1 **a)** Commercial uses of Canada's forests:

- pulp/paper
- paper products
- raw lumber
- wood furniture
- construction materials (shingles, beams, flooring, etc.)
- recreational equipment (bats, hockey sticks)

b) Some recreational uses of Canada's forests:

- hiking/walking
- observing wildlife
- camping
- canoeing

Environmentally, forests provide a habitat for wildlife and control erosion.

2 **a) i)** Coniferous rainforest—temperature range: 3 to 20°C; precipitation level: 1000 to 2500 mm

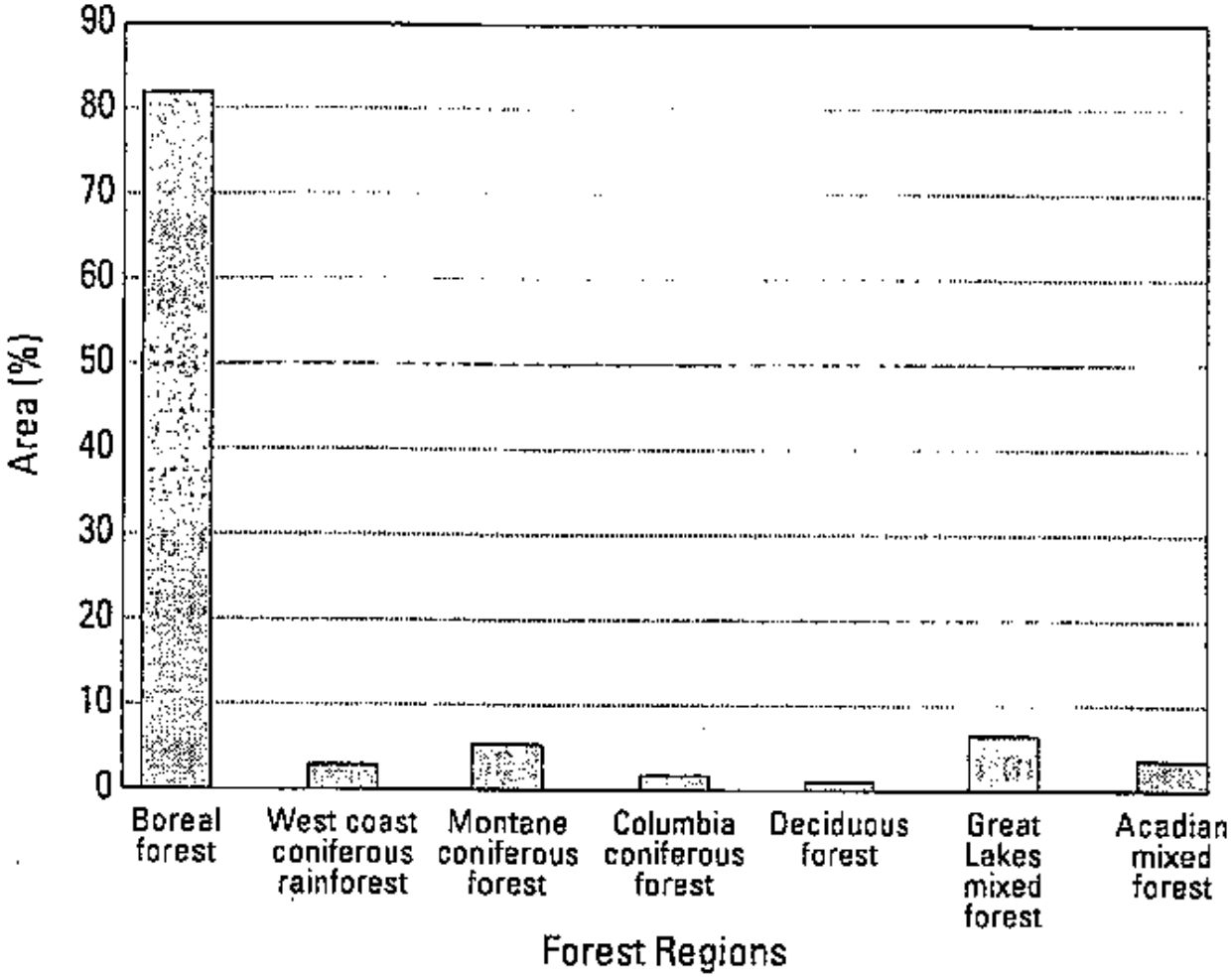
ii) Boreal forest—temperature range: –5 to 5°C; precipitation level: 400 to 1500 mm

iii) Deciduous forest—temperature range: 6 to 20°C; precipitation level: 600 to 2000 mm

b) Higher temperatures cause more evaporation of precipitation, therefore coniferous rainforests and deciduous forests need more precipitation so that sufficient moisture reaches tree roots.

