

000K76002

**NEEDED:
CLEAN WATER**



WHAT IS WATER ?

WATER is the liquid which falls as **"RAIN"** to make

**STREAMS
RIVERS
LAKES
SEAS**

CHEMICALLY, of course--

"water" is " H_2O " --

2 atoms Hydrogen = 11.18% weight

1 atom Oxygen = 88.82% "

ODORLESS - TASTELESS
TRANSPARENT

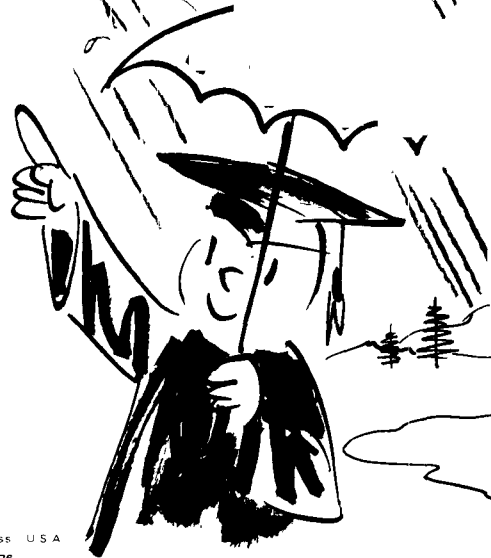
POOR CONDUCTOR
GOOD SOLVENT

FREEZES @ 32° F (0° C)

BOILS @ 212° F (100° C)



at sea level atmospheric pressure

Appears as -
"LIQUID WATER" } depending on
"STEAM" } TEMPERATURE
"WATER VAPOR" } and
"ICE" } PRESSURE



WATER is a "MUST"


for EVERYTHING that lives on Earth --



1 for **DRINKING**
(or we die of THIRST)

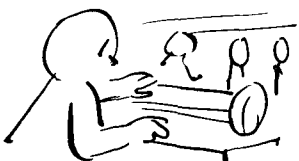
2 for **GROWING FOOD**
(or we die of HUNGER)

AS WELL AS



3 for **WASHING**


- OURSELVES
- OUR CLOTHES
- OUR BELONGINGS



4 for **WORKING**

OUR JOBS DEPEND ON WATER FOR

- POWER
- COOLING
- CARRYING
- MAKING THINGS
- CLEANING THINGS

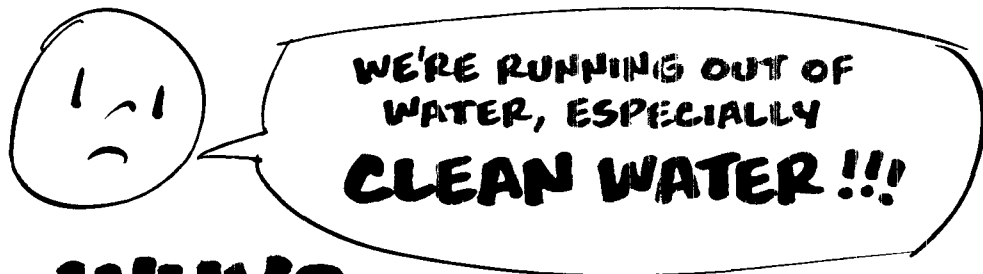


5 for **PLAYING**

- SWIMMING
- BOATING
- FISHING
- CAMPING

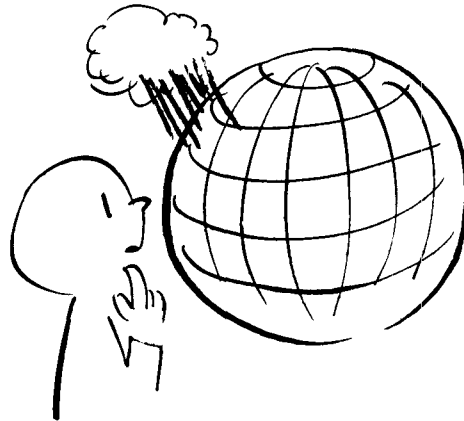


THAT'S WHY WE'VE GOT A PROBLEM



WHY?

because --
the **AMOUNT OF RAIN**
stays about the
SAME each year
while



1 the **POPULATION GROWS**

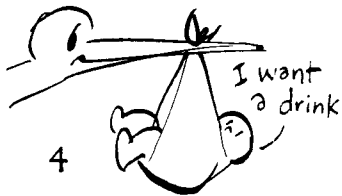
(in the U.S.)

