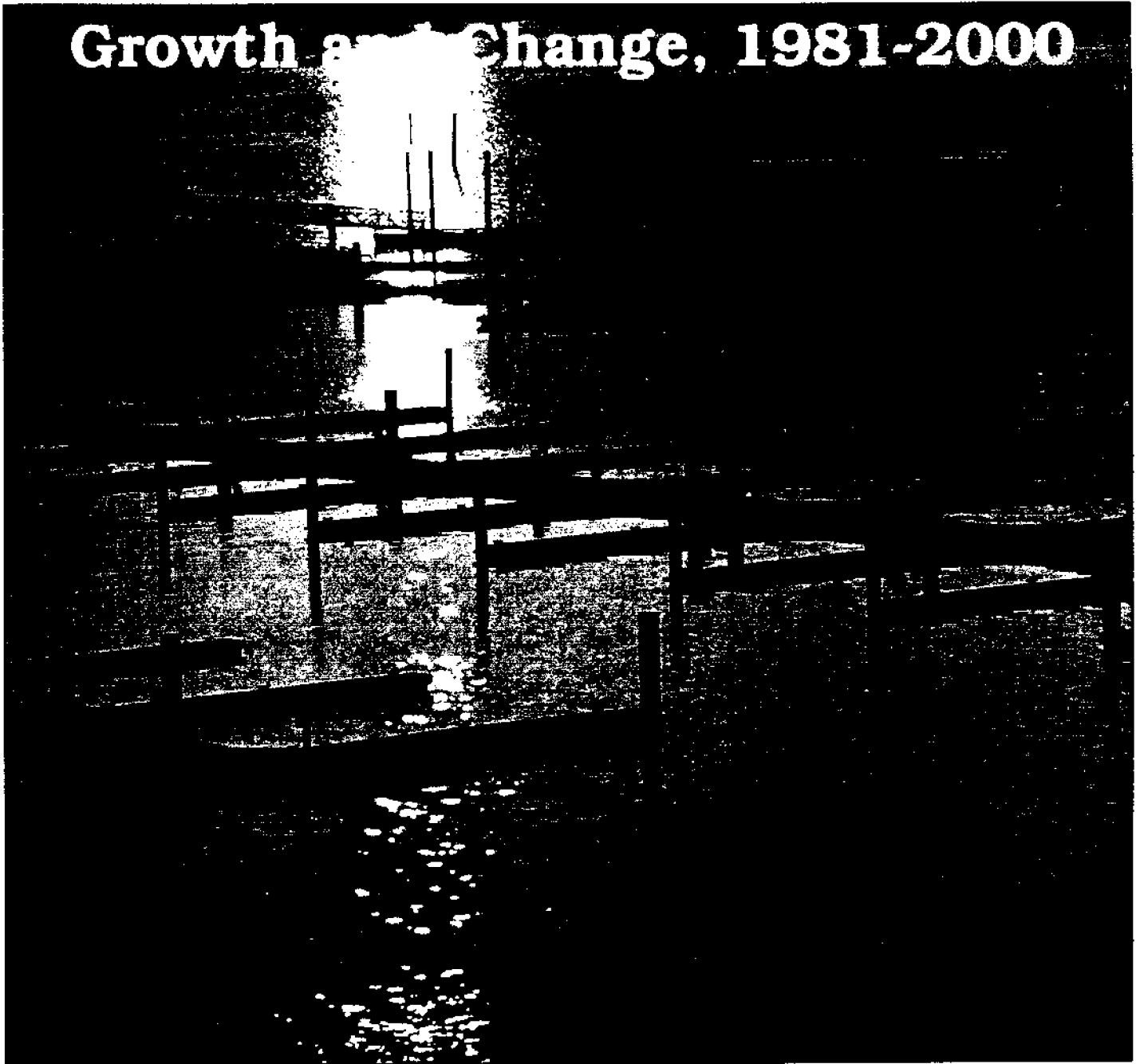


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The Marina Industry in Washington State:

Growth and Change, 1981-2000



Robert F. Goodwin

The Marina Industry in Washington State: Growth and Change, 1981-2000

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The Marina Industry in Washington State: Growth and Change, 1981-2000¹

Washington State encompasses a rich variety of geographies. Pacific Ocean storms drench the west slopes of the Olympic Range, creating short, fast rivers that dump directly back into the Pacific. Where the Chehalis, Willapa and Columbia Rivers have cut down through the rising Coastal Range, large quiet estuaries have formed behind the coastal barrier beaches of Long Beach, Westport, and Ocean Shores. Farther east, fjord-like, drowned glacial valleys hold the saltwater bodies of Hood Canal and Puget Sound, and numerous freshwater lakes, the largest of which are the connected series: Lakes Sammamish, Washington, and Union, the last lying within the City of Seattle. Year-round rainfall and meltwater from glaciers and snowfields in the Cascade Range feed a half dozen major rivers that flow through the Puget Sound lowlands before emptying into the Sound. The lower reaches of these rivers are navigable, and all harbor runs of salmon and steelhead trout. To the east of the Cascades, the arid interior of the Columbia Basin holds in its coulees and scab-lands geologic memories of catastrophic floods. Grand Coulee, the best known of these features, is now drowned in the dammed waters of the Columbia River, forming Lake Roosevelt, which extends most of the way upstream to Canada. The Columbia has been similarly tamed by dams downstream, to the limit of tidal influence. Only a few miles of wild river remain to remind us of days when flat-bottomed steamers fought currents and rapids to connect the Pacific Ocean to the Inland Empire of Washington's interior.

From the Pacific Ocean, then, to the foothills of Idaho's Bitterroot Mountains, Washington State provides a vast and varied set of choices for water-based recreationists: white-water river-running on the Skagit, Wenatchee, or Skykomish; saltwater canoeing through gray drizzle on the sloughs of Willapa Harbor; drifting the Stillaguamish for steelhead; fishing for bass in the Potholes lakes of the interior; racing sailboats Tuesday evenings on Lake Union with the sun glinting red off the glass of Seattle's downtown office towers; powerboat cruising among the rocky, forested San Juan Islands; or simply floating in an inner tube on Green Lake watching neon-clad board-sailors show off their skills to ordinary cityfolk taking their Sunday stroll in the park.

Water access is vital for all these activities afloat, whether the need is as simple as a sandy beach for rigging sailboards, or as elaborate as a full-service marina in which to moor luxury yachts; but water access is becoming increasingly scarce for many Washington residents as in-migration swells the population, particularly of the Puget Sound lowlands. New organizations are springing up around the country to promote the expansion of water access, and Washington State boaters and the marine industries that service them are at the cutting edge of this trend.²

Washington Sea Grant, since the late 1970s, has played a unique role in the state, conducting programs of applied research, education, and information transfer concerning boating and water access. In particular, we have focussed university-based programs on the most controversial of water access projects — marinas.

Last year we surveyed marinas across the state to determine current levels of supply of moorage slips and services, and the market conditions under which they are leased to boaters. This is the third and most comprehensive moorage market survey we have conducted since 1981.³ Also, over the same decade, we have monitored various indicators of moorage demand, including state boat registration data, statewide boat

¹The information contained in this report was first presented at the International Marina Institute's Marina Research Conference held in January 1991, in San Diego, California.

²The Washington Recreational Water Access Coalition (WRWAC) was founded last year to educate politicians and the public about water access needs and to promote water access projects of all kinds.

³Surveys were conducted and reported for the summer and winter seasons of 1980/81, 1987/88, and 1989/90. The results were reported in: *Boating and Moorage in the '80s*. Proceedings of a Conference held in Seattle, Oct., 1981, in *Boating and Moorage in the '90s*. Proceedings of a Conference held in Everett, WA, Nov., 1987, and in this article.

