

NISQUALLY CONFLICT RENEWED

by

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## INTRODUCTION

When the Port of Tacoma announced plans for development of the environmentally sensitive Nisqually Delta for commercial port activities in the late 1960's, the Puget Sound Leagues of Women Voters prepared a report, Nisqually in Conflict to help its members and the general public evaluate the issues. The result was a commitment to preserve the Nisqually Delta by the public and a league consensus that stated:

It is the position of the Puget Sound Leagues of Women Voters to support policies and procedures to preserve the natural estuarine environment of the Nisqually Delta. The Delta should be preserved for uses compatible with natural ecological balance. Changes to the ecosystems of the Nisqually River Basin and adjacent waters must be considered for their effect upon the Delta. All port, industrial and heavy commercial uses should be excluded from the Delta and adjacent waters. Comprehensive regional planning must be the basis for management of the area. The state should assume primary jurisdiction for a unified planning and management system. <sup>1</sup>

Today, industrial development versus environmental protection is again an issue. Therefore, delegates to the 1978 Puget Sound Leagues of Women Voters Convention called for an update of the Nisqually study.

The purpose of this report is to outline 1) current land use plans for the refuge and surrounding area, 2) threats to the refuge ecosystem, 3) adequacy of existing environmental protection authority, and 4) management mechanisms that might resolve land use conflicts. It is hoped that the information



will be used as a basis for discussion by members of the League of Women Voters and the public to stimulate action to solve the Nisqually conflict. It is a classic example of the struggle to resolve the issues of environmental protection, urban development, and utilization of resources necessary for the satisfaction of basic human needs. Its implications have social and economic effects at local, state, and national levels.

## BACKGROUND

### Description of the Area

#### Geography

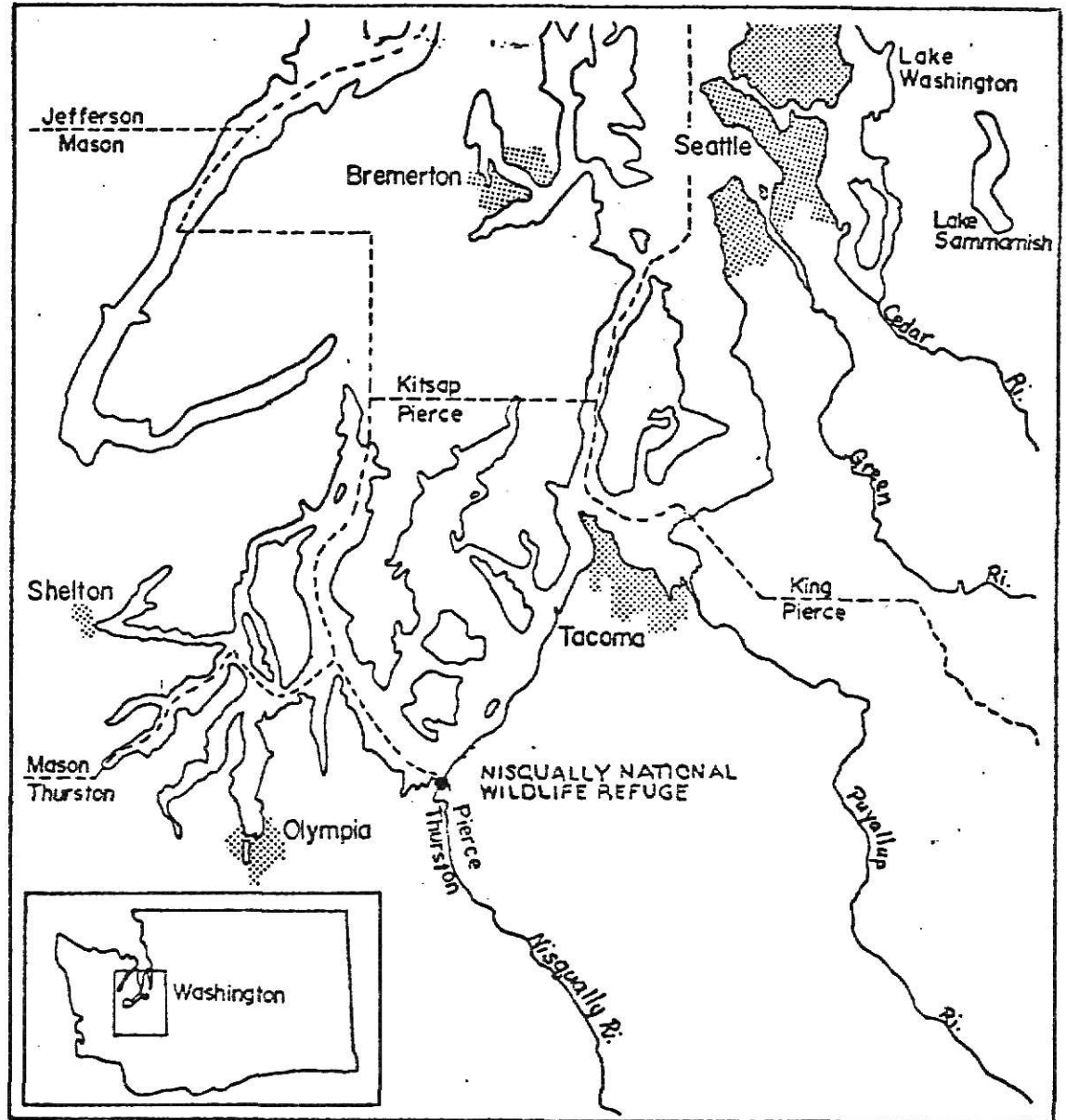
The source of the Nisqually River is the Nisqually Glacier on the southern slope of Mt. Rainier located in the Cascade Mountain Range in western Washington. It flows through mountain terrain, upland forest, plateau, valley, and plain, until it empties into Puget Sound midway between the cities of Tacoma and Olympia. Its entire 75 mile course forms the border between Thurston and Pierce Counties.

The Nisqually is one of only a few rivers left in this country still in a pristine state. <sup>2</sup> The river corridor includes some 400,000 acres with 80% of the area covered with trees. Most of the remaining area is in agricultural use. The flood plain between the mouth and the town of Yelm, thirteen miles upriver, is bordered on both sides by bluffs rising 200 feet from the mile wide valley floor. McAllister Creek runs at the bottom of the bluff on the Thurston County side and empties into Puget Sound near Nisqually Head.

The Nisqually estuary has been called the least spoiled of all major estuaries of the nation. <sup>3</sup> It was declared a national landmark by the U.S. Secretary of Interior August 25, 1971. The river divides the 4,000 acre delta into sloughs and channels of brackish water which flow through salt marshes and tidal areas, depositing accumulated silt. This deposit

MAP 1

REFUGE LOCATION MAP



forms the 1,000 acre mud flats. Beyond the flats the depth of the waters of Nisqually Reach increases rapidly, in some places from six to ninety feet in less than 150 yards. Mid-channel depth is 200 feet between Anderson Island and the delta. <sup>4</sup>

### Ecology

The ecology of the Nisqually estuary is important to the enhancement of the natural resources of the Puget Sound Region. The warm, fresh river water carrying nitrates, phosphates, and eroded materials floats in a layer over the cold, salt waters of Puget Sound. The incoming tide brings in nutrients from the sea and keeps the nutrients from the river, land, and sea from washing out into the ocean. These trapped nutrients are necessary for the growth of plankton, minute plants and animals at the bottom of the food chain. Currents and tides distribute nutrients and plankton throughout the estuary. The estuary thus provides food for the many fish species that reproduce in the delta. Its sheltered sloughs and salt marshes protect the newly hatched fish from harsh winds, waves, and predators. The Nisqually estuary is an important rearing area for flounder, sole, salmon, and steelhead. Crabs, oysters, clams, shrimp, and geoducks are also found.

The salt marsh of the Nisqually delta is a fertile area for plant life. Abundant cordgrass produces seven times as much food value per acre as does wheat. The decomposition of cordgrass and other grasses form a rich fertilizer called

detritus. This fertilizer is washed into the nutrient trap where it provides food for plankton.

Estuaries are not only "nursery grounds for the sea" but they are also the nesting and resting place for migratory waterfowl and marsh birds. Cordgrass and eelgrass provide shelter and food for over 160 species of wild birds. The Nisqually Delta is on the major fly land of the Pacific flyway and is the only place left in southern Puget Sound for migratory birds to rest. <sup>5</sup>

#### History of the Area

The Nisqually Indians established eight villages in the area of the Nisqually River, including one at the river's mouth and one at the mouth of Medicine Creek (now called McAllister Creek). <sup>6</sup> The Nisquallies fished in the rivers and streams, gathered roots and berries on the prairies, and hunted waterfowl, deer and other game throughout the area. In 1792, Captain Peter Puget passed the Nisqually area while mapping Southern Puget Sound for the British Vancouver Expedition. <sup>7</sup> But it wasn't until 1833 that white men first settled in the area. That year, the Hudson Bay Company established a post at the mouth of Sequelitchew Creek, just east of the Nisqually Delta. Fort Nisqually was to be a way station between the Hudson Bay Company's other Pacific Northwest posts, Ft. Vancouver on the Columbia River (near present Vancouver, Washington) and Ft. Langley on the Frazer River (near present

Vancouver, B.C.). British claim to the Northwest Territory was also to be enhanced by the establishment of this fort. <sup>8</sup>

In the beginning, the fort was used primarily as a collection point for furs from Puget Sound Indians. Then, in 1840, the Puget Sound Agricultural Company, a subsidiary of the Hudson Bay Company, began expanded farming and stock raising activities. It claimed land area from the Nisqually River north to the forested lands south of the Puyallup River and from Puget Sound to the dense forest of the Cascade Mountains. It covered about 167,000 acres. <sup>9</sup> The PSAC supplied other Hudson Bay Company posts with livestock, farm goods, and dairy products, as well as provided commodities for trade with England, Hawaii, and Russian Alaska. <sup>10</sup>

The earliest American farmer of the area was James McAllister who moved his family into a cedar tree stump on the banks of Medicine Creek (later renamed in his honor) in 1844. He farmed and raised cattle on the Nisqually Delta for a number of years. <sup>11</sup>

Other American settlers soon followed and, in 1846, the Oregon Treaty was signed setting the U.S.-British boundary at the 49th parallel. With the establishment of the Oregon Donation Land Act of 1850, whereby each adult U.S. citizen would receive 320 acres of land, it became necessary to reach a settlement of Indian land claims. <sup>12</sup> To this end, Isaac I. Stevens, Governor and Superintendent of Indian Affairs for the new Washington Territory, held treaty councils with the

Indians. One such council was held on the banks of Medicine Creek under a great Douglas Fir tree (which stood into the 1970's). The Medicine Creek Treaty of 1854 established a reservation for the Nisquallies two miles west of the mouth of the Nisqually River, along the bayshore. They retained the right to fish in their accustomed places and to hunt, gather berries and roots, and pasture their herds on unclaimed land.<sup>13</sup> Dissatisfaction with the terms of the treaty led to an Indian uprising which was halted by the capture of Chief Leschi. A new peace treaty was signed at Nisqually in November, 1856.<sup>14</sup>

With the end of open Indian hostilities, the way was cleared for development. Sawmills were established at the mouths of McAllister and Sequelitchew Creeks and the Nisqually River.<sup>15</sup> In 1890, the Northern Pacific Railroad (now Burlington Northern) completed a line from the south that crossed the Nisqually River a few miles from its mouth and followed the bottom of the bluff on the Pierce County side to the Sound, where it continued around the shoreline toward Tacoma.<sup>16</sup>

Diking of the delta to restrict high tides and river flooding began as early as 1870. While early agricultural efforts produced a variety of fruit and vegetable crops, dairy farming soon became the specialty. The Braget family began operation of its 350 acre dairy farm east of the Nisqually River in 1896<sup>17</sup> and production continues today. Across the river, the Brown Farm was established in 1904. This dairy farm consisted of nearly all the land between the Nisqually River and McAllister Creek and north of the present freeway.<sup>18</sup>

The site of old Ft. Nisqually was purchased in 1906 by the E. I. du Pont de Nemours Company. It constructed an explosives manufacturing plant there and a shipping dock at the mouth of Sequelitchew Creek. About a mile southeast of the plant a permanent company town was established (the present town of Dupont).<sup>19</sup> In 1919, another explosives industry concern, the Atlas Powder Company, located on the west side of the Nisqually Delta, a few miles from McAllister Creek. The nature of explosives manufacturing required large buffer areas for safety. Therefore, agriculture and wildlife used the Nisqually area quite harmoniously with the existing industry. Capitalizing on this scene, the Department of Game secured options to buy land on the Nisqually Delta for game management programs, including public hunting in 1947.<sup>20</sup>

Nisqually area farmers prospered due to their proximity to growing urban markets. But in time this strategic location also fostered other development plans for the Nisqually Delta. In 1949, the Port of Olympia included the Thurston County portion of the delta in their future development plans. In 1964, the city of Seattle explored the possibility of using the Nisqually Delta as a place to bury its garbage. And in 1965, the Port of Tacoma amended its comprehensive plan to include 2500 acres of land for a deep water port in the Nisqually Delta. That same year, the Port of Olympia amended its comprehensive plan to include industrial development of 3300 acres of Hawks Prairie, the old Atlas Powder Company site.