-UP 1950 -- 150 MILLION 

-UP TODAY -- 204 MILLION 

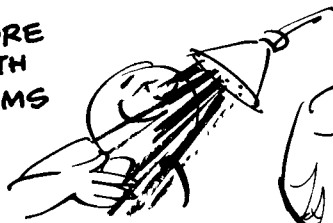
-UP 1980 -- 237 MILLION 

NOTE: the rate of population increase will be much greater in Latin America, Asia, Africa, in the next 20 years

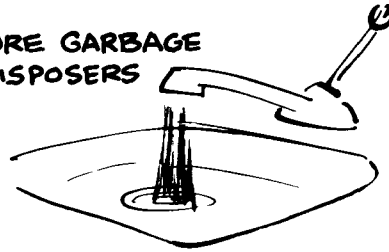


2 NOT ONLY MORE PEOPLE, BUT MORE USE PER PERSON

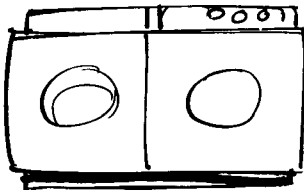
MORE BATH ROOMS



MORE GARBAGE DISPOSERS

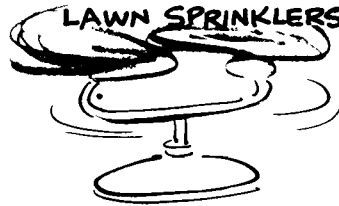


HOME LAUNDRIES

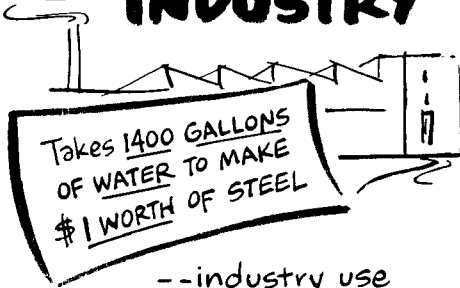


PER PERSON USE UP **4 TIMES** SINCE 1900 (in U.S.)

LAWN SPRINKLERS



3 AND MORE USE IN **INDUSTRY**



--industry use

up 6 TIMES since 1900
--uses **56 BILLION GALLONS PER DAY** (in U.S.)

4 AND MORE USE IN **AGRICULTURE**



IRRIGATION use up **6 TIMES** since 1900

--uses **120 BILLION GALLONS PER DAY** (in U.S.)

"There's just not enough clean water!"



Total use of water --
TODAY -- 327 BILLION GALLONS
1980 (est.) 443 " "
PER DAY

**UNFORTUNATELY, THE MORE
OUR POPULATION GROWS, THE
MORE WATER WE POLLUTE !**



WHAT'S THE ANSWER ?

The only solution
to the problem is to
REDUCE AND CONTROL
water pollution and to
RE-USE MORE
of the **SAME WATER !**

YOU MEAN, PEOPLE
WOULD HAVE TO DRINK WATER
THAT HAS ALREADY GONE
THROUGH SEWERS ?



Yes-- BUT IT'S NOT THAT BAD--

Millions of Americans already are drinking "used water" today-- water that has, however, been treated, filtered, disinfected and many of the harmful chemicals removed to insure its purity. Millions more will be drinking "used water" in years to come.

That is why it is **IMPORTANT** to understand about how water can be treated to prevent pollution and remove waste so it can be used again-- and again-- and **again**.

