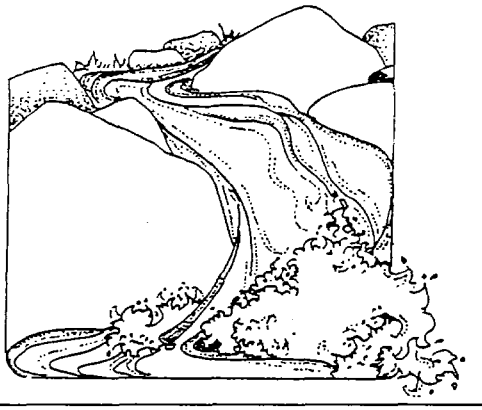
tent with the boat storage guidelines. See *Shoreline Development, Boat Storage* in this chapter.

Other Guidelines Affecting Air Access. Several other guidelines may affect air access. See the following sections of this chapter:

Upland Development
Shoreline Development
General Access
Boat Access
Subsurface Resources



WATER & SOLID WASTE

Goals

Water Quantity. Reserve adequate water quantity to provide for recreation and fish and wildlife habitat for each river system throughout the year.

Water Quality. Manage upland activities for multiple use within the corridors using mitigation measures to alleviate potential adverse effects on water quality.

Wetlands. Protect the hydrologic, habitat, and recreational values of public wetlands.

Litter and Solid Waste. Reduce litter, solid waste, and human waste deposition in the corridors in order to protect recreational values, water quality, and public health.

Management Guidelines

Litter. Litter and other signs of use were identified as a serious problem in the Recreation Rivers. Users were almost unanimous in saying that a "no litter" standard should be in place throughout the Recreation Rivers. To address this concern, the department should adopt a regulation prohibiting littering or bringing waste or refuse into the Recreation Rivers for its disposal. A public education program should be developed by DNR, in cooperation with the Matanuska-Susitna Borough and user groups, which stresses the "pack-it-in - pack-it-out" ethic. Other management tools to reduce litter should include providing staff for litter pick-up patrols and working with volunteer groups to expand this effort. The department should also work with commercial operators interested in picking up litter, in lieu of paying commercial-use permit fees (also see *Commercial, In-Kind Services).* DNR and the borough should consider contracting for litter pick-up if staff is short and funding is available. Funding these management options is a high priority.

Providing dumpsters or trash cans in remote locations in the corridors is not encouraged at this time. However, as funding allows, the borough, DFG, and DOPOR should continue to provide dumpsters at major road accessible boat launches such as the Deshka Landing, Susitna Landing, Little Susitna Access, and the Talkeetna boat launch, to encourage private landowners and the public not to dispose of garbage within the Recreation Rivers. Operators of private boat launches are also encouraged to provide these facilities for their customers.

Solid Waste. Land fills, dumps, and burial of solid waste and litter will not be authorized on state lands in the Recreation Rivers. DNR should identify unauthorized disposal sites and, in coordination with DEC, close these sites.

Waste Water Disposal Systems. All commercial guide camps on state lands are required to meet DEC regulations for wastewater systems. No wastewater disposal systems such as leach fields and septic systems will be allowed on the

shorelands. Wastewater disposal systems elsewhere in the Recreation Rivers shall comply with DEC regulations.

Other Signs of Use. Other than litter, the most common signs of use along the rivers is the accumulation of toilet paper and unburied human waste. DEC recommends that for one-time individual use, human defecation should be at least 100 feet from any stream or waterbody and away from campsites or other areas frequented by people. All fecal materials and tissues should be buried in a small hole, covered with soil, packed down, and vegetation replaced. To protect public health, the public education program proposed for the Recreation Rivers should include information on the proper disposal of human waste. (See Public Education.)

Privies. Consistent with DEC regulations, privies must be located at least 100 feet from the nearest waterbody, and the bottom of the pit must be at least 4 feet above the water table.

Drinking Water. Commercial facilities are required to provide water from an approved drinking water source. In addition, approved public drinking water sources are necessary at the mouths of the Deshka River, Clear Creek, Lake Creek, Talachulitna River, and Alexander Creek. The cost of providing public sources of drinking water at these sites with public funds is prohibitively expensive because of new EPA regulations. Until approved public drinking water sources are developed at these locations, the public should be warned, through a public education program, not to drink untreated surface water.

Waste Treatment Plants. Large-scale waste treatment plants for municipalities, subdivisions, manufacturing, or industry are prohibited in the Recreation Rivers.