The Port Authority placed a higher priority for development of this site over the Nisqually Delta site recommended in their earlier plan, and actively sought a buyer that would develop an industrial park on the Atlas site. In 1969, Burlington Northern Railroad purchased the land and requested industrial zoning.<sup>21</sup>

With large scale industrialization eminent at Hawks Prairie and on the Nisqually Delta by the Port of Tacoma, environmentalists began battle. To help the public evaluate the issues, the Puget Sound Leagues of Women Voters released a report, Nisqually in Conflict, in 1970. Subsequently port plans were halted and the delta was designated as a National Wildlife Refuge.

## NISQUALLY UPDATE

### The Nisqually National Wildlife Refuge

In January 1974, acquisition of the Nisqually National Wildlife Refuge was approved by the Migratory Bird Conservation Commission and management by the U.S. Fish and Wildlife Service was established. The Refuge's 3,780 acres includes all lands and tidal mudflats north of Interstate 5, between the Burlington Northern Railroad tracks on the east and the top of the bluff on the west. The primary purpose of the Nisqually NWR is "to maintain and manage a diversity of wildlife habitats on the Nisqually River Delta with particular emphasis on migratory birds." <sup>22</sup> Refuge Management goals are to:

- . Maintain, in a viable state, each of the area's native plant and animal species;

- . Assure continued survival in a near-natural state of the Nisqually River Delta and McAllister Creek existing tideland habitat sufficient to support wildlife populations at desired levels;

- . Maintain a tideland ecosystem in which there will be limited disturbance to wildlife and habitat;

- . Provide for optimum wintering waterfowl-use through habitat management of former (diked) tidelands;

- . Provide professional wildlife and marsh management services, and make the public from nearby metropolitan areas aware of them.

- . Improve the visiting public's understanding and appreciation of wildlife, fresh water and tideland ecology, and man's historic and current role in his environment.

. Obtain optimum levels, types, ranges, amounts, and qualities of marshland and wild-life oriented recreation. 23

The Development Plan and Management Plan (Map 2) are designed to achieve the above goals.

Acquisition of the refuge lands began with the purchase of the 1270 acre Brown Farm, located between McAllister Creek and the Nisqually River, North of the freeway. Future purchases are planned as money becomes available from "Duck Stamp" sales to hunters.

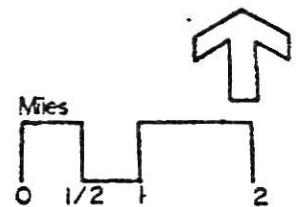
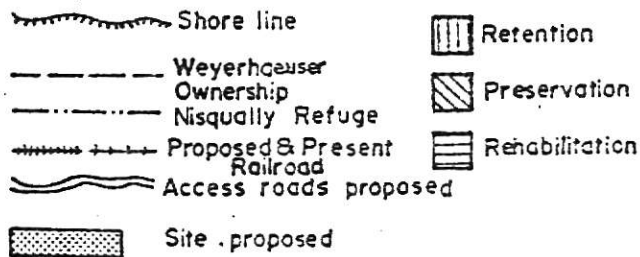
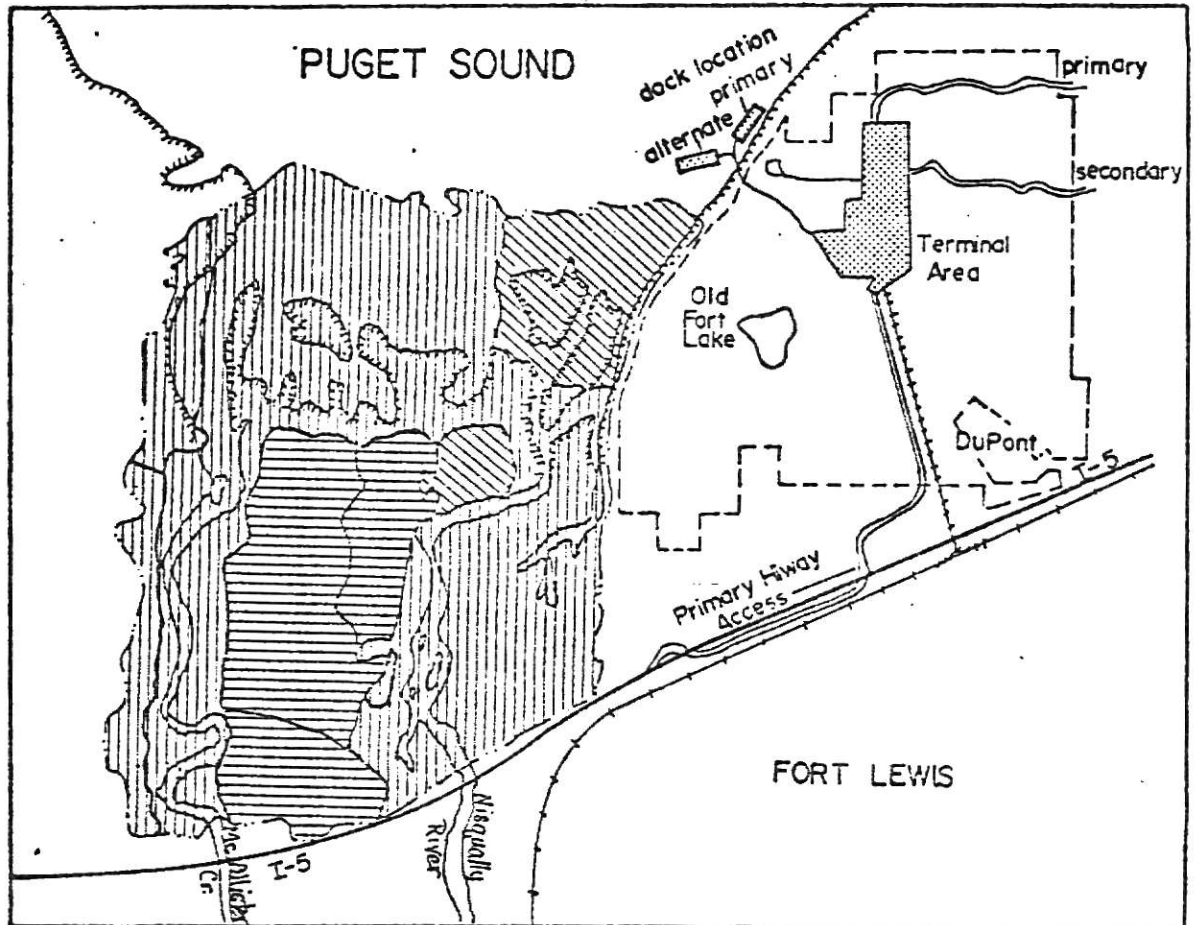
#### Area Land Use Planning

In 1972, Governor Evans' blue ribbon Nisqually River Task Force recommended that a comprehensive plan be developed for the entire river basin. This "Rainier to the Sea" plan called for the division of the river basin into eight planning areas with local management area councils to assist in planning and managing the area. It suggested state purchase of the delta, continuation of both agriculture and forestry as the highest and best use of a major portion of the land within the river corridor and basin, establishment of a fish hatchery on or near the Nisqually Indian Reservation, and utilization of all available means to provide for the continuance of open space throughout the river basin. 24 Little has been done to implement these recommendations.

With the passage of the state's Shoreline Management Act in 1971, local government was directed to plan and regulate land use in the public interest within 200 feet of the state's shorelines. The Act defines shorelines as:

# MAP 2

## WEYERHAEUSER PROPOSAL & Habitat Management Classifications



1. All marine shorelines;
2. All streams, rivers, and associated wetlands downstream from a point where the mean annual flow is 20 cubic feet per second or greater;
3. All lakes and their associated wetlands which are 20 surface acres or larger in size. 25

Shorelines adjacent to federal or Indian owned lands are exempt. Some areas are recognized in the Act as "Shorelines of Statewide Significance." These areas which include the Nisqually River and Delta, including the Puget Sound Shoreline from DeWolf Bight to Tatsolo Point, are to be given special consideration in land use planning.

Priorities are given in preference order, for uses that:

1. Recognize and protect the statewide interest over the local interest.
2. Preserve the natural character of the shoreline.
3. Result in long term over short term benefit.
4. Protect resources and ecology of shoreline.
5. Increase public access to publicly owned areas of shoreline.
6. Increase recreational opportunities for the public. 26

Guidelines for ensuring that these principles are incorporated into the master programs and adhered to in implementing the act include:

1. Where intensive development already occurs, upgrade and redevelop those areas to reduce their adverse impact on the environment and to accomodate future growth rather than allowing high intensity uses to extend into low intensity use or undeveloped areas.
2. Evaluate the short term economic gain or convenience of developments in relationship to long term and potentially costly impairments to the natural environment.
3. Leave undeveloped those areas which contain a unique or fragile natural resource.

4. Actions that would convert resources into irreversible uses or detrimentally alter natural conditions characteristic of shorelines of state-wide significance, should be severely limited. 27

To implement the policies of the Act, each city and county must:

1. administer a permit system for proposed development within 200 feet of the water,
2. develop an inventory of natural characteristics and land use patterns along the designated water bodies, and
3. prepare a master program to best determine the future use of all shorelines within their jurisdiction. 28

If the local governmental unit fails to develop a satisfactory shoreline management program, the state Department of Ecology will intervene. 29

Following DOE administrative guidelines, Thurston and Pierce Counties designated the Nisqually Delta a natural environment with the diked portion conservancy. The Nisqually River was designated conservancy for most of its length with portions in natural and rural. According to the administrative guidelines,

The natural environment is intended to preserve and restore those natural resource systems existing relatively free of human influence....The objective in designating a conservancy environment is to protect, conserve and manage existing natural resources and valuable historic and cultural areas.... The rural environment is intended to protect agricultural land from urban expansion, restrict intensive development along undeveloped shorelines, function as a buffer between urban areas, and maintain open spaces and opportunities for recreational uses compatible with agricultural activities....The objective of the urban environment is to ensure

optimum utilization of shorelines within urbanized areas by providing for intensive public use and by managing development so that it enhances and maintains shorelines for a multiplicity of urban uses. 30

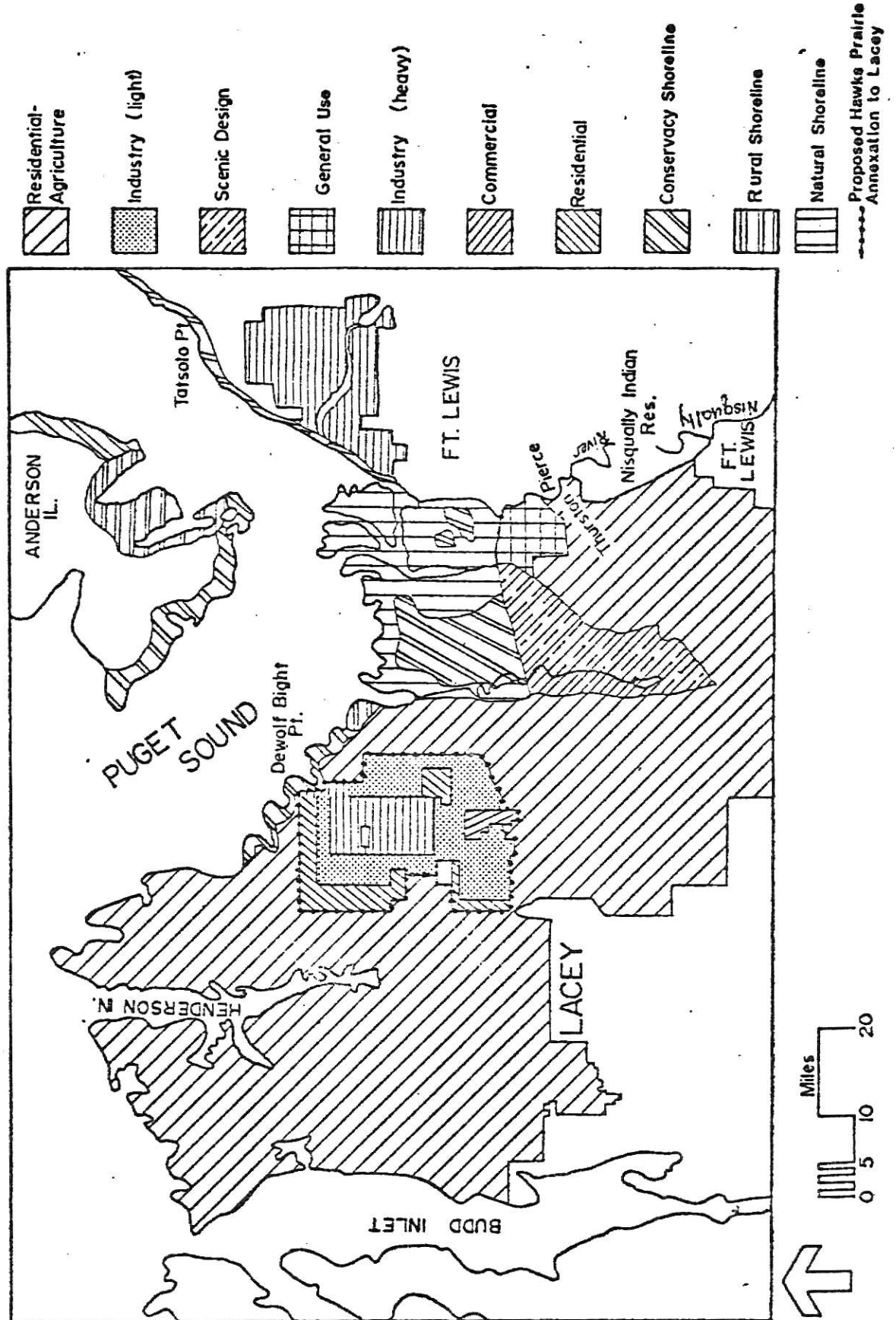
The Puget Sound shoreline on the east side of the Delta, a shoreline of statewide significance to Tatsolo Point, has been designated conservancy by the City of Dupont, with the exception of a portion at the mouth of Sequialitchew Creek, which was designated urban. 31 On the west side of the Delta, Thurston County reserved the Nisqually Head area for rural use with the rest conservancy. 32 (See Map 3)