2 / The Marina Industry in Washington State

sales, and economic and demographic trends. Previous studies investigated in detail the geographic variations in moorage demand, including the origins of both year-round and seasonal marina tenants.⁴ As a consequence of having this long view of the subject, Washington Sea Grant has become recognized as a highly credible authority on the moorage industry in the state, and our assistance is sought by many of those who design, finance, develop, manage, service, or regulate marinas. Abetting this reputation is our practice of presenting information in a fashion that makes it readily comprehended by end users, be they commercial bankers, agency officials, marina equipment suppliers, marina managers, or engineering consultants.

This paper characterizes the moorage industry in Washington State, documents the evolution of moorage market conditions over the last decade, and assesses the likely trends affecting those markets over the next decade. Particular attention is paid to the consequences of having both public non-profit and private for-profit providers operating in the same boating marketplace.

Characteristics of the Moorage Industry in Washington

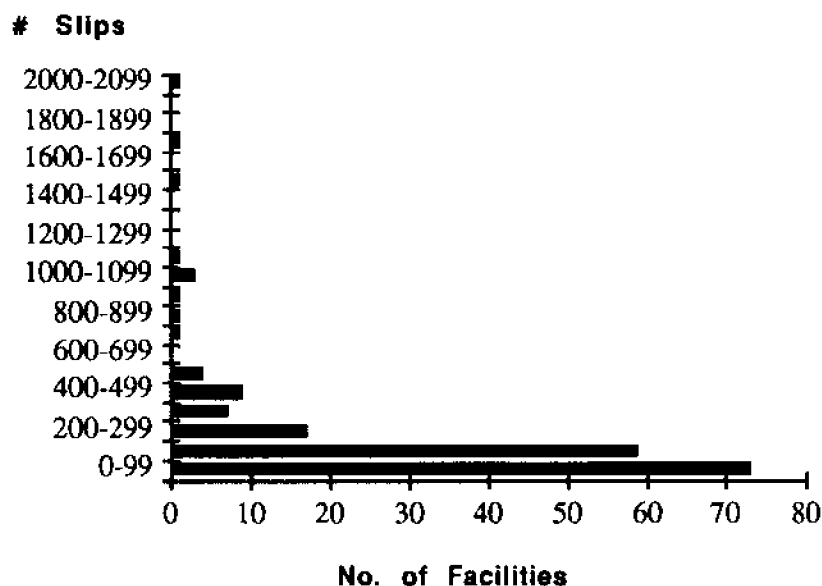


Fig. 1. Distribution of Marinas in Washington State by Size Class, 1989

Number and Size Distribution

Statewide, there are approximately 350 moorage facilities providing a total of approximately 40,000 moorage slips. These marinas vary in size from a very few, very large facilities to many very small ones. Not included are facilities having less than 10 slips. Figure 1 reveals their overall distribution by size and number.

⁴Goodwin, Robert F. *Recreational Boating in Washington's Coastal Zone: The Market for Moorage*. Institute for Marine Studies, University of Washington, Seattle, WA. 1982.

Organization and Ownership

Ownership and management of marinas in Washington State are shared among public, private for-profit, and non-profit membership organizations. Tables 1 through 3 show how the number of and size of facilities are distributed across these ownership types.

Ownership	Puget Sound	West. Wash.	East. Wash.	State Total
Public Ports	11,579	14,757	235	14,992
Parks	1,710	1,812	297	2,109
Private	16,270	16,761	938	17,699
Condo's	1,753	1,753	0	1,753
Yacht Clubs	2,000	2,050	224	2,274
Unknown	1,025	1,054	285	1,339
All	34,337	38,187	1,979	40,166

Table 1. No. Slips in Washington State Marinas by Ownership and Region, 1989

The majority of marinas — 205, or 59% — are owned by private, for-profit firms leasing 17,700 (44%) of the total slips (average size : 86 slips). In addition, there are 12 condominium moorages — or dockominiums — providing 1,753 slips for leasehold or fee-simple sale (average size : 146 slips). Many of these slips reappear on the rental market after sale.

Ownership	Puget Sound	West. Wash.	East. Wash.	State Total
Ports	21	30	2	32
Parks	29	33	14	47
Private	181	188	17	205
Condo's	12	12	0	12
Yacht Clubs	18	19	4	23
Unknown	12	13	14	28
All	273	295	51	347

Table 2. No. of Marinas in Washington State by Ownership and Region, 1989

The supply of public moorage is dominated by a relatively small number of public port authorities' facilities (32, or 9% of the total), which provide a disproportionate 38% or 15,000 of the total supply of slips statewide; their average size — 469 slips — is the largest of all ownership types; of the 5 facilities having 1,000 or more slips, only one is not owned and operated by a public port. The remainder of public slips are provided by 47 state, county, and municipal parks agencies with moorage for 2,109 boats (average size : 45 slips).

Providing moorage (usually exclusively) to their members and guests are 23 yacht clubs with 2,274 slips (average size : 99 slips).

Ownership	Avg. Size (No. Slips)
Public Ports.....	469
Parks.....	45
Private	86
Condo's.....	146
Yacht Clubs.....	99
All.....	116

Table 3. Average Size of Marinas in Washington State by Ownership, 1989

Geographic Distribution

Eighty-five percent of the state's marinas (295) and 95% of the slips (38,187) are located in counties west of the Cascades; and of these, 273 (79%) facilities with 34,337 (85%) slips are found on the shores of Puget Sound, or on nearby lakes, rivers, and estuaries. But the geographic concentration of moorage is even more pronounced when just the four urbanized counties of central Sound — King, Pierce, Snohomish and Kitsap — are considered: Over half the slips (19,738) in the Puget Sound region are located in 152 facilities in this metropolitan region. The San Juan Islands and their mainland neighboring counties (Skagit and Whatcom) account for another 8,672 slips in 63 facilities. Table 4 ranks counties by the number of moorage slips they host. Eastern Washington counties are shown in italics for clarity.

Utilization of Moorage Facilities

Another important geographic distinction can be seen in Tables 5 and 6, which reveal divergence in summer and winter occupancy rates among counties in Western and Eastern Washington, respectively. Two observations can easily be made from the data shown: First, Western Washington marinas have generally higher peak season occupancy rates (87% vs. 96%); and second, Western Washington boaters utilize moorage more on a year-round basis (15 vs. 60 percentage points difference between peak and off-peak occupancy rates). But the urban/rural split again shows up within Western Washington: With few exceptions, slips in central Puget Sound marinas are fully occupied year-round, while in rural counties, higher winter vacancy rates are seen. In part this divergence is explained by climate — Eastern Washington's is far more extreme than Western's — but distribution of the boating population and location of destination cruising and resort areas must also be considered.

In the simplest terms, most of Washington's boaters seek homeport moorage within the urban core counties of eastern Puget Sound, and look for seasonal, temporary, and guest moorage in the prime fishing and boating waters of the rural periphery.

County	No. Marinas	No. Slips
King	84	9,322
Snohomish	13	4,300
Whatcom	16	3,694
Pierce	29	3,148
Skagit	18	3,085
Kitsap	26	2,968
San Juan	29	1,893
Clallam	16	1,630
Thurston	11	1,568
Pacific	8	1,499
Jefferson	12	1,315
Grays Harbor	5	1,017
Clark	5	672
<i>Benton*</i>	5	494
Island	6	418
Mason	14	390
<i>Chelan</i>	10	379
Cowlitz	2	272
Wahkiakum	1	190
<i>Lincoln</i>	3	182
<i>Grant</i>	6	133
<i>Stevens</i>	7	133
<i>Whitman</i>	1	125
<i>Spokane</i>	4	110
<i>Asotin</i>	2	90
<i>Franklin</i>	2	80
<i>Columbia</i>	1	72
<i>Garfield</i>	1	71
<i>Walla Walla</i>	1	50
Skamania	1	40
<i>Okanogan</i>	3	20
<i>Klickitat</i>	2	19
<i>Ferry</i>	1	15
<i>Pend Oreille</i>	1	6
<i>Douglas</i>	1	0
Unknown	2	?
Total	350	39,400

