STATE OF CALIFORNIA – THE RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
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August 4, 2011 Reply in Reference To: NPS110411A

Cicely Muldoon
Superintendent
National Park Service
Point Reyes National Seashore
Point Reyes, California 94956

Re: Request for Concurrence, Determination of Eligibility of Johnson's Oyster Company (aka Drake's Bay Oyster Co.), Point Reyes National Seashore

Dear Ms. Muldoon:

Thank you for your letter dated July 8, 2011, requesting my comment and concurrence for the Determination of Eligibility for Johnson's Oyster Company (aka Drake's Bay Oyster Co.) within the boundaries of Point Reyes National Seashore. Along with your letter, you submitted National Register of Historic Places (NRHP) Registration Form (undated) that provides the context and evaluation for this property.

Through this evaluation, NPS concludes that while Johnson's Oyster Company appears to be significant under NRHP Criterion A, it lacks historic integrity. Therefore, the property is not eligible for listing on the NRHP. After reviewing this determination of eligibility, I concur that the property is not eligible for listing on the NRHP.

Thank you for seeking my comments and considering historic properties as part of your planning. If you have any questions or concerns, please contact Mark Beason, Project Review Unit historian, at (916) 445-7047 or mbeason@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form.* If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. **Place additional certification comments, entries, and narrative items on continuation sheets if needed (NPS Form 10-900a).**

1. Name of Property

historic name Johnson Oyster Company

other names/site number Jensen's Oysters; Drakes Bay Oyster Company

2. Location

street & number 17171 Sir Francis Drake Boulevard [ ] not for publication

Point Reyes National Seashore (PORE)

city or town Inverness [X] vicinity

state California code CA county Marin code 041 zip code 94937

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this ___ nomination _X_ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property ___ meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___ national ___ statewide __local

Signature of certifying official/Title Date

State or Federal agency/bureau or Tribal Government

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

Signature of commenting official Date

Title State or Federal agency/bureau or Tribal Government

4. National Park Service Certification

I hereby certify that this property is:

___ entered in the National Register

___ determined eligible for the National Register

___ determined not eligible for the National Register

___ removed from the National Register

___ other (explain:) _____

Signature of the Keeper Date of Action

Johnson Oyster Company
Name of Property

Marin County, California
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply.)

	private
	public - Local
	public - State
X	public - Federal

Category of Property
(Check only **one** box.)

	building(s)
X	district
	site
	structure
	object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
N/A	N/A	buildings
		Sites
		structures
		objects
		Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing)

NA

Number of contributing resources previously listed in the National Register

None

6. Function or Use

Historic Functions
(Enter categories from instructions.)

AGRICULTURE/SUBSISTENCE / fishing facility
DOMESTIC / single dwelling; multiple dwelling

Current Functions
(Enter categories from instructions.)

AGRICULTURE/SUBSISTENCE / fishing facility
DOMESTIC / single dwelling; multiple dwelling
RECREATION AND CULTURE / outdoor recreation

7. Description

Architectural Classification
(Enter categories from instructions.)

MODERN MOVEMENT; Ranch style
OTHER; industrial

Materials
(Enter categories from instructions.)

foundation: CONCRETE; WOOD
walls: WOOD / Weatherboard, plywood
roof: ASPHALT; WOOD / shingles
other:

Narrative Description

(Describe the historic and current physical appearance of the property. Explain contributing and noncontributing resources if necessary. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, setting, size, and significant features.)

Methodology

Project personnel conducted the documentation and assessment of the oyster farm in Drakes Estero as a potential cultural landscape. Cultural landscapes represent a specific class of property that may be listed in the National Register of Historic Places (NRHP). With reference to the five types of resources and properties recognized by the NRHP (buildings, structures, sites, objects, and districts), cultural landscapes are usually classified as either districts or sites, depending upon their character. Consistent with National Park Service (NPS) guidelines, the following narrative was prepared using the list of general landscape characteristics identified in *A Guide to Cultural Landscape Reports* as a framework.[1] The guide further refines the list of eleven landscape characteristics described in *National Register Bulletin 30, Guidelines for Evaluating and Documenting Rural Historic Landscapes*.[2] Of the thirteen potential cultural landscape features identified in the guide, the following are pertinent to understanding the current property: natural systems and features; spatial organization; land use; cluster arrangements; circulation; topography; buildings and structures and small-scale features.

Summary Paragraph

The Johnson Oyster Company, currently known as the Drakes Bay Oyster Company, operates within and adjacent to Drakes Estero. Drakes Estero is a large, shallow ocean lagoon north of Drakes Bay, which is located on the south side of the Point Reyes Peninsula in Marin County, California. The entire peninsula lies within the administrative boundary of

[1] Robert R. Page, et al., *A Guide to Cultural Landscape Reports: Contents, Process and Techniques* (Washington D. C., U.S. Department of the Interior, National Park Services, Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, 1998) p. 53.

[2] National Register Bulletin 30, issued in 1990, was the first publication to document methods and techniques for listing rural historic landscapes, which are defined as a "geographic area that historically has been used by people, or shaped or modified by human activity, occupancy, or intervention, and that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and water-ways and natural features." The bulletin lists eleven general characteristics that may be applicable to a particular landscape. These include: land uses and activities; patterns of spatial organization; response to the natural environment; cultural traditions; circulation networks; boundary demarcations; vegetation related to land use; buildings, structures and objects; clusters; archeological sites; and, small-scale elements. In contrast, the later *Guide to Cultural Landscape Reports* defines a cultural landscape as a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associate with a historic event, activity or person, or that exhibit other cultural or aesthetic values." The guide identifies four different types of cultural landscapes as follows: historic site (a landscape significant for its association with a historic event, activity, or person); a historic designed landscape (a landscape significant as a design or work of art; consciously designed and laid out either by a master gardener, landscape architect, architect, or amateur according to a recognized style or tradition; has a historical association with a significant person, trend or movement in landscape gardening or architecture, or a significant relationship to the theory or practice of landscape architecture); historic vernacular landscape (a landscape whose use, construction, or physical layout reflects endemic traditions, customs, beliefs, or values; expressed cultural values, social behavior, and individual actions over time; is manifested in physical features and materials and their interrelationships, including patterns of spatial organization, land use, circulation, vegetation, structures, and objects; a landscape whose physical, biological, and cultural features reflect the customs of everyday lives of people); and, ethnographic landscapes (a landscape containing a variety of natural and cultural resources that associated people define as heritage resources). Furthermore, the guide identifies thirteen general landscape characteristics that may be applicable to any inventory unit. These area similar to the characteristics defined in National Register Bulletin 30 and include: natural systems and features; spatial organization; land use; cultural traditions; cluster arrangements; circulation; topography (referring specifically to man-made earth works); vegetation; buildings and structures; views and vistas; constructed water features; small-scale features, and, archeological sites. The terminology used in this form is drawn from the 1998 Guide to Cultural Landscape Reports because those definitions are used for the National Park Service's Cultural Landscape Inventory—an agency specific inventory that is completed for cultural resource properties with landscape elements. [For an explanation of the evolution of various terms used in cultural landscape inventory, analysis and evaluation, see *A Guide to Cultural Landscape Reports: Contents, Process and Techniques* (Washington D. C., U.S. Department of the Interior, National Park Services, Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, 1998) p. 3.]

Point Reyes National Seashore (PRNS), established by Congress in 1962.[3] The *estero* covers roughly 2,270 acres at high tide, including the 1,300-acre main lagoon and four narrow inlets known as Barries Bay, Creamery Bay, Schooner Bay, and Home Bay.[4] A fifth inlet or branch is known as Estero de Limantour. The oyster company's operation consists of two related components: a processing plant and its associated residential area occupy about five acres of land at the head of Schooner Bay, and the oyster beds that are located on two state-authorized allotments or leases within the *estero*. Currently, the state allotments total about 1,100 acres. The area actually improved for growing oysters is smaller and varies from year to year and with the seasons. The principal permanent structural improvements located within the allotments in the intertidal zone are the wooden oyster racks (roughly 4.8 miles of them), which are used to grow oysters.

Narrative Description

Setting: The five arms of Drakes Estero cut deep into the rolling topography of the Point Reyes Peninsula. Originally grazed by native elk and antelope, in the 1830s, Spanish and Mexican landholders recognized the promise of the peninsula's native prairies for raising livestock, and turned out cattle, sheep and goats to forage. In the 1840s, newly arrived American agriculturalists initiated a series of tenant dairies on the peninsula, an experiment that culminated in the establishment of the Shafter-Howard system of tenant dairies that extended across the peninsula. The agricultural use of the land continued after the creation of PRNS and the peninsula retains its pastoral character to this day. Clusters of ranch buildings, most of which date to the dairy farming era, dot the landscape.

The surfaces of the steep-banked ridges that divide the bays of the *estero* contain two main plant communities, Coastal Rangeland and Coastal Shrub. Coastal Rangeland, a legacy of the nearly 200 years of domestic livestock grazing, consists of a mixture of native perennial bunch grasses and exotic annual and perennial grasses; rangelands cover the majority of the rolling upland surrounding the *estero*. Coastal Shrub communities occur in bands adjacent to the water's edge, including the east side of Schooner Bay, where the oyster processing plant is located. The hardy native and exotic plants in this community tend to have a low, shrubby growth habit with stiff leaves and long tap roots, all of which allow them to tolerate the high winds and blowing salt spray which buffet the windward areas of the *estero*. Silt deposition at the head of Schooner Bay has resulted in the formation of a large salt marsh. Also of note is a dense stand of eucalyptus, in a shallow drainage west of the processing plant.[5]

Processing Plant: The five-acre parcel of land historically associated with the processing plant is located near the head of Schooner Bay, on its east bank, just below the salt marsh. The parcel is accessed from a narrow road that runs south from Sir Francis Drake Boulevard for roughly a half mile, skirting the base of a steep hill slope at the margin of the marsh before terminating in an open, unpaved public parking area at the north end of the processing plant.[6] The access road, which is the principal terrestrial circulation feature associated with the property, is surfaced with crushed oyster shell. As a result, the road surface is a bright white, especially when dry. At the north end of the processing plant, some low split-rail fencing defines the boundary of the parking area for the public boat launch. A modern pit toilet, built by the National Park Service in 2008, sits at the south edge of the parking area. A 'privacy' fence of vertical boards separates the

[3] *An Act to Establish the Point Reyes National Seashore in the State of California*, Public Law 657, 87th Cong., 2d sess. (September 13, 1962); *Act to Establish the Point Reyes National Seashore in the State of California, U.S. Code*, vol. 16, secs. 459c-459c-7 (1962).
[4] Charles H. Peterson et al., *Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California* (Washington D. C., The National Academies Press, 2009) p. 12.
[5] Early dairy ranchers in the area used eucalyptus as a means to control erosion and as a source of firewood. The stand, which lies outside the boundary of the five-acre parcel historically associated with the oyster plant, is not believed to be directly associated with the oyster operation.
[6] Larry Jensen, who operated the oyster plant from about 1946 to 1955, built this road within a fourteen-foot-wide easement across the former Heims Ranch (also known as N Ranch). Although the exact date of construction is not known, the road appears on a 1952 aerial photo. Edwin F. Jordan "Appraisal of Real Estate An Unimproved Parcel of Land Consisting of 1115 Acres of Land and Improvements County Assessor's Parcel Numbers 109-13-01, 109-13-02 & 109-14-08, Heims Ranch at Point Reyes, Marin County, California," 1962, Document # PRNS 8051-583, File No. 1, Box 2, Land Appraisal Records, Point Reyes National Seashore Archives (hereafter PRNS Archives); Harding Appraisal Company "Appraisal Report & Economic Study, Johnson Oyster Company, Point Reyes National Seashore, Point Reyes California," 1972, File: Tract 02-106, Central Files, Point Reyes National Seashore (hereafter PRNS).

southwest side of the public parking area from a stringing shed, which is the northernmost permanent improvement associated with the oyster processing plant.

Larry Jensen established the processing plant in 1948; it includes all of the land-based improvements associated with over sixty years of oyster farming. Improvements are clustered according to function. Those associated with the industrial functions of the oyster business, are located adjacent to the shoreline—linked to the bay waters by a short dock. In contrast, the residential area is located slightly south, in the more sheltered bottom of a shallow drainage, where it is protected from prevailing winds by a low ridge. Besides the buildings and structures built to support the business, past owners of the property have modified the natural landforms within and surrounding the processing plant. On the west edge of the processing area, oyster shell deposits project into Schooner Bay.[7] The boat launch parking area (just north of the plant), is also underlain by shell deposits that extend into the adjacent marshland. Other modifications to the natural landforms include the removal of material from the base of ridge west of the residential area to make way for housing units. Also, in the 1960s, the owners at the time used material removed from the east side of the ridge as fill dirt, presumably for the areas where three mobile homes are currently located. For a time during the 1960s, the top of the ridge was used to pile and store oyster shell, however none is currently present at that location.

Processing Area*:* The processing area contains the processing plant, an office/warehouse, a shop, an oyster stringing shed, oyster larvae tanks, a dock for loading and unloading oysters that extends from the processing plant into the bay, and several other small-scale and/or temporary improvements.[8] Parking for patrons of the oyster business is located south of the boat launch parking area, adjacent to the east wall of the processing plant, which is the largest building in the processing area. This building contains the retail sales area and customer restrooms. Four large, round concrete bollards on the north and east sides of the processing plant prevent cars from parking close to the building and a National Park Service interpretive sign that is adjacent to the building. Other than these simple barriers, there is no formal designation of parking space. An expanse of new asphalt paving between the processing plant, office/warehouse and shop, currently contains eight picnic tables that can be used by patrons. Just below the shoreline, some vertical timbers and plywood extend into the bay, representing the location of an old pier. The condition of the permanent improvements in the processing area varies from fair to poor.

Processing Plant (present during the period of significance): Information in a 1972 appraisal of the Johnson Oyster Company facility indicates that the processing plant was built in about 1948, when Larry and Mary Jensen owned the property.[9] By 1963, the Johnson Oyster Company had built a frame addition, containing public restrooms, on the east end of the east/west wing of the concrete block building. They also enclosed the space inside the two wings of the L to contain a storage area and sorting room.[10] Sometime before 1991, the storage area/sorting room was enlarged by extending the east wall eastward, making it flush with the east wall of the bathroom addition. The later remodel also included a small second-story addition, which has since been removed.