Land use planning beyond the shorelines under Pierce County jurisdiction has not changed in the Nisqually area since the adoption of the Pierce County zoning code in 1962. The area was classified for "general use" at that time. In 1971 the City of Dupont annexed all the land owned by the Dupont de Nemours Company and zoned it industrial. (See Map 3)

Thurston County land use planning in the Nisqually area, on the other hand, has continued to be controversial. Much of the land use planning debate has been over the Hawks Prairie area, a few miles west of the wildlife refuge. Burlington Northern Railroad, the major land holder, wanted industrial zoning for their waterfront and adjoining upland property. The Thurston County Interim Zoning Ordinance adopted in 1970 allowed industrial uses, except petroleum refineries or storage facilities, for the upland property with a transportation corridor to the water on the condition that a master plan for the entire development be approved by the planning commission.



LAND USE ZONING





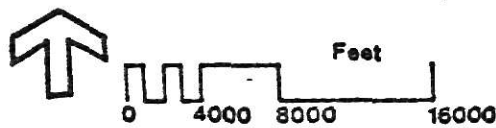
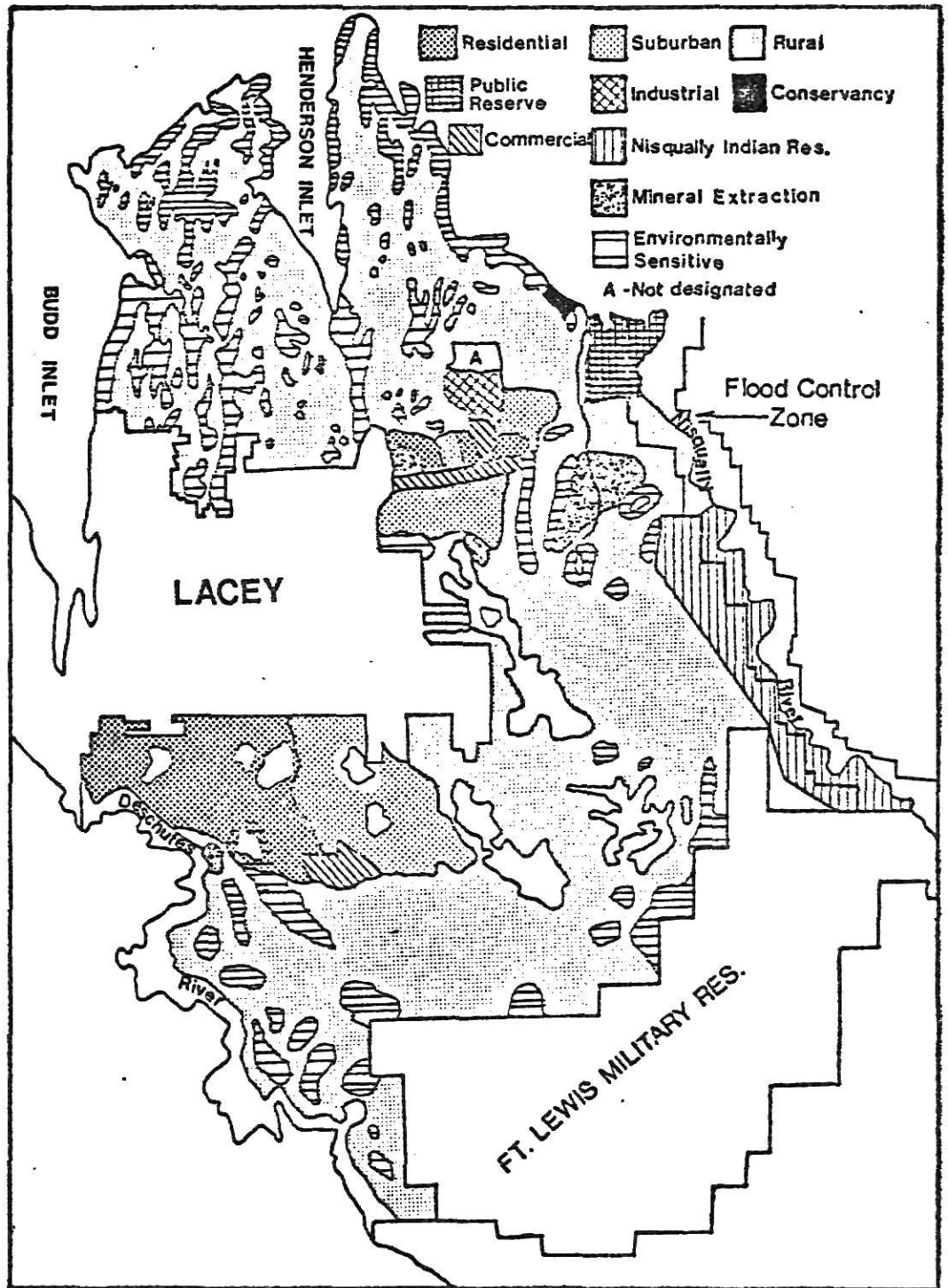
However, when Thurston County submitted their Shoreline Master Program with an urban designation to accommodate a port at this site, it was rejected by the Department of Ecology. Subsequently, the shoreline area was designated a rural environment, effectively eliminating water access to the proposed industrial park.

In 1977, the Thurston County Commissioners adopted the Northeast Thurston County Sub-Area Plan. This plan and its later amendments further restricted development on Hawks Prairie. The industrial park has been eliminated with only a 160 acre parcel of Burlington Northern property allocated to highway oriented light industrial development. (See Map 4)

Land use controls of a regional nature exist for the Nisqually Flood Control Zone (Map 5). This zone, administered by the State Department of Ecology, places restrictions on "the construction, operation and maintenance of any works, structures and improvements, private or public, to be created or built." <sup>33</sup> While the purpose of these regulations is to minimize flood damage, they also provide for an effective buffer zone for river protection.

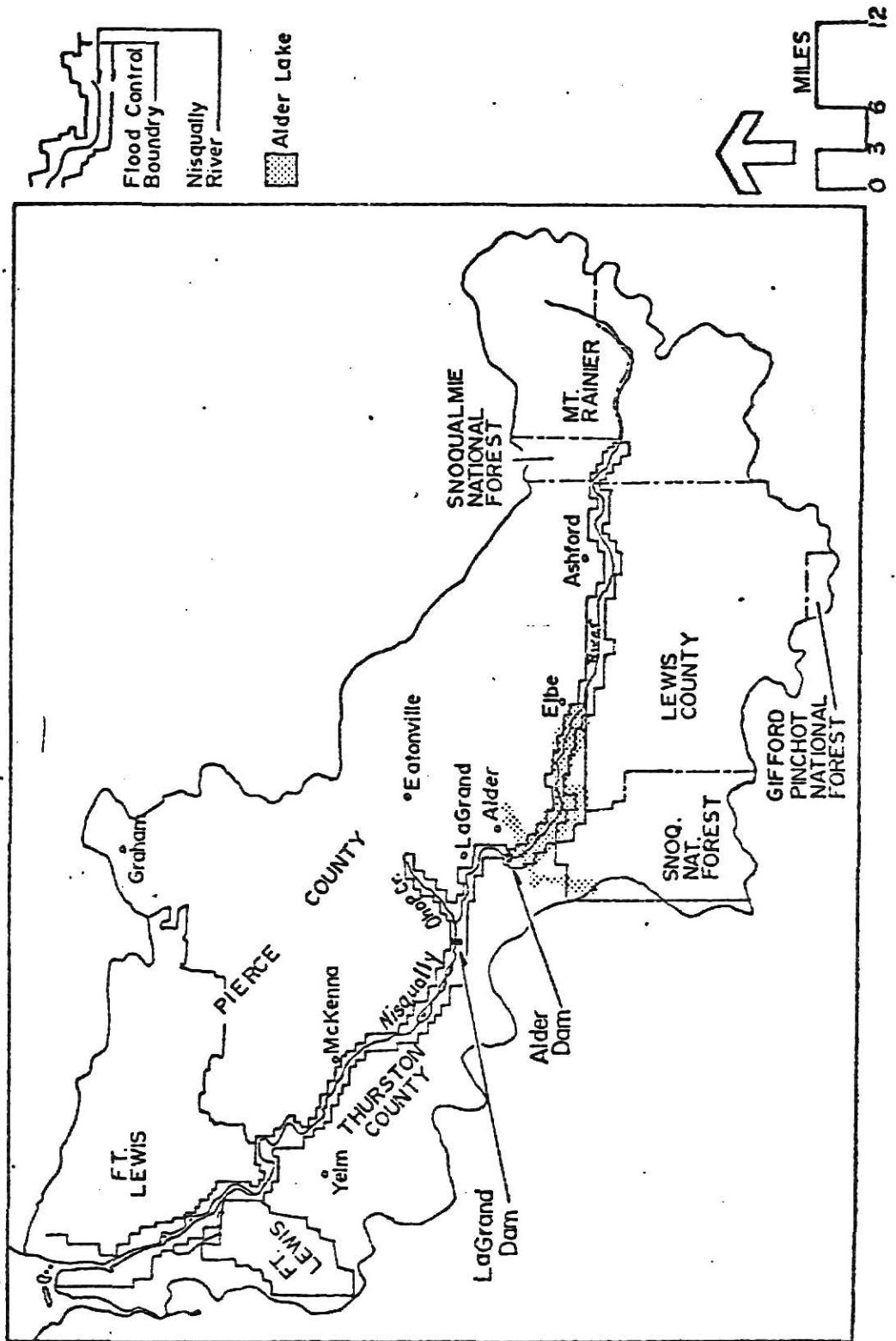
The primary existing land uses in the Nisqually Basin are forest, rangeland and cropland. Small areas of urban settlement are widely scattered throughout the area. Towns in the basin are Yelm, Eatonville, McKenna, Roy, LaGrande and Alder. Fort Lewis military reservation covers 57,200 acres of the basin. The Nisqually Indian Reservation is located along 5.7 miles of the Nisqually River.

