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科学探索丛书

L I F E S C I E N C E

生命科学

Protecting the Planet 保护地球母亲

KATE BOEHM JEROME (美) 著

外语教学与研究出版社

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生命科学

保护地球母亲

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鲜瑜注

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致读者

如果你希望读到地道的英语，在享受英语阅读乐趣的同时又能增长知识、开拓视野，这套由外语教学与研究出版社与美国国家地理学会合作出版的“国家地理科学探索丛书”正是你的选择。

“国家地理科学探索丛书”分为9个系列，内容涉及自然科学和社会研究，秉承《国家地理》杂志图文并茂的特色，书中配有大量精彩的图片，文字通俗易懂、深入浅出，将科学性和趣味性完美结合，称得上是一套精致的小百科。

这套丛书以英文注释形式出版，注释由国内重点中学教学经验丰富的英语教师完成。特别值得推荐的是本套丛书在提高青少年读者英语阅读能力的同时，还注重培养他们的科学探索精神、动手能力、逻辑思维能力和沟通能力。

本丛书既适合学生自学，又可用于课堂教学。丛书各个系列均配有一本教师用书，内容包括背景知识介绍、技能训练提示、评估测试、多项选择题及答案等详尽的教学指导，是对课堂教学的极好补充。

本套丛书是适合中学生及英语爱好者的知识读物。



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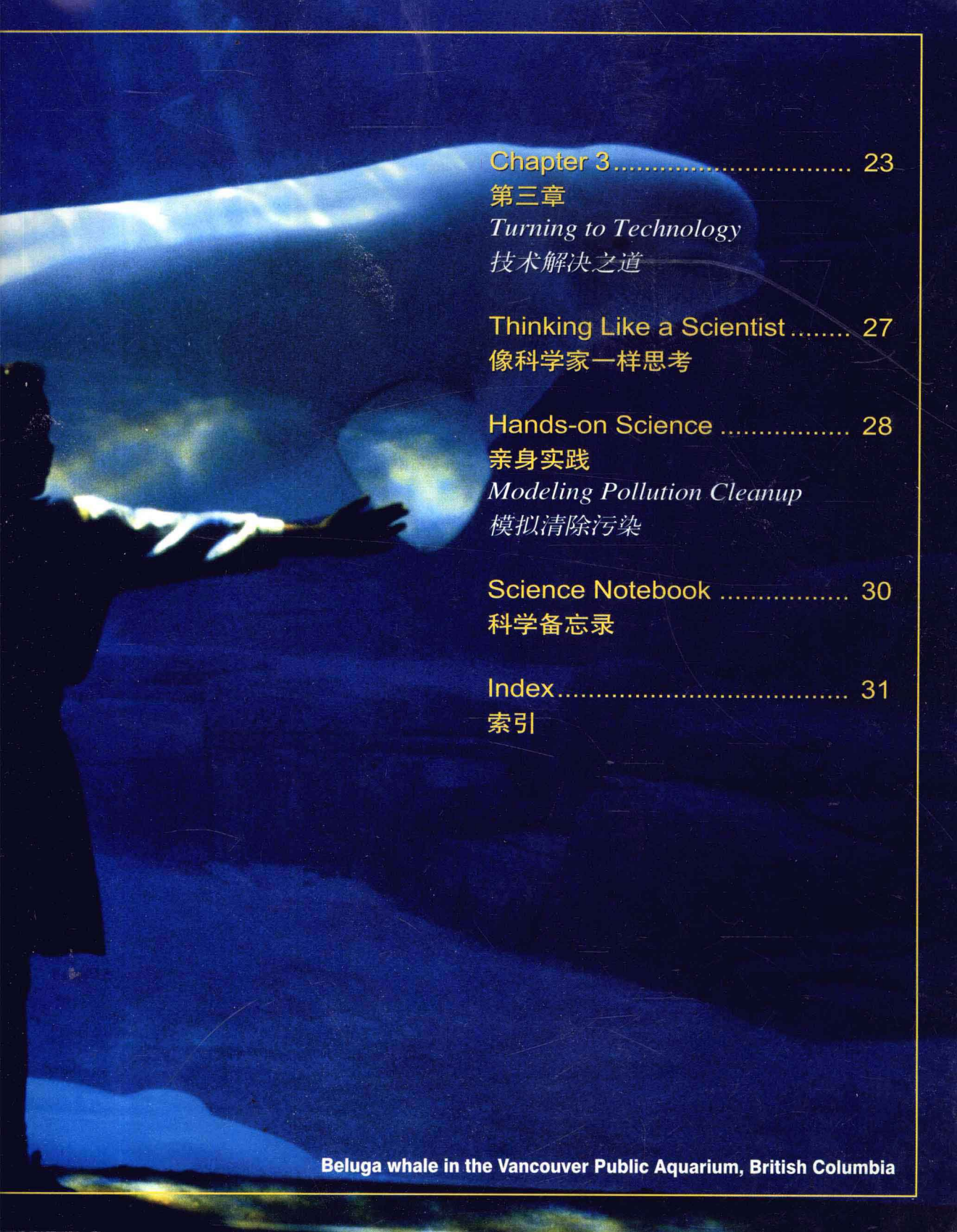
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A Call to Action