The processing plant is a one-story building consisting of the original, L-shaped concrete block component and its several wood-frame additions. The roughly rectangular footprint measures 40 ft. by 47.5 ft. The exterior walls of the concrete block component are covered with stucco, while those of the wood-frame additions are covered with painted vertical T-1-11 plywood. The plywood replaced earlier vertical boards. The original component has a hip-on-gable roof with exposed two-by-four rafter ends, while the additions have shed roofs. The entire roof is covered with rolled asphalt. The roof of each wing of the original L-shaped component has a metal vent. Window openings in the concrete block volume have concrete sills. Most contain one-by-one-light sliding, aluminum sashes, which replaced the original wooden sashes.

[7] It appears that the deposition of shell in the bay post-dates 1961. Shell deposition probably accelerated after Johnson Oyster Company dramatically increased its production through the 1970s. Aerial photo dated January 20, 1961, PRNS Archives.
[8] The building and structure names used here correspond to the names used in the 1972 appraisal report for the Johnson Oyster Company.
[9] Although the original Drake's Bay Oyster Company built the first processing facility in Drakes Estero in 1938, that plant was located in Creamery Bay.
[10] Date of additions determined by examination of photographs provided by Makiko Johnson.

The (concrete block) west wall of the processing plant contains a boarded-over entry in the middle of the wall, and two window openings on either side of the entry. A small, gable-roofed dormer is located in the roof toward the south end of this wall. Until 2006, this dormer served as the entry point for a conveyor belt that transferred oysters from the dock to a concrete hopper in the interior shucking (or 'cracking') room.

On the south wall of the building, the original component has a central entry with a plywood door that leads to the former shucking room. Wire mesh covers an opening in the upper half. A window opening with a one-by-one-light aluminum sash is located east of the door. A 1963 photograph of the building shows that this opening originally contained a four-light sash. East of the original component, the wall of a wood-frame addition contains a large opening with a wooden sliding door that is finished with T-1-11 plywood. At the east end of the south wall a one-by-one-light sliding aluminum sash window is framed with two-inch boards with beveled ends.

The east wall contains the entrance to the retail sales area. A pair of plywood sliding doors, suspended from an overhead rail, provides access the interior. To the north of the retail sales entrance, an addition on the east wall of the original building contains public restrooms. A two-panel wooden door leads to the Men's room. The Women's room has a flush wooden door. North of the restrooms, a small shed-roofed overhang shelters the electrical meters that are attached to the east end of the concrete block component.

The north wall has two window openings in the west half of the wall.

Office/Warehouse (present during the period of significance): According to Makiko Johnson, this building was an 'old house.' Her husband removed part of the building, which they then used as a shed. The 1972 appraisal report lists this building as an office/warehouse.

The office/warehouse is located south of the processing plant, across the expanse of asphalt pavement that currently contains picnic tables. This one-story, rectangular wood-frame building measures roughly 24 ft. by 16 ft. It has a side-gable roof and a concrete foundation wall. The roof has exposed rafter ends and is covered with rolled asphalt. The exterior walls are covered with six-and-a-half-inch rustic wood siding. The front (north) wall contains a pedestrian entrance offset slightly east of center and a window opening at the east edge of the wall. The entry has a metal door with nine lights, and the window contains an aluminum sash with one sliding and one fixed light. Both the door and window openings are trimmed with two-inch boards that are beveled at the ends. At the west end, the north wall has a large 'warehouse' entry with a vertical board door that slides on an overhead rail. The west, south and east walls contain no door or window openings.

Shop (present during the period of significance): The Jensens may have built this when they moved the processing plant to Schooner Bay. Makiko Johnson indicates that this was the original opening or shucking shed. Johnson Oyster Company moved that function into the expanded processing plant. The lean-to addition was added sometime after 1972.

The shop (currently used as the staff break room) is located about ten feet south of the processing plant, directly adjacent to the dock. It is a one-story, rectangular frame building (roughly 20 ft. by 16 ft.) with a front-gable roof and a wood foundation. A layer of rolled asphalt roofing covers the original sawn cedar shingles. The exterior walls are covered with nine-inch rustic siding with vertical corner board trim. A wood-frame lean-to addition with plywood walls covers the entire west wall of the shop. The north (front) wall has an offset entry (east of center) that contains a flush wooden door with one screened opening. An original window opening remains in the center of the south wall but the original two-light sash has been replaced with a single piece of Plexiglas. A new opening has been cut in the wall, west of the original window, and covered with wire-mesh screens. The lean-to addition is accessed from an opening in the east end of the north wall. A second entry, now covered with plywood, is located in the south half of the west wall.

Stringing Shed (present during the period of significance): The Johnson Oyster Company built the stringing shed in about 1960, when they began using racks to grow oysters.

The stringing shed is located northwest of the processing plant at the water's edge, just south of the boat launch parking area. This simple, one-story wood-frame structure (16 ft. 4 in. by 23 ft) has an irregular shape created by west and east walls that flare outward. The west, north and east walls are enclosed with plywood sheets. A partial shed roof, covered with fiberglass panels, is located at the north end of the structure, where it shelters a wooden shelf built around the north and east sides of the interior. Although the shelf extends along the east wall, this portion of the interior is not roofed. A wind storm in December of 2010 destroyed a portion of the roof covering. Additional damage to the shed occurred during a storm on March 21-22, 2011, during which the southern portion of the east wall and the northeast corner of the roof were destroyed. In addition, some of the plywood on the west wall was blown off the building.

Pier and Floating Dock (present during the period of significance): A wooden pier, about 23 ft. wide extends from the area between the processing plant and the shop roughly 40 ft. to the edge of the bay. It is built primarily with twelve-by-two-inch planks. The section of the original conveyor still used to wash oysters remains on the dock. (Between the late 1950s and 2005, the conveyor was used to move oysters from the oyster barges and on to the dormer in the processing plant.) At the end of the pier, ramps lead to a floating dock, measuring 12 ft. by 60 ft. The floating dock is currently in several pieces and no longer floats entirely because of the build up of oyster shell resulting from processing activities.[11] Several homemade tables, used by the staff to remove oysters from wires after they are retrieved from the bay, are located on the oyster barges secured at the edge of the dock. The storm of March 21-22 damaged the portion of the pier that extends into the water and destroyed the floating dock.

Oyster Larvae Tanks (modern structures added after the period of significance): In the early 1980s, Johnson Oyster Company began setting oyster seed on site, rather than buying it from Japan.[12] Initially, they used two, 4 ft. by 10 ft. tanks for this purpose. These original tanks are no longer on site. A second generation of larvae tanks (the existing fiberglass tanks), were added at an unknown date.

The two sets of oyster larvae tanks are located along the edge of the bay. A set of five are located just south of the shop, and a second set of six tanks (no longer in use), are located south of the oyster shell storage area. The partially buried fiberglass tanks in current use have a diameter of 5½ feet and are fitted with hinged plywood tops. PVC pipe drains extend from the bottom of the tanks into Schooner Bay.

Secondary pier (may have been present during the period of significance): The remains of a second pier are located south of the shop and west of the oyster larvae tanks. Prior to the storm of March 21-22, 2011, this pier consisted of pilings and plywood decking, and was used by the current owner to transfer oysters from the barges to the shore. The most recent storm destroyed this pier.

Punching shed (modern structure added after the period of significance): A 19 ft. by 18 ft. aluminum frame shelter is located east of the oyster tanks. This structure was added to the site sometime after 1993. Corrugated aluminum panels cover the roof, the west side, and the top part of the east side of the structure, which shelters a table where staff punch holes in oyster shells and place them in plastic mesh bags which are then placed in the larvae tanks.

Shipping containers (modern structures added after the period of significance): Besides the permanent buildings and structures described above, the processing area also contains two, 8 ft. by 40 ft. steel shipping containers, both located on

[11] According to Kevin Lunny, Johnson Oyster Company periodically dredged the area beneath the floating dock when oyster shell deposition inhibited its function. Kevin Lunny interview by Janene Caywood, Drakes Bay Oyster Company facility (PORE), March 14, 2011.

[12] "Sea Rancher Gives Oysters New Start," *The Sacramento Bee*, June 14, 1983. For the first twenty-five years of operation, the Johnson Oyster Company imported seed already attached to shell from Japan. After 1983, they altered their operation to start the oysters on site, introducing oyster larvae into tanks of sea water warmed to 75 degrees and filled with scallop shells. The free-swimming larvae attach to the surface of the shells, which are then moved to strings and moved to 'nursery racks' in the bay.

the east side of the office/warehouse. The container adjacent to the office/warehouse is used for storage, while the one farther east contains the cannery operation (shucking and bottling), which was moved from the processing plant in 2006.

Residential Area: The residential area is located southeast of the processing area. Most improvements are located between the west bank of a large pond and the base of a low ridge that extends northward (parallel to the edge of the *estero)*. The pond appears to be a man-made feature created by the bed of the access road damming the natural outlet in the drainage bottom.[13] A dirt lane extends southeast from the processing area along the base of the ridge, past the building known as the 'cabin,' and up to a well that produces all the domestic water for the site. This lane provides access to most of the buildings in the residential cluster. The area contains two frame residences and three mobile homes (all of which function as staff housing), as well as several ancillary structures. Until recently, residents of the site maintained a small vegetable garden in the area at the base of the ridge, west of the dirt lane. In contrast to the processing area, the residential area features some ornamental landscaping adjacent to the residences. Small-scale features include propane tanks (also adjacent to the residences) as well as a variety of fencing material.

Main House (present during the period of significance): After purchasing the processing plant in 1957, Charles and Makiko Johnson remodeled one of five small cottages or 'cabins' that came with the property to serve as their residence.[14] This "main house" is located at the north end of the residential area, just inside the mouth of the drainage. The dirt access lane leads past the southwest side of the building. A small expanse of lawn in front of the building is enclosed with a low, split-rail fence, while a portion of the yard at the rear and side of the building is enclosed with a mixture of fencing material (five-foot boards, woven wire and chain link). A flower bed along the west side of the house contains calla lilies, tea roses and other ornamental flowers.

The main house is a one-story wood-frame building with an irregular footprint. It is built on a concrete pier and wood foundation with maximum dimensions of 39ft. by 48½ ft. The Johnsons built hip roof extensions on the north and east walls of a gable-roof cabin, creating an irregular, block and wing plan. Sometime after 1993, the area east of the north wing was filled in and a flat-roof, open porch was added to shelter an entrance at the south end of the west wall. Today, the exterior walls are covered with rustic wood siding, above a plywood water table, with vertical corner-board trim. Asphalt shingles cover roof. Window openings contain aluminum sashes with one-by-one-light sliding lights and are trimmed with three-inch boards beveled at the ends.

On the front (northwest) wall a recessed entry contains a vinyl door paired with an aluminum storm door. The inset wall to the east of the entry has a fixed wooden sash with four lights. A set of wooden stairs with railing accesses the front entrance. The wall to the east of the entry has one large window opening. The wall to the west of the opening has two evenly spaced windows.

The northeast side wall has three window openings and the rear has three windows and a small, mesh-covered vent high on the wall. The southwest side contains another entry with a wooden door with one panel and one light. This entrance and a window north of the door are sheltered by a flat-roof porch. Four metal columns support the porch roof, which is covered with fiberglass. The porch walls south of the door have been enclosed with T-1-11 plywood siding.

Workshop (modern building added after the period of significance): A one-story wood-frame workshop is located off southeast (rear) wall of the main house. Its exact date of construction is unknown: it post dates 1993.[15] It consists of two frame buildings with gable roofs joined end to end, which together measure roughly 10 ft. by 17 ft. The building has a

[13] When this pond was created is unknown. An archaeological survey form, completed in 1948 when Larry Jensen owned the oyster operation, makes no mention of a pond, but describes the area as a containing a small "tidal creek." Archaeological Site Survey Record, Mrn-296, 1948, Cultural Resource Program Files, PRNS.

[14] Charlie and Makiko Johnson reportedly did the remodeling work themselves, although neither one had any construction experience. Makiko Johnson, interview by Delia Hagen, Petaluma, CA, January 3, 2011; "Farmer's Unusual Fishing Plan: The World Could be his Oyster," *San Francisco Examiner*, May 16, 1976.

[15] A 1993 photo of the Johnson Oyster Company property shows a two-car garage with a shed roof in this location. Photo 14, Document No. PORE-755, File 13, Box 4, PRNS Law Enforcement Records, PRNS Archives.

wood foundation. Plywood sheets cover the rear and side walls. It is open on the front (southeast) wall which is adjacent to the dirt lane. Rolled asphalt covers the roof. The rear and side walls have no doors or windows.

Cabin (present during the period of significance): The cabin is one of the five small houses that were present when the Johnsons assumed operation of the plant in the late 1950s. It is located at the southern end of the housing area, on the west side of the dirt access lane. Ornamental vegetation in the vicinity of the cabin includes a large eucalyptus tree growing in a leveled area at the rear of the building, and two smaller pine trees on the hill slope below the cabin. A steep wooden stairway leads from the west edge of the dirt lane to a landing in front of the east wall, which contains the only entrance to the building.

The cabin is a one-story frame building set on concrete piers. An addition on the rear of the building originally had a lean-to roof; however, the shed roof of a subsequent addition covers the lean-to roof entirely. The building measures roughly 35 ft. by 24 ft. Most of the exterior walls are covered with rustic wood siding. The exception is the addition at the rear of the lean-to which has plywood on the exterior walls. Rolled asphalt covers the roof. Most of the window openings have wooden sills and contain aluminum sliding sashes.

The front (northeast wall) contains a central entrance with a metal door that opens onto the landing at the top of the stairs. A window opening in the lean-to addition contains a double-hung vinyl sash with false mullions in the upper sash. The northwest side of the cabin has two window openings, both with board trim with beveled ends. The southwest (rear) wall has a window centered in the gable end and two windows in the wall of the lean-to addition. The smaller of the two windows has a four-light fixed sash. Both have plain board trim.