N.E. THURSTON CO.  
Land Use Plans



MAP 5

NISQUALLY RIVER BASIN & FLOOD CONTROL ZONE



## CAUSE FOR CONFLICT

In 1976, the Nisqually Delta was placed in a Threatened Category II status pursuant to Public Law 94-485 by the Heritage Conservation and Recreation Service of the Department of the Interior. <sup>34</sup> This action was in recognition of major developments being proposed on both sides of the Delta, specifically those of the Weyerhaeuser Company at Dupont and Burlington Northern Railroad at Hawks Prairie. At a public hearing September 20, 1978, Ralph Boomer, representing the U.S. Fish and Wildlife Service, explained that once refuge acquisition is completed, the Delta proper will be within the essential management unit needed for protection from direct, physical impacts, but "This is not to say that major developments and activities within the watershed or in adjoining waters or the Nisqually Reach could not still have a serious adverse impact upon the integrity of the refuge or should not be regulated as to type, scale and design." <sup>35</sup>

### Weyerhaeuser Export Facility at Dupont

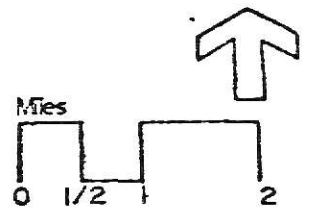
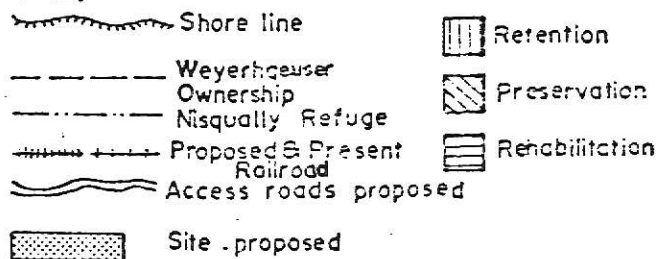
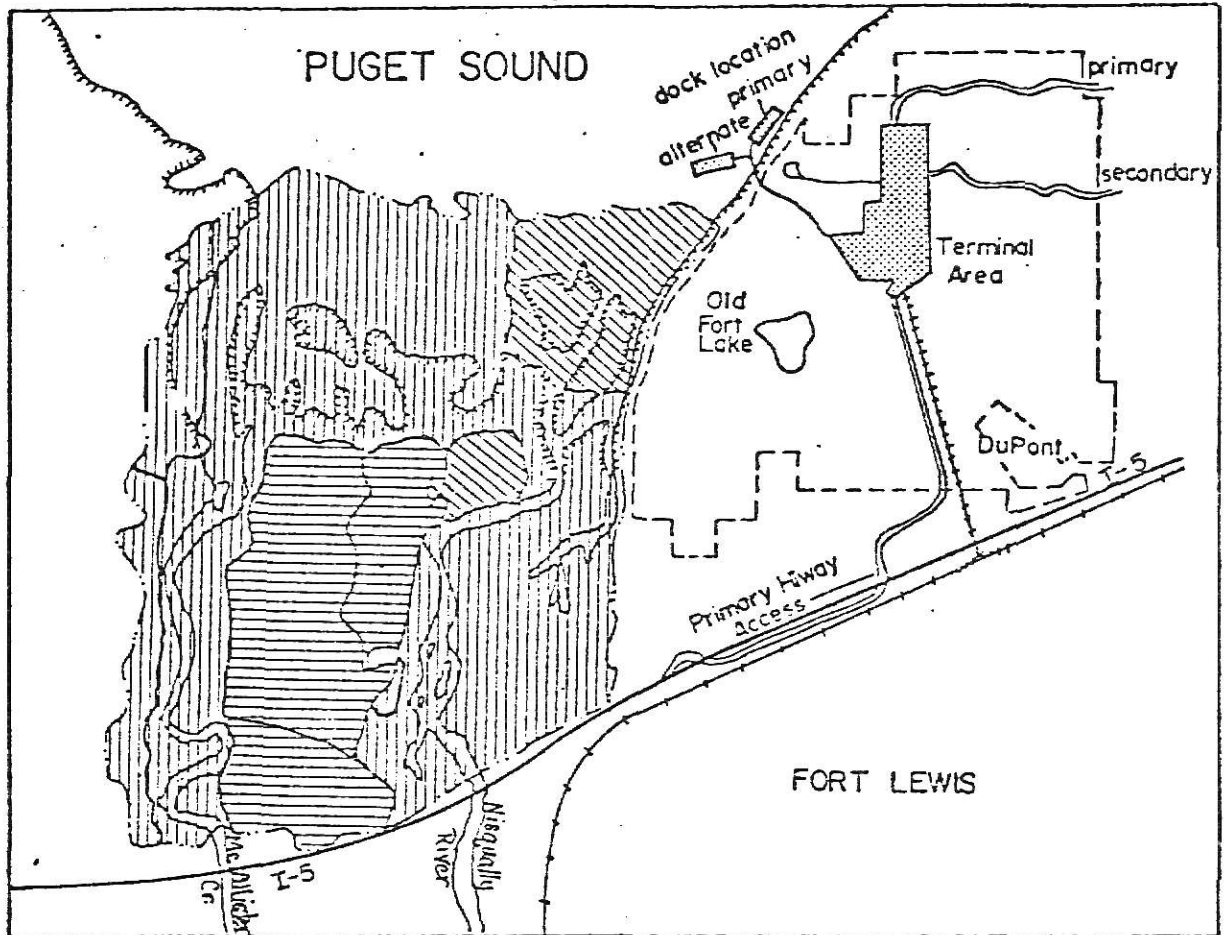
Early in 1976 the Weyerhaeuser Company announced the purchase of the E. I. du Pont de Nemours Company property within the town of Dupont. The site was purchased to construct and operate a world wide export facility that would provide a central location for receiving forest products from company operations in western Washington and allow rapid loading of forest products into ocean going vessels. <sup>36</sup> The proposed project

includes replacement of the existing dock and necessary loading equipment at the mouth of Sequelitchew Creek, 1/2 mile from the eventual Nisqually National Wildlife Refuge boundary. The dock would be approximately 140 feet wide and 1320 feet long stretching out in a northeasterly orientation parallel to the shoreline.<sup>37</sup> An average of 2 to 4.5 ships, ranging in length from 610 to 1010 feet with a draft of 32 to 40 feet, would be loaded each month.<sup>38</sup> A reinforced earth road along Sequelitchew Creek would allow wheeled vehicles to move finished products and logs from the terminal area on the uplands to the dock. The terminal area would include areas for receiving, handling, and storage of finished products and logs. An access road from I-5 and a new rail spur from the existing Burlington Northern line adjacent to I-5 would be used to bring logs and finished products to the site at the rate of 93-110 trucks and 3-8 trains per day.<sup>39</sup> The facility is designed to export two million tons of logs and finished products per year.<sup>40</sup> (See Map 6)

While many impacts to the natural and socio-economic environments have been noted in the Environmental Impact Statement for the project and in public comments made by government agencies and environmental groups,<sup>41</sup> the effects on the Nisqually Delta is of particular concern to this study. These impacts are summarized below:

# MAP 6

## WEYERHAEUSER PROPOSAL & Habitat Management Classifications



1. Possibility of oil spills - While there is some debate over the probable frequency and amount of oil spills that are predicted as a result of vessel casualties, any spill would have severe impact on some part of Nisqually Reach. Recent research has determined long term detrimental effects because of entrappment of oil in marsh sediments and interference with specie regeneration. <sup>42</sup> Regardless of how long it might be before an accident, it would not be publicly acceptable when it did happen.

2. Water quality degradation - The cumulative and combined effects of chronic petroleum spills, discharge of heated water from ships, heavy metal leaching from ship hulls, road runoff and other wastes generated at the dock make it highly unlikely that Class AA water quality standards can be maintained for all parts of Nisqually Reach. The waters of Nisqually Reach are flushed out only very slowly. Currents move back and forth across the tide flats of the Nisqually with every tidal cycle. Thus, any pollutants would be carried to the Delta and beyond with every flood tide and back again with every ebb tide. This could have sub-lethal and lethal effects upon fish and wildlife and/or result in decertification of shellfish harvests.

3. Lights and glare from pier - Studies in Puget Sound waters have demonstrated that bright lights attract schools of juvenile salmon and other fishes. <sup>43</sup> In this case, predatory fishes would be attracted to a pier located along a major salmon migration route, reducing the salmon population in the area. In addition, lights and glare from the pier, which



may be seen as far away as Anderson Island, could be distracting to night migrating birds or disturbing to resting birds on the refuge.

4. Noise - Dock noise could also disturb some wildlife species in the refuge, especially at night, and would be annoying to refuge visitors seeking communion with nature.

5. Air quality degradation - While large volumes of pollutants will not be discharged as presently proposed, the emissions from auto, truck, and train traffic generated will add to the cumulative pollution effects in the area. Since the refuge lies at sea level in a pocket or trough, air pollutants and odors blown by predominantly northeast winds during air stagnation episodes would tend to be trapped there by local inversion. <sup>44</sup>

6. Short term use versus long term productivity - While the proposed facility would increase the short and intermediate term economic productivity of Dupont and the surrounding area, an adverse impact on the Nisqually Delta would constitute a severe decrease in long term productivity of the region. "The real value of the Delta area proper lies not in its present commercially harvestable reserves but in its capacity for generation of nutrients and plankton to support not only local food chains, but through current action, to influence the productivity of much of the ecosystems of at least the southern parts of Puget Sound." <sup>45</sup> The State of Washington has recognized the importance of the area to production of various fish and shellfish species by declaring



the Delta and the Puget Sound shoreline from DeWolf Bight to Tatsolo Point as a Shoreline of Statewide Significance under the Shoreline Management Act. Shoreline uses that result in long term benefit, protection of statewide interests, and preservation of natural character are preferred in these areas. Weyerhaeuser's proposed dock and upland industrial uses conflict with these preferred uses.

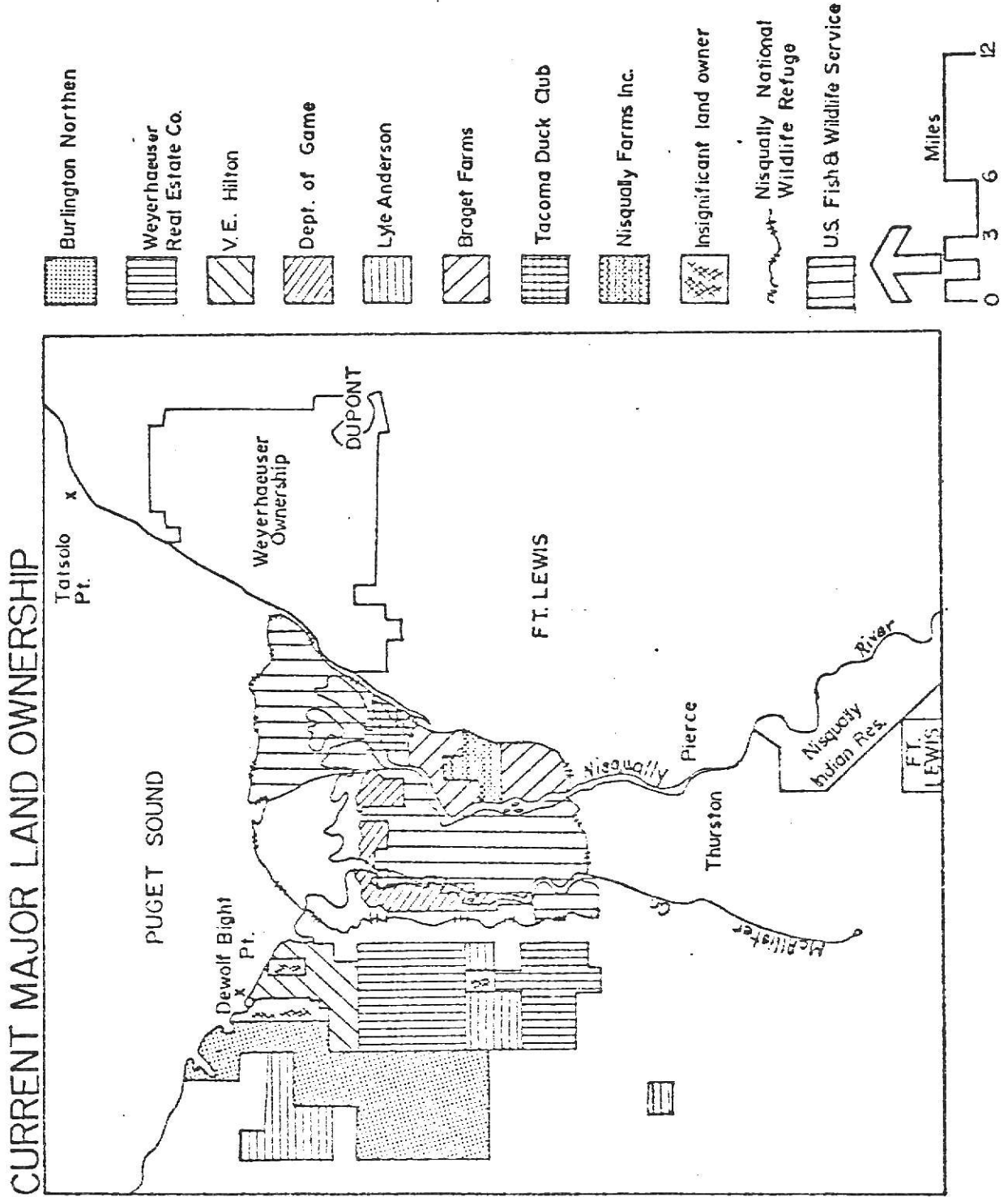
7. Future Developments - The site owned by Weyerhaeuser at Dupont covers 3,200 acres. The present proposal for an export facility covers 250 acres which brings up the question of what will be done with the remaining acreage. While Weyerhaeuser states that it has no immediate plans for the development of their Dupont property, it recognizes that the site has potential capability for manufacturing operations or other industrial facilities.<sup>46</sup> This type of land use could have severe adverse impacts on the refuge. As Drs. Dixy Lee Ray and Gordon Alcorn, Washington scientists, explained in their report on the future of the Nisqually Delta area,

