

chairman of the Concerned Citizens said that, despite the fine natural location of Lewiston-Clarkston, "we find that we have a national reputation for having created an aerial cesspool and being willing to wallow in it." Several area doctors stated that they believed air pollution in the area increased the incidence of upper respiratory illnesses. One resident, Vern Morton, was more dramatic; he stated, "I believe the horrible, rotten stench coming from the smokestacks of the Potlatch pulp mill here in Lewiston is killing me; I am afraid to remain here; I don't want my family or myself to die premature deaths."

At the conference, federal officials said that emissions of pollutants in the area were just as substantial as when the first studies were conducted in 1961-62, but that there were still no effective ordinances or air-pollution control programs. William H. Megonnell, chief of the PHS's air-pollution abatement division, said that the problem had developed and grown in the area "because of inaction of state and local agencies and the inability of one state to deal with pollution generated in the other."

Idaho state health administrator Terrell O. Carver pointed out that the federal government was also a late comer to the problem of air pollution and, by way of explanation, noted that the Idaho state appropriations for air-pollution control had been so low since 1959 that no abatement work could be undertaken in his state. PFI President Cancell said that "as a company, I submit to you that we are doing everything in our power to be a good citizen. We are a collection of people like those in any other economic, social, or government group. We are no better. We are no worse."

Being "no worse" was not good enough. The conference participants found that PFI should be required to control its offensive odors, that an interstate air pollution agency should be set up, and that refuse should not be burned in the open or in single-chamber incinerators. If these recommendations are not put into effect, the HEW Secretary can take the next enforcement step—establishing a hearing board.

Meeting preliminary deadlines set by HEW, PFI announced this July that it was purchasing three new pieces of pollution-control equipment for \$862,200. In an interview, the PFI president said that he didn't know whether the

new equipment would eliminate odor. "I can only pray that it will," he said. Area residents now have confidence that PFI is moving to combat its odor problem.

In an interview in Washington, William Megonnell said that he didn't expect that PFI could get rid of its smoke and steam or even 100 percent of its odor. But Megonnell does think that adequate technology exists so that PFI can eliminate "90 percent" of its odor emission and its discharge of particulate matter.

In the Lewiston-Clarkston valley, there is a good deal of respect among concerned observers for the care with which the PHS documented its pollution case and for the deliberate manner

in which it has taken action to improve the local situation. Even in this area of the Western United States, a region traditionally hostile to the federal government, there seems to be some gratitude for intervention from Washington. As one Lewiston advocate of cleaner air, Peter Gertonson, summed it up: "Without federal pressure, nothing would have come about. If this is interference, I think it is good. This is what the citizen should get from his government." Although many residents of this area may be happy because of federal action, citizens in hundreds of other cities wonder whether the "feds" will ever get around to helping alleviate the air pollution problems in their communities.—BRYCE NELSON

North Cascades National Park: Copper Mining vs. Conservation

When the Administration's bill calling for the creation of a North Cascades National Park in Washington state was introduced in Congress in March, it seemed initially that the measure might resolve a long battle between the National Park Service and the National Forest Service about which agency should have jurisdiction over federal lands in the area. Instead, the area has become the center of a new controversy, which concerns commercial mining in protected wilderness areas.

What started the latest altercation was an announcement last December that the Kennecott Copper Corporation was negotiating with the U.S. Forest Service about the possibility of operating an open-pit copper mine in the Glacier Peak Wilderness Area. The area is adjacent to the southern boundary of the proposed national park. In May the company acknowledged its interest. Since that time, a number of conservation groups have protested, and many of their members have hiked into the area to take a closer look. Supreme Court Justice William O. Douglas led 150 people on one such hike in early August. Conservationists are particularly angered by the idea of the mine because the Glacier Peak area includes some of the most spectacular scenery in the United States. The area

was suggested as a national park as far back as 1906.

The Kennecott mine would be located on a 450-acre site near the 6000-foot level of Miners Ridge, about 7 miles northeast of the 10,528-foot Glacier Peak. The site is about 15 miles from the nearest road. Kennecott has indicated that it has made no final decision concerning the mine. To date it has not made application either to the Forest Service for the necessary access permits or to the local planning commission for permits. Legally, however, the corporation is entitled to mine the ridge. Under the 1964 Wilderness Act, exploration for minerals may continue in wilderness areas until 1984 and valid claims may be mined indefinitely, since the Forest Service has no right of condemnation. What makes the current controversy unique is that this is the first major confrontation between the public and a mining company with patented mineral rights within a wilderness area. Patented claims confer title of the land to the claimant.