Double-wide Mobile Homes (exact date of placement in the residential area unknown, may have been present during the later part of the period of significance): Three double-wide mobile homes (24 ft. by 60 ft.) are located around the northeast and southeast sides of the main house. They were placed on site sometime between 1961 and 1972. They are factory-built homes set on concrete piers and skirted with plywood.

Goat pen (modern structure added after the period of significance): A small, frame goat pen (6 ft. by 12 ft.) is located north of the cabin in the brush on the west side of the dirt lane. This simple frame shelter is screened with hog wire and plywood and has a plywood roof. It is almost completely surrounded by vegetation.

Office Trailer (modern structure added after the period of significance): A portable trailer (8 ft. by 20 ft.) is parked northwest of the main house, adjacent to one of the double-wide mobile homes. The current owner of the operation, Drakes Bay Oyster Company, moved this trailer to the site after purchasing the business from the Johnson family in 2005. It is used as the company's business office.

Well house (may have been present during the period of significance): A well house (roughly 8 ft. by 10 ft.) is located southwest of the cabin, atop the ridge that shelters the residential area. This well produces all of the domestic water for the processing plant. The wood frame structure has plywood walls and shed roof covered with green fiberglass panels. An entry in the northwest elevation is offset left of center and contains a plywood door.

Oyster Allotments

The two oyster allotments (also referred to as leases) cover portions of Berries, Creamery, Schooner and Home bays as well as part of the central lagoon in Drakes Estero. The success of the Johnson Oyster Company operations has always depended upon the natural systems of the *estero*, particularly its high water quality and the protected mud and sand banks that provide an excellent environment in which to grow oysters. Plankton and detritus (minute particles of disintegrated marine animals and plants) are circulated through the bays on the tides. Oysters feed on them by pulling currents of water over their gills, where the particles become entangled in mucus that is secreted when the oysters feeds.[16] Because they are

[16] California Department of Fish and Game, *Fish Bulletin 123: The California Oyster Industry*, by Elinore M. Barrett (Sacramento, 1963), p. 12.

filter feeders, oysters will also ingest contaminates, so water free from pollution is important to successful commercial oyster farming.

Initially, the Johnson Oyster Company used conventional growing techniques, which involved planting oyster seed (or spat, oyster larvae that have attached themselves to a hard surface—usually oyster or scallop shells), directly onto mud or sand banks. After a period of about two years, mature oysters were picked from the surface or raked from the mud. About two and a half years after purchasing the Schooner Bay facility, the company introduced the "hanging cultch" method used in Japan. Instead of placing oyster seed on the bottom, oyster shell with spat attached (mother shells) are suspended on wires and then hung on wooden racks in the bay. This method is only suitable for estuaries with relatively deep water, where the oysters are covered for most or much of the time. Because the growing racks are anchored in the substrate of the bay, the method is usually suitable only for more sheltered areas, where violent storms and/or tides do not routinely damage the racks. Growing the oysters vertically takes advantage of the entire water column in the bay thus increasing the number that can be grown in a given area. In addition, it keeps the oysters out of the mud, which improves their flavor and reduces the amount of time that it takes to clean them when they are harvested. The hanging method also keeps the oysters out of reach of ground-feeding predators. In 1963, the Johnson Oyster Company had five racks in the bay.[17] They gradually increased the number of racks to twelve. The exact dates of construction of the racks have not been determined, although most were probably built by 1971 when the Johnsons sold their property to the NPS

The existing racks vary in length from 24 feet to 240 feet. The racks (built with two-by-fours) are supported by treated timbers set ten feet into the bay's substrate. Each consists of a number of twelve-foot-long segments or 'bents.' "Mother shells" strung on wire are hung over the racks so that the lowest shell is about 1 ½ feet off the bottom and the upper shell is six feet above the bottom. At high tide the racks are completely submerged. They become more exposed during low tide. The condition of the racks varies, with over half being in need of repair. The racks alone cover an area of roughly seven acres in the *estero*.[18] Besides the racks, other numbered beds are used for laying out bags of oysters for fattening or for shell repair prior to harvesting. In some of these, the bottoms are "hardened," by spreading oyster shell over the mud bottom.

Summary of resources associated with Johnson Oyster Company operation*	
Resources present during the period of significance	Modern resources added after the period of significance
Processing plant	Oyster larvae tanks (two sets)
Office/warehouse	Stringing shed
Shop	Shipping containers (2)
Stringing shed	Office trailer
Pier and floating dock	Workshop
Main house	Goat pen
Cabin	
Secondary pier	
Oyster racks	
* The date when the three mobile homes were moved onto the site is unknown. The manufacture of double-wide mobile homes did not begin until the late 1960s, so the three mobile homes may post-date the period of significance.	

[17] Hand-drawn map on Johnson Oyster Company letterhead, prepared after 1964, private papers of Makiko Johnson.
[18] Kevin Lunny, interview with Janene Caywood, Inverness, CA, December 9, 2010; acreage of racks calculated from dimensions provided by Kevin Lunny as of 2007.

Johnson Oyster Company
Name of Property

Marin County, California
County and State

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- ☐ A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ☐ B Property is associated with the lives of persons significant in our past.
- ☐ C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☐ D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

- ☐ A Owned by a religious institution or used for religious purposes.
- ☐ B removed from its original location.
- ☐ C a birthplace or grave.
- ☐ D a cemetery.
- ☐ E a reconstructed building, object, or structure.
- ☐ F a commemorative property.
- ☐ G less than 50 years old or achieving significance within the past 50 years.

Areas of Significance
(Enter categories from instructions.)

Period of Significance

Significant Dates

Significant Person
(Complete only if Criterion B is marked above.)

Cultural Affiliation
N/A

Architect/Builder
Drake's Bay Oyster Company

Charles W. and Makiko Johnson

Period of Significance (justification)
N/A

Criteria Considerations (explanation, if necessary)
N/A

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance and applicable criteria.)

The oyster-growing facility in Drakes Estero is significantly associated with the revival of oyster culture in California. After the collapse of the state's commercial oyster fishery in the first decade of the 1900s, in the late 1920s and early 1930s, the California Department of Fish and Game (in cooperation with private growers) began to experiment with Pacific oysters imported from Japan. Following the lead of Washington State, which had successfully introduced Pacific oysters into its costal waters, by the late 1930s, the California oyster fishery had been reestablished in several bays and sloughs along the coast. This initial success was terminated when trade with Japan halted during World War II. It was not until after the war and the resumption of oyster seed shipments from Japan, that the California oyster industry gradually regained some of its pre-war vigor. Oyster farming in Drake's Estero exemplified this historic trajectory, and Johnson Oyster Company, which has been associated with the site since about 1957, literally embodied the links to Japan. Moreover, the site is significant for its association with the introduction of Japanese off-bottom growing methods, specifically the hanging cultch method. In the early 1960s, Johnson Oyster Company successfully adapted this method to conditions in the *estero*, and in doing so, became one of the largest commercial oyster producers in the state.

When considering only historical significance, Johnson Oyster Company facility would be eligible for listing under National Register Criterion A, with a period of significance of from 1957, when Charles W. Johnson assumed control of the Schooner Bay plant and the state oyster allotment, to about 1965, when his company successfully adapted Japanese off-bottom growing methods to the specific conditions of Drakes Estero. The area of significance would be Maritime History. However, despite the property's association with significant historic events, it is ineligible for listing in the NRHP because it lacks historic integrity. Of the seven aspects of integrity (location, setting, materials, workmanship, design, feeling and association), for the most part, the property retains integrity of location, setting, and association. The processing plant and the racks in the *estero* are in their original locations, and the property's setting—the pastoral landscape surrounding the bay—has been little altered since the early 1930s. Minor modifications to the property's setting include the modern (2008) pit toilet added to the boat launch parking area at the north end of the processing plant.

With regard to integrity of materials, workmanship, and design, however, virtually all of the resources in the plant have been modified through structural additions and/or the application of modern materials. Some are in such poor condition that their structural integrity is threatened. Specifically, the processing plant has some post-1990 additions and is also in poor condition with stucco falling off some of the exterior walls. The materials used in its doors and windows have been altered since the 1960s to include T-1-11 plywood, and metal sliding-sash windows. On the shop, a large, roughly constructed plywood addition has been built on the west wall, while on the south wall, the original window opening has been altered and new openings have been added. The old office/warehouse has modified door and window openings, and exterior wall covering is missing on the south and west walls. The floor has been removed from the interior. The pier and floating dock and stringing shed have received little maintenance and are in very poor condition—to the extent that their usefulness and functions within the plant are threatened. A severe storm in March of 2011 destroyed the floating dock and a portion of the pier. It also destroyed the southern part of the stringing shed's east wall and the northeast corner of its roof.

In the residential area, structural additions have compromised the main house and the cabin. On the main house, a large post-1991 addition is located on the front wall. On the cabin, a new roof structure has been added over the rear shed-roof addition. With regard to the racks in the *estero*, slightly more than half are in need of repair, although they all remain in use.

Besides these resource-specific issues, the design of the Schooner Bay plant operation has been altered. Because of health department concerns, the bottling (aka canning) function that had been a component of the Schooner Bay plant since its creation was moved off site. In about 2005, the improvements associated with this function were either removed or partially dismantled. Specifically, the conveyor system that moved oysters from the dock and pier through the roof dormer of the processing plant was disconnected from the plant. (A portion of the conveyor remains on the dock and is used to move oysters from the barges onto the pier for washing.) Inside the processing building, the bin and opening table

in the opening room were removed. In order to bring the bottling process back to the plant, the current owner added a shipping container to the processing area and modified it to serve as a temporary cannery. Another modern shipping container now serves as a storage building. Other buildings and structures have been added to the plant since the end of the period of significance, including: the shop behind the main residence and the goat pen in the vicinity of the old garden. Finally, the combination of alterations, including a general lack of material and design integrity, as well as the addition of modern structures, has altered the appearance of the Johnson Oyster Company operation, which in turn adversely affects the property's integrity of feeling.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

Developmental history/additional historic context information (if appropriate)

General Context: California and Pacific Coast Oyster Farming

The commercial oyster fishery on the Pacific Coast began in the mid 1800s. The rapid growth of population centers in Washington, Oregon and California that followed American conquest of the coast in the 1840s brought with it a rising demand for oysters. The majority of those new to the West came from eastern states, where oysters were a ubiquitous, affordable, and popular source of protein. Over the next 100 years, three types of oysters formed the basis of the Pacific fishery. Initially, commercial operations used the native *Ostrea lurida.* This species occurred naturally, in suitable habitat, along the entire Pacific Coast. The coast of Washington, however, provided the optimum growing conditions. For the first twenty-five years of commercial oystering, operations were based upon the export of mature native Washington oysters to Oregon and California.

After the 1869 completion of the first transcontinental railroad, California oystermen began importing eastern oyster seed (*Crassotrea virginica)* that was native to the East Coast and the Gulf of Mexico.[19] They were able to grow this seed to marketable size, which they did primarily in San Francisco Bay. Eastern oysters soon dominated in California commercial operations. In Washington, companies continued to focus mainly on growing their native varieties, but experimented with eastern oysters. In the early 1900s, Washington oyster growers also began experimenting with Japanese oysters (*Crassotrea gigas*). By the 1920s, even though they required imported seed, Japanese oysters, known by their market name "Pacific" oysters, dominated the Washington market. In the late 1920s, the California Department of Fish and Game began experimenting with Japanese oyster seed in various locations along the state's coast. For the most part, these experiments were successful. As in Washington, Pacific oysters quickly came to dominate California's commercial market.

The Trade in Native Oysters

Through the 1860s, oysters native to the West Coast (*O. lurida*), grown mostly in Washington, supplied much of the Pacific Coast market. An important center of early oyster production was Washington's Willapa Bay (originally called Shoalwater Bay), which was sheltered by the Long Beach Peninsula in the southwestern corner of the state. Oyster culture there entailed harvesting native oysters from beds below the low water mark. After sorting, oysters of marketable size were shipped via schooners to Portland, San Francisco, and other coastal population centers. Immature oysters were re-planted into the bay on more accessible tidal mudflats above the low-water mark, where they where then left for about

[19] In oyster reproduction, larvae are released into the water, where they develop for a period of about three weeks until they attach themselves to a solid surface. After attachment they are called seed or spat. Oyster growers discovered early on that they could collect spat on old oyster shells and other materials called "cultch." This "cultch" culture produces clusters of oysters on the mother shell. It is distinguished from "cultchless" culture, in which larvae are introduced to quantities of very small particles of shell or sand. Each particle may contain only one spat that grows to maturity as a single oyster.

two years to reach marketable size.[20] Willapa Bay oysters were the foundation of the early California oyster industry. Oystermen shipped their catch to market from one of several bay towns, such as Oysterville and Bay Center that developed around the oyster industry.[21] In San Francisco, the center of the California oyster market, dealers sold part of their Willapa Bay shipments upon arrival. They placed the surplus oysters in beds on tidal flats where they could be kept fresh for later sale. Tidal flats were used because they were easy to fence against bat rays, the principal oyster predator in San Francisco Bay.