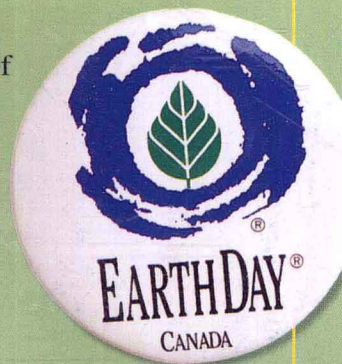
行动倡议



n

On April 22, 1970, more than 20 million Americans took part in the largest organized demonstration¹ in history. What could draw so many people to action? Were they protesting the Vietnam War ... or staging² a rally³ to end world hunger? No. They were demonstrating for a healthy environment⁴.

^{organism}
Organizers were stunned⁵ at the number of people who participated⁶ in that first Earth Day. Since 1970 Earth Day has become an annual⁷ worldwide⁸ event. In 2001 millions of people in 184 countries took part in activities to raise awareness⁹ about pollution and other problems affecting the environment.



The success of Earth Day prompted¹⁰ the creation of the Environmental Protection Agency¹¹ (EPA). Soon after, several important environmental protection laws were passed in the United States, including the Clean Air¹², Clean Water¹³, and Endangered Species Acts¹⁴.

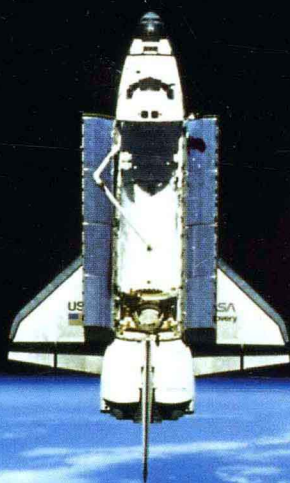
Today most people understand that we need to protect this planet that we call home. This is a book about becoming better caretakers¹⁵ of Earth. We'll look at the different environments on Earth, how humans affect the resources in these environments, and how technology might shape the future. Caring for our planet is a big job—and we all need to help out.

1. demonstration	<i>n.</i>	示威	9. awareness	<i>n.</i>	意识
2. stage	<i>v.</i>	举行	10. prompt	<i>v.</i>	促使
3. rally	<i>n.</i>	集会	11. Environmental Protection Agency		美国环保署
4. environment	<i>n.</i>	环境	12. Clean Air (Act)		《清洁大气法》
5. stun	<i>v.</i>	使吃惊	13. Clean Water (Act)		《净水法案》
6. participate	<i>v.</i>	参与; 参加	14. Endangered Species Act		《濒危物种法》
7. annual	<i>adj.</i>	一年一次的; 每年的	15. caretaker	<i>n.</i>	管理者; 看管者
8. worldwide	<i>adj.</i>	世界范围的	16. spell out		清楚地写明

◀ Young people—wearing T-shirts that spell out¹⁶ “Love your mother”—pose in front of a model of Mother Earth.

Spaceship Earth

从宇宙飞船看地球



Space shuttle¹ *Discovery*
photographed in Earth's orbit²

- | | |
|------------------|------|
| 1. space shuttle | 航天飞机 |
| 2. orbit | 轨道 |

All systems go. The astronauts¹ blast² into space. Ground control broadcasts instructions into their headsets³. Check this. Report on that. When the astronauts finally get a chance to look out the window of their spacecraft⁴, they gasp⁵.