Table 4. Rank Order of Washington Counties by Number of Marina Slips, 1989

**Eastern Washington counties shown in italics*

County	Percent Slips Occupied Peak	Percent Slips Occupied Off-Pk	Percent Difference
Cowlitz	100.0	100.0	0.0
King	98.1	94.5	3.5
Skagit	98.6	93.9	4.7
Pierce	98.2	91.3	6.9
Snohomish	92.5	82.8	9.7
Island	96.9	84.4	12.4
Jefferson	93.8	81.2	12.6
Grays Harbor	65.3	49.4	15.9
San Juan	97.1	79.2	17.9
Whatcom	106.7	87.2	19.5
Thurston	79.1	58.9	20.2
Kitsap	97.2	74.7	22.5
Wahkiakum	85.3	60.0	25.3
Clallam	98.6	67.9	30.8
Clark	97.4	64.6	32.7
Mason	93.5	41.2	52.3
Pacific	99.9	31.2	68.7
W. WA Total	96.2	81.3	14.9
State Total	95.9	79.5	16.4

Table 5. Occupancy Rates in Western Washington Marinas by County and Season, 1989

County	Percent Slips Occupied Peak	Percent Slips Occupied Off-Pk	Percent Difference
Franklin	40.0	25.0	15.0
Columbia	100.0	84.7	15.3
Walla Walla	20.0	2.0	18.0
Asotin	84.5	60.3	24.1
Klickitat	40.0	13.3	26.7
Benton	100.0	54.7	45.3
Stevens	78.9	18.8	60.2
Spokane	77.1	2.9	74.3
Ferry	80.0	0.0	80.0
Lincoln	98.5	9.1	89.4
Chelan	97.8	7.9	90.0
Grant	95.8	3.2	92.6
E. WA Total	86.8	26.5	60.4
State Total	95.9	79.5	16.4

Table 6. Occupancy Rates in Eastern Washington Marinas by County and Season, 1989

The Evolution of Current Market Conditions

The cumulative effects of all the trends affecting boaters' demand for moorage in Washington State, when combined with the changing supply and geographic distribution of facilities, create a complex system of evolving regional moorage markets. It is useful to look at these markets in the same way that lenders and appraisers look at other kinds of real property; that is, by examining occupancy rates and their relationship to the location and prices, and how these have changed over time. Figures 2 through 14 depict these changing relationships in three quite different market areas: King County in central Puget Sound, which contains Seattle, the largest urban population in the state; Thurston County in south Puget Sound, and its county seat, Olympia, which is also the state capital; and, finally, the combination of Grays Harbor and Pacific counties located on the Pacific coast of the Olympic Peninsula, and encompassing the main coastal sandy beaches and sheltered estuaries.

Most of the state's population is found in the counties of central Puget Sound, and this area continues to experience rapid growth. Consequently, a very tight market for moorage in the Seattle area over the past decade has been evident. Marinas on freshwater Lake Union, the Ship Canal, and Lake Washington, and in saltwater facilities on the Duwamish Waterway, Elliott Bay, Shilshole Bay, and other sites have been full year-round and have commanded the highest (uncovered wet) moorage rates in the region, starting in 1981 at \$5.00-\$5.50 /ft./mo., and rising to \$7.00-\$7.50 /ft./mo. in 1990. (Figures 2-4) Covered moorage, in scarce supply throughout Puget Sound, commands rates of \$9.00 /ft./mo. in King County marinas. Comparing Figures 3 and 4, we can see that new moorage added to the county's stock before 1987 was easily absorbed by 1989. Long waiting lists are evident at facilities charging less than top rates, and many King County boaters must moor their vessels at more distant homeports in Everett, Edmonds and Anacortes to the north, and in Tacoma to the south.

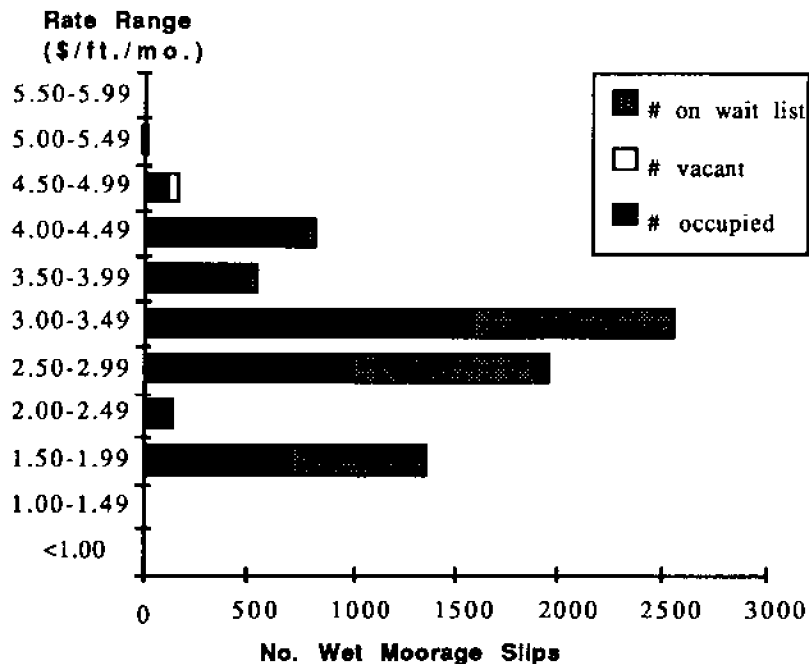


Fig. 2. Moorage Market Conditions, King County, 1981, Peak Season

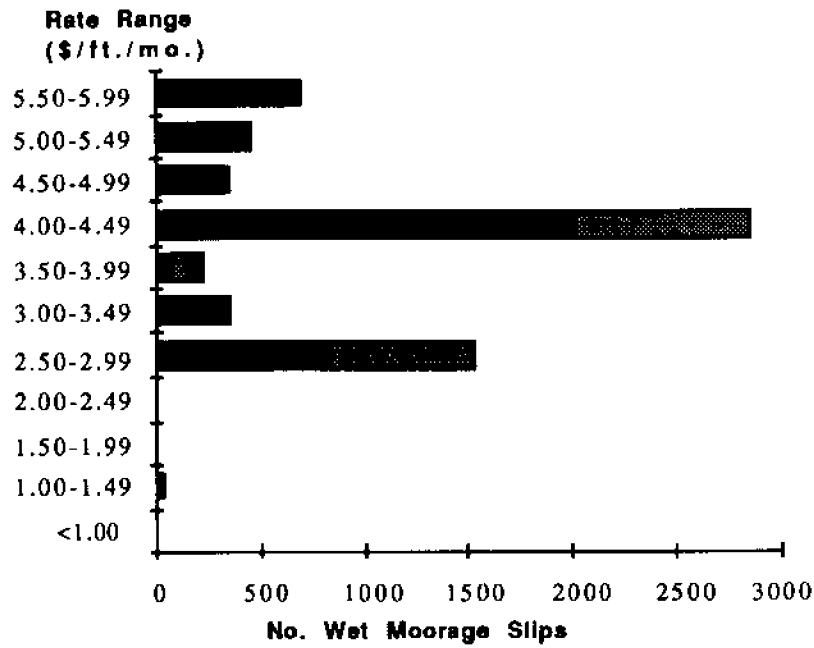


Fig. 3. Moorage Market Conditions, King County, 1987, Peak Season

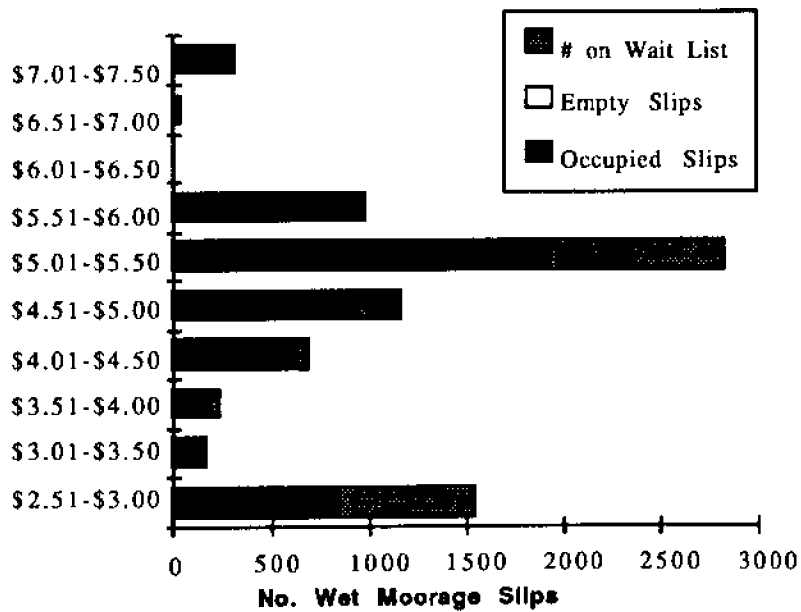


Fig. 4. Moorage Market Conditions, King County, 1989, Peak Season

The Elliott Bay Marina, due to open in Summer 1991, will bring 900 new open wet slips to the market. These slips do not appear in Figure 4, but will be priced from about \$7.50/ft./mo. up to almost \$10 for large vessels.