All that is required for the onset of this inevitable loss of natural value is the unwitting and possibly unobserved extinction of one of the plant or animal species upon which the balance of the entire deltaic ecosystem depends. Air and water pollutants, necessary adjuncts of even the most severely regulated operations are potential agents for extinction. We need not postulate poisonous gases or massive oil slicks. Causes which are relatively small in scale when measured by human yardsticks, as slight changes in air or water quality imperceptible to all but the most sensitive instruments, can simply make the environment less favorable for one species of grass whose seed is the keystone of a food chain.<sup>47</sup>

## Burlington Northern Industrial Park

After it became clear that Thurston County would allow only limited industrial use on Hawks Prairie, Burlington Northern and other area property owners (Map 7) proposed annexation to Lacey in June, 1977. The area to be annexed includes 4500 acres generally located in a two mile wide strip east from Carpenter Road and north from I-5 to Puget Sound. In the petitioner's zoning plan for the area, 1370 acres were designated for heavy industry, 85 for limited heavy industry, 1380 for light industry, 190 for limited light industry, 260 acres for commercial and the remainder for various residential densities and a small park (See Map 3). The proposal also included access for marine shipping at the site of the old Atlas Powder Company warf. In January, 1978, the Lacey City Council deleted the waterfront section from the proposed zoning plan. While Burlington Northern and the Hawks Prairie Owners Association believe water access to be an important part of the proposal, annexation plans are proceeding without it. The Lacey Planning Commission is waiting for the completion of the environmental impact statement in order to evaluate the proposal and recommend action to the city council.

Though a measurement of all impacts on the Nisqually Wildlife Refuge is not possible until specific industrial firms reveal their development plans, likely impacts from the kinds of development allowed under the plan can be determined. Heavy industrial zoning would allow all manufacturing, compounding, processing, refining, treatment and assembly of



products and materials (except explosives manufacturing and processing, distillation of bones, rendering of inedible fat and disposal of dead animals, glue and amonia, slaughterhouses and stockyards). Also permitted are warehouses, storage and freight terminals, fuel and bulk storage facilities. Light industrial zoning would allow warehouses, wholesale and storage establishments (excluding the storage and handling of explosives, amonia, clorine, and other dangerous and toxic substances), manufacturing, preserving and packaging, canning, dying or finishing of textiles, finishing of furniture, assembling of transportation, electrical and electronic equipment, printing, publishing, agricultural uses (excluding keeping of livestock and cultivation of mushrooms), retail and wholesale sales of automobiles, trucks, trailers, boats, heavy equipment, etc. 48

Some of these allowable industries could produce harmful air emissions which could be carried to the delta. Improper waste handling could have adverse affects on water quality. The very scale of development proposed would place severe stress on the ecosystem.

Some industrial chemicals can also have harmful effects on plant and animal life. One such chemical, polychlorinated biphenyls (PCBs) is widely used in industrial activities of the types allowed by the proposed plan. Studies by Evergreen State College have shown a clear relationship in the Puget Sound region between the level of industrialization and the level of

PCBs in the adjacent environment.<sup>49</sup> PCB is closely related to DDT and moves similarly through the food chain, concentrating more and more as it moves up the chain to higher order animals. A study by the Department of Ecology (Marine Shoreline Fauna of Washington: A Status Survey, December, 1975) identifies several birds and mammals present in the Nisqually Delta whose numbers have already been affected by PCBs. For example, members of a harbor seal colony that does much of their feeding in Nisqually Reach, have been found to exhibit an alarming relationship between PCB contamination and reproductive failures.<sup>50</sup>

Water Pollution in the Nisqually River Basin.

The physical and chemical qualities of rivers, streams, lakes, and ground water in the Nisqually River basin is generally good. All waters within the Basin normally meet the present criteria for their classification. The Nisqually River from its mouth to Alder Dam is classified as Class A and from Alder Dam to its headwaters, Class AA. Violations of the water quality standards associated with these classifications are from occasional high coliform counts.<sup>51</sup>

A number of activities near the Nisqually and its tributaries could cause water quality degradation. Agricultural practices such as the over application of commercial fertilizers cause the excess nitrogen to be flushed into the river and streams during heavy rains. Improper disposal of animal wastes can be a source of contamination.

Improper plowing and planting techniques can cause soil erosion and sedimentation of the river and streams. Poor logging practices can result in water quality deterioration from decaying timber in the stream bed, heavy sedimentation from surface runoff, and increased temperature due to solar radiation on unshaded streams. Land development practices that remove the underbrush and top soil, cause erosion and river sedimentation during periods of heavy rain. Military training activities could accidentally cause pollutants or sediments to enter the river.

Unchecked water quality violations could have harmful effects on the fish and wildlife of the Nisqually National Wildlife Refuge. Demands for more intensive agriculture, increased logging, and urban development are likely to strain water quality management programs in the coming years.

## ENVIRONMENTAL RESPONSIBILITIES

Numerous federal and state agencies, as well as local government, have responsibilities for environmental protection. This section discusses these responsibilities and authority for taking action to protect the resources of the Nisqually National Wildlife Refuge.

### U.S. Fish and Wildlife Service

The Fish and Wildlife Service is under the U.S. Department of Interior which has "basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States, now and in the future." <sup>52</sup> The Service acts as manager for federal wildlife and wetland resources under the National Wildlife Refuge System. It has responsibility for retention of representative habitat types. The Migratory Bird Act and the Endangered Species Act make the Service especially concerned with this type of wildlife preservation. In addition to enhancing habitat areas on refuge lands, the Service acts to enhance fish and wildlife populations in other areas. One way they do this is by commenting on environmental impact statements for projects under the National and State Environmental Policy Acts. The Fish and Wildlife Coordination Act requires that their opinion be considered regarding fishery

resources in federally constructed or approved marine and estuarine development actions. Federal regulations governing the issuance of U.S. Army Corps of Engineers permits require their evaluation of fish and wildlife resources before approval can be granted.

#### National Park Service

The National Park Service administers the National Natural Landmarks Program for the Department of Interior. This program strives to "assure the preservation of such a variety of significant natural areas that, when considered together, they will illustrate the diversity of the country's natural environment." <sup>53</sup> On August 25, 1971, the Nisqually Delta was added to the national registry under this program. The area so designated roughly corresponds to the eventual boundaries of the Wildlife Refuge except that the diked area in the center was excluded and the Puget Sound shoreline to DeWolf Bight was included. Although the designation carries no legal restrictions on the use of the land, it is the declared policy of the Department of Interior to resist environmental encroachment in the area.

#### U.S. Army Corps of Engineers

The Nisqually River, McAllister Creek, and Puget Sound are classified as navigable waters by the Corps of Engineers. Therefore, permit authority granted to the Corps by the Rivers and Harbors Act of 1899 applies to those waters. Before any construction affecting the nation's navigable waters



can begin, the Corps must balance the benefit which may be expected to accrue from the project against its reasonably foreseeable detriments. According to the federal regulations, "that decision should reflect the national concern for both protection and utilization of important resources." <sup>54</sup> The regulations give further direction for the protection of resources by stating that "the unnecessary attrition or destruction of wetlands should be discouraged as contrary to the public interest." The Corps is to give "great weight" to fish and wildlife considerations in evaluating the permit application. The project's compliance with water quality standards is to be evaluated and the permit may be conditioned to implement water quality protection measures. Due consideration is to be given to the effect which the proposed project may have on the enhancement, preservation, or development of historical, scenic, and recreational values. The authority of the Corps to deny permits on environmental grounds alone has been upheld in the courts. <sup>55</sup> In no case is the Corps to issue a permit to a non-federal applicant until certification has been provided that the proposed activity complies with the coastal zone management program and the appropriate state agency has concurred (i.e., Department of Ecology in Washington).

In addition to regulatory powers, the Corps has authority to conduct public works projects in the nation's navigable waters. Best known are Corps' flood control projects, but the Corps may undertake projects for fish and wildlife enhancement,

water quality control, and comprehensive river basin planning. Specific projects require congressional approval for funding.

#### National Oceanic and Atmospheric Administration (NOAA)

NOAA, under the Department of Commerce, is responsible for the implementation of the federal Coastal Zone Management Act. Its Office of Coastal Zone Management (OCZM) approves state programs and administers grants to states for planning and implementation of their programs. Washington's program, approved by the OCZM, designates the Nisqually Estuary as an area of particular concern. This area was recognized as a resource of greater than local environmental significance that is sought by ostensibly incompatible users.<sup>56</sup>

#### National Marine Fisheries Service

The National Marine Fisheries Service is a division of the National Oceanic and Atmospheric Administration. Part of their National Program for Marine Fisheries is concerned with conservation and enhancement of fish habitats. Activities listed to achieve their objective include:

- 1) Use existing legislation to ensure actions in the coastal zone give full consideration to fish habitat effects.
- 2) Restore and enhance habitats.
- 3) Research effects of human activities on the productivity of marine fish habitats and determine how undesirable impacts may be modified.
- 4) Advise agencies of results of research.<sup>57</sup>

These activities could be applied to the Nisqually Delta since it is an important fish habitat.

## U.S. Department of Agriculture

Several agencies of the U.S. Department of Agriculture have responsibilities that have a bearing on water quality and land use and could be applied to the Nisqually River Basin.

1) U.S. Soil Conservation Service - Activities of the Soil Conservation Service are primarily advisory. It provides natural resource data for land use and water quality management planning and information concerning conservation and flood prevention practices. Development plans affecting soil and water conservation are subject to Conservation Service review and comment.

2) Agricultural Stabilization and Conservation Service (ASCS)- Local offices of the ASCS provide information to land owners on the installation of conservation and agricultural pollution control measures. It administers a program of "water bank" payments for installation of measures for preventing serious loss of wetlands and preserving, restoring, and improving designated water areas.

3) U.S. Forest Service - The U.S. Forest Service controls about 1/3 of the nation's land area. National forest lands within the Nisqually River Basin total approximately 54,000 acres. The land it controls is to be managed for "compatible best use" for recreation, conservation, and economic exploitation. 58

## Environmental Protection Agency

The Environmental Protection Agency (EPA) acts to preserve and protect the physical environment through its regulatory activities, research, development and demonstration projects, and its technical and financial assistance to other governmental bodies. EPA announced a policy for protection of the nation's wetlands on March 20, 1973. It declared that "it shall be the agency's policy to minimize alterations in the quantity or quality of the natural flow of water that nourishes wetlands and to protect wetlands from adverse dredging or filling practices, solid waste management practices, siltation, or the addition of pesticides, salts, or toxic materials arising from non-point source wastes and through construction activities, and to prevent violation of applicable water quality standards from such environmental insults." <sup>59</sup> This policy is to be applied to the extent of its authorities in conducting its program activities.

## Pacific Northwest River Basin Commission

The Water Resources Planning Act (1965) established the Water Resources Council "to encourage the conservation, development, and utilization of water and related land resources of the U.S. on a comprehensive and coordinated basis by the federal government, states, localities, and private enterprise." The Council formed regional river basin commissions, one of which was the Pacific Northwest River Basin Commission, to carry out planning.

In 1964, the Commission appointed a task force of ten members representing major state and federal agencies having some authority over or interest in the use of water resources in Puget Sound. They produced a report, Puget Sound and Adjacent Waters, Comprehensive Water Resource Study. A discussion of current conditions and alternatives for future development in the Nisqually River Basin was included.