It's an awe-inspiring⁶ view—Earth floating as a lone planet. All of Earth's living things, including humans, exist in a region of Earth called the biosphere⁷. This region extends from the deepest point in the ocean to about 8 kilometers (5 miles) into the atmosphere. The biosphere includes all the land, water, and air in which plants and animals live.

Just by looking around, you can see the many different kinds of environments in Earth's biosphere. Environments are made up of⁸ living things—plants and animals. Environments are also made up of nonliving things, such as water and air. All the living and nonliving things interacting⁹ in an area are called an ecosystem¹⁰. A large group of similar ecosystems makes up a biome¹¹.

To be a good caretaker of our planet, you have to know what needs protecting. So let's explore¹² Earth's biomes.



1. astronaut	n.	宇航员
2. blast	v.	起飞; 升空
3. headset	n.	戴在头上的耳机
4. spacecraft	n.	宇宙飞船
5. gasp	v.	喘气; 倒抽气
6. awe-inspiring	adj.	令人惊叹的
7. biosphere	n.	生物圈
8. be made up of		由……构成
9. interact	v.	互相作用; 互相影响
10. ecosystem	n.	生态系统
11. biome	n.	生物群落
12. explore	v.	探究

Diver⁶ and sweeper fish⁷
in the Red Sea

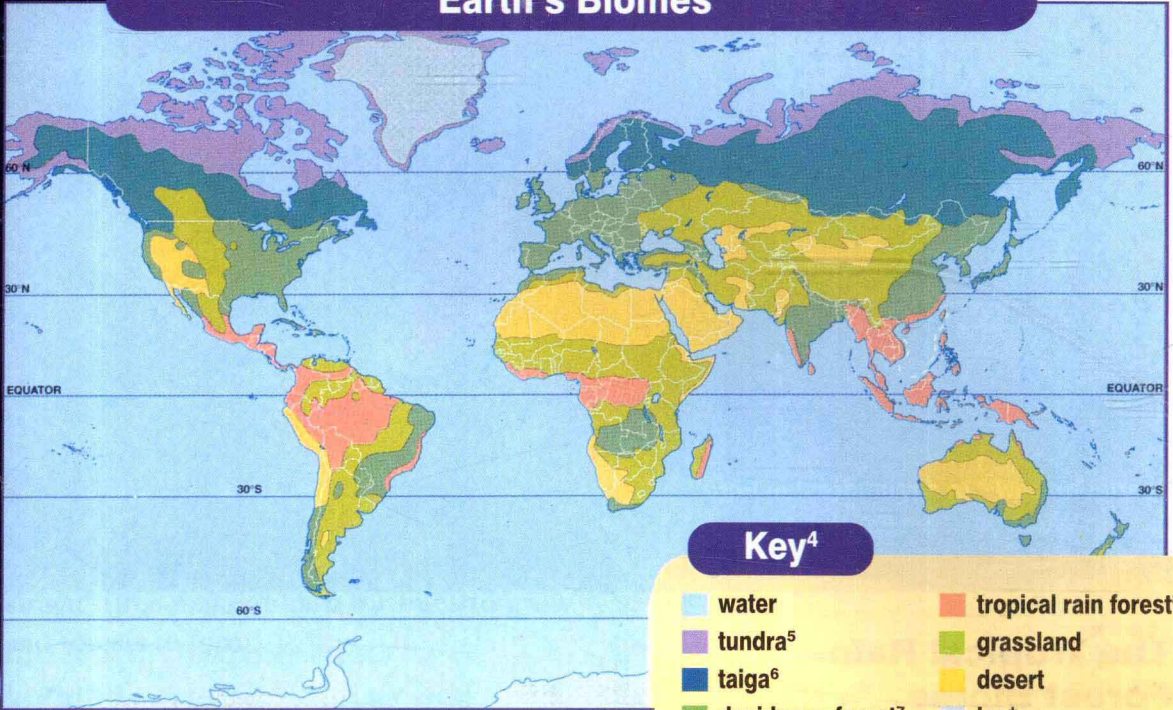


Water Biomes

Oceans cover about 70 percent of Earth's surface¹. So can you guess what kind of biome makes up most of the biosphere? Yes, it's water. There are two major water biomes. One is ocean waters, or the marine² biome. The other is freshwater³ biomes. These are lakes, streams⁴, rivers, and ponds⁵.