The market for moorage that has emerged over the last decade presents a very different picture in the Olympia area of south Puget Sound. With a small in-county population base, and a fickle out-of-state boating clientele from the Portland, Oregon, metropolitan area, Thurston County has a surfeit of quite new moorage facilities.

A large public port marina development in the early '80s brought 600 new slips into a market that was stalled by the 1979-82 recession. From full peak-season occupancy in 1981 (Figure 5), Olympia's private marinas dropped to 50% peak-season vacancy (Figure 6) and worse during the winter months (Figure 7) when the East Bay Marina opened in 1984⁵. While some improvement due to growth in the in-county and Portland area markets is evident now (Figures 8 and 9), there are still several hundred empty slips in the peak summer season, and double those in the winter.

Revitalization of Olympia's downtown waterfront is transforming a former industrial eyesore into a fine urban amenity. The attention this civic endeavor has brought to water's edge cannot help but promote further gains in marina occupancy rates, but it will be several years before the surfeit of slips is filled, even in the busy summer months.

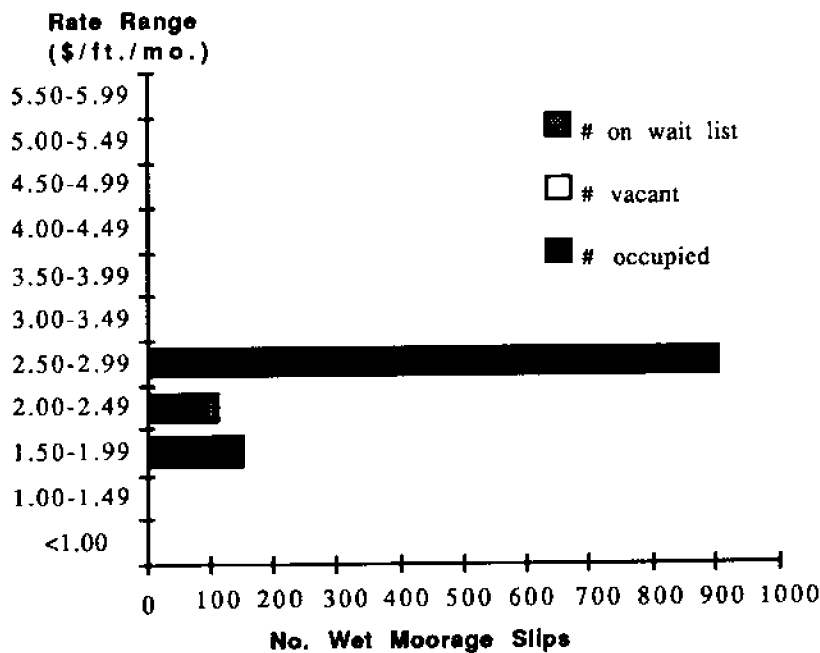


Fig. 5. Moorage Market Conditions, Thurston County, 1981, Peak Season

⁵For a full treatment of this subject see: Goodwin, Robert F., "Small-Boat Marinas: The New Professionalism" in *Urban Ports and Harbor Management*. Marc Hershman, Editor. Taylor & Francis, N.Y. 1988.

