

# Standards

SS7G10 The student will discuss environmental issues across Southern and Eastern Asia.

- a. Describe the causes and effects of pollution on the Yangtze and Ganges Rivers.
- b. Describe the causes and effects of air pollution and flooding in India and China.

# Asia's Environmental Issues

Pollution of the Yangtze and Ganges Rivers &  
Air Pollution and Flooding in India and China

# Ganges River



# Ganges River

- The Ganges River begins high in the Himalayas and flows southeast through India and Bangladesh for more than 1,500 miles to the Bay of Bengal.
- It is the most important river to the Indian subcontinent.
  - The Ganges provides water for drinking, bathing, cooking, and for transportation for over 400 million people who live in its river valley.
  - It runs through India's most fertile and densely populated areas.
- The Ganges is nicknamed “Mother Ganges”, and it is very sacred to the Hindu religion.

# Causes of Pollution

- About two million tons of chemical, human, and agricultural waste pours into the Ganges every day.
  - Cities pour millions of gallons of sewage into the river that is eventually carried to villages farther south.
- Human and animal waste also pollute the river.
  - Hindus believe that they will have a peaceful journey to the next life if their ashes are scattered into the Ganges.
  - Many are too poor for cremation, so they place the bodies in the water instead.

# Effects

- The Ganges River is highly polluted with dangerous bacteria.
- It is estimated that about 80% of all illnesses and 1/3<sup>rd</sup> of deaths in India come from diseases carried by dirty water.
  - Outbreaks of such diseases as cholera, dysentery, typhoid, and hepatitis are common.
- Cities along the Ganges have the highest rates of water-borne diseases (found in drinking water) of any who live in India.

# Solution?

- India's government started a program in 1985 called the Ganges Action Plan, with the purpose of cleaning up the river.
  - Indians have built many sewage and water treatment plants along the river.
- Unfortunately, it has not proved to be enough as India's growing population and the run-off from industrial and farm production have continued to pollute the river.



**Yangtze River**



RUSSIA

KAZAKHSTAN

MONGOLIA

CHINA

*Yangtze R.*

East  
China  
Sea

INDIA

MYANMAR

TAIWAN

South  
China  
Sea

# Yangtze River

- The Yangtze is China's longest river and the third longest in the world.
  - It begins in the Tibetan Plateau and flows nearly 4,000 miles through 185 towns where 400 million people live until it reaches the East China Sea.
- The Yangtze is extremely important to about a third of China's population because it provides hydroelectric power, water for irrigation, and transportation for cargo ships.
  - Pumping stations along the river take water out to supply people with water for drinking, irrigation, and industrial uses.

# Causes of Pollution

- Billions of tons of chemicals and waste from agriculture, industry, and humans pour into the river each year.
- Nitrogen from fertilizers and arsenic (poisonous chemical) from industrial uses are the leading pollutants in the river.

# Effects

- The pollution puts all of the cities along its banks at risk.
- Many species of plants and animals are dying.
  - Nitrates from farm run-off has caused algae in the water to multiply and is contaminating and killing the fish.
  - Chinese people are eating the sick fish, which has led to many health problems.
- Hundreds of millions of Chinese villagers do not have safe drinking water because of the pollution.

# Solution?

- The Chinese government is building more water treatment facilities along the Yangtze's banks.
- It is encouraging cities to build sanitary landfills for garbage rather than dumping it into the river.