State Department of Ecology (DOE)

The Department of Ecology has regulatory and program planning authority for pollution control involving air, water, and land resources. Of paramount importance to the protection of the resources of the Nisqually Wildlife Refuge is the maintenance of high water quality. The DOE administers a permit system governing waste discharges, a compliance assurance program for enforcement of permit conditions and water quality standards, a grant program for construction of municipal sewage treatment facilities, and a monitoring program to provide data for water quality assessment.<sup>60</sup> DOE is also involved in developing water quality management plans for river basins in the state as required under the Federal Water Pollution Control Act. Such a plan was completed in 1974 for the Nisqually River Basin in cooperation with Pierce, Lewis, and Thurston Counties. This plan identified pollution problems and presented alternatives for their solution.<sup>61</sup>

DOE water resource programs also affect the Nisqually River Basin. The Water Resource Act of 1971 mandates an orderly management of current water uses with consideration given

to the retention of river and stream flows adequate for the preservation of wildlife and fish values. <sup>62</sup>

The DOE plays a key role in the protection of the state's shorelines and estuaries, such as the Nisqually. While local government has the primary responsibility for initiating and administering the regulatory program under the Shoreline Management Act, DOE acts in a supportive and review capacity role, insuring compliance with the policy and provisions of the Act. <sup>63</sup> Local shoreline management plans and regulations must be approved by DOE. Substantial development permits issued under the regulations are reviewed by the Department and can be appealed if local actions appear to be inconsistent with either the intent of the Shoreline Management Act or the adopted plan. <sup>64</sup>

DOE was designated by the governor as the administering agency for the Federal Coastal Zone Management Act. This places the DOE in a coordinative role for all state agencies having responsibilities in the coastal zone.

The Department of Ecology has regular authority in flood control zones, including the Nisqually flood plain. Permits are required within the zone for any works, structures, and improvements. <sup>65</sup>

DOE has considerable environmental review authority under the National and State Environmental Policy Acts, U.S. Army Corps of Engineers permit regulations, and the Federal Water Pollution Control Act. Actions in the Nisqually River basin involving these laws would also involve DOE.

## State Department of Game

The purpose of the Department of Game is "to preserve, protect, perpetuate, and enhance wildlife through regulations and sound continuing programs to provide the maximum amount of wildlife oriented recreation." <sup>66</sup> The Department of Game is concerned with fresh water fish, steelhead, waterfowl, and game animals. The division of Fishery Management is responsible for the improvement and conservation of game fish habitat.

These responsibilities are met through land acquisition, environmental review authority, and regulatory powers in issuance of the state hydraulics permit. Any project that will divert the natural flow or utilize the waters of any stream in the state must contain plans for the protection of fish life and be approved by the permit issued jointly by the Department of Game and the State Fisheries Department. <sup>67</sup>

Several federal and state laws require Game Department review. The Fish and Wildlife Coordination Act requires that fishery values be considered in federally constructed and approved marine and estuarine development actions. Consideration of fishing resources in preparation of environmental impact statements and subsequent decisions on federal actions is dictated by the National Environmental Policy Act. Permits approved under the River and Harbor Act of 1899 must consider fish and wildlife.

The Department of Game is listed in the administrative guidelines for the State environmental Policy Act as an



agency that should be consulted when environmental impact statements are prepared. Local master programs and regulations prepared under the state's Shoreline Management Act are checked by the Game Department to see that proper consideration is given to fish and wildlife.

The Environmental Management Division oversees the state's wildlife recreation areas, including one on the Nisqually Delta. Lands there are used for controlled hunting, recreation, and biological research.

#### State Department of Fisheries

The Department of Fisheries is responsible for the management, protection, and enhancement of the food fish resources of the state, specifically salmon, other marine fish, and shellfish. The food fish and shellfish industry is of large scale importance to the state, with commercial landings of salmon and other marine fin fish ranging from 100 to 150 million pounds annually. Commercial shellfish harvests have averaged 21 million pounds annually with an additional recreational harvest estimated at 51 million pounds.<sup>68</sup> The Nisqually estuary and reach is an important natural rearing area for many of these species, particularly for the South Puget Sound fishery. Thirty-three percent of the total recreational harvest of marine fish is typically taken in South Puget Sound.<sup>69</sup> The Nisqually Indians take an average 24,500 salmon yearly by set nets in the Nisqually River.<sup>70</sup>



The Nisqually and adjacent areas have some of the best potential for future salmon enhancement in the state. <sup>71</sup> The Department of Fisheries plans a substantial salmon enhancement project for the Nisqually Delta. Releases of juvenile salmon through 1978 in the area totaled over 30 million; projected harvest is more than 400,000 salmon. Releases in McAllister Springs are expected to be almost 19 million. <sup>72</sup> In 1981, the release of over 80 million salmon is planned for the Nisqually area.

The Department of Fisheries has regulatory authority to protect fishery resources. To this end, it issues and enforces regulations related to the location and timing of sport and commercial fishing activities and the design of bulkheads, landfills, and marinas in the coastal zone. In addition, it jointly issues hydraulics permits with the Game Department for any works within the state's fresh waters. Permit approval is dependent upon a finding of no harmful affects on fish and their habitat.

Like the Department of Game, the Fisheries Department vigorously exercises its review responsibilities under SEPA, NEPA, Forest Practices Act, SMA, and Army Corps of Engineers permit processing.

#### Department of Natural Resources

Under provisions of the Washington State Constitution, the State has title to the beds and shores of all navigable waters and estuarine zones. The Department of Natural Resources has jurisdiction over and is responsible for the management

of these and other state owned lands. Multiple use characterizes Department of Natural Resources' management policy for marine lands. Under this policy, several uses may be made simultaneously on a single tract and/or planned rotation of uses on and between specific portions of the total ownership may occur. Uses may include commercial exploitation of resources, public recreation, and natural area preservation. Conflicts between uses are resolved in favor of best economic interests of the public. <sup>73</sup>

Though by law, these state lands cannot be sold to private individuals or cooperations, they can be leased. Department of Natural Resources currently leases parts of Nisqually Reach for geoduck harvesting. Harbor leases which provide for the right to build and maintain wharves, docks and other structures are granted by Department of Natural Resources in established harbor areas.

Department of Natural Resources management of forest lands in the Nisqually River basin affect the Delta. These management activities include timber cutting, stream protection, replanting, thinning, fertilization, disease control, and fire prevention. Timber sales are planned on the basis of providing a statewide sustained yield and are in keeping with the Department's obligation to maximize economic profit to state trust lands.

Department of Natural Resources also administers the state's Forest Practices Act. This act establishes a permit process

governing forest practices on forestlands in the state, both private and public, except for federal lands. <sup>74</sup> Water quality protection from forest practices is especially important for fish and wildlife preservation in the Nisqually River Basin.

#### Department of Social and Health Services

The Department's Office of Environmental Programs has responsibilities for protecting the public health. Their activities which coincidentally protect the Nisqually Delta include: protecting public water supplies, controlling solid and liquid waste disposal, protection from pesticide poisoning, and providing sanitary control of shellfish taken for human consumption.

#### Public Utilities

Tacoma City Light operates dams at Alder and LaGrande on the Nisqually River approximately 40 miles from its mouth. The operation of these dams can severely impact the Nisqually Wildlife Refuge. Impoundments and withdrawals deplete the flow of fresh water and may result in degradation of water quality. Releases can inundate spawning areas, impede spawning runs, and the downstream migration of young anadromous fish. State law declares it to be the policy of this state that a flow of water sufficient to support game fish and food fish populations be maintained at all times on the streams of this state. <sup>75</sup>

Twenty-six miles up river, the Centralia Power Canal diverts water from the Nisqually River to provide power for

generating electricity for Centralia. Water is returned to the river at the 13 mile mark. The amount of water diverted is restricted to maintain a minimum flow of 150 cubic feet per second below the point of diversion. <sup>76</sup>

#### Local Government

Major responsibility for land use decisions surrounding the wildlife refuge and in the Nisqually River Basin rests with the cities and counties. Rights to use land are regulated in Washington through zoning and the exercise of police powers to protect the public welfare. Under state constitutional and statutory provisions, counties and cities can regulate the uses of land within their jurisdictions in the best interests of the community.

The Shoreline Management Act also grants local government powers to specially regulate land use in the shoreline zone defined as 200 feet from the ordinary high water mark and including deltas and flood plains associated with water bodies subject to the act.<sup>77</sup>

## ASSESSMENT OF EXISTING CONTROLS

While many federal, state, and local agencies have responsibilities and authority for environmental protection, the current land use conflict in the Nisqually Delta area illustrates shortcomings in implementation. The following summary identifies controls that may not be adequate to protect the Refuge from the impacts of adjacent land use and water pollution.

### Local land use controls are not comprehensive.

Local governments determine the extent and nature of land use controls within their jurisdictions. Some governments exercise more control than others. Pierce County's "general use" zoning in the Nisqually Basin imposes few development restrictions. Each of the local governmental jurisdictions in the Nisqually River Basin has its own set of priorities for economic and environmental enhancement. But when a local unit makes a land use decision that conflicts with the priorities of a neighboring unit, there currently is no method for resolving that conflict.

The Shoreline Management Act is designed to encourage local governments to resolve land use conflicts in a manner consistent with state policies for shoreline use. But shoreline regulation only applies 200 feet inland from the ordinary high water mark. The hydrology, physiography, soil type, and the scale of some development proposals, may make this strip inadequate to protect shorelines. Department of Ecology guidelines direct local governments to consider shorelines as an integral part of area wide planning so that adjacent land uses are compatible with

shoreline environmental designations. <sup>78</sup> Dupont, however, has industrial zoning next to conservancy shoreline designations. Department of Ecology has not always been willing to override local decisions.

Although DOE has the authority to override shoreline management plans and development permit decisions, they have not always been willing to do so. DOE refused to approve an urban shoreline designation in Thurston County's program, but so far has let the urban designation stand for a section of the Dupont shoreline.

DOE is not a completely independent state agency, free from political influence. Its director is appointed and subject to removal by the Governor. Governor Dixy Lee Ray has publicly stated her support for Weyerhaeuser's export proposal at Dupont. <sup>79</sup> Such statements make it difficult for DOE to evaluate the project objectively.

Conflicts exist in the management of public lands.

Public land managers such as the state Department of Natural Resources and the U.S. Forest Service, try to maximize the public benefit by allowing multiple uses. But, the "multiple use" concept doesn't work when there is a finite resource or competing uses. Conflicts between uses must be resolved in favor of highest economic benefit according to legislative mandate. <sup>80</sup> This may not always be compatible with environmental preservation. For example, DNR recently released a Draft Environmental Impact Statement on their Forest Land Management Program which has been

criticized for its bias toward economic considerations to the detriment of fish and wildlife.<sup>81</sup> Timber cutting too near the Nisqually River and its tributaries could affect water quality and fish habitat.

U.S. Army Corps of Engineers do not give sufficient weight to fish and wildlife considerations.

According to a review of permit application files, the Corps of Engineers do not always give sufficient weight to fish and wildlife considerations.<sup>82</sup> Current administrative guidelines do not provide any method of weighing the various factors the Corps must consider in reviewing a permit application. Therefore, political and public pressure plays an important role in decision making. This method does not ensure that environmental interests are served.

Current forest practices may not adequately protect water quality.

The current forest practices regulations have been controversial.<sup>83</sup> Environmentalists argue that a 50 foot buffer is not adequate to protect water quality from effects of clear cutting. Logging interests contend that with careful harvesting techniques, a reduced buffer zone that would allow more timber harvest would not endanger the streams or their fish runs. The Department of Ecology has funded a research project on the Olympic peninsula to test the effects of various timber harvesting practices on water quality and fish production.<sup>84</sup> Testing has not yet been completed.

In the meantime, some local governments have already reduced the buffer zones required by the regulations under their shoreline



master programs. Pierce County recently changed the forest practices buffer from 200 feet to 50 feet in the "natural designation" areas under their shoreline program, including those areas on the Nisqually, Carbon, and Mashel Rivers. <sup>85</sup> In "conservancy" shoreline areas, the buffer was removed entirely. DOE has the authority to deny these changes as the Shoreline Management Act specifies that only selective cutting with no more than 30 percent of the trees harvested in any ten year period, be allowed within 200 feet of a shoreline of statewide significance. <sup>86</sup>

Water Quality control measures may not be adequate.

State and federal water pollution control laws <sup>87</sup> set standards for such water quality variables as dissolved oxygen, acidity, alkalinity, temperature, and bacterial content. These standards are the goals to be achieved by water quality programs. The National Pollution Discharge Elimination System permit program was established as a move toward meeting these goals for surface waters and is implemented in Washington by DOE. Compliance with NPDES permit conditions are dependent upon the imposition of monetary penalties, or their threats, for violation of standards. But for some concerns, these fines may not be a sufficient deterrent to water quality degradation. A reliance on "after the fact" enforcement provides little confidence that high water quality will be maintained.

Regulations have been designed to protect groundwater from contamination. The Department of Social and Health Services sets standards for the construction of septic tanks and requires sewers



in areas where groundwater contamination has been demonstrated. But no state agency has authority to prevent septic tank construction until after the groundwater source has been contaminated. 88

The environmental assessment process does not necessarily ensure that environmental concerns are met.

The Environmental Impact Statement is intended to provide full public disclosure of all significant environmental effects of a proposed action and to improve the analysis and comparison of alternative courses of action. 89 It is a tool to be used by planners designing the project and by decision makers in evaluating permit applications. In practice, the EIS falls short of its intent. 90 Although most statements carefully list all possible impacts, they neglect to objectively weigh these so that an overall evaluation of the proposal is possible. Cumulative effects on the environment are often not considered. Mitigation measures are not required to be carried out, unless any permits granted are so conditioned.