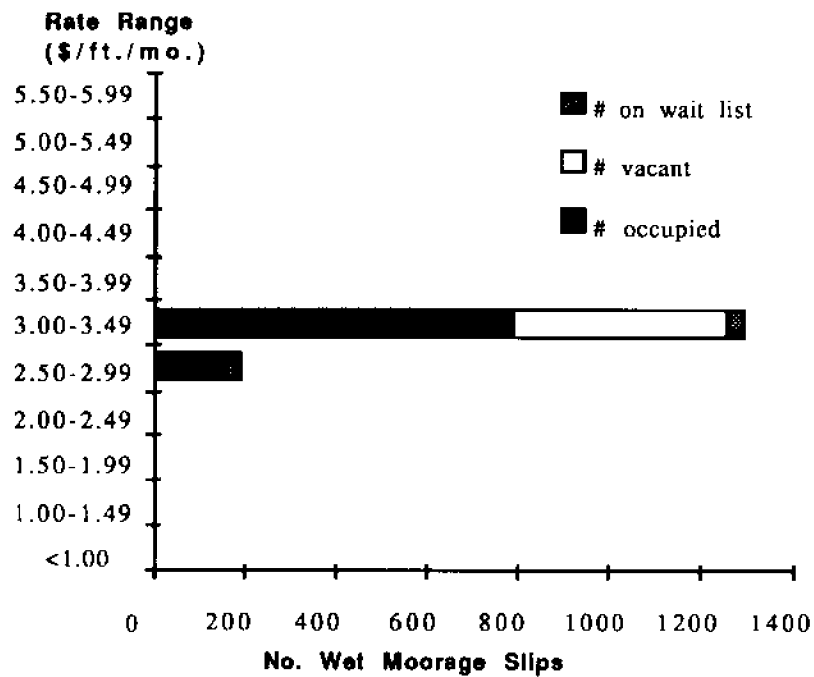


Fig. 6. Moorage Market Conditions, Thurston County, 1987, Peak Season

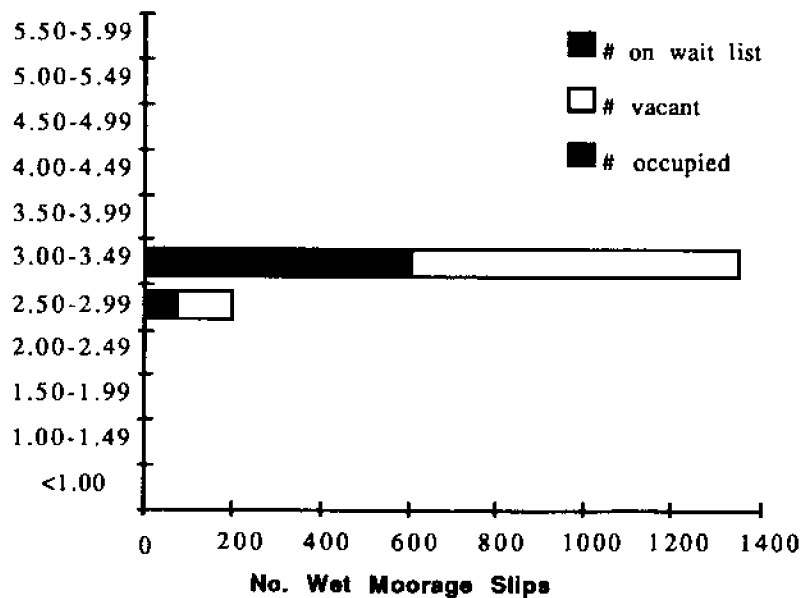


Fig. 7. Moorage Market Conditions, Thurston County, 1987, Off-Peak Season

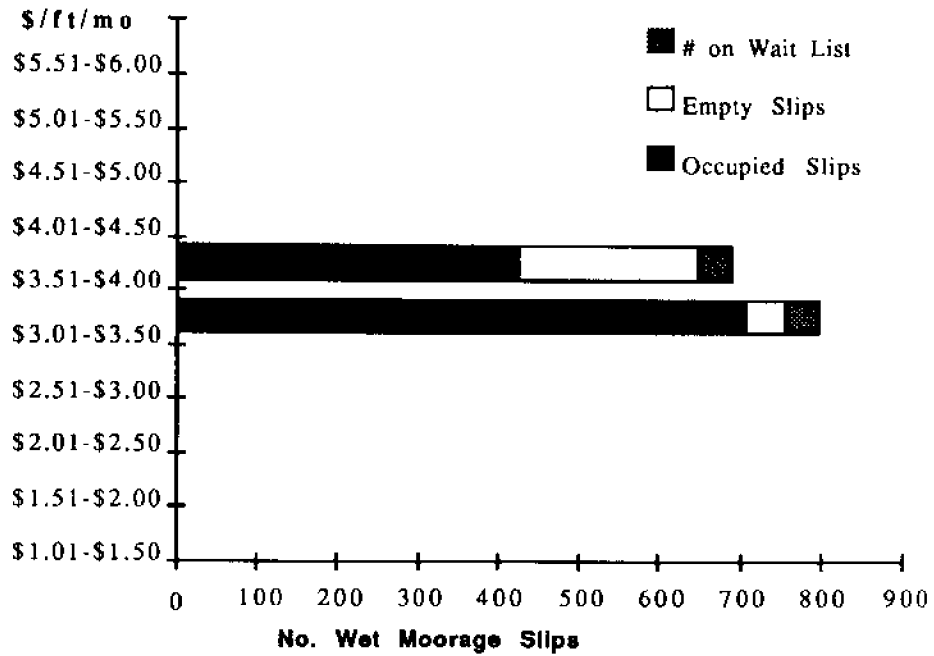


Fig. 8. Moorage Market Conditions, Thurston County, 1989, Peak Season

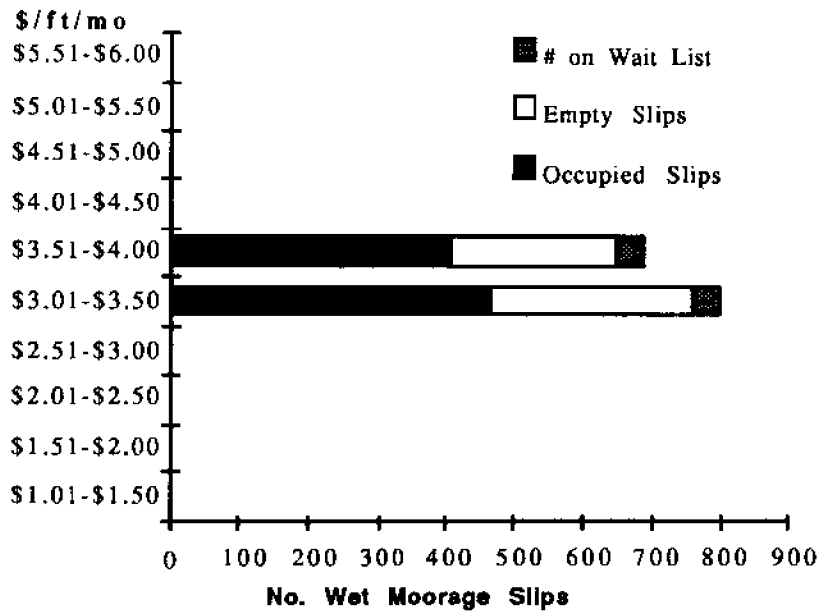


Fig. 9. Moorage Market Conditions, Thurston County, 1989, Off-Peak Season

Intractable vacancies are also seen in Washington State's Pacific Ocean coastal counties' marinas (Figures 10 through 14)— a situation exacerbated by another ill-timed public port marina development, this time an expansion of the Port of Grays Harbor's Westport Marina in Grays Harbor County.⁶ Ports' marinas on the Washington coast cater to both commercial and recreational smallcraft. In the early '80s the full impact of US v. Washington (the Boldt Decision) began to be felt. Reallocation of the salmon fisheries between the Treaty Indian Tribes and Washington commercial and recreational fishermen shifted the fishing effort away from the open ocean and into Puget Sound and the Columbia River. As a consequence, the fleets of charter vessels, ocean commercial trollers, and sports fishing boats moored in coastal harbors declined dramatically.

Currently, short summer recreational salmon fishing seasons in the ocean and lower Columbia River limit high occupancy rates to just a few weeks in Pacific County facilities. (See: Figures 11, 13) The facilities' managers do capture higher revenues by adjusting rates upwards during this short season, and this strategy has helped avoid bankruptcy in at least one port.

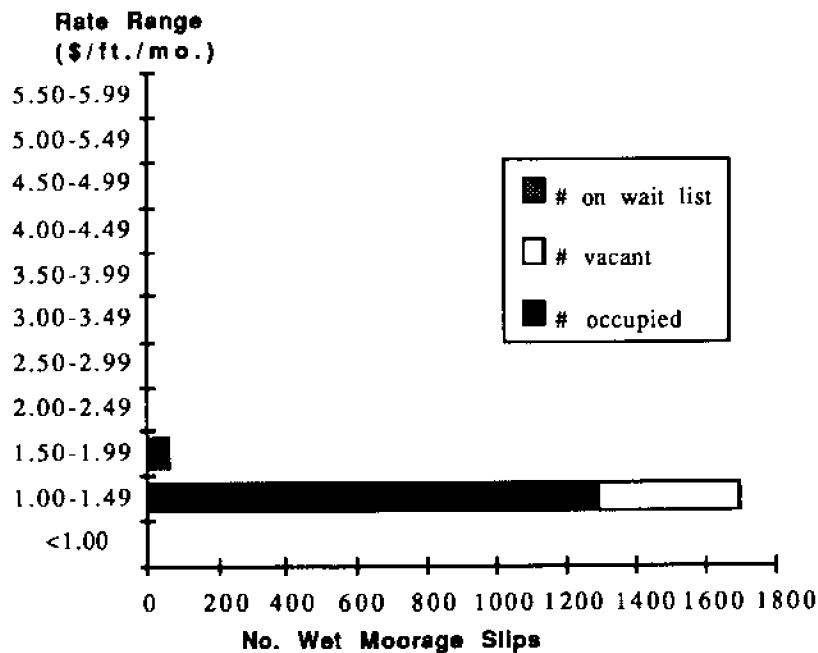


Fig. 10. Moorage Market Conditions, Grays Harbor and Pacific Counties, 1981, Peak Season

⁶Ibid.