The importance of Willapa Bay to the early California oyster industry is reflected in the fact that the two largest oyster companies in San Francisco, the Morgan Oyster Company and that of M. B. Moraghan, both owned oyster beds in Willapa Bay. Although native oysters were collected from other bays in the Pacific Northwest, their production was negligible: Willapa Bay provided 90 percent of the native oysters for the San Francisco market.[22]

Washington oysters dominated the early California oyster industry despite the fact that native oysters were abundant in San Francisco Bay. Because of their relatively small size and distinctive coppery taste, native oysters in San Francisco Bay did not figure prominently in the California market. According to a report completed in the early 1890s, native oysters (*O. lurida*) grew twice as large in Willapa Bay as they did in San Francisco Bay. Of *O. lurida* in California the report's author wrote:

> This small oyster abounds in San Francisco Bay where it is utterly worthless as compared with the (same) oyster from Washington. It is present upon all the bedding grounds of the eastern species. When the latter are permitted to lie too long undisturbed they become coated with the small shells of O. lurida. … So abundant are they that this constantly increasing deposit of shells covers everything alongshore and forms bars extending into the bay.
>
> Schooners frequently carry away loads of them for the making of garden walks and for other purposes to which old oyster shells are adapted. … The supply is unfailing.[23]

The trade in Washington-grown oysters sustained the Pacific Coast, and particularly the California oyster market, for nearly two decades until the completion of the first transcontinental railroad provided California oystermen with the opportunity to experiment with the introduction of eastern oysters.[24]

Eastern Oysters in the Pacific Coast Trade

The completion of the transcontinental railroad transformed the California oyster industry. Although some early attempts had been made to import mature East Coast oysters (*O. virginica*) by ship, in most cases the duration of the voyage damaged or destroyed the shipments. California oystermen eagerly anticipated the completion of the railroad: the first shipment of mature oysters arrived in the spring of 1869, shortly after the final rails were laid.[25] The cost of shipping

[20] United States Commission of Fish and Fisheries, *Annual Report of the Commission for 1889 to 1891, Part XVII, Appendix 2: Report of Observations Respecting the Oyster Resources and Oyster Fishery of the Pacific Coast of the United States*, by Charles H. Townsend (Washington, D.C.: Government Printing Office, 1893), p. 366-367.
[21] In 1854, Isaak Clark and R. H. Espy began exploiting native oyster beds expressly for shipping to San Francisco. The port town of Oysterville was established adjacent to the oyster beds, and for a time was the focus of oyster farming in Willapa Bay. By the early 1890s, however, many of the Oysterville beds had become covered with grass and Oysterville was surpassed by the town of Bay City. T. Sheldon, "Oysterville Cemetery Pacific County, Washington," http://www.interment.net/data/us/wa/pacific/oysterville; United States Commission of Fish and Fisheries, *Annual Report of the Commission for 1889 to 1892*, p. 367.
[22] Willapa Bay was originally called Shoalwater Bay. The early San Francisco trade in native oysters became known as the "Shoalwater trade." California Department of Fish and Game, *Fish Bulletin 123*, p. 22.
[23] United States Commission of Fish and Fisheries, *Annual Report of the Commission for 1889 to 1891*, p. 355.
[24] Mexican oysters from Altata and Acapulco were also shipped on steamers to San Francisco between 1868 and 1870, but the trade was not profitable because so many died en route. The completion of the railroad put an end to this business. Paul Bonnot, "The California Oyster Industry," *California Fish and Game* 21, no. 1 (1935): p. 65-80.
[25] California Department of Fish and Game, *Fish Bulletin 123*, p. 27.

adult oysters soon proved to be prohibitive. It was not long before the major San Francisco oyster companies were experimenting with the importation of eastern seed (young oysters) that could be grown to market size in local waters.[26] The Morgan Oyster Company imported the first eastern seed oysters for experimental plantings in San Francisco Bay in 1870.[27] Initially, Morgan and others planted the seed in the same beds used to hold native Washington oysters, most of which were located in the central part of San Francisco Bay (around Sausalito, Point San Quentin, Oakland Creek and Alameda Creek).[28] The impacts of storm and flood damage to the seed, as well as the growing problem of silting and sewage, rapidly proved prohibitive. Oyster companies looked for new sites in the more sheltered southern part of San Francisco Bay.[29] By 1875, most San Francisco oyster companies were satisfied that eastern oyster seed could be grown successfully and economically in these new beds, which were located near San Bruno, Dumbarton Point, and Millbrae.[30]

Over the next thirty-four years, eastern oysters raised from imported seed dominated the California commercial oyster industry, which continued to be centered in San Francisco. From 1890 through 1908, San Francisco received 9,000 barrels of eastern oyster seed annually. This seed was planted in the south bay beds.[31] The eastern oyster plantings accounted for 85 percent of the California harvest between 1888 and 1908. Native oysters from Washington constituted the remainder.[32] San Francisco's largest oyster firm, Morgan Oyster Company, supplied hotels and restaurants in the city and also shipped boxed or canned oysters to "all the large towns of the Pacific region, from Victoria to San Diego, and from Salt Lake to Honolulu." Other firms sold their harvest at food stands in the city.[33]

Experiments with eastern oyster seed in Washington State were less successful. Moreover, Washington lacked the advantage of a direct transcontinental railroad connection, making it even more difficult and expensive to import seed. In the early 1890s, Townsend reported that Willapa Bay oyster growers were willing to try bedding eastern oysters once a better rail connection was made between the Atlantic and Pacific coasts.[34] Ultimately, the eastern seed oysters did not grow as well as those in San Francisco, and the Washington oyster industry continued to focus on cultivating native oysters.[35]

Around 1904, California's position in the Pacific Coast oyster industry began to decline. Since the late 1880s, California's production (measured in thousands of pounds of oyster meat) had exceeded or matched that of Washington. At the same time, Oregon's production was but a fraction of that of the other two states.[36] Although the cause of the decline has never been identified, after 1904 eastern seed oysters in San Francisco Bay "took much longer to reach a fair size and they were thin, watery and unfit for market."[37] Pollution may have been a factor, but it was not necessarily the primary problem. Paul Bonnot, a California Department of Fish and Game biologist, who studied the oyster industry in the 1930s, attributed the decline to "some unknown factor or factors," citing the fact that oystermen at the time knew little of "the biological side of their business and ran it by trial and error."[38]

[26] Ibid.
[27] Paul Bonnot, "The California Oyster Industry," p. 67.
[28] Ibid.
[29] United States Commission of Fish and Fisheries, *Annual Report of the Commission for 1889 to 1891,* p. 354.
[30] In 1875 seventeen carloads of eastern oysters were laid out near Millerton Station in the south part of Tomales Bay. The oysters kept well until marketed or removed to San Francisco beds. Around 1890, Charles Townsend, author of the *Report of Observations Respecting the Oyster Resources and Oyster Fishery of the Pacific Coast of the United States*, observed only native oysters in Tomales Bay. United States Commission of Fish and Fisheries, *Annual Report of the Commission for 1889 to 1891, 2*, p. 364.
[31] Paul Bonnot, "The California Oyster Industry," p. 67; California Department of Fish and Game, *Fish Bulletin 123,* p. 28.
[32] California Department of Fish and Game, *Fish Bulletin 123*, p. 28.
[33] United States Commission of Fish and Fisheries, *Annual Report of the Commission for 1889 to 1891,* p. 357.
[34] Ibid., p. 370.
[35] California Department of Fish and Game, *Fish Bulletin 123*, p. 40.
[36] Ibid., p. 5.
[37] Paul Bonnot, "The California Oyster Industry," p. 67.
[38] Ibid.

When the San Francisco Bay beds began to fail, the growers' only recourse was to look for new areas in which to plant their oysters. But the turn to new growing areas did little to stem the decline of the California oyster industry. The Morgan Oyster Company, which by that time was the largest grower in San Francisco, turned to Humboldt Bay. In 1896, the U.S. Bureau of Fisheries had planted three- and four-year-old eastern oysters in Humboldt Bay. They achieved poor results. Nevertheless, in 1911, the Morgan Oyster Company bought out the holdings of a small oyster operation in the northern part of the bay, and there planted large quantities of eastern oysters. At about the same time, the Consolidated Oyster Company tried planting eastern oysters in the south part of Humboldt Bay. Neither endeavor was successful. By 1912, the Morgan Oyster Company, having lost nearly $90,000 dollars, abandoned its holdings. "Humboldt Bay was given up by the oystermen and no attempt was made to do anything more there until 1932."[39]

Some oyster production continued in Tomales Bay, where eastern oysters were planted in 1907. By the early 1930s, the Tomales Bay oyster beds held both eastern and native Washington oysters (the latter called by their market name "Olympia" oysters). However, the California oyster industry continued its downward spiral. By 1922, Washington state production exceeded that of California ten fold: Washington produced 625,000 pounds of oyster meat to California's 74,000 pounds. California's production nonetheless continued to dwarf that of Oregon, which produced only 11,000 pounds. [40] Several decades of stagnation followed the decline, which Paul Bonnot summarized as follows:

> The California oyster industry, which in the latter part of the last century was a flourishing business, had declined to a very small portion of its onetime opulence by 1910 and from that date until 1931 consisted merely of importing oysters from outside the State and reselling them. Beds were maintained only to hold live oysters until sold and no attempts were made to grow oysters.[41]

The Introduction of Japanese (Pacific) Oysters to the West Coast Market

The idea of introducing Japanese oysters (*Crassotrea gigas*) to the west coast of North America originated in the mid 1870s with Professor George Davidson and H. D. Dunn, both of San Francisco. Davidson spent three months in Japan during the winter of 1874 and 1875. During his visit he sampled the local oysters, describing them as "very large, full, and well flavored."[42] At that time, limitations in the transportation system precluded their commercial importation. By the early 1890s, transportation systems had improved significantly and Davidson again advocated Japanese oyster cultivation. The market in eastern oysters was by then thriving, however, and his suggestion went unheeded.

Despite the commercial success of their native oyster industry, growers in the state of Washington were the first to attempt to grow Japanese oysters on the west coast of the United States. In 1905, Japanese growers planted mature *O. gigas* oysters in Washington's Samish Bay. These failed to propagate naturally but subsequent plantings of Japanese seed oysters grew well in Washington's coastal waters. By the 1920s, an oyster industry based upon the importation of Japanese seed was firmly established in Washington. By 1931, Japanese oysters, known by the trade name "Pacific" oysters, dominated the Washington trade.[43] In a move symbolizing the trade's growing importance, oyster growers established a trade group called the "Pacific Coast Oyster Growers and Dealers" to deal with industry issues in 1930.[44]

The struggling California oyster industry did not experiment with Japanese oysters until the late 1920s and early 1930s. At that time, the California Department of Fish and Game took an active role in reviving the state's oyster industry. In 1931, in partnership with the U.S. Bureau of Fisheries, it began to investigate oyster resources and potential growing areas in California. These efforts included a survey of twenty-one bays and lagoons along the California coast. Fisheries biologist Paul Bonnot made a recommendation regarding each area's fitness for growing oysters. Many places, including San Francisco and San Diego bays, were deemed unfit because of sanitation or other pollution concerns. Others were

[39] Paul Bonnot, "The California Oyster Industry," p. 68.
[40] California Department of Fish and Game, *Fish Bulletin 123*, p. 5.
[41] Paul Bonnot, "The California Oyster Industry," p. 65.
[42] Quoted in United States Commission of Fish and Fisheries, *Annual Report of the Commission for 1889 to 1891*, p. 360.
[43] California Department of Fish and Game, *Fish Bulletin 123*, p. 48-49.
[44] Ibid, p. 49. Later the group's name was changed to the Pacific Coast Oyster Growers Association.

dismissed because they lacked the natural features conducive to oyster cultivation.[45] Bonnot ultimately identified Humboldt Bay, Drakes Estero, Tomales Bay, Bolinas Lagoon and Elkhorn Slough as the most suitable locations for commercial oyster operations in California.[46] Of these, the state recommended that Humboldt Bay be reserved for growing native oysters.[47]

Bonnot's conclusions were based in part on the success of state-sponsored experiments with Japanese seed in Drakes Estero, Tomales Bay, and Elkhorn Slough. Of Drakes Estero, Bonnot wrote: "No oysters were found growing there. Several small plants of Japanese seed oysters were made in 1932. The oysters grew remarkably well and in five months were about two-thirds market size."[48] Despite the fact that the bay was heavily infested with foreign pests, Japanese seed also did well in Tomales Bay.[49] In Elkhorn Slough, earlier efforts to cultivate small eastern oysters and Mexican oysters had failed, but Japanese seed, introduced in 1929 (using the Japanese method of setting it on tarred rope suspended from rafts) succeeded. With reference to the Elkhorn Slough experiments, in the estimation of the state's biologist, "the growth of these oysters was remarkable, requiring only eight months from the time of planting to reach market size."[50]

In California, success with Pacific oysters contributed to the establishment of new companies and the retooling of existing businesses. New corporations, such as the original Drake's Bay Oyster Company (operating from Drakes Estero) and others (including some in Morro Bay) focused on growing Pacific oysters. Existing businesses, such as Tomales Bay Oyster Company and Jensen's Oysters (operating in Tomales Bay) that held eastern and native oysters, began planting Pacific oysters.

Although Pacific oysters appeared to jump-start the industry in California and Oregon, the market for oysters had changed since the 1800s. Then, most of the states' residents came from the East, where oysters were a familiar and affordable food. By the 1930s, however:

> … the long period of scarcity, and immigration of many people from midwestern states, the California market was for the most part unaccustomed to oysters, and the early distributors of Pacific oysters had to build up a new market. Producers at Morro Bay and Elkhorn Slough had trouble marketing their oysters in the 1930s partly for this reason.

Also, the appearance and flavor of Pacific oysters did not necessarily appeal to that portion of the population that enjoyed eastern oysters.

Just as growers began to develop the market for Pacific oysters, United States entry into World War II stopped Pacific oyster seed shipments from Japan. In California and Oregon the industry was entirely dependent upon imported seed. The lack of seed to replenish existing oyster stocks, coupled with a shortage of workers during the war years, caused some small-scale operations to close.[51] In contrast, production in Washington fared better, largely because of very large natural sets of Pacific oysters during the unusually warm summers of 1936 and 1942 in Willapa Bay, Grey's Harbor, and Hood

[45] Paul Bonnot, "The California Oyster Industry," p. 68-75
[46] Although Bonnot initially did not think Morro Bay suitable for growing oysters, he was surprised at the success of 1932 plantings. And, despite the slow growth in the local oyster market, during World War II Morro Bay was the leading producer in the state. California Department of Fish and Game, *Fish Bulletin 123*, p. 67.
[47] Some success with native oysters had been achieved in Humboldt Bay by using methods employed in Puget Sound. Specifically, oysters were removed from their deeper natural beds and reefs and placed in diked beds in the tidelands to be used as brood stock. The dikes surrounding the beds retained water during the low tide, and the surfaces were 'hardened' by laying down shell to keep oysters from sinking into the mud. A successful set of seed was obtained in 1934 on artificial spat collectors. This success, coupled with the poor results from introduced eastern oysters and the absence of "imported pests," resulted in the decision to limit Humboldt Bay to growing native oysters. Paul Bonnot, "The California Oyster Industry," p. 69-70; California Department of Fish and Game, *Fish Bulletin 123*, p. 9.
[48] Paul Bonnot, "The California Oyster Industry," p. 71.
[49] Ibid.
[50] Paul Bonnot, "The California Oyster Industry," p. 72.
[51] Department of Fish and Game, *Fish Bulletin 123*, p. 49.

