holdings. These small holdings are gradually being consolidated into the ownership of a few large producers who operate on a sustained yield basis. A variable relationship exists between timber production in the five-counties named and the volume of forest products moved through the Humboldt Harbor. The increase in foreign lumber shipments has occurred because of two circumstances: (a) the recent economic expansion of countries bordering the Pacific Basin, and (b) under the prevailing price structure, export sales of forest products yield a higher return than domestic sales. It is anticipated that the rate and extent of economic development in these countries will be even greater in the future than in the recent past. One of the consequences will be stepped-up exports of forest products from Pacific Coastal ports. In consideration of these prospects it is believed that exports of lumber and other forest products will increase steadily to, and level off, at about seven percent of the tributary area production by the year 2000.

#### WOOD PULP

Another factor that will contribute to increased shipments from Humboldt Bay is the completion in 1965 and the scheduled completion in late 1966 of two wood pulp mills, one at Samoa and one at Fairhaven. These mills are expected to produce 150,000 tons and 180,000 tons per year, respectively. The owners expect that of the total 330,000 tons, about 150,000 tons will be shipped by deep-draft vessels. Indications are that a third mill of comparable size will begin operations in 1980 bringing the total annual pulp production in Humboldt Harbor to about 500,000 tons.

# BARGE SHIPMENTS OF LUMBER AND OTHER FOREST PRODUCTS 1

Current and future trends in the movement of lumber and other forest products by barge are discussed in detail in Appendix A. From a study of past records and current trends it is estimated that in the future, barge shipments of lumber and other forest products will increase from an average of 9.0 percent of total shipments during the period 1959–1962 to 15 percent by 1980 and level off at that point. The remainder of the shipments would be moved by deep-draft vessels.

### RECEIPTS OF PETROLEUM PRODUCTS

Information furnished by shippers of petroleum products indicates that future tankers and barges likely to call at Humboldt Bay would probably not increase in size or draft to the extent that present channel dimensions and depths would be inadequate. The benefits likely to accrue to this traffic due to the proposed improvements would be limited to those associated with the proposed anchorage area.

## FISH LANDINGS

Seed oysters from Japan are also brought in for planting in Humboldt Bay. The proposed improvements will not affect the oyster industry since the oyster beds lie outside the area of these improvements.

Although receipts of fresh seafoods average about 12,000 tons annually and approximately 450 fishing vessels are registered here, the proposed improvements will have no effect on the fishing industry other than further enhancement of the bay as a harbor of refuge.

#### VESSEL TRAFFIC

#### PRESENT TRIPS AND DRAFTS

Vessel traffic for the years 1955 through 1964 in Humboldt Bay is shown in the following table by inbound and outbound drafts.

<sup>1</sup> Excluding wood pulp.