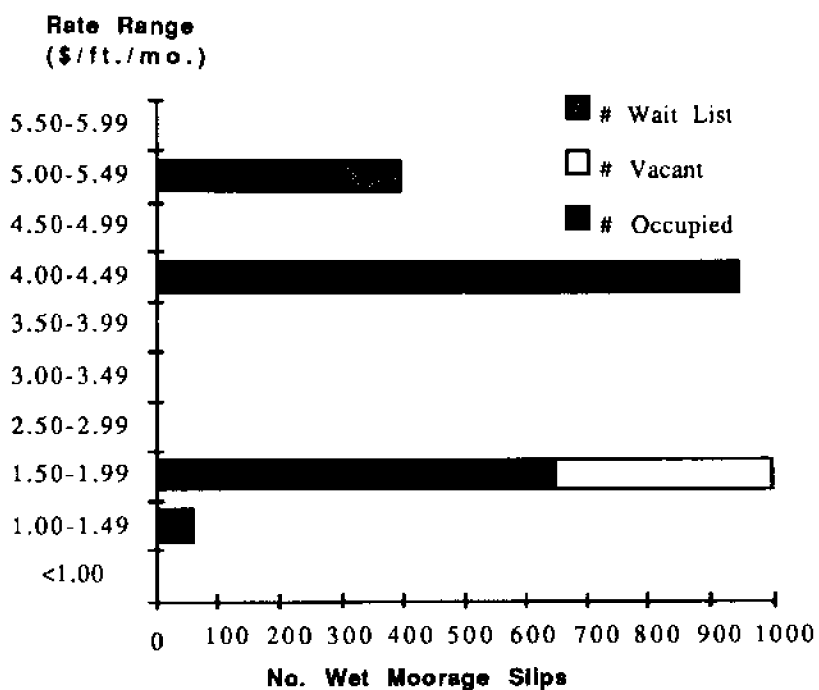


Fig. 11. Moorage Market Conditions, Grays Harbor and Pacific Counties, 1987, Peak Season

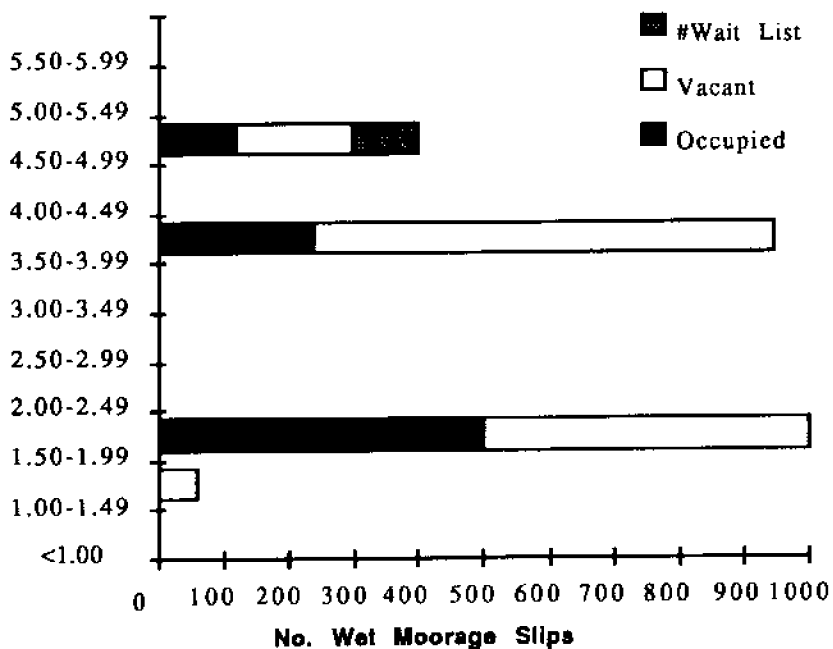


Fig. 12. Moorage Market Conditions, Grays Harbor and Pacific Counties, 1987, Off-Peak Season

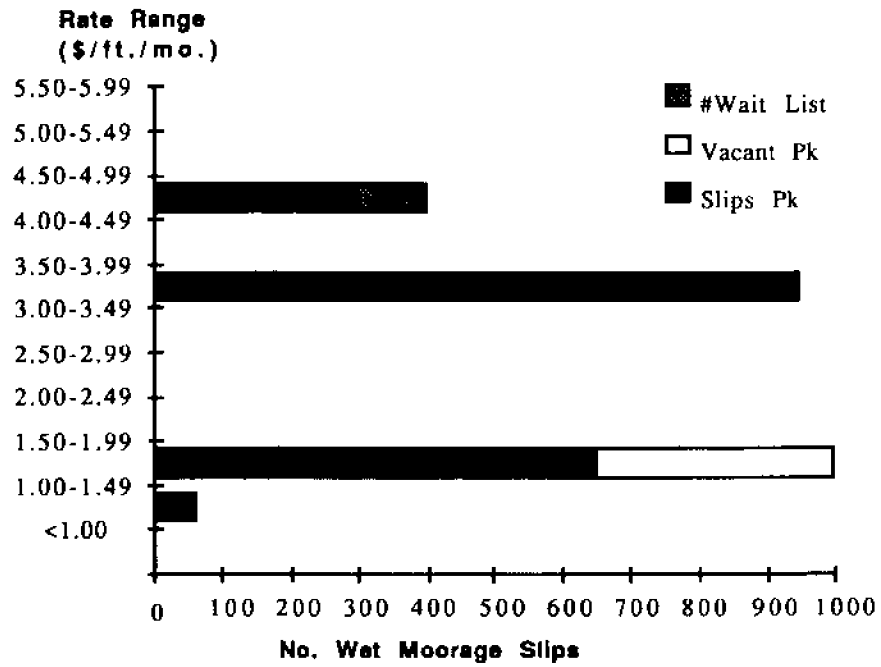


Fig. 13. Moorage Market Conditions, Grays Harbor and Pacific Counties, 1989, Peak Season

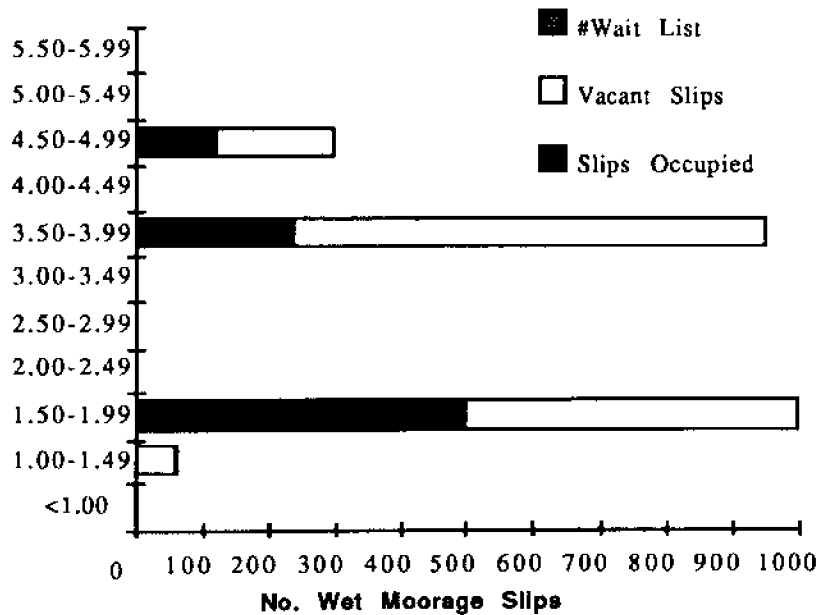


Fig. 14. Moorage Market Conditions, Grays Harbor and Pacific Counties, 1989, Off-Peak Season

Dimensions of Growth in Washington State, 1990-2000

Figure 15 and Table 7 show how and where the state's population is expected to grow between now and the beginning of the 21st century. While the state is expected to grow overall by a little over 13%, this growth will be quite unevenly distributed.

Urban Core and Rural Periphery

The trends of the last decade will continue into the next: Growth will again be concentrated in the existing urbanized areas of Western Washington. Of the state's 628,369 new people, 86% (541,941) will be found in the counties surrounding Puget Sound. Moreover, 80% (429,723) of Puget Sound's growth will be in the four central counties — King, Pierce, Snohomish, and Kitsap — and 50% (210,987) in King County alone. But there will be some losses.