Canal.[52] Indeed, during the war years, Washington production remained strong, and actually peaked in 1946 at over 13,000,000 pounds of meat. In contrast, Oregon produced only 130,000 pounds and California 22,000 pounds.[53]

Shipments of Japanese seed resumed after World War II. Rather than rely on the Pacific Coast Oyster Growers Association, some large West Coast oyster growers, such as the Coast Oyster Company of South Bend, Washington, began to send buyers to Japan. American buyers, as well as seed inspectors from state agencies, spent substantial time in Japan, where they worked directly with Japanese oyster companies, most of which were located in Miyagi Prefecture about 250 miles north of Tokyo.[54] Oysters native to this area grew faster than more southerly varieties, making them the preferred seed for West Coast producers.

Between the end of World War II and the early 1960s, Pacific Coast oyster production paralleled earlier years, with Washington leading production and followed by California and Oregon. Although production remained fairly steady in Oregon, in the mid 1950s California's production increased by a factor of 250 percent. This jump was the result of the Coast Oyster Company's introducing Pacific oysters to Humboldt Bay in 1953. By the time oysters from early plantings reached the market in 1956, the Coast Oyster Company "had achieved a scale of operations and level of production far greater than any other California producer." Much of the success of the company's operation was due to the use of a hydraulic dredge for harvesting.[55] California's production would retain its position behind that of Washington for years to come.

The Oyster Industry Since 1960

Since the 1960s, private oyster growers and state agencies responsible for fisheries development have continued to experiment with and develop various aspects of the oyster industry. The methods used in oyster culture depend upon the physical characteristics of the production bay and the type of oyster predators located there, as well as the type of substrate (mud or sand), the strength of the current, the tidal velocity, and phytoplankton productivity.[56] In California, innovative growing techniques include a number of 'off-bottom' methods wherein oyster cultch (mother shells with young oysters or "spat" attached) is suspended above the ocean floor. Despite excellent results using Pacific spat suspended on tarred rope in Elkhorn Slough in 1929, little use was made of off-bottom culture until the early 1960s, when the Johnson Oyster Company introduced the method in Drakes Estero. After some experimentation, the company succeeded in adapting the Japanese system, using cultch strung on wires and suspended from racks made with pressure- treated wood. Eureka Oyster Farms also used off-bottom culture in Humboldt Bay. Today, many types of off-bottom methods are used, with variation in methods reflecting variation in the growing sites.[57]

In the 1970s, California growers began to experiment with "cultchless" seed. Instead of using whole or partial shells as cultch, hatcheries used tiny particles of ground shell or sand, which resulted in a large proportion of single oysters meant for the half-shell or raw oyster market.

Another advance in the industry has been the establishment of domestic oyster hatcheries. For many years, West Coast growers remained dependent upon Japan for a steady supply of Pacific oyster seed. However, in the early 1980s

[52] Jesse Hayes "Hayes Oyster Co. History," http://www.hayesoyster.com/history.html; Clyde L. MacKenzie, Jr. "History of Oystering in the United States and Canada, Featuring the Eight Great Oyster Estuaries" *Marine Fisheries Review*, (1996) *HighBeam Research.* (January 25, 2011). http://www.highbeam.com/doc/1G1-19847493.html
[53] Department of Fish and Game, *Fish Bulletin 123*, p. 6.
[54] Photographs taken in Watanotta, Japan in 1962, show Charles and Makiko Johnson, Kinjiro Takahashi, and a Mr. Dalton of the California DFG. Makiko Johnson private papers, Petaluma, California.
[55] Department of Fish and Game, *Fish Bulletin 123*, p. 69.
[56] California Department of Fish and Game, "Status of Fisheries 2008: 21 Culture of Oysters," p. 21-3. http://www.dfg.ca.gov/marine/status/report2008/oysters.pdf.
[57] Ibid, p. 21-4. In the mid 1990s, growers in Humboldt Bay switched from bottom-grown oysters to off-bottom techniques in order to reduce damage to eel grass.

hatcheries in Washington and Oregon began to produce Pacific oyster larvae that can be shipped directly to oyster producers, who place the larvae in tanks containing clean shell and heated sea water.

> In this process called remote setting, the larvae settle on clean oyster or scallop shell, called mother shell or cultch, attach and metamorphose into the more familiar flat young oyster called spat. Spatted cultch ultimately results in about 9 to 13 market-sized oysters clustered on remnants of the old mother shell.[58]

This development freed the West Coast oyster industry from dependence upon Japan and lowered the cost of oyster seed. Between the mid-1980s and the mid-1990s, the California oyster industry grew significantly, largely due to advances in hatchery technology and remote setting. Although the industry continues to experiment with different oyster varieties, Pacific oysters produced from domestic seed continue to dominate. Following historical trends, Washington still leads in West Coast oyster production, followed by California and Oregon.

A variety of factors has caused fluctuations in California oyster production since 1960. These include: "cyclic shellfish mortality caused by summer mortality syndrome (SMS), availability of seed oysters, economic conditions, and the financial stability of individual companies."[59] Between 1960 and 2008, production has varied between a low of 661,254 pounds in 1968 and a high of 2,310,286 pounds in 1994. Recurring SMS, extended closures caused by poor water quality, and a shortage of hatchery seed have all contributed to drops in production after 1994. A shortage of hatchery seed continues to be a problem.[60]

Oyster Farming in Drakes Estero

Commercial oyster farming in Drakes Estero began in the early 1930s, when the California Department of Fish and Game, in cooperation with private parties, experimented with Pacific seed oysters in the *estero*.[61] Successful plantings in 1932 and 1933 led to the creation of the original Drake's Bay Oyster Company. Based upon the success of the test plants, in 1934 the California Department of Fish and Game issued "Allotment No. 2" of the state water bottoms to David Dreier for the purpose of growing oysters. The following year, the state transferred the allotment to the Drake's Bay Oyster Company, Inc.[62] Formed on April 2, 1935 the company's three principals included O. V. Wykoff of San Francisco, Ernest H. Quayle of Inverness and Frank L. Crist of Palo Alto.[63] Of the company's operation in 1936 state fisheries biologist Paul Bonnot wrote:

> In common with most attempts to adapt exotic species to a strange environment, mistakes were made at first in the selection of suitable areas, but after several years of trial and error the merits and demerits of various parts of the bay have been determined. At present the beds are in a flourishing condition. Oysters have been marketed in increasing numbers from these beds for several years. The available growing area of the bay is extensive and there is still ample space for expansion.[64]

The company built a small "opening" plant in the *estero* in 1938, selling their fresh shucked oysters in San Francisco.[65] A 1930s photo, attributed to the California Department of Fish and Game, shows the original Drake's Bay Oyster

[58] California Department of Fish and Game "Status of Fisheries 2008: 21 Culture of Oysters" p. 21-5. http://www.dfg.ca.gov/marine/status/report2008/oysters.pdf
[59] Ibid.
[60] Ibid.
[61] The names associated with the state-issued allotments in Drakes Estero do not always correspond with the owners of the five-acre parcel of land containing the processing plant. The processing plant parcel (identified by the National Park Service as Tract No. 02-106) was not legally divided from the Heims Ranch until 1951, when it was purchased by Larry Jensen.
[62] Harding Appraisal Company, "Appraisal Report & Economic Study, Johnson Oyster Company, Point Reyes National Seashore, Point Reyes California," 1972.
[63] Articles of Incorporation for Drake's Bay Oyster Company, Inc., Corporation Number 162228, California State Archives, Sacramento, California. The relationship between Drier and the principals in the Drake's Bay Oyster Company remains unclear.
[64] Paul Bonnot, "Report on the California Oyster Industry for 1937," *California Fish and Game* 24, no. 2 (1938): p. 191-195.
[65] California Department of Fish and Game, *Fish Bulletin 123*, p. 63.

Company's plant, including a wooden dock built on pilings and at least two frame buildings.[66] The plant was located in Creamery Bay.[67] An Army Corps of Engineers map of the peninsula, drawn in 1940, shows buildings on the west bank near the mouth of the bay. A road and a telephone line linked the buildings with Sir Francis Drake Boulevard.[68]

The original Drake's Bay Oyster Company operated within Drakes Estero until about 1945. During the company's tenure, the oyster industry in California remained small relative to that of Washington. In some years, California production even trailed that of Oregon.[69] These trends suggest the overall climate within which the company operated. Production figures for Drakes Estero itself during this period are difficult to determine. Until 1950, official reports on oyster production combined Drakes Estero figures with those of oyster operations in nearby Tomales Bay. By the late 1930s and early 1940s, production from these two sites represented, depending upon the year, between 35 and 90 percent of California oyster production.[70] Drake's Bay Oyster Company was the only company operating in Drakes Estero at this time.

The subsequent demise, in 1946, of the original Drake's Bay Oyster Company may have been caused by world events. Seed shipments from Japan ceased during the years that the United States was involved in World War II (four of the company's ten years in Drakes Estero). This interruption, coupled with labor shortages, caused some small-scale oyster growers to close. It is unclear how or if these developments affected Drake's Bay Oyster Company. For whatever reason, in April of 1946 the Drakes Estero oyster allotment was transferred to Andrew L. "Larry" Jensen of Tomales. Two months later, the principals in the original Drake's Bay Oyster Company dissolved the corporation.[71]

Larry Jensen and his wife Mary operated the oyster business in Drakes Estero for about ten years. Initially, they may have used the Creamery Bay bottling plant built by the Drake's Bay Oyster Company. However in 1948, they purchased five acres on Schooner Bay from Edward and Hildegard Heims.[72] They paid $2,000 for the five acres and offered to purchase an additional ten acres north of the plant for expansion. At a cost of $10,000, they then built the road connecting the plant with Sir Francis Drake Boulevard through a new fourteen-foot-wide right-of-way.[73] A 1949 article in *Marin Magazine* indicates that Jensen had established a "new camp" (presumably in Schooner Bay) from which to farm Japanese seed oysters obtained from Puget Sound. However, working with Paul Bonnot, Jensen reported some success in getting natural sets of Japanese oysters in his Creamery Bay beds by erecting racks and shell dikes to catch the free-swimming oyster larvae. By using natural sets, Jensen hoped to avoid having to rely upon imported seed.[74] Little else is known about the

[66] Other than the Fish and Game photo, little is known of the appearance of the original plant. According to Makiko Johnson, when she and her husband took over the property in 1957, the residential area contained five small cottages or cabins, similar to the one remaining on site. Makiko Johnson, interview by Delia Hagen, Petaluma, CA, January 3, 2011.
[67] "Raising Oysters for Commercial Sale," August 20, 1949. *Marin Journal*, California Room, Marin County Free Library, San Rafael, California.
[68] Army Corps of Engineers "Special Map, Point Reyes, Calif.," 1940. Un-accessioned new acquisition, PRNS Archives.
[69] California Department of Fish and Game, *Fish Bulletin 123*, Table 1, p 5.
[70] Ibid, p. 10.
[71] Certificate of Dissolution, Drakes Bay Oyster Company, Inc., June 12, 1946, California State Archives, Sacramento, California. The certificate was signed by Morton Beebe (president), O. V. Wykoff, Frank Lee Crist (secretary), and Harley Grandstaff. Apparently, Earnest Quayle, one of the three original directors was no longer associated with the company.
[72] Edwin F. Jordan, "Appraisal of Real Estate, An Unimproved Parcel of Land Consisting of 1115 Acres of Land and Improvements County Assessor's Parcel Numbers 109-13-01, 109-13-02 & 109-14-08, Heims Ranch at Point Reyes, Marin County, California." 1962., Document # PORE 8051-583, Land Appraisal Records, File No. 1, Box 2, Land Appraisal Records, PRNS Archives. The original agreement between Heims and Jensen may have been a contract for deed. The actual deed transfer did not take place until February 2, 1951. Office of the Clerk and Recorder, book 657, page 354, Marin County Courthouse, San Rafael, California.
[73] Edwin F. Jordan "Appraisal of Real Estate An Unimproved Parcel of Land Consisting of 1115 Acres of Land and Improvements County Assessor's Parcel Numbers 109-13-01, 109-13-02 & 109-14-08, Heims Ranch at Point Reyes, Marin County, California." Document # PORE 8051-583, Land Appraisal Records, File No. 1, Box 2, Land Appraisal Records, PRNS Archives.
[74] "Raising Oysters for Commercial Sale," Another reference to new improvements comes from a notation on an archaeological site form completed in 1948. In it, the recorder mentions a 40 ft. by 30ft. by 6 ft. excavation for a "recently built cabin."Archaeological Site Survey Record, Mrn-296, 1948, Cultural Resource Program Files, PRNS.

Jensen operation. However, a 1950 photo of Jensen employees shows them picking oysters by hand at low tide and loading them into baskets.[75]

In April of 1954, Larry Jensen entered into an "agreement of sale" in which he sold the Jensen's "oysters, state oyster allotments, five acres of upland real property, and miscellaneous personal property," to Ralph P. Hayes (as buyer) and Verne Hayes (as guarantor), for $48,000.[76] Verne Hayes was a principal in Coast Oyster Company, and may have acted on its behalf in the agreement with Larry Jensen.[77] Three months later, Jensen officially transferred the oyster allotment to the Van Camp Sea Food Company. Van Camp, in turn, transferred the allotment to the Coast Oyster Company, on February 11, 1955.[78]

The transfer of the allotment to Coast Oyster Company prompted a review of, and reduction in, the size of the allotment. Testimony during state hearings on August 23, 1955, indicated that the area allotted in the *estero* for growing of oysters contained closer to 2,500 rather than 6,000 acres. The Coast Oyster Company agreed to a reduction in the size of the allotment to 1,175 acres, with the balance to be used for clamming and eel grass.[79] Although this seems at first glance like a huge reduction, it was not. The new figure was simply more accurate and still much larger than the area actually used for bedding oysters, which had always been a small proportion of the acreage available under the allotment.