The 458,000-acre Glacier Peak area is among the 9.1 million acres that became the Wilderness System under the act designed to safeguard unique public land against private use. During the fight in Congress over passage of the bill, a compromise was arranged whereby mining and grazing provisions were

added, to satisfy Western interests.

All the land protected by the 1964 act previously had been classified as wilderness by the Secretary of Agriculture. The Glacier Peak area was set aside in 1960. Prior to passage of the Wilderness Act the Forest Service also designated some regions as primitive and wild areas. Among these was the North Cascades Primitive Area, from which the proposed national park would be carved. Kennecott has had options on the Miners Ridge claims since 1954 and has owned the site of the ore deposit since 1959. It also has an additional 2650 acres of unpatented claims in the area. The firm states that it wants to bring the area into production because copper is in short supply and be-

cause it hopes to reduce the balance-of-payments deficit.

Secretary of Agriculture Freeman challenged Kennecott's reasoning during a speech in April before members of the Sierra Club, one of the conservation groups opposing operation of the mine. "The reasons given for this mine are not so very different from the reasons given for other resource development," he said. "The copper deposit is valuable; companies are being encouraged to increase domestic copper production; and, as we all know, there's a war going on. . . . But, in balance, it can also be pointed out that: Our present war effort will not suffer if Miners Ridge is left undeveloped. Neither will our civilian standard of living suffer.

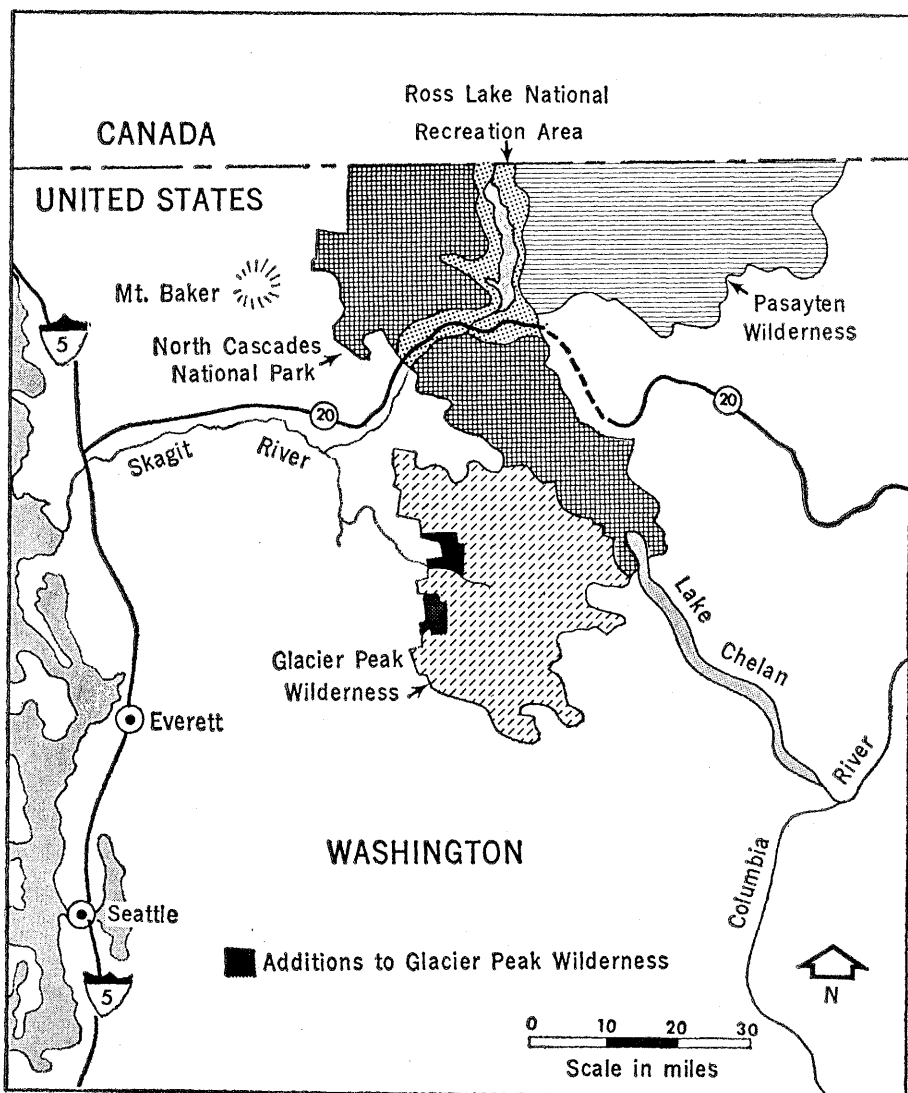
This is not the only undeveloped copper deposit in the United States. Others exist, perhaps less valuable, perhaps more costly to develop. . . . It is not a case, in short, of 'either-or.' It is rather a case of economics, of choosing alternatives; of balancing a priceless, yet intangible, national treasure against ledger sheets and profits."