Fuel Storage. No more than 55 gallons of fuel, oil, and other liquid petroleum products may be stored on state land or water, or associated structures, within 100 feet of any waterbody. Fifty-five gallon drums stored within 100 feet of the river must be within an impermeable-diked area with a capacity of 110 percent of the largest amount of fuel stored. Underground storage of petroleum products in the Recreation River is prohibited.

Bears and Garbage. (See *Fish and Wildlife* in this chapter.)

Storm Drains. Private storm drains may not discharge into the Recreation Rivers or their tributaries. Public storm drains may be allowed if settling ponds and grease separators are used to maintain water quality, a maintenance schedule is planned and undertaken, appropriate erosion control measures are taken (where erosion is a problem), and pre-existing contours are maintained. When storm drains discharge into wetland, perforated pipe to dissipate water should be used.

Water Intake Structures. When issuing appropriations for waters in fish-bearing streams, DNR will require that water intake structures be installed that do not entrap, impinge, or injure fish. Water intake structures will be screened and intake velocities will be limited. Support structures should be designed to prevent fish from being led into the intake. Other effective techniques may also be used to achieve the intent of this guideline. Screen size, water velocity, and intake design will be determined in consultation with DFG.

Instream Flow. In accordance with AS 41.23.420(b), "The commissioner shall reserve to the state under AS 46.15.145 an instream flow (see glossary) level for the water in the rivers described in AS 41.23.500 that is adequate to achieve the purposes of AS 41.23.400." DNR will establish these reservations of water (instream flows) through an instream flow application in accordance with AS 46.15.145 and 11 AAC 93.141-147. An expanded continuous stream flow monitoring and data collection program should be established on all six recreational rivers with special attention to Lake Creek, Talachulitna River, and Alexander Creek where historical flows are poorly documented or non-existent. The stream flow data collected will be used to establish or modify the initial reservation of water, to update and review the reservation in 10 years, in accordance with AS 46.15.145(f) and to monitor and enforce instream flow reservations.

Contingent on funding and staff, instream flow reservation applications for the Recreation Rivers will be filed within one year after the plan takes effect as defined by AS 41.23.440(c). Because some of the applications will be based on hydrological estimates, it may be necessary to

amend these applications under 11 AAC 93 as additional data are acquired and analyzed.

Until an instream flow reservation is filed, out-of-stream applications will be adjudicated consistent with AS 46.15 with consideration given to fish and wildlife, recreation, and other stream values. Notice will be given to DFG, DEC, and other interested parties as required by AS 46.15.133.

Water Discharge from Mining Operations. Zero discharge of pipe effluent will be allowed into the rivers or their tributaries from mining operations.

Wetlands Drainage and Associated Discharge. Wetlands serve to filter nutrients and sediments from upland runoff. They also stabilize water supplies by storing excessive water during flooding and by recharging groundwater during dry periods. In addition, wetlands provide important feeding, rearing, nesting, and breeding grounds for many species, selected recreational uses, and aesthetic values.

The location of wetlands are shown in Appendix H under a separate cover. To protect these values, drainage into wetlands will be authorized only in a manner that:

1. There shall be no impediment to fish passage.
2. Ditches shall not physically connect to any natural bodies of water.
3. Settling ponds and grease separators shall be used to maintain water quality. A strict maintenance schedule shall be undertaken.
4. Disturbed soil areas shall be revegetated by the next growing season. Natural revegetation is acceptable if the site is suitable and will revegetate itself within the next growing season.
5. Discharged waters shall not exceed the state water quality standards.
6. Excess material excavated from the site that is not needed for site development shall be disposed of at an upland site or outside the Recreation Rivers.
7. Side slopes shall not exceed 2:1.

Other Guidelines Affecting Water and Solid Waste. Several other guidelines may affect waste and solid waste. See the following sections of this chapter:

Shoreline Development
Fish and Wildlife Habitat
Commercial
Subsurface Resources
Education

FORESTRY

Goals

Personal Use. DNR will continue to make wood available for personal use within the constraints of budget, access, and habitat and recreation values and the Recreation Rivers Act. Sources of wood for personal use may include permits or sales in remote areas, personal use harvesting areas in road-accessible regions, use of wood residues incident to clearing for other purposes, and harvest of dead and down wood.

Commercial Use. Make wood products available for use incidental to the construction of access or for habitat enhancement.

Forested Land Base. Maintain in public ownership a forested land base that is adequate to meet the needs for personal use harvest, recreation, fish and wildlife habitat, soil, and water.

Fire. Protect from wildfire, human life, valuable public and private forest lands, and significant human improvements.