It was Coast Oyster Company's interest in Drakes Estero that ultimately brought Charles W. "Charlie" Johnson to the area. According to his own account, Johnson first saw the oyster farm in 1955, when he worked as a seed buyer for Coast Oyster Company.[80] He would go on to found the Johnson Oyster Company, which operated the oyster farm in Drakes Estero until 2005.
Originally a wheat farmer from Oklahoma, during the Dust Bowl in the late 1930s, Johnson moved to Ocean Park, Washington—a small community on the west side of Willapa Bay. Johnson later recalled, "I arrived with $16.00 in my

[75] Carola DeRooy and Dewey Livingston, *Images of America: Point Reyes Peninsula, Olema, Point Reyes Station, and Inverness*. San Francisco: Arcadia Publishing 2008, p. 45
[76] Office of the Clerk and Recorder, "Decree Settling and Allowing First and Final Account, Allowance of Fees for Extraordinary Services, and Decree of Final Distribution," book 1200, page 322, Marin County Courthouse, San Rafael, California.
[77] Brothers, Sam and Verne Hayes (along with W. Arnold Waring) were principals in the Coast Oyster Company, which was established in 1946. "Hayes Oyster Co. History," http://www.hayesoyster.com/hiostory.html, (accessed 1/19/2011); Articles of Incorporation of Coast Oyster Company, Corporation Number 307265, California State Archives, Sacramento, California.
[78] Harding Appraisal Company, "Appraisal Report & Economic Study, Johnson Oyster Company, Point Reyes National Seashore, Point Reyes California," 1972, File: Tract 02-106, Central Files, PRNS.
[79] Ibid. California DFG documents describing the transfer of the allotment from Coast Oyster Company to Charles Johnson indicate that the lease contained 1,165 acres rather than the 1,175 acres referred to in the 1972 appraisal report. Another substantial change was made to the allotment in 1965 when that portion of Allotment No. 2 in Estero de Limantour (344 acres) was traded for 170 additional acres in Schooner Bay. The state assigned a new allotment number (72), to the additional acreage in Schooner Bay. This trade left 843 acres in Allotment No. 2. Together, the two allotments (Nos. 2 and 72) totaled 1,013 acres. In 1979, the state consolidated oyster allotments 2 and 72 into one, two-part allotment and assigned it number M-438-01. In a follow-up letter to Charles Johnson, a representative from CA DFG indicated that a close review of the lease description had shown that the allotment actually contained 1,060 acres. "Assignment, Transferring Allotment of State Water Bottoms for Oyster Culture No. 2," November 18, 1960; Director E. C. Fullerton to Charles W. Johnson, February 14, 1979, File: State Water Bottom Leases M-438-01, Aquaculture and Bay Management Project, Marine Region Aquaculture, California Department of Fish and Game (hereafter DFG), Eureka, California.
[80] According to Jesse Hayes, of the Hayes Oyster Company, his father (Sam) and uncle (Verne) established the Coast Oyster Company in Washington. In about 1954, Verne Hayes divided the company into three parts and opened it up to public ownership. Van Camp Sea Food Company wound up controlling the majority share, which it used to vote Verne Hays out as president of the corporation. Verne Hayes would go on to establish the very productive oyster operation in Humboldt Bay, trucking seed to California from Washington. He also was instrumental in the experimentation with and establishment of domestic oyster hatcheries that provided oyster larvae directly to growers, thus eliminating the dependence of the industry on imported Japanese seed. Jesse Hayes, interviewed by Janene Caywood, January 21, 2011.

pocket. Got a job for a year learning the oyster business then went into business for myself. Nine years later I had $125,000 in the bank and a whole bunch of other stuff."[81]

After the end of World War II, Johnson left Ocean Park to begin his work as a seed buyer, work which took him to Japan.[82] In 1956, in an interview conducted in Japan, Johnson described himself as a "managing director" for the Coast Oyster Company, then one of three large companies buying seed in Japan for the West Coast market.[83] Johnson spent about ten years in Japan. As a seed buyer, he traveled between Miyagi, Tokyo and Hiroshima, where he met directly with local fishermen.[84] In the course of his travels he met his future wife, Makiko Sato, who worked at the time as a telephone operator for the railroad.[85] The couple lived in Japan for about nine years before moving to California. In either 1957 or 1958, they took over the Drakes Estero oyster farm. Johnson paid some $100,000 for the operation ($75,000 for the allotment and $35,000 for existing oysters and buildings).[86]

Initially, Johnson may have had a partner in the Drakes Estero farm. In several instances Johnson suggested he was in partnership with one Charles Mel, a former president of Calo Pet Food, who Johnson said held the original allotment issued in 1934.[87] However in other instances, Johnson described the Johnson Oyster Company as a family-run business.[88] The articles of incorporation for the Johnson Oyster Company, filed on July 18, 1960, include only Charles W. Johnson (as president), his son, Charles B. Johnson, and John H. Painter as directors of the corporation.[89]

When Makiko and Charles Johnson moved to the oyster plant at Schooner Bay, existing improvements included the L-shaped processing plant, a frame building used for opening oysters, and the dock. In the residential area, there were five small cottages or cabins, presumably for employee housing.[90] By 1963, the Johnsons had built two additions to the processing plant. One served as a sorting room and the other contained restrooms. The sorting room may have been added because health regulations at the time required that opening operations be physically separated from packing operations.[91] Charles Johnson also converted an old house that was already on site for use as an office and warehouse. In

[81] "Farmer's Unusual Fishing Plan: The World Could Be His Oyster," *San Francisco Examiner*, May 16, 1976.
[82] In various newspaper and magazine articles, Johnson provides conflicting dates for some events, such as when he purchased the Drakes Estero plant.
[83] According to Jesse Hayes of the Hayes Oyster Company, when West Coast oyster growers were once again able to buy seed from Japan, they realized that in order to get the best seed at the best price they would have to go to Japan. Jesse Hayes email communication with Janene Caywood, January 26, 2011.
[84] **"**In Business Circles," unidentified newspaper clipping from 1956. Makiko Johnson private papers, Petaluma, California.
[85] "Strings of Oysters Grow in Watery Acres," unidentified newspaper article, no date. Makiko Johnson private papers, Petaluma, California.
[86] Harding Appraisal Company "Appraisal Report & Economic Study, Johnson Oyster Company, Point Reyes National Seashore, Point Reyes California." As part of the settling of Mary Jensen's estate, in 1962 the Superior Court of the State of California issued an order conveying the Drakes Estero property to Charles W. Johnson. The order included the five-acre parcel containing the oyster plant, the right-of-way corridor containing the access road, as well as personal property, including three oyster barges, four skiffs, three outboard motors, miscellaneous oyster equipment and tools, an oyster grading table in the shucking house, a salt-water pump and all furniture, furnishings and equipment located in a cabin. Language in the order indicates that the purchase agreement had originally been with another party. Office of the Clerk and Recorder, "Decree Establishing Fact of Death and Terminating Joint Tenancies in Real Property," book 1180, page 356, Marin County Courthouse, San Rafael, California.
[87] "Farmer's Unusual Fishing Plan: The World Could Be His Oyster,"; "Their World is an Oyster: They Grow 'Em Great Down on the Johnson Oyster Farm," *Vacaville Reporter*, June 6, 1982.
[88] "Farmer's Unusual Fishing Plan: The World Could Be His Oyster." In 1962, Charles W. and Makiko Johnson transferred title to all real and personal property acquired from the Mary Jensen estate to the corporation. Office of the Clerk and Recorder "Bill of Sale, Assignment and Transfer of Personal Property" book 1549, page 346, Marin County Courthouse, San Rafael, California.
[89] Articles of Incorporation of Johnson Oyster Company, Corporation Number 399692. California State Archives, Sacramento, California. In 1961, the principals modified the articles to increase the number of directors from three to five.
[90] Photos of Johnson Oyster Co's "cannery" and residential area improvements in 1958 and 1963. Makiko Johnson private papers; Makiko Johnson, interview by Delia Hagen, Petaluma, CA, January 3, 2011.
[91] California Department of Fish and Game, *Fish Bulletin 123, p*. 86.

the residential area, he and Makiko added on to one of the small cabins to create a larger building that functioned as their residence.[92]

Immediately after taking over operation of the oyster business, Johnson Oyster Company continued to use standard growing methods. When the tide was in, crews working from scows shoveled oyster seed onto beds that had been hardened by dumping old shell onto the bottom. When the oysters were large enough, they were transferred to fattening beds. These beds usually were "located in areas just off the main tidal channels where strong currents bring a plentiful supply of water and food."[93] The company used a unique air boat to navigate over soft mud, making it possible for employees to reach oyster beds at low tide. At the Johnsons' operation in the late 1950s:

> … the varied qualities of the 200 acres of beds make it necessary to transplant from some of them. The transplanting operation involves picking up young oysters from the seed beds at low tide, and then, when the tide comes in, taking them to fattening grounds and scattering them over beds there. Pacific oysters are harvested by hand, and at times a few eastern oysters, bedded in a deeper part of the estero, have been tonged. The oysters are collected in wire bushel baskets and carried to nearby scows. When the incoming tide floats the scows, they are towed to the packing plant on the shore of Schooner Bay inlet. The oysters are dumped onto a conveyor belt which carries them into a bin over the opening table inside the plant.[94]

From the 13 ft. by 6 ft. concrete bin, the oysters dropped to a 14 ft. by 8 ft. opening table, where six to eight workers (called "openers") removed the meat from the shell. The openers then passed the oyster meats on to the sorting room. Two women "sorters" segregated the oysters by size and packed them into glass jars which they sealed manually. Shell, discarded by the openers, was taken back to the *estero* to be spread over the bottom in the softest beds.[95]

As of May, 1961, the Johnson Oyster Company had twelve beds ranging in size from one to sixteen acres located throughout Creamery Bay, Schooner Bay, Berries Bay and Home Bay.[96]. These beds together totaled seventy planted acres. At that time, the company estimated that it had over nine million oysters in Drakes Estero. Production for 1962 was projected to be 25,000 gallons, and would increase to 40,000 gallons by 1964.[97] Most of these oysters were Pacific oysters grown from Japanese seed. Johnson had also begun to experiment with French, New Zealand, Olympia, and Kumomoto oysters.[98]

By the mid-1960s, Johnson Oyster Company also had beds in Bolinas Lagoon, in Tomales Bay, and in Moss Landing Bay.[99] Because of water quality, the fenced bed in Bolinas Lagoon was used only as a seed bed.[100] From Bolinas Lagoon, Johnson Oyster Company moved the oysters to fattening beds in the clean water of Drakes Estero, where they were kept

[92] Photos of Johnson Oyster Co's "cannery" and residential area improvements in 1958 and 1963. Makiko Johnson private papers. Johnson later reported that he and Makiko did the work on the house themselves for a cost of about $6,500. "Farmer's Unusual Fishing plan: The World Could Be His Oyster."
[93] California Department of Fish and Game, *Fish Bulletin 123, p*. 82.
[94] Ibid., p. 79-80.
[95] At Johnsons Oyster Company all of the sorting was done by two women. California Department of Fish and Game, *Fish Bulletin 123*, p. 86-88; Harding Appraisal Company, "Appraisal Report & Economic Study, Johnson Oyster Company, Point Reyes National Seashore, Point Reyes California."
[96] In documents from the early 1960s, Johnson sometimes calls Home Bay "Holm Bay," and Estero de Limantour "Laimore Bay."
[97] "Oyster Inventory on Beds in Drakes Bay as of May 1, 1962," This document appears to have been written to the directors of the new company. Makiko Johnson private papers.
[98] "Imported Oysters Not New in Marin, 'Hanging Cult' Keeps Them Alive," *Independent Journal*, October 8, 1963. Kumumoto oysters are native to more southerly parts of Japan. They are smaller and have a milder flavor than Pacific oysters and are preferred for the half-shell market.
[99] Johnson Oyster Company letterhead, Makiko Johnson personal papers.
[100] Sewage from the town of Bolinas discharged directly into the bay where the tides carried it to the vicinity of the oyster bed. At the time, state health regulations required that oysters in polluted water be kept in clean water for thirty days prior to sale. California Department of Fish and Game, *Fish Bulletin 123*, p. 64.

for more than thirty days.[101] In Tomales Bay, the company used a 150-acre plot east of Toms Point to grow Pacific oysters.[102] The beds by Moss Landing were intended for growing small, native (Olympia) oysters.[103]

In about 1962, the company began experimenting with the Japanese 'hanging cultch' method of growing oysters. Using this method, mother shells imported from Japan were strung on heavy wire. The strung wires were then transported into the *estero* and hung over wooden racks secured in the substrate of the bay. New infrastructure required by this method included the racks in the bay (built with treated timbers) and also a shelter in which to string the mother shell. Johnson built the stringing shed (a simple frame structure enclosed on three sides with plywood) at the edge of the high water mark, slightly north of the processing plant.[104]

Hand-drawn maps of Drakes Estero, printed on Johnson Oyster Company letterhead, show that by the mid 1960s there was at least one rack in Schooner Bay. Several other proposed racks were slated for the area within the main lagoon near the mouth of Creamery Bay. A floating rack was located in the main lagoon. Besides the racks, numerous beds lined the sides of the *estero*, including one fenced bed in Home Bay.[105] The author distinguished between "fatting" or fattening beds and seed beds, and among the latter, noted the location of seed planted in 1962, 1963, and 1964.[106]

After some initial failures with the hanging cultch method, Johnson brought a marine biologist, Kinjiro Takahashi, to Drakes Estero from Japan.[107] Takahashi determined that Johnson had been planting the oysters too close together. The company adapted its methods accordingly. Ultimately, Johnson attributed the success of the company's experiments with French oysters to the hanging cultch method, which reduced the mortality rate of baby oysters to about twenty percent compared with eighty percent or more in bottom culture.[108] Johnson predicted that he would be making seven times his yearly gross by 1967.[109]

Johnson Oyster Company marketed this abundant production in a variety of ways. Maikiko Johnson indicated that during the early years of operation, the company sold most of its product to the Coast Oyster Company plant in Humboldt Bay (operated by Verne Hayes).[110] Other sources indicate that in the 1960s, the company trucked fresh bottled oysters to wholesale seafood dealers in San Francisco, which in turn sold them to restaurants and other retail outlets. They also provided fresh oysters to two restaurants near Tomales Bay and sold directly to consumers from their packing plant adjacent to Schooner Bay.[111] Later, the sale of oysters directly to consumers appears to have been the major source of income for the company.