1. surface	<i>n.</i>	表面
2. marine	<i>adj.</i>	海洋的
3. freshwater	<i>adj.</i>	淡水的
4. stream	<i>n.</i>	溪流
5. pond	<i>n.</i>	池塘
6. diver	<i>n.</i>	潜水者
7. sweeper fish		单鳍鱼类

Earth's Biomes



Key⁴

- | | |
|-------------------------------|-----------------------------------|
| water | tropical rain forest ⁸ |
| tundra ⁵ | grassland |
| taiga ⁶ | desert |
| deciduous forest ⁷ | ice* |

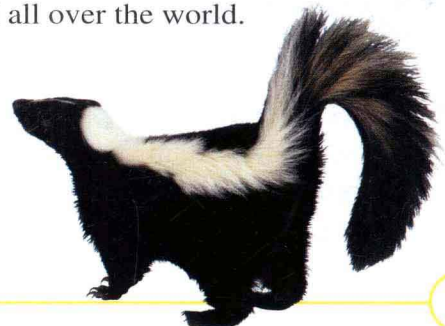
*shows ice-covered areas, not biomes

When astronauts look out the window of their spacecraft, they mostly see the marine biome. It is the largest and most widespread biome on Earth. Organisms¹ that live in a marine biome are diverse², or different from one another. If you think about the oceans, you'll begin to see why. Shallow waters along the coast are warmed by the sun. These waters support a variety³ of plant and animal life.

Deep ocean waters get little or no light. Temperatures can be very cold. Different types of organisms live at different depths of the ocean.

Land Biomes

The biomes we know best are the ones where we live—the land biomes. There are six major land biomes. Each has its own kind of climate, soil, plants, and animals. As you can see from the map, these six land biomes are found all over the world.



- | | | |
|-------------------------|-------------|-------------|
| 1. organism | <i>n.</i> | 生物 |
| 2. diverse | <i>adj.</i> | 不同的; 多样的 |
| 3. variety | <i>n.</i> | 多样化 |
| 4. key | <i>n.</i> | 图例 |
| 5. tundra | <i>n.</i> | 苔原 |
| 6. taiga | <i>n.</i> | 泰加林(即北方针叶林) |
| 7. deciduous forest | | 落叶林 |
| 8. tropical rain forest | | 热带雨林 |

Scarlet macaw¹³ in a rain forest in Peru¹⁴

The Tropical Rain Forest Biome

Tropical rain forest biomes lie close to the Equator¹. They have a hot and humid² climate. Rainfall is frequent³ and heavy. Tropical rain forest biomes have about as many species of plants and animals as all the other land biomes combined.

The high trees in a rain forest biome form a dense⁴, umbrella-like canopy⁵. This canopy can be as high as 45 meters (148 feet) above the ground. It is so thick that little sunlight can reach the forest floor. In a rain forest biome many plants and animals live high up in the trees.

The Desert Biome

What makes a desert? The simple answer is very little rainfall. Organisms that live in a desert often have traits⁶ that help them conserve⁷, or use less, water.

Most deserts are hot, partly sandy regions with few plants and animals. Earth's largest desert biome is the Sahara⁸. It is on the continent of Africa. But did you know that not all deserts are hot? Interior⁹ lands of Antarctica (land surrounding¹⁰ the South Pole¹¹) receive as little precipitation¹² as the Sahara. These polar deserts are extremely cold and covered in snow and ice.

