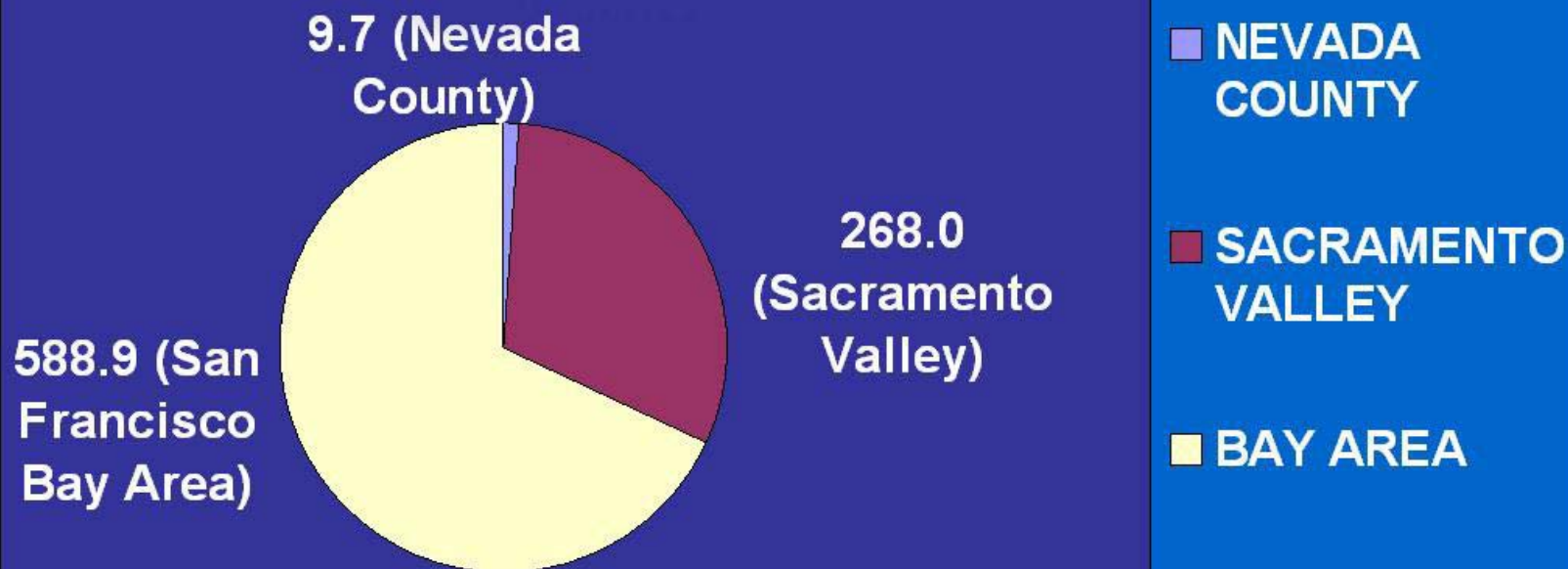
OZONE (O_3)