In 1972, the company sold the five-acre processing plant on Schooner Bay to the federal government. In a newspaper article, Charlie Johnson reported that he was paid $90,000 for the land, and retained a forty-two-year lease to continue

[101] California Department of Fish and Game, *Fish Bulletin 123*, p. 64.
[102] Ibid., Figure 13, p 57.
[103] "Mollusks Make a Comeback on the Shoreline of Marin: The Oysters at Drake's Bay," unidentified newspaper clipping, Makiko Johnson private papers.
[104] The stringing shed is located just outside the boundary of the five-acres originally developed for the processing facility.
[105] California Department of Fish and Game, *Fish Bulletin 123*, Figure 15, p. 62.
[106] Hand-drawn maps of Drakes Estero on Johnson Oyster Company letterhead, undated, Makiko Johnson private papers.
[107] According to Makiko Johnson, Kinjiro Takahashi was the son of a prominent oyster farmer in Japan, and married her sister, Keiko. Makiko Johnson, interview by Delia Hagen, Petaluma, CA, January 3, 2011.
[108] "Imported Oysters Not New in Marin, 'Hanging Cult' Keeps Them Alive,"; "Sea Air, Peace and Oysters," *San Francisco Tribune*, undated clipping; "A Fat Farm for 7 Million Oysters," unidentified newspaper clipping, Makiko Johnson private papers.
[109] "Mollusks Make a Comeback on the Shoreline of Marin: The Oysters at Drake's Bay."
[110] Makiko Johnson, interview by Delia Hagen, Petaluma, CA, January 3, 2011. Jesse Hayes stated that Verne Hayes' oyster farm in Humboldt Bay sold the majority of its product to large grocery chains. Johnson Oyster Company's decision to use a San Francisco distributor probably saved the company the cost of transporting the oysters north to Eureka which was the location of Verne Hayes' bottling operation. Jesse Hayes, telephone interview by Janene Caywood, January 21, 2011.
[111] California Department of Fish and Game, *Fish Bulletin 123*, p. 92-93.

oyster operations. He also stated that the lease agreement he was allowed to keep seven living units on the property (including both trailers and houses), for use as quarters for family members who helped run the oyster farm.[112]

Charlie Johnson continued to experiment with new products and techniques. In 1979, the company modified its state lease to use one acre for the cultivation of purple hinged rock scallops. The agreement with California Fish and Game specified that the scallops would only be cultivated on racks and in trays "which confine the animals therein."[113] However, Johnson Oyster Company's scallop production was far smaller than the production from its oyster operation, which they continued to refine. During their seed-buying trips to Japan, Charlie and Makiko traveled to other oyster growing areas, such as Hong Kong and the Philippines, to observe different oyster culture methods. At one point, the company experimented with oyster cultch on stakes, planted directly into parts of the bay with mud bottoms.[114] Johnson's faith in Japanese oyster-growing methods appears to have been well-founded: in 1981, he reported that the company had increase production from 600 pounds an acre to 50,000 pounds an acre.[115] It grew roughly sixty-five percent of its oysters with the hanging cultch method, with the remaining thirty-five percent grown on the bottom of the bay.[116]

Besides refining the hanging cultch method to the specific conditions in Drakes Estero, Johnson Oyster Company also updated its operation in response to industry-wide advances. After domestic hatcheries began to produce oyster larvae for sale to growers, the company integrated "off-site" setting into its production plant. By October of 1981, they had installed two, 4 ft. by 10 ft. larvae tanks at the edge of Schooner Bay. Charlie Johnson estimated that the new process would save the business $20,000 a year. Once again, he credited the company's biologist, Kinjiro Takahashi, with adapting the operation to incorporate the new process. [117]

After over thirty successful years of operation, the company began to experience difficulties in the late 1980s, mostly because of its noncompliance with state and county health and safety regulations. Since selling its five acres adjacent to Schooner Bay to the federal government, the company had been operating under a reservation of use and occupancy agreement with the National Park Service. Under the agreement the company could not erect "any permanent or temporary structure, sign or other improvement of any type whatsoever," without prior written approval from the National Park Service. As a result, when the Marin County Planning Department contacted Charlie Johnson in November of 1989 regarding violations of the Marin County Zoning Code, officials at PRNS also became involved. Violations included the enlargement of the sales room (a portion of the processing plant), and the installation of at least four mobile homes (for agricultural workers) without the appropriate permits. Apparently, the company had neither applied for county permits for the new construction nor notified the National Park Service of the additional mobile homes.[118]

By November of 1990, Johnson Oyster Company and the county planning department appear to have reached an agreement that would "legalize" the addition to the sales room and the additional employee trailers. Fees to cover the applications and permits were projected to be nearly $8,000. The most critical need was to expand the septic system capacity to accommodate the additional housing units.[119] PRNS Superintendent John L. Sansing indicated that although he could issue a permit for some additional land to accommodate a leach field, he could not "allow an endless expansion

[112] "A Fat Farm for 7 Million Oysters." The deed conveying the property to the federal government, executed on November 9, of 1972, indicates that the amount paid to Johnson Oyster Company was slightly less, $79,200. The agreement also states that the tenure of the lease was 40 years, not 42 years as indicated in the article. Folder 1 of 10, "L1425 Johnson Oyster CO," Central Files, PRNS.
[113] "Indenture of Lease," June 1979, File: State Water Bottom Leases M-438-02, Aquaculture and Bay Management Project, Marine Region Aquaculture, California Department of Fish and Game (hereafter DFG), Eureka, California.
[114] "Sea Air, Peace and Oysters"
[115] "Down on the Oyster Farm," *The Sacramento Bee*, March 19, 1981.
[116] "But Company Expanding on Pt. Reyes Peninsula," undated newspaper clipping, Makiko Johnson private papers.
[117] "Sea Rancher Gives Oysters New Start," *The Sacramento Bee*, June 14, 1983; "Their World is an Oyster They Grow 'em Great Down on the Johnson Oyster Farm," *Vacaville Reporter*, June 6, 1982.
[118] Debbie Poiani, Marin County Planning Department, to Charlie Johnson, Johnson Oyster Company, March 2, 1990, Acc # PORE-755, PRNS Law Enforcement Records, File 14, Box 4, PRNS Archives
[119] Debbi Poiani, Marin County Planning Department, to Tom Johnson, Johnsons Oyster Bed, November 7, 1990, Acc # PORE-755, PRNS Law Enforcement Records, File 14, Box 4, PRNS Archives.

of the trailer village" at the oyster plant. [120] Sansing suggested that the company should consider establishing an employee housing area outside the park. Ultimately, the Johnsons removed the noncompliant employee trailers from the site. They also removed the small second story addition above the sales room area of the processing plant.

Besides the county code violations at the processing plant, the company also increasingly faced criticism for some of its production practices.[121] The increasing popularity of the national seashore brought more recreational users to the shores of Drakes Estero. Some of them complained about the volume of plastic debris on the beaches that they perceived to result from oyster operations in the bay. Some also wondered about the effects of the oyster farm's activity on harbor seals (protected under the Marine Mammal Protection Act of 1972), which used mud flats in the *estero* as haul outs.

In 1991, the Environmental Health Division of the California Department of Health Services (CDHS), Environmental Health Division produced a management plan for commercial shell fishing in Drakes Estero.[122] The plan was intended to provide a mechanism for implementing harvest closures when the growing area did not meet approved water quality standards. Superintendent Sansing reviewed the plan and sent comments to the CDHS. Among other things, he suggested that the leased bed boundaries be changed by 50 to 100 yards to exclude parts of the shoreline, especially in the vicinity of Bull Point where visitors could access oyster "baskets" at low tide. He also did not want the oyster operation to use the mud flats near the mouth of the *estero* because of their importance to harbor seals and shorebirds. He wanted the plan to require the company to remove oyster racks on mud banks that were not in use and to remove the plastic lids and tubing that littered the bay.[123]

Brian Hunter, Region 3 Manager for the Department of Fish and Game, responded to Sansing. Hunter pointed out that CDHS lacked the authority to change the allotment boundary (which extended to the high water mark along the shoreline). He also noted that the area in question was an extremely productive part of the intertidal zone and represented a large part of the usable acreage of the allotment. Hunter called special attention to the importance of Bull Point to the oyster operation. With its firm bottom and strong currents, it was unique within the allotment and was used to grow and harden seed oysters. He suggested that the National Park Service install an informational sign that cautioned visitors about the consequences of gathering oysters: under state code they could be prosecuted for theft of agricultural products. Hunter also indicated that the company met with a department biologist about the harbor seals and that it was willing to modify its practices to avoid disturbing the animals. Finally, he stated that the company, by conducting regular shoreline patrols, had made a good-faith effort to remove plastic debris (of which less than 50 percent was attributable to the oyster operation).[124]

In 1996, the Johnson Oyster Company hired Charles Desler, an architect from Placerville, to develop a plan to bring the facility into compliance with federal, state, and county health and safety codes. The plan included rehabilitation of the dock, the stringing shed, and a seed-setting building. It called for removal of the original processing plant and proposed its replacement with a new two-story building located about 100 feet from the water's edge. Two new leach fields were also part of the plan, one for the disposal of oyster wash water and the other for the residential area septic system. Charlie and Makiko Johnson's house (and associated garage), four modular (mobile) homes and the building known as the "cabin" were to remain.[125]

[120] John L. Sansing, Superintendent, to Debbie Poiani, Marin County Planning Department, July 2, 1991. Acc # PORE-755, PRNS Law Enforcement Records, File 15, Box 4, PRNS Archives.
[121] Charlie Johnson had long complained about environmental regulations that he felt hindered the development of the industry in general and his business in particular.
[122] California Department of Health Services, Environmental Health Division, "Management Plan for Commercial Shellfishing in Drakes Estero, California," 1991, Acc # PORE-755, PRNS Law Enforcement Records, File 15, Box 4, PRNS Archives.
[123] John L. Sansing, Superintendent PRNS, to Kenneth H. Hansen, California Department of Health Sciences, March 19, 1991, Acc # PORE-755, PRNS Law Enforcement Records, File 15, Box 4, PRNS Archives.
[124] Brian Hunter, Regional Manager CA DF&G, to John Sansing, Superintendent PRNS, August 21, 1991, Acc # PORE-755, PRNS Law Enforcement Records, File 15, Box 4, PRNS Archives.
[125] Johnson Oyster Company Point Reyes National Seashore, Plot Plan, December 30, 1996, Acc # PORE-583 Johnson Oyster Co. Plot Plan, File No. 3330, PRNS Archives.

PRNS prepared an Environmental Assessment of the company's plan. During the environmental review process, many groups commented on the plan. Some supported the project. Others raised questions about the consequences of allowing oyster operations in Drakes Estero to continue at all. In August of 1998, the National Park Service issued a finding of no significant effect (FONSI), which permitted the project to move forward. With the exception of some work on the leach fields the Johnson Oyster Company, never took the project beyond the planning stage.

Throughout the controversy with the county and the subsequent planning process, the Johnson Oyster Company continued to cultivate and sell oysters. Between 1985 and 1995, production remained consistently high, fluctuating from lows around 450,000 pounds to a high of over 769,590 pounds. During peak production in 1995 the Johnson Oyster Company produced thirty-five percent of all oysters in California.[126] Over the next five years, however, production declined markedly. In the year 2000, the Johnson Oyster Company produced only 34,094 pounds of oyster meat. Several factors contributed to the decline, among them the ongoing struggle to comply with health and safety regulations. Sometime before 2005, in response to health department concerns, the company stopped opening and bottling oysters on site. It did, however, continue selling fresh oysters to retail customers.[127]

In 2005, Kevin Lunny purchased the Johnson Oyster Company operation. Lunny had grown up nearby on a beef and dairy cattle ranch across the bay from the oyster plant. With several family members, he established the new "Drakes Bay Oyster Company." Some changes have been made since the Drakes Bay Oyster Company assumed control of the operation. For one, workers disconnected a portion of the old conveyor that moved oysters from the floating dock to the dormer in the roof of the processing plant. More significantly, the opening and bottling functions have been brought back to the site. They are housed in a temporary structure—a shipping container modified for that purpose. As of 2009, oyster production had climbed to slightly over 300,000 pounds.[128] This reinvigorated production includes oysters grown using the hanging cultch method (introduced by Johnson Oyster Company in the early 1960s) as well as cultch-less oyster culture, using new technology to set single oyster larvae on site.[129]
A summary of the oyster companies operating in Drakes Estero, including the dates of operation and the names of the principals, are included in the following table.

Company Name	Dates of Operation	Owners/Directors/Officers
Drake's Bay Oyster Company	1936*-1946 *Date of incorporation. Experiments with Pacific seed began in 1932.	O. V. Wykoff; Ernest H. Quayle; Frank L. Crist; Morton Beebe, Harley Grandstaff.
Jensen Oysters	1946-1955	Andrew L. "Larry" and Mary Jensen
	1955-1957 (approximate)	San and Verne Hayes The Hayes may have operated

[126] Charles H. Peterson et al., *Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California*, p. 18; California Department of Fish and Game; "Status of Fisheries 2008: 21 Culture of Oysters," Table "Oyster production and value, 1950-2008," p. 2-13 to 2-14. Note that the California DFG is currently in the process of recalculating oyster production figures for the entire state. This recalculation is based upon state tax records that have recently become available.
[127] Inspectors worried that oysters might get caught in the bin above the opening table, where they would spoil. For a time, the opening and bottling function moved to Santa Rosa. Kevin Lunny, interview with Janene Caywood, Inverness, CA, December 9, 2010; "Grown in Marin," *The Point Reyes Light*, January 20, 2005.
[128] Charles H. Peterson et al., *Shellfish Mariculture in Drakes Estero, Point Reyes National Seashore, California*, p. 18.
[129] Prior to the Lunny family's acquisition of the facility, Johnson Oyster Company purchased single oyster seed from hatcheries and placed them in the bay to mature. Kevin Lunny, email communication with Janene Caywood, February 1, 2011. A 2008 California DFG report indicated that Drakes Estero had one of the largest off-bottom rack culture systems in use along the West Coast. California Department of Fish and Game, "Status of Fisheries 2008: 21 Culture of Oysters," by Thomas O. Moore and James D. Moore, p. 21-4. http://www.dfg.ca.gov/marine/status/report2008/oysters.pdf.

		the Drakes Estero plant under the name of the Coast Oyster Company of California.
Johnson Oyster Company* *Note that the corporation was not formed until 1960	1957 (approximate)-2005	Charles W. "Charlie" Johnson, Charles B. Johnson, John H. Painter
Drakes Bay Oyster Company	2005-Present	Lunny family

9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form.)