AN ALL-OUT WATER CONSERVATION PROGRAM

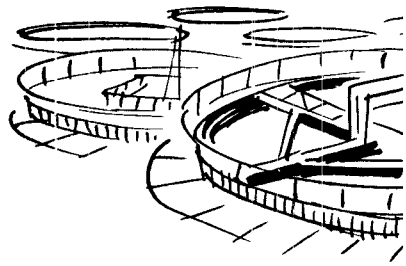
will help make more water available--

- 1 preserve **VEGETATION** and **FOREST COVER**
- 2 prevent **EROSION, SILTING, CARELESS RUN-OFFS**, etc.
- 3 better practices by **CITIES, INDUSTRIES, FARMS**, etc.

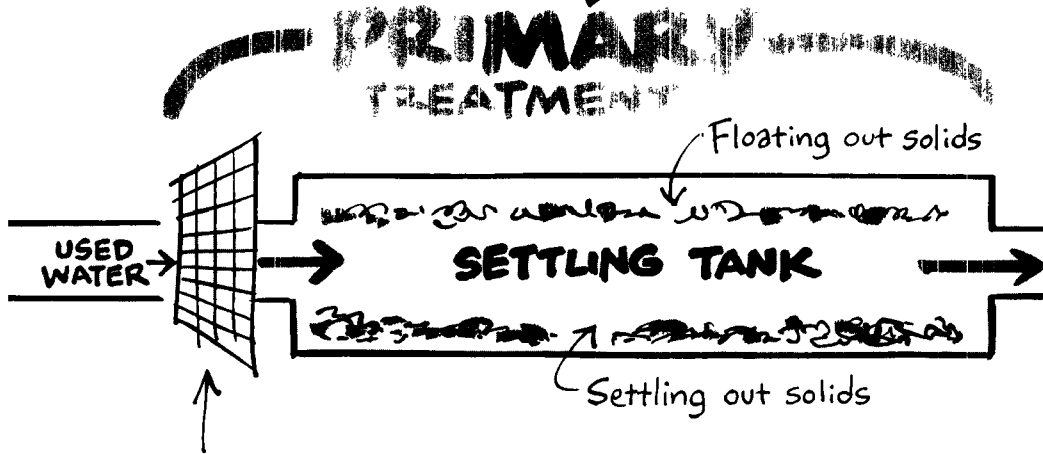
THIS MIGHT
ADD A HUNDRED
BILLION GALLONS
A DAY



HOW USED WATER CAN BE TREATED SO IT CAN BE USED AGAIN--



About 15% of municipalities have ONLY primary treatment.



SCREENING OUT
sticks,
rags,
etc.

--removes about **35%** of
ORGANIC POLLUTANTS
from SEWAGE WATER

OVER 1200
municipalities
with sewers
dump wastes
back into rivers
and streams
UNTREATED

8

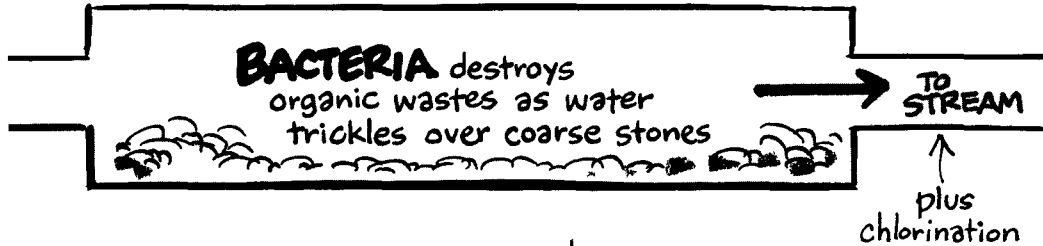
60 MILLION PEOPLE
in the U.S. use wells for
water, and cesspools or
septic tanks for waste.

M
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TODAY -- 13,000 communities
have sewage treatment plants --
NEEDED -- 3,000 MORE!

75% of MUNICIPALITIES have

SECONDARY TREATMENT



-- removes up to

90% of **ORGANIC POLLUTANTS**
from SEWAGE WATER

SCIENTISTS must find ways to remove wastes that resist regular treatment.