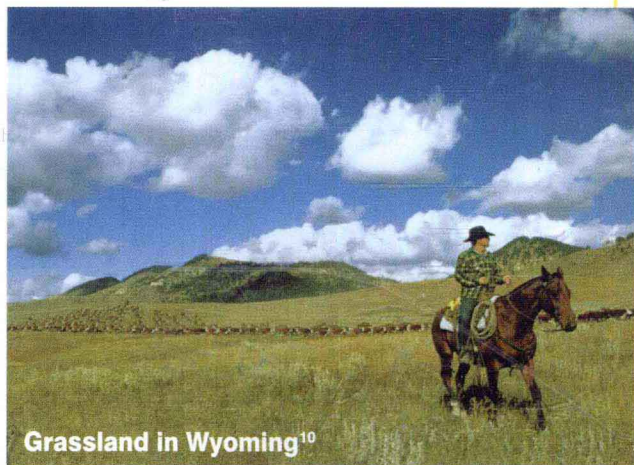
1. Equator	<i>n.</i>	赤道
2. humid	<i>adj.</i>	潮湿的
3. frequent	<i>adj.</i>	时常发生的; 频繁的
4. dense	<i>adj.</i>	浓密的
5. canopy	<i>n.</i>	树冠层
6. trait	<i>n.</i>	特性
7. conserve	<i>v.</i>	保存
8. Sahara		撒哈拉沙漠
9. interior	<i>adj.</i>	内陆的
10. surround	<i>v.</i>	围绕
11. South Pole		南极
12. precipitation	<i>n.</i>	降水量
13. scarlet macaw		绯红金刚鹦鹉
14. Peru		秘鲁

The Grassland¹ Biome

There are two types of grassland biomes. The temperate² grassland usually has hot summers and cold, windy winters. The savanna³ grassland is tropical. It is usually warm all year round⁴. Grasslands have wet and dry seasons rather than a steady flow of rain all year. They often have droughts⁵—long periods of time when little rain falls.

Along with grasses, small bushes and shrubs provide food to countless⁶ grazing animals⁷ in a grassland biome. You might wonder why many trees don't grow in a grassland biome. Long dry spells⁸, grazing animals, and occasional⁹ fires make it hard for trees to grow and forests to form.

1. grassland	<i>n.</i>	草原
2. temperate	<i>adj.</i>	温带的
3. savanna	<i>n.</i>	热带稀树草原



Grassland in Wyoming¹⁰

4. all year round		一年到头; 终年
5. drought	<i>n.</i>	干旱; 旱灾
6. countless	<i>adj.</i>	无数的; 数不尽的
7. grazing animal		食草动物
8. spell	<i>n.</i>	(特定天气的)一段持续时间
9. occasional	<i>adj.</i>	偶尔的; 间或发生的
10. Wyoming		怀俄明州
11. Jordan		约旦



Desert region in Jordan¹¹

Deciduous forest in Great Smoky Mountains National Park¹⁶, North Carolina¹⁷

The Deciduous Forest Biome

/'hɪkərɪl

The oak¹, maple², and hickory³ leaves in a deciduous forest turn blazing⁴ colors in the fall. When the leaves fall from the trees, they provide habitats⁵ for insects⁶ and spiders⁷ on the forest floor. A wide variety of animals—from skunks⁸ to snakes—also make their homes in this biome. Deciduous forests usually have warm summers. Winters are colder with frequent precipitation.

Deciduous forest biomes once covered almost all of the eastern United States and Western Europe. But many forests have been cleared away⁹ to make room for farms, cities, and towns.

The Taiga Biome

Chances are good that the paper in this book comes from trees grown in a taiga biome. Most paper produced in the United States and Canada is made from conifers¹⁰. In a taiga forest, most of the trees are conifers like spruce¹¹ and pines. Unlike deciduous trees,

most conifers are evergreen¹². This means they keep needlelike green leaves all year long.

Taiga winters are long and cold. Summers are short and usually mild¹³. Large animals like moose¹⁴ and elk¹⁵ share this biome with smaller ones like rabbits and owls.



1. oak	<i>n.</i>	橡树
2. maple	<i>n.</i>	枫树
3. hickory	<i>n.</i>	山核桃树
4. blazing	<i>adj.</i>	眩目的
5. habitat	<i>n.</i>	(动物的)栖息地
6. insect	<i>n.</i>	昆虫
7. spider	<i>n.</i>	蜘蛛
8. skunk	<i>n.</i>	臭鼬
9. clear away		消除; 消失
10. conifer	<i>n.</i>	针叶树(如松、柏等)
11. spruce	<i>n.</i>	云杉
12. evergreen	<i>adj.</i>	常绿的
13. mild	<i>adj.</i>	温暖宜人的
14. moose	<i>n.</i>	驼鹿
15. elk	<i>n.</i>	麋鹿
16. Great Smoky Mountains National Park		大雾山国家公园
17. North Carolina		北卡罗来纳州