While shoreline and upland use regulations create more hurdles to cross before development occurs, they do little to address the real issue of how to equitably share the limited resources that exist.

As it is now, only those with enough money to pass the hurdles can qualify to use the resources. Weyerhaeuser has spent \$2.5 million for preparation of the environmental impact statement for their project at Dupont. Two environmental groups have filed a lawsuit against their proposal which could mean substantial litigation fees over the next few years in addition to escalated construction costs for the project. But when measured against

Weyerhaeuser's corporate assets, Weyerhaeuser can well afford whatever it takes to pursue their desire to build the Dupont facility.

The ability of local and state agencies to carry out legislative mandates for environmental protection is hampered by tight funding.

Current laws and regulations require a system of monitoring environmental conditions, enforcement of permit stipulations, and investigation of possible violations. This necessitates a tremendous amount of staff time. Legislative appropriations often fall short of providing full funding for all activities.

#### Conclusion

Many of these shortcomings stem from the fact that governmental jurisdictional boundaries do not correspond with natural ecological units. The idea that "everything is related to everything else" is undeniably true for the estuarine environment. Birds and mammals are dependent upon the fish and plant life, which depend upon nutrients circulated in fresh and salt waters that are unpolluted from upland uses. In order to protect the entire system, the coordination of all aspects of the environment is required. An authority that cuts across, coordinates, and where necessary, supersedes the individual authorities dealing with the various governmental functions or fragments of ecological units, may provide the protection needed.

## MANAGEMENT MECHANISMS

The idea of establishing a separate management authority for the Nisqually area is not new. The task force appointed by Governor Dan Evans in 1970 recognized the importance of placing the Nisqually River system under single management and stewardship so that "protection of the total ecosystem will be provided with proper consideration given to replaceable and irreplaceable resources of the river." <sup>91</sup> In 1974, the Nisqually River Basin Water Quality Management Plan suggested that "before further development takes place within the basin, the three counties involved should establish a basin wide land use policy and outline to the state legislature the jurisdictional problems and lack of legislative authority to implement the land use policy." <sup>92</sup>

The realization that local land use controls are inadequate to cope with problems that are regional in scope has prompted innovative solutions in other parts of the country. <sup>93</sup> The San Francisco Bay Conservation and Development Commission was the first regional jurisdiction to combine comprehensive planning with implementation and enforcement authority.

### San Francisco Bay Conservation and Development Commission

The San Francisco BCDC was the result of citizen efforts to save the Bay from massive filling projects which were destroying fish and wildlife habitat, contributing to air and water pollution, and eliminating public access to the water. A coalition of conservation groups persuaded the legislature to create a study commission, then expanded it to a planning commission, and finally

to a regulatory commission. Commission membership consists of representatives of county and city governments around the Bay, federal and state agencies, and the general public. The plan they developed consists of policy statements and maps designed to preserve waterfront for industrial, port, airport, and recreational sites that are necessary to the regional economy and to provide for public access to the waterfront. The commission is directed to use these policies as its guide in issuing permits for fill or construction projects within 100 feet of the shoreline and in certain wetlands, creeks, and diked areas adjoining the Bay. All private and public bodies, including the U.S. Army Corps of Engineers must comply with permit provisions. Local land use authority is superseded by the BCDC in those areas under its jurisdiction. <sup>94</sup>

The San Francisco BCDC has been widely acclaimed for its success in achieving legislative objectives. <sup>95</sup> To determine if something like it would be successful in "saving the Nisqually," an understanding of why it succeeded is in order. First, the Bay was highly visible to a large number of people and so it was relatively easy to generate interest in it. The urgency of public action was stimulated by a Corps of Engineers study that predicted that the Bay would become a river if the current rate of filling was not altered. Political lobbying efforts led to the creation of a commission to study the Bay's problems and possible solutions.. The commission held public hearings and generated much citizen interest and media coverage. The

commission then came back to the legislature with a proposal to form a Bay Conservation and Development Commission with interim permit powers and a mandate to complete a comprehensive use plan for the Bay. Because of the substantial public interest in the idea, the proposal passed. The planning process that ensued cultivated the support and cooperation of opposition forces by providing access to the decisional process. Thus, when the comprehensive plan was finally complete, there was uniform support for the establishment of a permanent commission to carry out plan implementation.

The structure of the BCDC has also contributed to its success.

The makeup of the political appointees ensured a regional view rather than one of narrow, local vested interests. The nature of the professional staff and its (dictated) relationship to the commissioners provided the required level of expertise and blended it with the representation of the public will. Finally, the legislation clearly spelled out the goals in terms of operation decision criteria; administrative rules dictated that the criteria be followed. 96

#### Applicability to Nisqually

Solid, wide based public support was behind the efforts to save the San Francisco Bay from certain destruction. Though the numbers of Nisqually preservationists are growing, it has not captured political support as evidenced by the certain failure of protective legislation introduced in the 1979 session. 97 Nor has a potential threat to the refuge been clearly established in the eyes of the general public. In the case of the proposed pier at Dupont, Weyerhaeuser's public relations

campaign minimizes any harmful effects on the refuge. Unlike the single, direct threat to the Bay, i.e. filling, threats to the refuge are more indirect and range widely from timber harvesting and agricultural practices upriver to oil spills in the Reach. While mobilization of efforts to save the Nisqually may be difficult, the organization of the BCDC and their authority to implement a management plan could be useful tools for Refuge protection.

#### Grays Harbor (Washington) Estuary Management Plan

In response to increasing conflicts between demands for estuary uses, the Grays Harbor Regional Planning Commission formed an Estuary Planning Task Force in 1975. Members represent the cities surrounding the harbor, the county, the port, DNR, DOE, State Fisheries and Game Departments, U.S. Army Corps of Engineers, Environmental Protection Agency, National Marine Fisheries Service, and the U.S. Fish and Wildlife Service.

Funding for their plan has been provided by federal coastal zone management planning grants. When adopted, the plan will become an amendment to Washington's Coastal Zone Management Program and must be approved by the federal Office of Coastal Zone Management. This procedure is designed to ensure that national policies for estuary protection and development are met.

The area covered within the management plan includes the Grays Harbor estuary area from the end of the harbor entrance jettys up the Chehalis River to its junction with the Wynochee River, south of Montesano. The general plan area covers land areas within one to two miles from the shoreline.<sup>98</sup>

Since the Grays Harbor Regional Planning Commission has no authority to adopt or enforce any plan, each state and federal agency and local government will incorporate all applicable portions of the plan into their review and permit processes. 99 The plan would, therefore, have the effect of law on the state and local governments, but since federal law cannot be superseded by local law, federal agencies may not necessarily be bound by its provisions.

Of paramount importance to the successful implementation of the plan is the resolution of conflicts during the planning phase. This has been a lengthy, controversial process. Some feel environmental interests have been compromised to their detriment. On the other hand, development interests feel they are unduly restricted. To date the plan has not been finalized by the participants.

#### Applicability to the Nisqually

A regional council of governments that encompasses all the jurisdictions in the Nisqually basin area does not currently exist. Therefore, a new organization would have to be formed. Motivation to form this organization may be difficult to stimulate since each unit might not significantly gain from it. Some small towns, such as Dupont, may well feel it would have much to lose by planning on a regional rather than local basis.

When jurisdictions in the Nisqually area recognize that protection of environmentally sensitive areas are in the best interests of the public and are achievable only through regional cooperation, the Grays Harbor concept could be applied.



## Management Plan Contents

In remarks before the League of Women Voters September 24, 1970, Richard Slavin, Director of the State Office for Planning and Community Affairs, said, "We know that having no plan is in itself a plan for the eventual destruction of the Delta as an environmental resource." Further consideration should be given to an approach that provides for the integration of inter-agency planning and its implementation and for the reconciliation of conflicting interests and values. "A plan in this context would be more than simply a map showing permissible land uses or zones. It would be an action program. It would provide regulation as well as specifying permit procedures to be followed in its implementation. It might include a capital improvements program or an acquisition program. It would be an agreement between governmental agencies and others with respect to various matters covered by the plan."<sup>100</sup> The following items should be considered in plan development.

### Boundary Determination

Generally, planning areas should be large enough to contain a full comprehension of the problem and to make the proposed solutions effective. <sup>101</sup> The extent of the estuarine ecosystem boundaries can be determined by:

- the hydrology of the estuarine area including the scale and configuration of the allied watershed, tidal range, estuarine hydrodynamics, and rate of riverine flow into the estuary;
- The physiography of the coastal area encompassing the estuary, including the geomorphology of the area, shape of the estuary, and the soil types of the watershed; and



-the flora and fauna within the watershed  
that are coastal species and the areas of  
interdependence associated with the species. 102

Through the use of base maps and overlays each of these indicators can be represented and areas of overlap identified to determine the geographic extent of interdependence.

Scientists Dixy Lee Ray and Gordon Alcorn recognized the need to look beyond the Nisqually Delta to protect its resources. "We must point out that protecting the delta region without protecting the river upstream from pollution and major impoundments would be futile. In the very near future, some portion of our concern for not wasting the natural values of the delta should be extended upstream to the headwaters." 103

#### Ecological Data Base

It is essential that the ecology of the estuary be understood in order to determine what level of man's intervention can be tolerated without destabilizing vital systems. In other words, the nature of the living resources, their interactions among themselves and their environment and the effects of man's activities, must be known to enable the manipulation of the resources and the environment in a predictable, purposeful fashion. 104 Continual monitoring of the system would provide a measurement of the effects of past decisions. This information would be useful in future decision making to ensure system stability.

## Compatible Land Uses

Land uses which would normally be assigned to an area due to its resource attributes or other factors should be reassessed if they are not compatible or conflict with the uses of the refuge. The following factors should be considered in determining which uses are compatible.

- 1) inherent suitability of areas to support uses
- 2) existing commitments to which other lands are dedicated
- 3) impacts of uses on the refuge
- 4) ability to adopt and enforce performance standards to mitigate impacts 105

Generally, land suitable for resting, breeding, and feeding areas for migratory animals often are not compatible with industrial land or harbor use, high density human activity or waste disposal. 106 Forestry and agricultural utilization in the river basin is compatible with fish spawning areas as long as run off is controlled. Military reservations can be beneficial to wildlife if range use plans are sensitive to wildlife needs.

## Conflict Resolution

The ultimate objective of any land use plan should be to identify those land uses that are environmentally and economically realistic. To achieve this, there should be a willingness to compromise between total development and total preservation. One method of resolving disputes could be the employment of professional mediators. There also should be fair access to the planning process. When all parties affected by the plan participate in its development, the plan will reflect the reconciliation of interests necessary for its implementation.

## Implementation Methods

Implementation of the plan includes the provision of public services, the control of non-governmental sectors in meeting plan objectives, and the feedback of new information into a continuing adjustment of the plan. Specific methods of control include the following.

1. Allocation by permit
2. Exercise of zoning powers to favor desirable uses
3. Fee simple acquisition (acquire full title to land)
4. Purchase and lease back under restriction
5. Acquisition of selected, specified rights (easements)
6. Compensable regulation (minimum sale price guarantee in exchange for desired uses)
7. Tax relief for desired uses
8. Conditional permits (performance stipulations)
9. Special user taxes <sup>107</sup>

Once a specific plan, together with ancillary agreements and arrangements, were adopted, it would provide a visible and established set of guidelines for the development and use of the area which could be implemented in an efficient and predictable fashion.

## OPTIONS

Whatever solution to the Nisqually conflict is selected, citizen action is required. Each individual has the right and responsibility to participate in deciding the future of the Nisqually. Options for action include 1) working to get a regional management authority established by the legislature; 2) organizing an intergovernmental coordination plan; 3) strengthening existing laws and/or creating new laws; 4) opposing individual development proposals that would threaten the refuge ecosystem.

## FOOTNOTES

<sup>1</sup> Puget Sound Leagues of Women Voters, PSL Program Story (Seattle: Puget Sound Leagues of Women Voters, 1973), p. 17.

<sup>2</sup> Washington, Office of the Governor, Planning and Community Affairs Agency, "The Nisqually Plan: From Rainier to the Sea," 1971, p. 4.

<sup>3</sup> Puget Sound Leagues of Women Voters, Nisqually in Conflict (Seattle: Puget Sound Leagues of Women Voters, 1970), p. 3.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid., pp. 5-6.

<sup>6</sup> Sandra Connell, Indian Land and Legislation as it Pertains to Pierce County Indians (Tacoma, Washington: Tacoma/Pierce County League of Women Voters, 1977), p. 4.

<sup>7</sup> Ibid., p. 1.