INDUSTRY NEEDS
THOUSANDS OF
WASTE TREATMENT
PLANTS

In spite of this treatment, the water pollution of our rivers today is **6 TIMES** as great as in 1900

SALT BRINE AFFECTS WATER

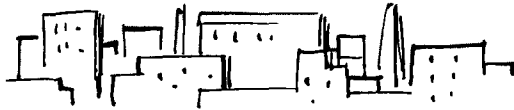
VIRUS HEPATITIS FROM POLLUTED WATERS

DRINKING WATER HAS BAD TASTE AND ODOR

PESTICIDES BLAMED FOR LARGE FISH KILL

BATHING BEACHES CLOSED

SHORTAGE OF WATER CREATES HOSE BAN



A typical large city uses **70 MILLION GALLONS OF WATER PER DAY**

Resulting in this WASTE--

- 17 TONS --ORGANIC SUSPENDED SOLIDS
- 17 TONS --ORGANIC DISSOLVED SOLIDS (including a ton of detergents)
- 8 TONS --INORGANIC DISSOLVED SOLIDS
- 60 CUBIC FEET OF GRIT

ACID MINE DRAINAGE BRINGS ECONOMIC LOSS

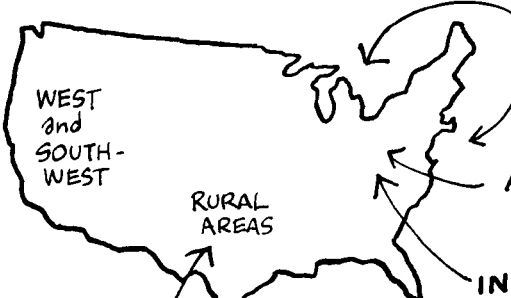


SOME REGIONAL PROBLEMS of WATER POLLUTION



SCARCITY OF FRESH WATER

--use lowers
water table and
becomes polluted
with SILT
and SALT



WEST
and
SOUTH-
WEST

RURAL
AREAS

INSECTICIDES
PESTICIDES

LOSING
SHELLFISH
RESOURCES
from POLLUTION

SEWAGE
CLOSES
BEACHES

ACID MINE
DRAINAGE

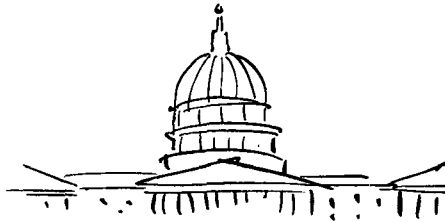
INDUSTRY WASTES
(acids, chemicals,
oils, greases, salts,
animal and
vegetable matter)

**WATER POLLUTION
IS CAUSED BY PEOPLE--
IT MUST BE
CURED BY PEOPLE**



Today -- in America...
PEOPLE are taking ACTION
to prevent WATER POLLUTION
on THREE fronts --

1 FEDERAL GOVERNMENT



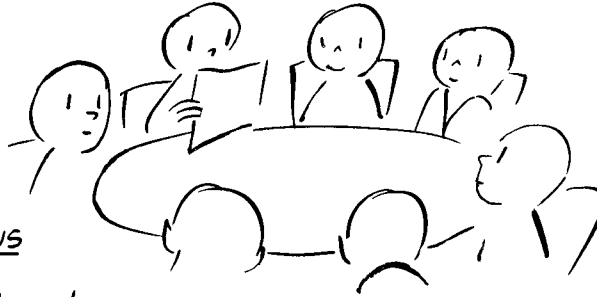
- Provides funds to help communities build waste treatment works
- Makes grants to state water pollution control programs
- Conducts research to find better ways to treat wastes
- Controls -- and authorizes states to control -- discharges from industries and municipalities by a permit system
- Works with states to establish and enforce water quality standards to prevent pollution
- Encourages public participation in the implementation of the 1972 Federal Law on water
- Provides technical assistance to states on pollution problems
- Joins in international cooperative efforts
- Enforces Federal laws against pollution of rivers, lakes, streams, marshlands and coastal waters.
- Prepares long-range comprehensive programs for water pollution control in major river basins and urban areas.