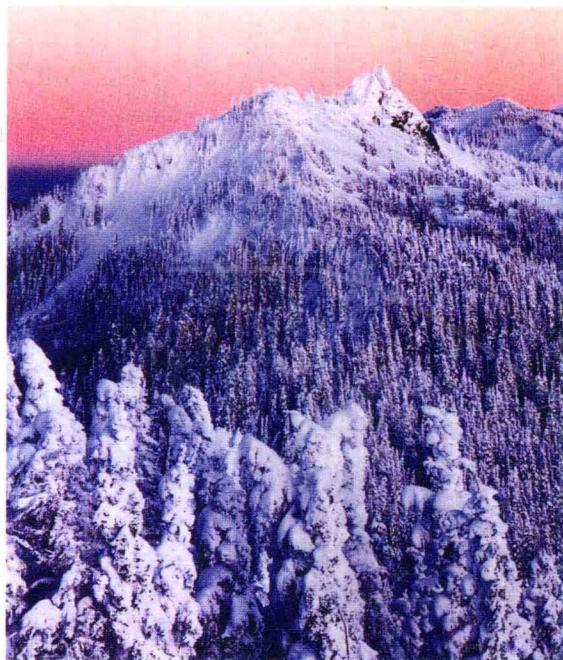
The Tundra Biome

The tundra is cold. In fact, much of the soil in the tundra stays frozen. Winters are long and cold. Summers are short and mild. Precipitation is sparse¹ in the tundra of the far north. In summer shallow ponds dot² the landscape. They serve as breeding³ grounds for millions of insects, such as mosquitoes⁴.

Caribou⁵ feed on the short grasses and low shrubs that grow in the thin layer of unfrozen soil in the tundra. Large herds⁶ migrate⁷ over long distances to find food and to keep ahead of very cold temperatures.

What other plants and animals might live in each biome?

1. sparse	adj.	稀少的
2. dot	v.	星罗棋布于
3. breeding ground		滋生地
4. mosquito	n.	蚊子
5. caribou <i>ˈkærɪbuːl</i>	n.	北美驯鹿
6. herd	n.	一群(动物)
7. migrate	v.	迁移
8. Denali National Park		迪纳利国家公园
9. Alaska		阿拉斯加州



Taiga in Olympic National Park, Washington



Tundra in Denali National Park⁸, Alaska⁹



From Trash to Treasure

变废为宝

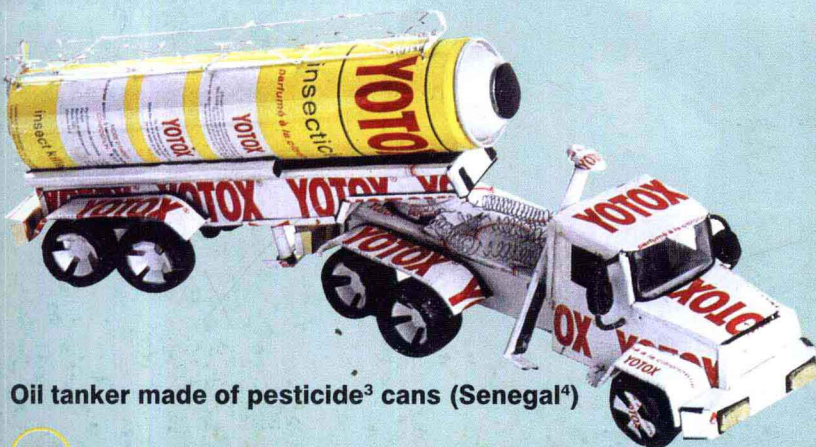
A simple way to protect Planet Earth is to reduce the amount of trash¹ we throw away. Just what's in our trash? There's paper, plastics, glass, metals, and other kinds of waste. How much of that trash can be reused²? How much can be turned into something useful?

Kids around the world have found some clever ways to reuse trash. They've turned their trash into toys.

- | | | |
|-------------------------------|-----|-------------|
| 1. trash | 11. | 废物; 垃圾 |
| 2. reuse | 12. | 再使用 |
| 3. pesticide | 13. | 杀虫剂 |
| 4. Senegal | | 塞内加尔 |
| 5. wheeled coconut-shell boat | | 由椰壳制成带轮子的小船 |
| 6. Indonesia | | 印度尼西亚 |



Wheeled coconut-shell boat⁵
(Indonesia⁶)



Oil tanker made of pesticide³ cans (Senegal⁴)