Kennecott has countered Freeman's statement by saying the company has no intention of destroying the alpine beauty of the Glacier Peak Wilderness, although, it admitted, "it is impossible for wilderness and mining to coexist." The firm would, it added, do as much as possible to protect the wilderness environment. "When the operation terminates, the open-pit mine will fill with water from the run-off of heavy snows and rains in that area and could be made into an attractive lake," the company stated.

The Miners Ridge pit would produce 12,000 to 15,000 tons of low-grade copper ore (concentration, about 1 percent) annually for a 20- to 30-year period. Kennecott has estimated about 200 men would be employed at the mine and at the milling operation in the valley below. At the mill, the ore would be concentrated by a conventional flotation process to a copper content of about 36 percent. The ore would then be hauled out of the area over a 15-mile road and trucked south to a smelter in Tacoma. Roads are permitted within the Wilderness System only by permit, to provide access to mining operations.

There is little doubt that the proposed pit would affect the wilderness area, which has been protected from commercial activities since 1960. It is estimated that the concentrator would require 5000 tons of water a day for the flotation process. Tailings, the mineral residue, from the concentrator would cover about 200 acres and might be toxic and likely to pollute streams and destroy fish. Tailings from the Holden Mine, a copper mine which operated on the eastern edge of the wilderness area until 1962, did pollute streams and kill fish.

Although some public officials are now expressing doubt that Kennecott will proceed with the mine because of increasing public pressure, conservation leaders in the West are not so optimistic. In January they met with C. D. Michaelson, Kennecott vice president in charge of mining, who indicated that the mine was necessary for a variety of



MINING CONTROVERSY: An area in the scenic North Cascades Mountains in Washington state is the center of a conflict between conservationists who would like to see the area preserved and mining interests who want to develop an open-pit copper mine in the heart of the Glacier Peak Wilderness Area. A North Cascades bill, which would give some protection to the area, has been introduced in Congress. The bill advocates the creation of a national park, a national recreation area, a wilderness area, and two extensions to the Glacier Peak area.

reasons; these included the copper shortage and an increase in the per capita consumption of copper.

Representative Lloyd Meeds (D-Wash.), sponsor of the North Cascades bill in the House and congressman for the area in which the proposed mine would be located, believes the public has exerted sufficient pressure to force Kennecott to abandon its plans. If the corporation does not do so, Meeds has announced, he will introduce legislation blocking development of the mine. He recently circulated a statement that an open-pit mine would be "grossly inconsistent with the intent of the Wilderness Act and with the management objectives of the U.S. Forest Service." His proposed legislation would authorize the Secretary of Agriculture to acquire privately owned land within the Glacier Peak Wilderness Area by condemnation, withdraw from disposition all mineral lands within the area, and allow the President, upon subsequent determination of the national interest, to permit mining operations within the area.

Opposition

But it appears that the congressman is less than eager to enter into direct combat with the giant corporation, because more than 3 months have elapsed since his announcement that he would introduce legislation after a "reasonable time."

Meeds noted in an interview last week that his proposed legislation might not be needed, there being "some question that the Secretary of the Interior may have the inherent power of condemnation" over mining claims, since mining patents are processed through the Interior Department.

There is also a strong likelihood that the proposed mine would come under the zoning restrictions of the county in which it would be located. The Snohomish County senior planner told *Science* that the portion of the county in which the mine would be located is zoned for rural use. County officials believe that, since Kennecott's mining claims are patented, or owned by the company, the mine would be subject to the same restrictions as other private land. That would mean that Kennecott would first have to obtain the approval of the county board of adjustment before being able to proceed with the mine. The state pollution control commission would also have jurisdiction over any pollution of streams or rivers.