FOR MORE
INFORMATION
on Federal action
to control and prevent
water pollution
write to the
EPA Information Center
ENVIRONMENTAL
PROTECTION
AGENCY
Washington, D.C. 20460

2 STATE GOVERNMENTS

have a most important responsibility for water pollution control.

EVERY STATE has laws to control pollution and agencies to administer these laws.



STATE AGENCIES--

- establish and administer water quality standards
- collect and analyze data on water supply and pollution within state
- give technical aid to communities and industries seeking ways to treat wastes
- review plans for local sewage treatment plants and check the operation of these plants
- many states provide funds for treatment plant construction
- enforce permit system under authority delegated by EPA.

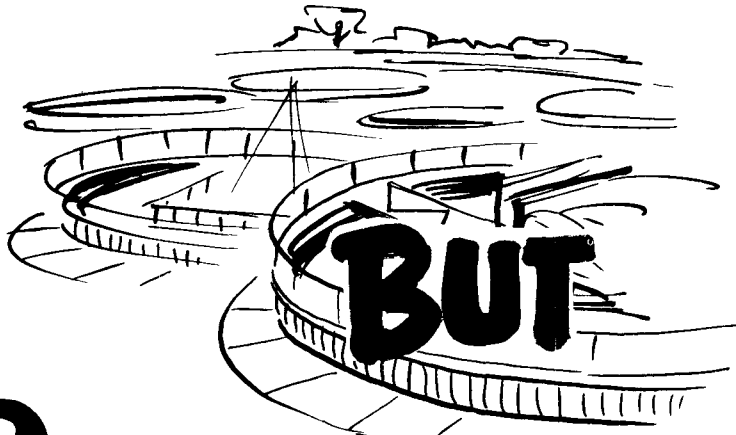
FOR MORE INFORMATION--

Write to the "WATER POLLUTION CONTROL AGENCY" in your state capital

SOME STATES have formed **INTERSTATE COMPACTS** to fight regional water pollution problems.



INDUSTRY has developed new manufacturing processes to conserve water and, with new Federal help, is stepping up its research on industrial waste problems and control technology. Some industries have formed associations to work together to control pollution.



③ LOCAL GOVERNMENTS

are the first line of defense in the battle against water pollution. It is here that much of the pollution begins and where it must be controlled. Communities must make sure that their wastes are properly treated before being discharged into a waterway. Local treatment plants must be staffed by trained personnel so that the plant will be properly maintained. Communities must see that the land is put to the best environmentally practical use, and that new housing developments and industries have proper sewage and waste disposal facilities.

A GOOD COMMUNITY HAS--

- Adequate sewer systems
- A sewage treatment plant providing at least secondary treatment, or more advanced treatment, if necessary
- Adequate and properly trained staff to maintain the plant
- Plans for building new sewers and treatment plants as the community grows
- Industries which are doing their part in keeping untreated wastes out of streams.



Sooo --
what can I do
PERSONALLY?



GET THE **FACTS**--

about the water situation
in your community.

WHAT **FACTS?**

THESE FACTS--

- (1) Where does the water come from?
- (2) What is it used for in the community?
- (3) Is there plenty-- for the next 10 years?
- (4) What are the water pollution problems?
- (5) What are the sources of pollution?
- (6) Where does the waste water go?
- (7) How is it treated?

HOW TO FIND OUT

LOCALLY--



WRITE

①

Your **MAYOR**

PHONE

②

Your **WATER DEPARTMENT** or **CITY ENGINEER**

VISIT

③

Your **HEALTH DEPT.**

THEN



IF there's a problem in your
community-- join with **CIVIC, CONSERVATION,**
and **WOMEN'S ORGANIZATIONS**--

to get ACTION!



**U.S. ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460**