<sup>8</sup> Interview with National Park Service Officer, Fort Vancouver National Historic Site, Vancouver, Washington, June 2, 1978.

<sup>9</sup> David H. Stratton and Glen W. Lindeman, Cultural Resources Survey-- Dupont Site, Vol. II: Survey of Historical Resources at the Dupont Site (Pullman, Washington: National Heritage, Inc., 1977), p. 11.

<sup>10</sup> Ibid., p. 5.

<sup>11</sup> Al Wiedeman (ed.), Nisqually Delta Group Contract (Olympia, Washington: Evergreen State College, 1974), p. 6.

<sup>12</sup> Connell, p. 6.

<sup>13</sup> Ibid., p. 9.

<sup>14</sup> Governor Evans' Nisqually River Task Force, Nisqually River Task Force River Basin Study (Olympia, Washington, 1971), p. 6.

<sup>15</sup> Flo Brodie, "Nisqually Chronology of Historical Events" (Olympia, Washington: Nisqually Delta Association, 1978), p. 2.

<sup>16</sup> Stratton and Lindman, p. 2.

<sup>17</sup> James Kyle, "The Nisqually Delta Controversy" (unpublished Master's thesis, Dept. of Geography, University of Washington, 1970), p. 4.

- <sup>18</sup> Wiedeman, p. 8.
- <sup>19</sup> Stratton and Lindeman, p. 14.
- <sup>20</sup> Brodie, p. 3.
- <sup>21</sup> Ibid., p. 4.
- <sup>22</sup> U.S. Department of Interior, Fish and Wildlife Service, Environmental Impact Assessment for Nisqually National Wildlife Refuge (Olympia, Washington: Nisqually National Wildlife Refuge, 1978), p. I-1.
- <sup>23</sup> Ibid., p. II-1.
- <sup>24</sup> Washington, Office of the Governor, Planning and Community Affairs Agency, p. 12.
- <sup>25</sup> Wash. Rev. Code 90.58.030
- <sup>26</sup> Wash. Rev. Code 90.58.020
- <sup>27</sup> Wash. Admin. Code 173-16-040 (5)
- <sup>28</sup> Wash. Rev. Code 90.58.080, 140
- <sup>29</sup> Wash. Rev. Code 90.58.090 (2)
- <sup>30</sup> Wash. Admin. Code 173-16-040
- <sup>31</sup> Dupont, Washington, City of Dupont Shorelines (Dupont, 1975), p. 15.
- <sup>32</sup> Thurston County Regional Planning Commission, Shoreline Master Program for the Thurston Region (Olympia, Washington, 1975), Fig. A-3.
- <sup>33</sup> Wash. Admin. Code 508-60-005
- <sup>34</sup> Ralph Boomer, U.S. Fish and Wildlife Service, statement at public hearing, September 20, 1978, Dupont, Washington.
- <sup>35</sup> Ibid.
- <sup>36</sup> URS Company, Weyerhaeuser Export Facility at Dupont, Draft Environmental Impact Statement (Seattle, August, 1978), p. xviii.
- <sup>37</sup> Ibid., p. 1-10.

<sup>38</sup> Ibid., p. 1-13.

<sup>39</sup> Ibid., p. 1-10.

<sup>40</sup> Ibid., p. 1-14.

<sup>41</sup> see Final Environmental Impact Statement, Weyerhaeuser Export Facility at Dupont (Seattle: URS Company, 1979), Appendix L, "Comments and Responses."

<sup>42</sup> Frank Graham Jr., "Oil in the Sea: How Little We Know," Audabon, November, 1978, pp. 133-147.

<sup>43</sup> Letters to Dupont Mayor John Iafrati from Ralph Boomer, U.S. Fish and Wildlife Service, October 10, 1978, and Gordon Sandison, Department of Fisheries, October 5, 1978.

<sup>44</sup> Letter from Jack Davis, weather analyst, to U.S. Fish and Wildlife Service, October 2, 1978.

<sup>45</sup> Ernest Kalstrom, Notes on the Marine Biology of the Nisqually-the Outer Flats, Delta Front, and Reach (Tacoma, Washington: University of Puget Sound, 1971), p. 2.

<sup>46</sup> URS Company, p. 1-16.

<sup>47</sup> Dixy Lee Ray and Gordon Alcorn, "The Future of the Nisqually Delta Area," A report to the Washington State Legislative Council Committee on Parks and Natural Resources, Olympia, Washington, November 9, 1970 (Seattle: Innova, Inc., 1970), p. 5.

<sup>48</sup> Lacey, Washington, Municipal Code 16.24, 28

<sup>49</sup> Thurston County Regional Planning Staff memorandum to Thurston County Board of Commissioners on Shoreline Master Program, July 26, 1976 (in the files of the Department of Ecology).

<sup>50</sup> Ibid.

<sup>51</sup> Consoer, Townsend and Associates, Water Quality Management Plan for the Nisqually River Basin, a preliminary draft to the Board of Commissioners, Pierce County, Washington (Tacoma, Washington, 1973), p. 49.

<sup>52</sup> U.S. Department of Interior, Federal Water Pollution Control Administration, The National Estuarine Pollution Study (Washington, D. C.: U.S. Government Printing Office, 1969), back cover.

<sup>53</sup> U.S. Department of Interior, National Park Service, "The Natural Landmarks Program (Washington, D.C.: U.S. Government Printing Office, 1971), p. 1.

<sup>54</sup> 33 CFR 320.4

<sup>55</sup> Zabel v. Tabb, 430 F.2d 199 (5th Cir. 1970).

<sup>56</sup> Washington, Department of Ecology, Washington State Coastal Zone Management Program (Olympia, Washington, 1976), p. 12.

<sup>57</sup> U.S. Department of Commerce, A Marine Fisheries Program for the Nation (Washington, D.C.: U.S. Government Printing Office, 1976), pp. 37-43.

<sup>58</sup> 36 CFR 200.3

<sup>59</sup> Policy for Wetland Protection, EPA Press Release, March 20, 1973.

<sup>60</sup> Washington, Department of Ecology, pp. 57-61.

<sup>61</sup> Consoer, Townsend and Associates, pp. 60-78.

<sup>62</sup> Wash. Rev. Code 90.54

<sup>63</sup> Wash. Rev. Code 90.58.050

<sup>64</sup> Washington, Department of Ecology, p. 127.

<sup>65</sup> Wash. Admin. Code 50-60-005

<sup>66</sup> Wash. Admin. Code 232-12-806

<sup>67</sup> Wash. Rev. Code 75.20.100

<sup>68</sup> Washington, Department of Ecology, p. 90.

<sup>69</sup> Washington, Department of Fisheries, Washington State Sport Catch Report, 1975 (in files of the Department).

<sup>70</sup> Paul Saboda, Tribal Fisheries Biologist, personal communication, January 12, 1979.

<sup>71</sup> URS Company, p. 2-64.



- <sup>72</sup> Ibid., p. F-4.
- <sup>73</sup> Wash. Rev. Code 79.01.095
- <sup>74</sup> Wash. Rev. Code 76.09
- <sup>75</sup> Wash. Rev. Code 75.20.050
- <sup>76</sup> Consoer, Townsend and Associates, p. 18.
- <sup>77</sup> Supra, p. 13.
- <sup>78</sup> Wash. Admin. Code 173-16-040(4)
- <sup>79</sup> Suburban Times (Tacoma, Washington), September 13, 1978, p. A-1. Also, Post Intelligencer (Seattle), October 22, 1978, p. B-3.
- <sup>80</sup> Wash. Rev. Code 79.01.095
- <sup>81</sup> Letters to Ralph Beswick, Department of Natural Resources from Chris Drivdahl, Washington Game Department, March 12, 1979 and George L. Capp, U.S. Fish and Wildlife Service, February 26, 1979.
- <sup>82</sup> see files of Seattle District Corps of Engineers ref. PN 071-OYB-1-001417, Port of Olympia (May 30, 1973); PN 071-OYB-1-002537, Port of Olympia (April 28, 1975); PN 071-OYB-2-004503-C, Zedrick Boat Sales (March 21, 1978); PN 071-OYB-1-001009, Theodore LaValley (November 7, 1972).
- <sup>83</sup> see comments appended to Final Environmental Impact Statement for Proposed Forest Practices Regulations, Department of Natural Resources, 1976.
- <sup>84</sup> Interview with Tom Holbock, Department of Ecology, March 20, 1979.
- <sup>85</sup> Tacoma News Tribune, March 14, 1979, p. B-1.
- <sup>86</sup> Wash. Rev. Code 90.58.150
- <sup>87</sup> the State Water Pollution Control Act of 1973 (RCW 90.48) implements the federal Clean Water Act of 1977 (PL 95-217).

<sup>88</sup> League of Women Voters of Washington, Water Management: Quality and Quantity; Both Salt and Fresh (Seattle: League of Women Voters of Washington, 1978), p. 22.

<sup>89</sup> League of Women Voters of the U.S., Improving the Environmental Impact Statement Process (Washington, D.C.: League of Women Voters Ed Fund, 1978), p. 1.

<sup>90</sup> Ibid., p. 3.

<sup>91</sup> Governor Evans' Nisqually River Task Force, p. 1.

<sup>92</sup> Consoer, Townsend, and Associates, p. 73.

<sup>93</sup> U.S., Council on Environmental Quality, The Quiet Revolution in Land Use Controls, prepared by Fred Bosselman and David Callies (Washington, D.C.: U.S. Government Printing Office, 1971), p. 3.

<sup>94</sup> Ibid., pp. 110-111.

<sup>95</sup> Robert B. Ditton, et al., Coastal Resources Management (Lexington, Massachusetts: D.C. Heath and Co., 1977), p. 147; Rice Odell, The Saving of the San Francisco Bay (Washington, D.C.: The Conservation Foundation, 1972); James Dolezel and Bill Warren, "Saving San Francisco Bay," Stanford Law Review 23 (January 1971): 349-366; Peter Douglas, "Coastal Zone Management, A New Approach in California," Coastal Management Journal 1 no. 1 (1974); E. Jack Schoop, "The San Francisco Bay Plan," AIP Journal, January 1971, pp. 2-10.

<sup>96</sup> Ditton, p. 160.

<sup>97</sup> H.B. 738, 46 Leg., Reg. Sess. (1979).

<sup>98</sup> Montagne-Bierly and Associates, Grays Harbor Estuary Management Plan, Preliminary Draft, prepared for Grays Harbor Regional Planning Commission (Grays Harbor, Washington, March, 1978), p. 1.

<sup>99</sup> Ibid., p. 3.

<sup>100</sup> Lindell L. Marsh, "Regulation, Taking and Planning in the California Coastal Zone," Proceedings of Coastal Zone Management and the Western States' Future Conference (Los Angeles: Marine Technology Society, 1973), p. 252.

<sup>101</sup> U.S. Department of Interior, Fish and Wildlife Service, National Estuary Study, (Washington, D.C.: U.S. Government Printing Office, 1970), Vol. 3, p. 241.

<sup>102</sup> John Armstrong, et al., Coastal Zone Management: The Process of Program Development (Sandwich, Maine: Coastal Zone Management Institute, 1974), p. 170.

<sup>103</sup> Ray and Alcorn, p. 4.

<sup>104</sup> J. F. Peel Brahtz (ed.), Coastal Zone Management: Multiple Use with Conservation (New York: Wiley-Interscience, 1972), p. 73.

<sup>105</sup> Armstrong, p. 174.

<sup>106</sup> Bostwick H. Ketchum, The Water's Edge: Critical Problems of the Coastal Zone (Boston: MIT Press, 1972), p. 101.

<sup>107</sup> Ibid., pp. 277-280.

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NISQUALLY CONFLICT RENEWED

by

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B. B. A., University of Iowa, 1970

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AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF REGIONAL AND COMMUNITY PLANNING

Department of Regional and Community Planning

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The Nisqually River Delta, located between Olympia and Tacoma Washington, on southern Puget Sound, has been valued for its natural resources for many generations. It was a source of food for the Indians. The mud flats yielded clams, crab, shrimp, and oysters. The river and sloughs nurtured salmon and steelhead. Game birds and animals came to feed on the delta marsh grasses. Its fertile river valley soil offered a livelihood for farmers. The deep waters of the reach, beyond the delta, have accomodated large scale shipping to growing markets throughout the world. its scenic beauty has attracted recreational and residential developers. Over the years the users of these resources have come into conflict. Though the delta has been set aside for a National Wildlife Refuge, the struggle to resolve the issues of environmental protection, urban development, and utilization of resources continues.

This report outlines 1) current land use plans for the refuge and surrounding area, 2) threats to the refuge ecosystem, 3) adequacy of existing environmental protection authority, and 4) management mechanisms that might resolve land use conflicts. It is hoped that the information will be used to stimulate action to ensure protection of the Nisqually National Wildlife Refuge.