Region	1990	2000	Change, 1990-2000	
			No.	%
Puget Sound	3,436,594	4,015,841	541,941	15.6
Coast & Columbia River	92,971	93,602	-298	-0.3
Other Washington	1,209,268	1,257,759	86,726	7.4
State Total	4,738,833	5,367,202	628,369	13.3

Table 7. Washington State Population Estimates, 1990-2000

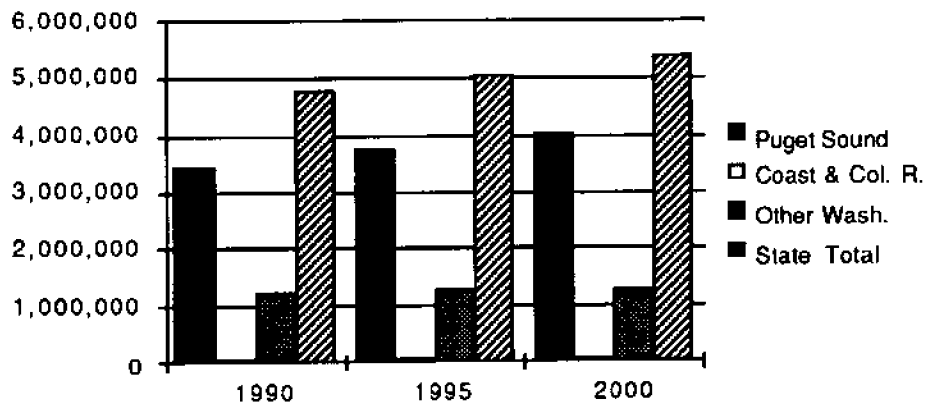


Fig 15. Washington State Population Estimates, 1990-2000

Rural ocean coast and lower Columbia River counties as a region will decline slightly—down 298. Troubles in timber and fishing will continue, and jobs in these resource-dependent basic industries will decline further, causing ripple effects throughout the region's manufacturing and service economies. To some extent these losses will be offset by growth in tourism and recreation activity fed by affluent urban populations 2-5 hours distant in Seattle and Portland, OR.

The eastern part of the state ("Other Washington" in Figure 15) will fare better as a region than the coastal and lower Columbia River counties, but the growth rate will be only half that of Puget Sound. Nonetheless, demands on services from tourism and recreation originating west of the Cascades can be expected to benefit Eastern Washington's resort areas.

Relationship of Growth to Boat Ownership and Moorage Utilization

Many of the 630,000 new people who will be living in Washington by the year 2000 will have been drawn here by the state's outdoor recreation amenities — skiing, hiking, mountaineering, sailing, and boating. But how many will already own, or decide to buy, boats is unknown. One demographic study suggests that in-migrants from out-of-state to King County (exclusive of Seattle) are younger, better educated, and have higher incomes for their age than those who moved from in-state origins, and had a median income only a little below that of the population that had not moved in the preceding year.⁷ They also tended to rent rather than own their residence, suggesting that they might not have accumulated as much wealth as older non-migrant residents. But the implications for boat ownership, and particularly for type and length of boat owned, are unclear.

Nor is there accurate contemporary information on boat ownership. Since the state assumed responsibility for boat registration in 1984, compliance with the state boating safety program has been less than complete. Complicating the picture is the exclusion from state registration requirements of vessels not operated on federal waterways. Many of Washington's rivers and lakes fall into this category.

How many registered boats are there in the state today? — An easy question to answer, one would think. In fact, it depends on *when you ask the question!* Figure 16 illustrates this problem:

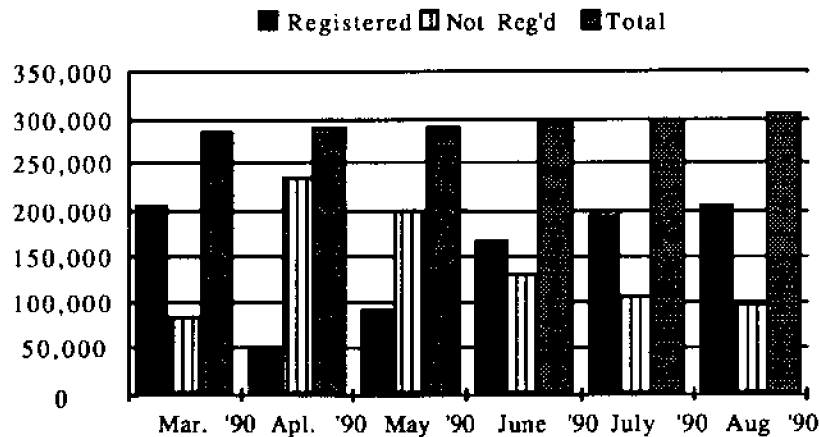


Fig. 16 Reported Registrations of Vessels, Washington State, by Month, 1990

⁷McCutcheon, Laurie. Migrants to King County Outside Seattle: How Many Are Coming, Where Are They Coming From, and Who Are They? Institute for Public Policy and Management, University of Washington, Seattle, WA. August, 1989

The state's Department of Licensing (DOL) is responsible for managing the registration and titling of boats, and for the collection of fees and excise tax levied on them. DOL maintains a boat registration database that is constantly updated as vessel owners register for the first time, or renew their registration. Boat registration renewals are not staggered by month, as are motor vehicles in Washington State. Consequently, about July 1 every year, an avalanche of renewal applications descends on Olympia, and it takes time to process the backlog of paperwork. Furthermore, some boaters may procrastinate in renewing their registration, counting on their luck and minimal enforcement efforts by the state to avoid detection and penalties! A boat, once registered, remains in the database forever, or until its owner reports that it has been scrapped or sold to an out-of-state party. In some months, then, there are more vessels classified as "not-registered" than "registered." Figure 17 reveals that even more complexity lies behind the "not-registered" category of vessels.

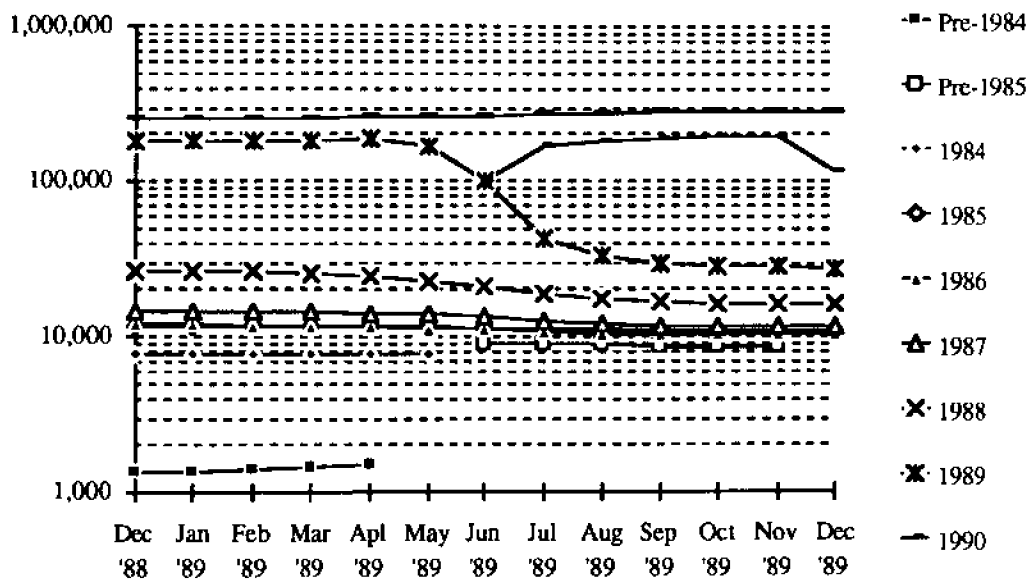


Fig. 17. Vessels Registered in Washington State, Dec. 1988 - Dec. 1989 by Year of License Expiration

A month-by-month profile of the state's database for December 1988 through December 1989 reveals something of the behavior of Washington boat-owners. The vertical scale is logarithmic to show closely spaced data lines more clearly. The top line in the diagram represents the total number of vessels in the database. Currently, this number is a little over 300,000. The two lines below this show the number of boats with current registrations — 1989 or 1990 expiration dates, depending on whether the period under consideration comes before or after July 1, 1989. Similar data lines are shown for registration expiration dates going back yearly to pre-1984. Note that the number of vessels with expiration dates prior to 1989 declines over the 13-month period shown. While some of this decline is due, undoubtedly, to the disappearance of these vessels from the state's waters, much is due to re-registration of vessels after several years' lapse. In the latter case, these vessels are added to the current registration year, explaining some of the month-to-month increase in current registrations. The author has been unable to ascertain the contribution made by each of these explanations to the decline in earlier years' registrations.