Despite optimism in some quarters about the chances of blocking the mining operation before it begins, Kennecott has yet to indicate that it has given up the battle. The corporation has prepared a publication on the world copper situation, which it has not yet made public. A company official said it was written for the benefit of congressional and government officials, "to prove a point."

North Cascades Bill

In any event, it now appears likely that Kennecott's decision on the mine will come long before Congress takes any action on the North Cascades bill. President Johnson recommended establishment of the park in his message to Congress of 30 January. The bill was introduced in the Senate on 20 March by Senators Henry M. Jackson and Warren G. Magnuson (both Democrats of Washington) and in the House on 20 April, by Representative Meeds. The bill calls for the creation of a 570,000-acre North Cascades National Park; a 100,000-acre Ross Lake National Recreation Area, which would divide the park into two sections; a 500,000-acre Pasayten Wilderness Area to the east of the park; and two extensions, totaling about 10,000 acres, to the Glacier Peak Wilderness Area.

Acquisition costs for the park have been placed at \$3.5 million for 4030 acres now under private ownership. An additional \$1.5 million would be needed if Congress were to authorize condemnation of unpatented mining claims in the area. Development costs for the area that would be under the jurisdiction of the Park Service are placed at \$35 million, of which \$29 million would be spent during the first 5 years.

Both the Glacier Peak extensions and the Pasayten Wilderness would remain under the jurisdiction of the Forest Service, while the Park Service would have jurisdiction over the recreation area and the park. Access to the park and recreation area would be provided by the North Cross state highway, now being constructed by the state of Washington. It is scheduled for completion in 1972.

The park would be located in an area which is often referred to as "America's Alps," a region which is largely inaccessible except by helicopter or by foot. There are more than 150 active glaciers within the park site.

The North Cascades bill is the direct result of the so-called "Treaty of the

Potomac," which was arranged in 1963 between Secretary of Agriculture Freeman and Secretary of the Interior Udall. The treaty opened the way for a joint study of the federal lands in the North Cascades by a study team consisting of two appointees from Agriculture, two from Interior, and a chairman, Edward C. Crafts, head of the Bureau of Outdoor Recreation.

The team studied an area of about 7 million acres which included more than half of the federally owned land in Washington. As might have been anticipated, recommendations by the study-team members reflected their department's interests, and a compromise agreement was left to the study chairman, who came up with a proposal for establishment of one national park, a wilderness area, and a national recreation area. The Administration's proposal was based extensively on Craft's recommendation.

"Treaty of the Potomac"

Despite the compromise arrangement, the bill, as now written, does little to satisfy a number of groups. Conservationists would like to see a larger park. They also advocate reclassifying the Glacier Peak Wilderness Area as a national park. Recreation groups would like an expanded national recreation area; hunters would like to see the area of the proposed park remain in the hands of the Forest Service, as would the timber interests.

Daniel J. Evans, governor of Washington, has come up with his own recommendations for the North Cascades. He advocates the creation of a North Cascades National Recreation Area totaling 1.8 million acres. He proposes establishment within that area of multiple-purpose recreation areas and a wilderness-type national park. All but the park land would remain under the jurisdiction of the National Forest Service.

Much of the dissatisfaction with the North Cascades bill can be attributed to the public's uncertainty over which governmental agency offers the best methods for making use of the land and preserving it for the future. The National Park Service allows construction of scenic roads and permits some concessions within national parks. The Forest Service, except for wilderness and primitive areas, adheres to a multiple-use concept. The Park Service allows no hunting, while both hunting and fishing are permitted on Forest Service lands. Ski lifts are allowed in national

forests, while the Park Service prefers facilities which require no permanent installations. Mining is not allowed in most national parks, although it is permitted at Mount McKinley in Alaska.

It is the mining provision in the Wilderness Act that has caused the most unhappiness among conservation groups. In the area encompassed by the North Cascades bill, there are an estimated 91,000 mining claims. Of those, 590 have been patented. Despite the large number of claims, there has been relatively little commercial mining in the area over the years. There are no

commercial mines in operation now on any lands covered by the North Cascades bill.