**ALMOST ALL OZONE
IN SIERRA FOOTHILLS IS
TRANSPORTED THERE BY
AIR CURRENTS FROM
SACRAMENTO VALLEY
AND BAY AREA**

MOST GROUND-LEVEL OZONE IS A BY-PRODUCT OF AUTOMOBILE EXHAUST

AVERAGE NO_x PRODUCED, TONS/DAY



AIR QUALITY INDEX

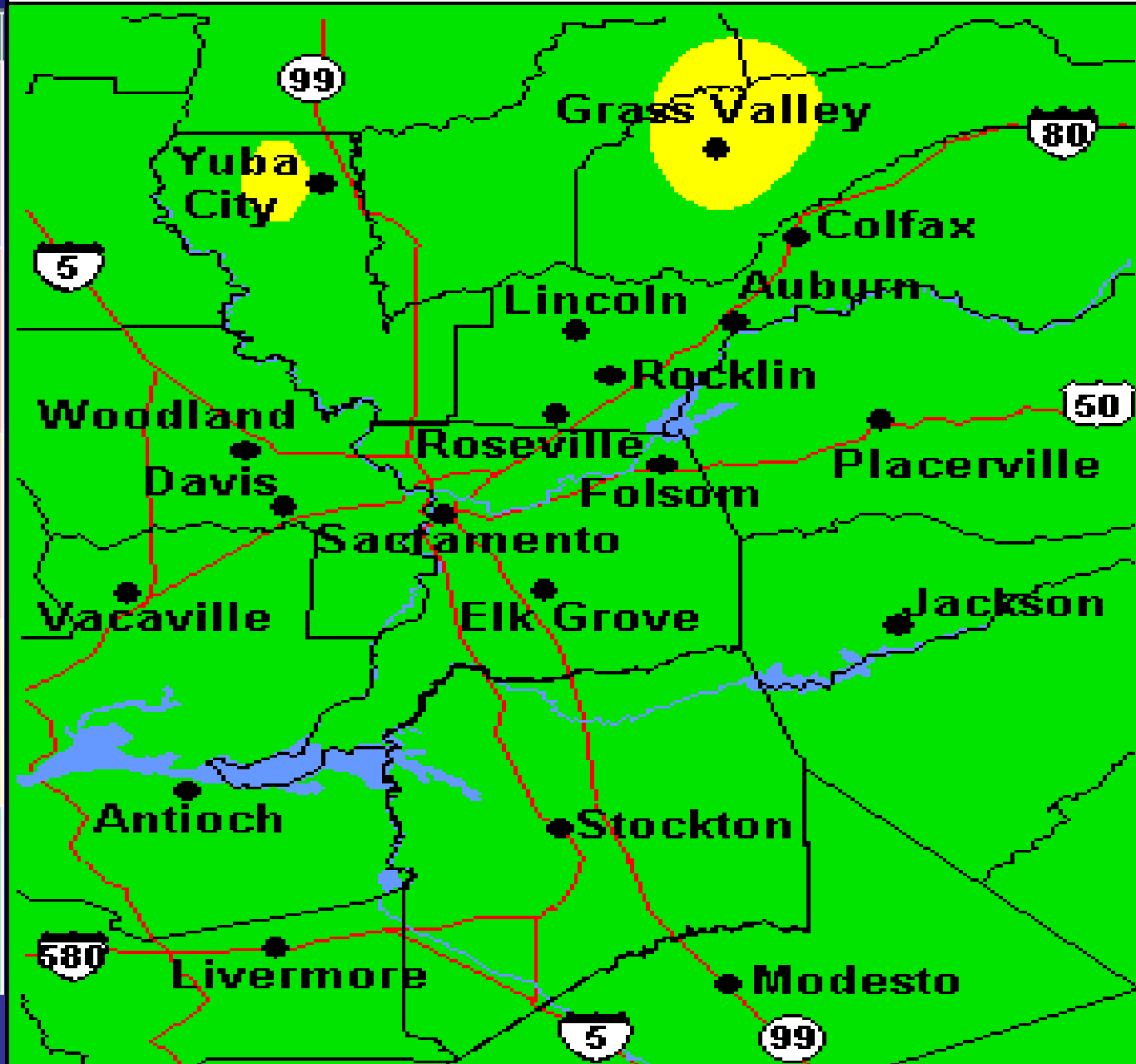
	Health Categories	Ozone	Particulate Matter
300	Very Unhealthy 201 - 300	Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.	People with heart or lung disease, older adults and children should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy exertion.
200	Unhealthy 151 - 200	Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.	People with heart or lung disease, older adults and children should avoid prolonged or heavy exertion. Everyone else should reduce prolonged or heavy exertion.
150	Unhealthy for Sensitive Groups 101 - 150	Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.	People with heart or lung disease, older adults and children should reduce prolonged or heavy exertion.
100	Moderate 51 - 100	Unusually sensitive people should consider limiting prolonged outdoor exertion.	Unusually sensitive people should consider reducing prolonged or heavy exertion.
50	Good 0 - 50	None	None

For detailed information about health effects visit: SpareTheAir.com



Sacramento Region Ground-Level Ozone

July 26, 2005
12:00 am PDT



WHAT DOES OZONE DO TO US?

SHORT-TERM EXPOSURE

- **IRRITATES AIRWAY**
- **MAKES DEEP BREATHING PAINFUL**
- **MAKES EXERCISE DIFFICULT**
- **AGGRAVATES ASTHMA, BRONCHITIS AND OTHER RESPIRATORY DISORDERS**

WHAT DOES OZONE DO TO US?