The only certainty that can be deduced from these registration data is that there were *at least* 195,000 registerable⁸ vessels in Washington State in 1989. This number corresponds to the highest count of vessels with 1990 registration expirations. (The latest count available — August 1990 — was 205,387 vessels registered.) The author believes there are probably many more than this number of boats in the state based on the following reasoning:

Washington Sea Grant research published in 1982⁹ estimated that the registered boat ownership rate in 1978 was approximately 47 boats per 1,000 population. This estimate was achieved by having access to *boat trailer* registration data, which is no longer maintained by the DOL, and a boating household survey conducted by Washington Sea Grant in 1979. With the conservative assumption that boat ownership rates have remained level over the last decade, applying this rate to the state's current population of 4,738,833 yields 222,686 registerable vessels. This estimate suggests a state under-count of 7-8%. If boat ownership rates have increased, the under-count could be appreciably greater than this. But how many of these vessels are occupying in-water moorage?

Our latest moorage survey counted over 40,000 slips statewide, of which 32,000 were occupied in winter. This figure accounts for 14% of fleet in year-round moorage — a credible number considering that 9% of fleet exceeds 26 feet in length, the maximum length normally trailerable, and 22% of fleet exceeds 20 feet, a length below which most boats are trailered, car-topped, or kept aboard larger vessels.

Implications for Marina Development

Lacking a reliable model for linking boating participation rates to the socio-economic and demographic characteristics of the "new" population — if we knew what these were — we are forced to make some gross assumptions about the likely size and character of the future boat fleet and the demands it will place on the moorage industry.

Demand for Year-round Moorage

If the fleet expands at a rate proportional to population growth, there will be a 13.3% increase by year 2000, for a total fleet of 252,000 vessels, of which 36,300 will seek year-round moorage — 4,300 more than in the current year. Since 86% of the new population will reside in Puget Sound counties, 3,700 of these slips could be in demand in that region.

With the new Elliott Bay Marina's 900 slips on line, there will still be an unmet demand of 2,800 new slips to service vessels moored year-round on Puget Sound and its adjacent waters.

Demand for Seasonal Moorage

Much of the demand for seasonal, temporary and guest moorage is felt in the San Juan Islands, north and south Puget Sound, the Hood Canal, along the Strait of Juan de Fuca, in Grays and Willapa Harbors, and along the length of Columbia River throughout Eastern and western Washington. In Grays Harbor, Wahkiakum, and Thurston counties, there is a year-round surfeit of moorage presently, and this surfeit will gradually be absorbed by growth in summer moorage demand. Elsewhere, notably San Juan, Whatcom, Clallam, Clark, and Mason counties in Western Washington, and Chelan, Grant, Benton, and Columbia counties in Eastern Washington, summer visitors now absorb most, if not all vacant slips. Here demand

⁸Powered vessels over 10 horsepower are required to be registered in Washington State if used on federal waterways.

⁹Goodwin, 1982, op. cit.

for expansion of moorage to serve seasonal demand will be felt. Whether or not such expansion occurs will depend upon how binding are the constraints presently limiting it.

Constraints on Supply of New Moorage

Limiting expansion of moorage supply in Washington State are three kinds of constraints. First are a web of environmental laws and regulations passed by Congress and the Washington Legislature since the early 1970s. Second are court rulings affecting some western states and their relations with certain Indian Tribes under treaties that guaranteed the perpetuation of tribal access to living marine resources. Finally, the marketplace in which moorage is built and leased gives unmistakable signals about when and where new moorage can profitably be developed.

Environmental Constraints

In Washington marine waters, the productivity of intertidal and shallow sub-tidal habitats is guarded by both state and federal resource agencies. Eelgrass communities in particular are off-limits to dredge and fill operations; but virtually any productive habitat threatened by development will bring demands for mitigation. The shallows immediately adjacent to shorelines provide shelter for migrating juvenile salmon; preserving the natural slope of these fish corridors entails displacing marina development farther seaward than efficient use of the site would suggest. Returning salmon runs will affect the timing of pile-driving and other in-water construction; and concerns about impairment of water quality are encountered almost ubiquitously, in fresh and saltwater. As a consequence, marinas are becoming increasingly difficult to site, and expensive to construct and mitigate.

Treaty Indian Fish and Shellfish Rights

U.S. v. Washington, discussed earlier in connection with coastal fisheries issues, has had a profound effect on development on Puget Sound tidelands. Wherever Treaty Tribal Indians have fished in the past, these "fishing grounds and stations" are protected vigorously from encroachment. Where a marina development could potentially increase recreational boating traffic through these areas, Indian objections during permit proceedings, or later in the courts, have had a chilling effect on the approval of the project. Tribal objections are given weight, too, where developments could harm the salmon's rearing habitat, far from reservations or fishing grounds. Just how far these "environmental rights" under Indian Treaties can be asserted has yet to be adjudicated by the federal courts, however.

Market Limits

Given the additional costs imposed nowadays on marina construction and mitigation by environmental and Indian Treaty concerns, the moorage leasing rates necessary to provide a reasonable economic return on invested private capital may simply be too high to attract sufficient tenants, except in peak market areas. Private marinas built today are often only a small part of a much larger upland development which they are built serve; a stand-alone marina could simply not survive financially.

Increasingly, too, these market forces are affecting public marina projects as public subsidy via federal appropriations to the Army Corps of Engineers for recreational navigation projects has been phased out by a deficit-conscious Congress. Recent tax reform measures have placed stricter limits on tax-exempt financing by municipalities; private leasehold development within a public marina project may doom the project's financing in this fashion.

Conclusions

The estimates of demand for new moorage in Washington State through the year 2000 suggest that the equivalent of two more marinas the size of Shilshole Bay Marina, plus the new Elliott Bay Marina now under construction, will be needed on Puget Sound. Such estimates, even if accurate, do not guarantee those slips will be built. Costs could drive up moorage rates to the point where demand would be deflated to much lower levels than the author's estimates. But here are some likely scenarios for where and how new moorage will be brought on-line.

New for-profit facilities will be developed in existing urban harbors where demand is highest, where moorage is part of a waterfront revitalization effort, or as part of a larger resort development in rural shorelines. Public facilities will be limited mainly to guest moorage for which public funding is still available. An exception would be possible in cases where re-configuration and build-out of permanent moorage facilities have been permitted already, or where impacts of expansion would be minimal.

New facilities, or expansion of existing facilities, where permitted, will be contingent upon providing public amenities, such as access to the docks, boat sewage pump-out stations, fishing piers, and restrooms. The distinction between a purely public and a wholly private marina will blur as new interpretations of the Public Trust Doctrine arise from citizen challenges in the courts.

References Cited

Goodwin, Robert F. (Ed.) Boating and Moorage in the '80s. Proceedings of a Conference held in Seattle, WA, Oct., 1981. Washington Sea Grant. WSG-WO 82-1. 1982.

Goodwin, Robert F. (Ed.) Boating and Moorage in the '90s. Proceedings of a Conference held in Everett, WA, Oct., 1988. Washington Sea Grant. WSG-WO 89-1. 1989.

Goodwin, Robert F. "Recreational Boating in Washington's Coastal Zone: The Market for Moorage." Institute for Marine Studies, University of Washington, Seattle, WA. 1982

Goodwin, Robert F., "Small-Boat Marinas: The New Professionalism" in *Urban Ports and Harbor Management*. Marc Hershman, Editor. Taylor & Francis, N.Y. 1988.

McCutcheon, Laurie. "Migrants to King County Outside Seattle: How Many Are Coming, Where Are They Coming From, and Who Are They?" Institute for Public Policy and Management, University of Washington, Seattle, WA. August, 1989

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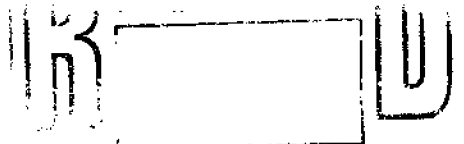
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