The decision on what is to happen to the area now rests with a Congress which has shown no signs of acting on the measure. The Senate Interior and Insular Affairs Committee, under the chairmanship of Senator Jackson, held hearings on the bill in Washington, D.C., and in the state of Washington in the spring. Since that time the bill has been locked up in committee. Senator Jackson has said he hopes the bill will be acted on prior to adjournment,

but the committee will not release the North Cascades bill until the Senate has acted on the bill for a Redwood National Park (*Science*, 30 September 1966 and 28 July 1967).

In the House, the Interior and Insular Affairs Committee headed by Representative Wayne Aspinall (D-Colo.) has yet to schedule hearings on the measure. No one is optimistic about the bill's future in the House, although Representative Meeds, who is a member of Aspinall's committee, believes it will pass eventually in some form.

—KATHLEEN SPERRY

Whales: Decline Continues Despite Limitations on Catch

Whaling as an industry has gone past the point of diminishing returns. As for the whales themselves, conservationists say their very survival is threatened. In the case of the largest whale of all, the great blue whale, some observers feel it may be too late now for that leviathan no matter what is done.

Since World War II, whalers have gone about their work with a growing efficiency that is putting them out of business. So grim are the statistics of the industry that only three nations—Japan, Norway, and the Soviet Union—still engage in pelagic whaling, that is, whaling from oceangoing ships.

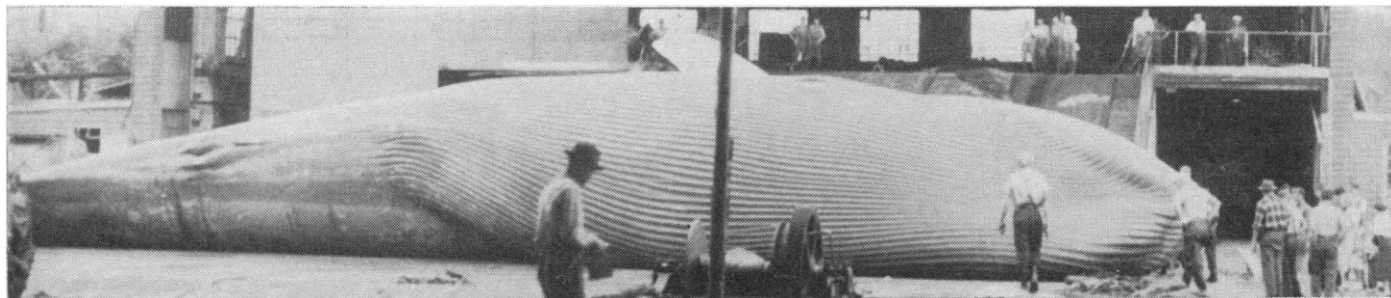
Hope for the whales lies mainly in the efforts of the International Whaling Commission, which was established in 1946. Fifteen nations now belong to

the commission, including the principal whaling nations, but the organization is an entirely voluntary one, and resistance to putting into effect an international inspection system on whale catches has contributed as much as anything to pessimism about the future of the whales.

Signs of the situation can be read in the decline of the "yield" and reduction in Antarctic whaling fleets in recent years. In the 1964-65 whaling season (December to April) there were 15 whaling expeditions to the Antarctic. In 1966-67 there were nine expeditions (four Japanese, three Russian, and two Norwegian). The catch last season was four blue whales, 2893 fin whales, and 12,893 of the smaller sei whales, or the equivalent by IWC reckoning of 3511 blue whale units (a

blue whale unit equals two and a half humpback whales, two fin whales, or six sei whales). Some 4960 sperm whales were also reported caught in the Antarctic. The year before, when there were ten expeditions to the Antarctic whaling grounds, an equivalent of 4089 whale units were caught, 578 more than last season.

The best-known work of the IWC has been the setting of catch limits for the Antarctic. A recommendation on safe catch limits is given each year to the commission by its scientific committee made up mainly of scientists drawn from the fisheries ministries of the commission's member countries. This year the committee recommended a catch limit of between 3100 and 3600 blue whale units. At its annual meeting held late in June in London, a limit of 3100 was put forward but was rejected as too low. Norway, which is faced with competition from the powerful Japanese and Russian whaling fleets and was unable to catch its full quota last year, asked for a limit of 3500. After hard bargaining, the limit for the coming season was put at 3500. (This, in effect, means fin and sei whales. Because the blue whale



R. M. Gilmore

Female blue whale on deck at whaling station of British Columbia Packers, Coal Harbour, north Vancouver Island, B.C.