Activity 3(a-c)

Forest Region	Tree Type	Principal Species	Area of Each Region	Provinces/ Territories
Boreal Forest	coniferous with limited deciduous	spruce, pine, birch, fir, aspen	1	all except NB, NS, PEI
Boreal Forest and Barren	coniferous	spruce, tamarack	2	all except NB, NS, PEI
Great Lakes-St. Lawrence	mixed	pine, hemlock, birch maple, oak	3	ON, PQ NB, MB
Grasslands	deciduous	aspen, willow, bur oak	4	AB, SK, MB
Coastal/ Columbian	coniferous	red cedar, hemlock, sitka spruce, Douglas fir	5	BC, AB
Boreal Forest and Grass	deciduous	aspen, willow	6	AB, SK, MB
Acadian	mixed	spruce, fir, birch, maple	7	NB, NS, PEI
Montane	coniferous with limited deciduous	Douglas fir, pine, aspen	8	BC
Deciduous	deciduous	beech, maple, walnut, hickory, oak	9	ON


90
80
70
60
50
40
30
20
10
0
Area (%)
Boreal forest
West coast coniferous rainforest
Montane coniferous forest
Columbia coniferous forest
Deciduous forest
Great Lakes mixed forest
Acadian mixed forest
Forest Regions

5 a) British Columbia contains the largest variety of forests in Canada including coastal, Columbian, Montane, and boreal forests.

b) These variations are a result of climatic differences in the province. The mountain ranges in British Columbia give rise to areas with high amounts of relief precipitation, mostly along the coast. The relatively warm Pacific Ocean also moderates temperatures along the coast, creating the unique environment required for coniferous rainforests. Other regions in British Columbia are extremely dry because they lie on the leeward side of the mountains in a rain shadow area. In these areas, grasslands dominate. Tundra conditions are found near mountain peaks along the Rockies.

22 Canadians today are more aware of the need to conserve our forest resource. The actions of Canadian and international environmental groups have drawn attention to Canada's poor forest management practices. Growing numbers of Canadians are discovering the value of forests for recreational purposes and the importance of a clean environment. As a result, we have gained a greater understanding of the role that forests play in the ecosystem and how they contribute to a healthy environment for all species.

23 a) More trees (and profit) can be harvested in the short run if a sustained yield plan is not followed. Forest companies ultimately are motivated by profit.

Canadians should be concerned because the future of our forests is in jeopardy. If the forests are destroyed, a valuable part of our heritage will be gone. In addition, a large number of Canadians will have to seek employment in other areas; recreational areas will be destroyed; other aspects of our environment will be adversely affected.

b) In the 1990s governments took action by
- introducing maximum yields;
- reducing clear-cut areas;
- ensuring forest debris was left to decay;
- requiring forest companies to replant cleared land;
- investing more in silviculture.

c) Canadian provincial and federal governments respond to their electorates. Until 1990 there was insufficient public support for responsible forest management. Canadians have to be aware of what is happening to our country's environment and voice our opinions to elected officials.

26 With **small-patch clear-cutting** only small areas of old growth are cleared, leaving large old growth areas in place. This allows trees to reseed naturally. Decayed forest remains and shade from older trees create the required conditions for regrowth.

Shelterwood logging leaves only small patches of old-growth forest. These small patches provide seeds for regrowth in cleared areas.

Seed tree retention leaves a few trees standing to seed the large cleared area.

Selective cutting removes only the mature trees, either singly or in small groups. This method allows for the most successful regeneration and the healthiest forests.

27 a) Silviculture will provide Canadians with better trees, which will help to regenerate forests more quickly and effectively.

b) Silviculture expenditures have increased significantly since 1977 because of pressure from environmental groups and the Canadian public on both the government and forestry companies. This indicates that the forest industry is responding to public opinion by working towards sustainable development.

c) Students may argue that the companies should pay for planting and seeding since they profit from the forest. Alternatively, since provincial governments own the most forest, perhaps they should pay with the money they earn from the forestry companies. Another consideration is that many forests are now used for other purposes. For example, people use logging roads to enter the forest and explore the landscape. So perhaps the general public should also contribute towards regeneration.

If governments provide subsidies and support for recycling programs, these programs are more likely to succeed. This may be the most effective way to save Canada's forests. Alternatively, government funds are limited and governments must make careful choices about where to spend money. Also, individuals must realize that it is in their own best interest and that of future generations to reduce consumption in order to protect our resources.