LONG-TERM EXPOSURE

- ◆ DAMAGES LUNGS,
REDUCING RESPIRATORY CAPACITY
- ◆ REDUCES DEFENSES AGAINST FOREIGN
PARTICLES AND BACTERIA
- ◆ SENSITIZES LUNGS TO OTHER IRRITANTS

PEOPLE MOST SUSCEPTIBLE TO OZONE EFFECTS:

- ◆ **CHILDREN UNDER 14**
- ◆ **PEOPLE WITH HEART OR LUNG DISEASE**
- ◆ **PREGNANT WOMEN**
- ◆ **OUTDOOR WORKERS**
- ◆ **THE ELDERLY**
- ◆ **PEOPLE WITH COMPROMISED IMMUNITY**
- ◆ **ATHLETES**

THE CHILDREN'S HEALTH STUDY (1992)

**DEPARTMENT OF PREVENTIVE MEDICINE
UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE**

**“WE’VE KNOWN FOR SOME TIME THAT SMOG
CAN TRIGGER ATTACKS IN ASTHMATICS.
THIS STUDY HAS SHOWN THAT OZONE
CAN **CAUSE** ASTHMA AS WELL.”**

**DR. ALAN LLOYD, CHAIRMAN
CALIFORNIA AIR RESOURCES BOARD**

ACCORDING TO AMERICAN LUNG ASSOCIATION...

**FROM 1982 TO 1995 PEDIATRIC ASTHMA
INCREASED NATIONALLY **160%****

**FROM 1984 TO 1996, ADULT ASTHMA
INCREASED IN CALIFORNIA **60%****

**ASTHMA IS LEADING CAUSE OF SCHOOL
ABSENCES DUE TO CHRONIC ILLNESS**

THE CHILDREN'S HEALTH STUDY (1992)

**DEPARTMENT OF PREVENTIVE MEDICINE
UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE**

AVERAGE 24-HOUR OZONE CONCENTRATION

**LOW POLLUTION
CITIES, SOUTHERN
CALIFORNIA**

**HIGH POLLUTION
CITIES, SOUTHERN
CALIFORNIA**

25.1

38.5

THE CHILDREN'S HEALTH STUDY (1992)

**DEPARTMENT OF PREVENTIVE MEDICINE
UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF
MEDICINE**

AVERAGE 24-HOUR OZONE CONCENTRATION

LOW POLLUTION CITIES, SOUTHERN CALIFORNIA	HIGH POLLUTION CITIES, SOUTHERN CALIFORNIA	WESTERN NEVADA COUNTY
25.1	38.5	51.7

THE CHILDREN'S HEALTH STUDY, MAJOR RESULTS

- ◆ **IN HIGH-OZONE COMMUNITIES, CHILDREN WHO PARTICIPATE IN SEVERAL SPORTS ARE MORE LIKELY TO DEVELOP ASTHMA**
- ◆ **WHEN OZONE CONCENTRATIONS ARE HIGH, SO ARE SCHOOL ABSENCES**



RESPIRATORY EFFECTS OF OZONE AMONG TEENS

- **HAMPERED LUNG GROWTH, AGE 10-18**
- **LOWER LUNG FUNCTION SCORES AT AGE 18**
- **CHANGES LIKELY PERMANENT:
GREATEST EFFECT LATER IN LIFE**



OZONE'S SOCIAL EFFECTS



- ◆ **SCHOOL ABSENCES**
- ◆ **REDUCED ATHLETIC PARTICIPATION AND PERFORMANCE**
- ◆ **EMERGENCY ROOM VISITS**
- ◆ **MEDICAL EXPENSE**

WHAT CAN I DO?

DIMINISH DRIVING...EVERYWHERE

EDUCATE OTHERS ABOUT OZONE

**EXPRESS CONCERN TO COUNTY, STATE
AND FEDERAL LEGISLATORS**

SUPPORT POLLUTION CONTROL EFFORTS OF

- **NORTHERN SIERRA AIR QUALITY
MANAGEMENT DISTRICT (530-274-9360)**
- **CALIFORNIA AIR RESOURCES BOARD**
- **U.S. ENVIRONMENTAL PROTECTION AGENCY**