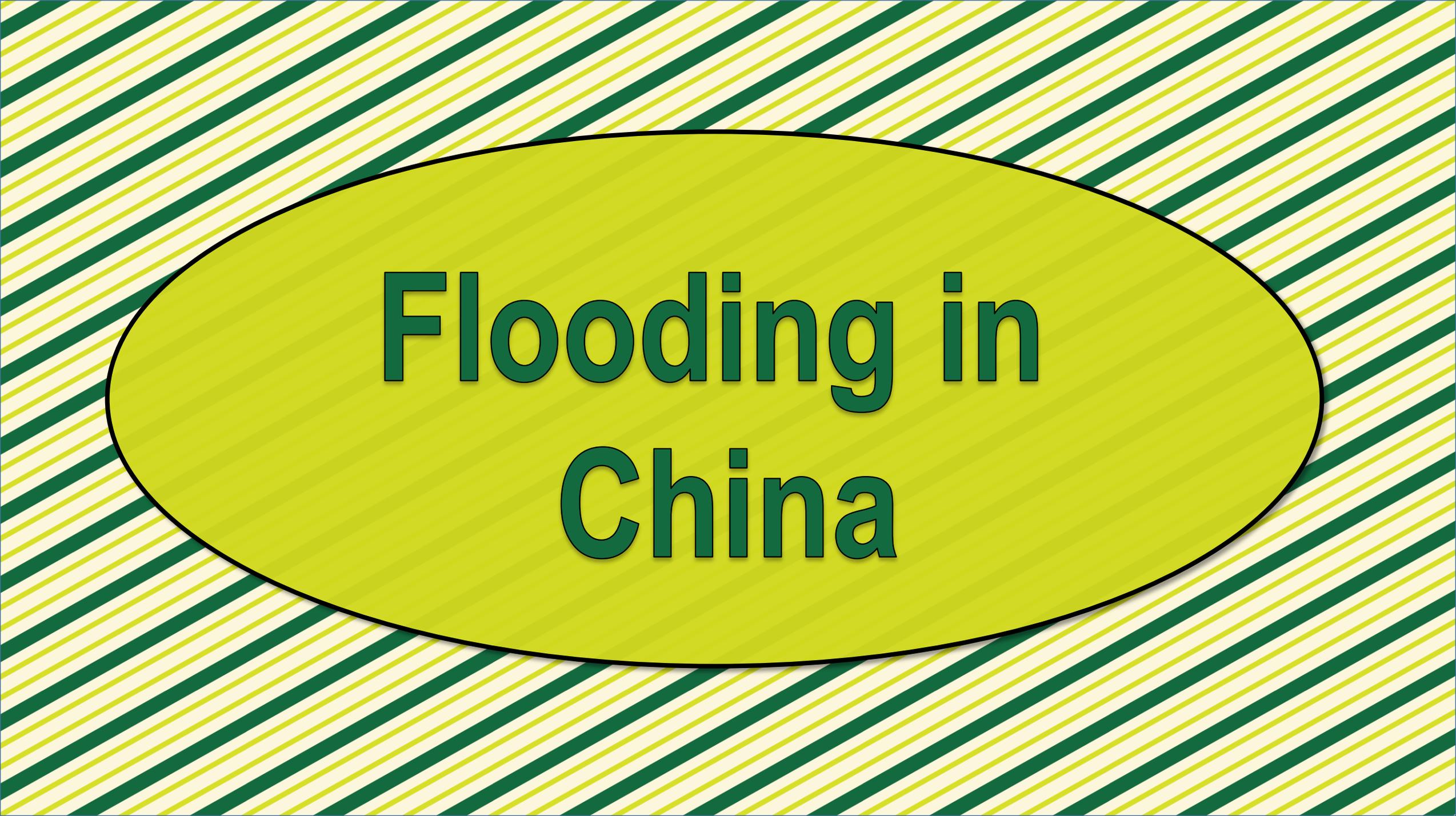
# Flooding in India

# Causes

- Monsoons are a mixed blessing for India.
  - Farmers depend on the rain for their crops and the huge amounts of water are used to generate electricity.
  - Unfortunately, monsoons are also responsible for heavy floods.
- Monsoon season begins in June and spreads heavy rain until September.
  - If flooding occurs, the rivers overflow and cause mass destruction and spread water-borne diseases.

# Effects

- When monsoons are too severe, the rivers overflow their banks and water sweeps over the land.
  - When this happens, airports close, power lines fall, humans and animals drown, and water-borne illnesses spread.



# Flooding in China

# Causes

- Monsoons are beneficial to farmers, but they also cause floods in China.
  - China's monsoon season runs from March through August.
- Over the years, loggers have cut down many of the trees that used to contain flooding.
- Farmers downstream have also drained wetlands that used to act as sponges during floods.
  - These actions have multiplied the effects of the storm water runoff and it now takes much less water to cause a flood.

# Effects

- Monsoons usually cause floods every two or three years in China.
- When the river floods, homes and crops are buried and lives are lost.
  - Flooding from China's Huang He River has caused more deaths than any other river in the world.



# Air Pollution in India

# Causes of Pollution

- India has some of the heaviest air pollution in the world due to an enormous and automobile emissions and the development of industry.
  - Automobile emissions account for almost 70% of the air pollution in some urban areas of India.
- Indoor air pollution is also a growing problem.
  - In rural areas, many families cook over open fires, using wood, livestock dung, or coal as fuel.
  - These fuel sources emit carbon monoxide, soot, and other harmful chemicals into the air.

# Effects

- Because of India's rapidly growing population, more and more Indians are exposed to pollution every year.
- Indians living in cities have some of the highest rates of respiratory disease in the world.
  - Air pollution is now the fifth leading cause of death in India.
- The Taj Mahal, a sacred site and popular tourist destination, is growing yellow from high levels of air pollution.
- Some scientists believe that Indian smog could potentially change weather patterns in North America.

# Solution?

- It has been very difficult for India's government to enforce laws on industry and transportation to clean up the air because it would effect the economy.
  - A large part of India's population is poor and does not want anything to slow down economic growth.
- India has been investing money in clean up efforts, but it has not proved to be enough.



# Air Pollution in China

# Causes of Pollution

- China's cities have experienced tremendous growth in population and industry in the past few decades.
  - China is home to 16 of the world's 20 most polluted cities.
- Much of China's energy is provided by burning coal, a process that sends soot, ash, and chemicals into the air.
  - The Chinese people also burn coal to heat their homes, adding to the pollution problem.
- Millions of Chinese people now drive automobiles, whose exhaust is a major source of air pollution.

# Effects

- The leading causes of death in China are heart and respiratory conditions related to overexposure to air pollution.
- Air pollution has also created acid rain in China, a problem for at least a third of country's agricultural areas.
- Unfortunately, air pollution created in Chinese cities is not confined in the country.
  - Winds carry the contaminated air and rain to Korea, Japan, and other parts of Asia as well.

# Solution?

- China's government created the Beijing Municipal Environmental Protection Bureau to work on the quality of the city's air before the 2008 Olympics.
  - Automobile traffic was greatly reduced and many factories were temporarily closed.
  - Many air pollutants were cut by as much as 45%.
  - Many people enjoyed the cleaner air and petitioned the government to find long-term ways to clean it up.