Published Sources

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----- "Report of the California Oyster Industry for 1937." *California Fish and Game* 24, no. 2 (1938), p. 191-195.

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Government Documents

Livingston, Douglas S. [Dewey]. "Ranching on the Point Reyes Peninsula: A History of the Dairy and Beef Ranches within Point Reyes National Seashore, 1834–1992." Point Reyes National Seashore, National Park Service, 1993

McClelland, Linda Flint, J. Timothy Keller, Genevieve P. Keller and Robert Z Melnick, "Guidelines for Evaluating and Documenting Rural Historic Landscapes," *National Register Bulletin 30*, US Department of the Interior, National Park Service, Interagency Resources Division, 1990

Page, Robert R., Cathy Gilbert and Susan Dolan. *A Guide to Cultural Landscape Reports: Contents, Process and Techniques* (Washington D. C., U.S. Department of the Interior, National Park Services, Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, 1998.

Archival Collections

Johnson, Makiko. Private papers. Petaluma, California.

Office of the Clerk and Recorder, Marin County Courthouse, San Rafael, California.

Johnson Oyster Company
Name of Property

Marin County, California
County and State

Office of the Secretary of State, California State Archives.

Point Reyes National Seashore Archives. Point Reyes Station, California.

Previous documentation on file (NPS):

___ preliminary determination of individual listing (36 CFR 67 has been requested)
___ previously listed in the National Register
___ previously determined eligible by the National Register
___ designated a National Historic Landmark
___ recorded by Historic American Buildings Survey #_____
___ recorded by Historic American Engineering Record # _____
___ recorded by Historic American Landscape Survey # _____

Primary location of additional data:

___ State Historic Preservation Office
___ Other State agency
_X_ Federal agency
___ Local government
___ University
_X_ Other
Name of repository: Point Reyes National Seashore Archives

Historic Resources Survey Number (if assigned): N/A

10. Geographical Data

Acreage of Property 1065.5
(Do not include previously listed resource acreage.)

UTM References
(Place additional UTM references on a continuation sheet.)

	Zone	Easting	Northing		Zone	Easting	Northing
1				3			
2				4			

Verbal Boundary Description (Describe the boundaries of the property.) N/A
Boundary Justification (Explain why the boundaries were selected.) N/A

11. Form Prepared By

name/title Janene Caywood & Delia Hagen
organization CRCS date March 21, 2011
street & number PO Box 8753 telephone 406 728-9190
city or town Missoula state Montana zip code 59807
e-mail crcs@montana.com

Johnson Oyster Company | Marin County, California
Name of Property | County and State

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** (7.5 or 15 minute series) indicating the property's location.

  A **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.

- **Continuation Sheets** (33-65**)**

- **Additional items:** (Check with the SHPO or FPO for any additional items.)

Photographs:

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map.

Name of Property: Johnson's Oyster Company

City or Vicinity: Inverness vicinity

County: Marin State: California

Photographer: C. Milo McLeod and Janene Caywood

Date Photographed: December 9 and 11, 2010; March 14, 2011

Description of Photograph(s) and number: (see continuation pages)

Property Owner:

(Complete this item at the request of the SHPO or FPO.)

name _____

street & number _____ telephone _____

city or town _____ state _____ zip code _____

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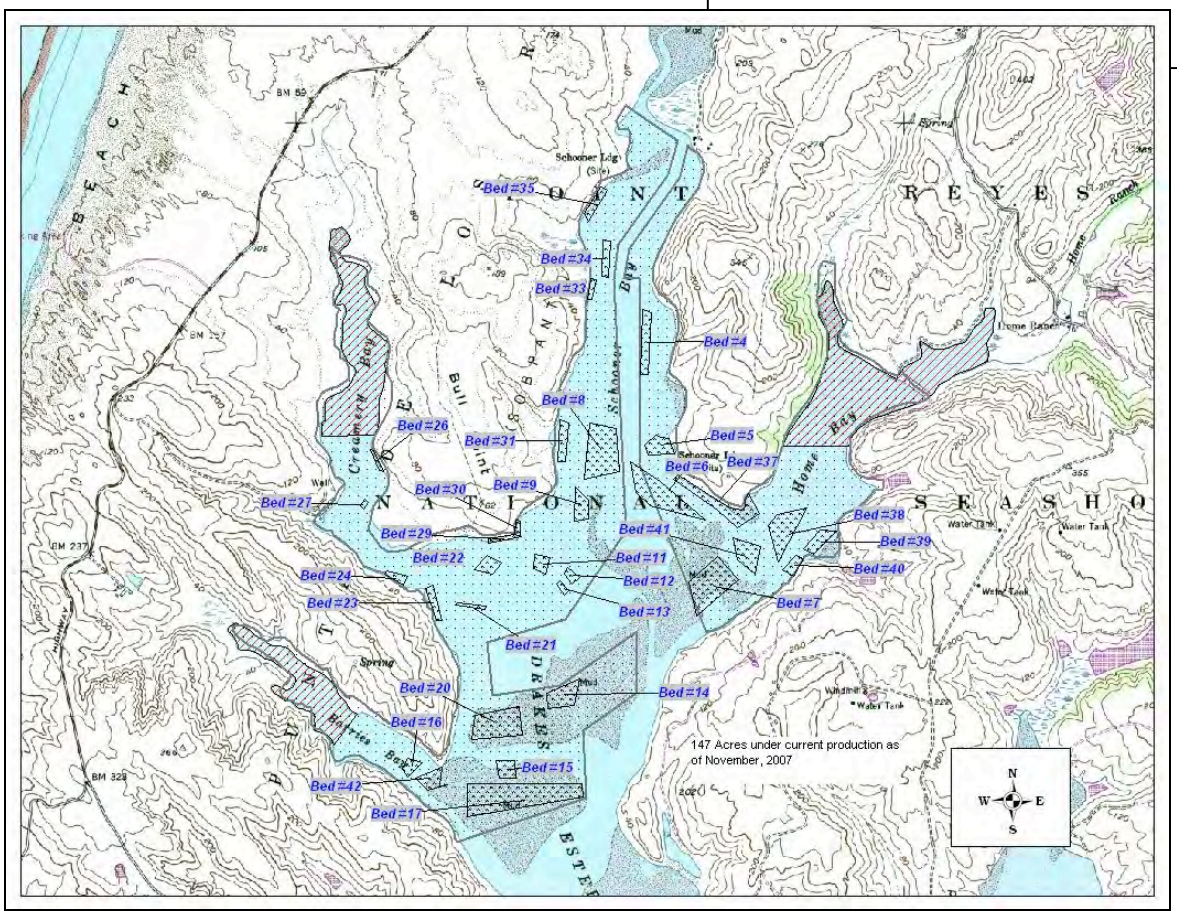

Map of Drakes Estero Oyster allotments (leases) showing location of oyster beds as of 2007.
Racks are associated with bed numbers 4, 6, 8, 9, 11, 12, 13, 21, 22, 34, 38 and 41.
Map provided by Kevin Lunny.

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Historical Photographs

Looking southwest from edge of Schooner Bay to processing plant and residential area.

Enlargement of Point Reyes National Seashore Museum (PRNSM), Historic Photo Research Collection (HPRC) No. 3890, "Johnson Oyster Co.," date unknown.

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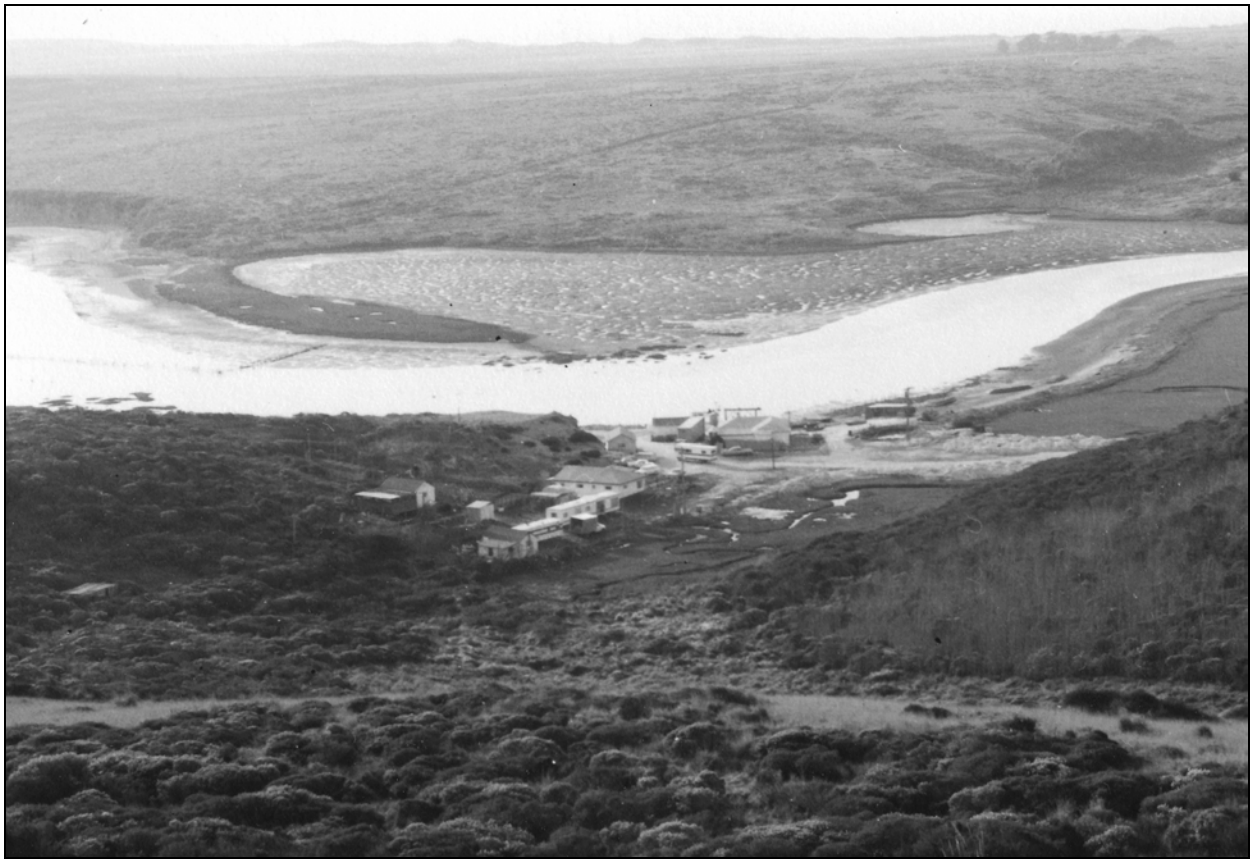
Historical Photographs continued



Enlargement of PRNSM HPRC No. 3880 “Johnson Oyster Co.,” date unknown.
Looking northeast from the hill above the oyster plant. This picture probably post-dates the early 1960s, because the stringing shed is present. The three double-wide trailers have not been added to the complex, but there are at least two single-wide trailers on site.

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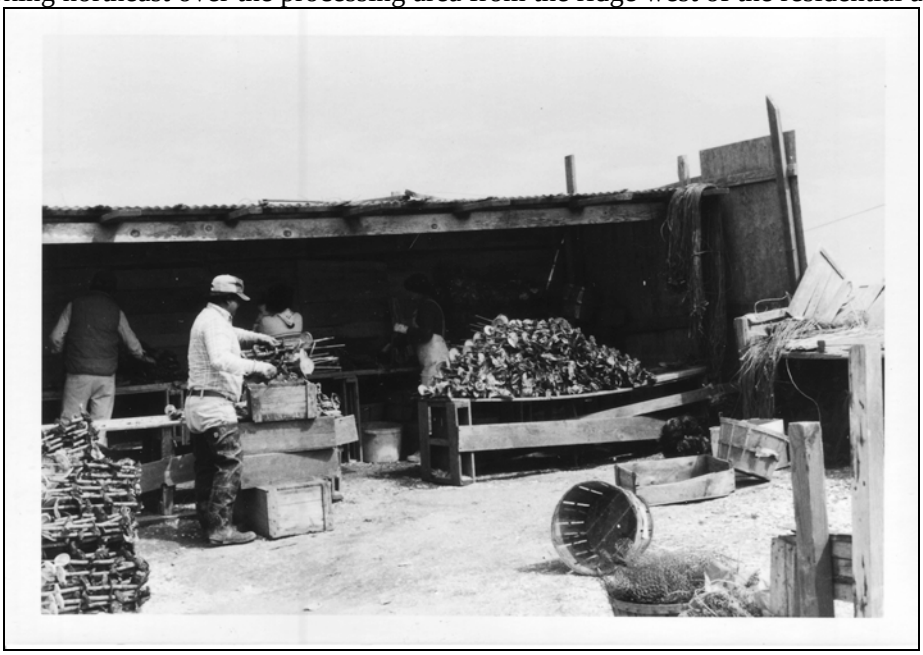
Historical Photographs continued

PRNSM HPRC No. 38260.1 “Johnson Oyster Co.,” 1971.
Looking northeast over the processing area from the ridge west of the residential area.



PRNSM HPRC No. 3870 “Johnson Oyster Co.,” 1971.
Looking northeast to the stringing shed.

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Historical Photographs continued

PRNSM HPRC No. 3770 Johnson Oyster Co., date unknown (probably 1971)
Charles W. and Makiko Johnson in front of the conveyor leading to the shucking room.

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Historical Photographs continued

Drakes Estero oyster packing plant in the 1930s.
(probably the Drakes Bay Oyster Company plant in Creamery Bay.)
California Department of Fish and Game photograph.
California Department of Fish and Game, *Fish Bulletin 123*, p. 64.

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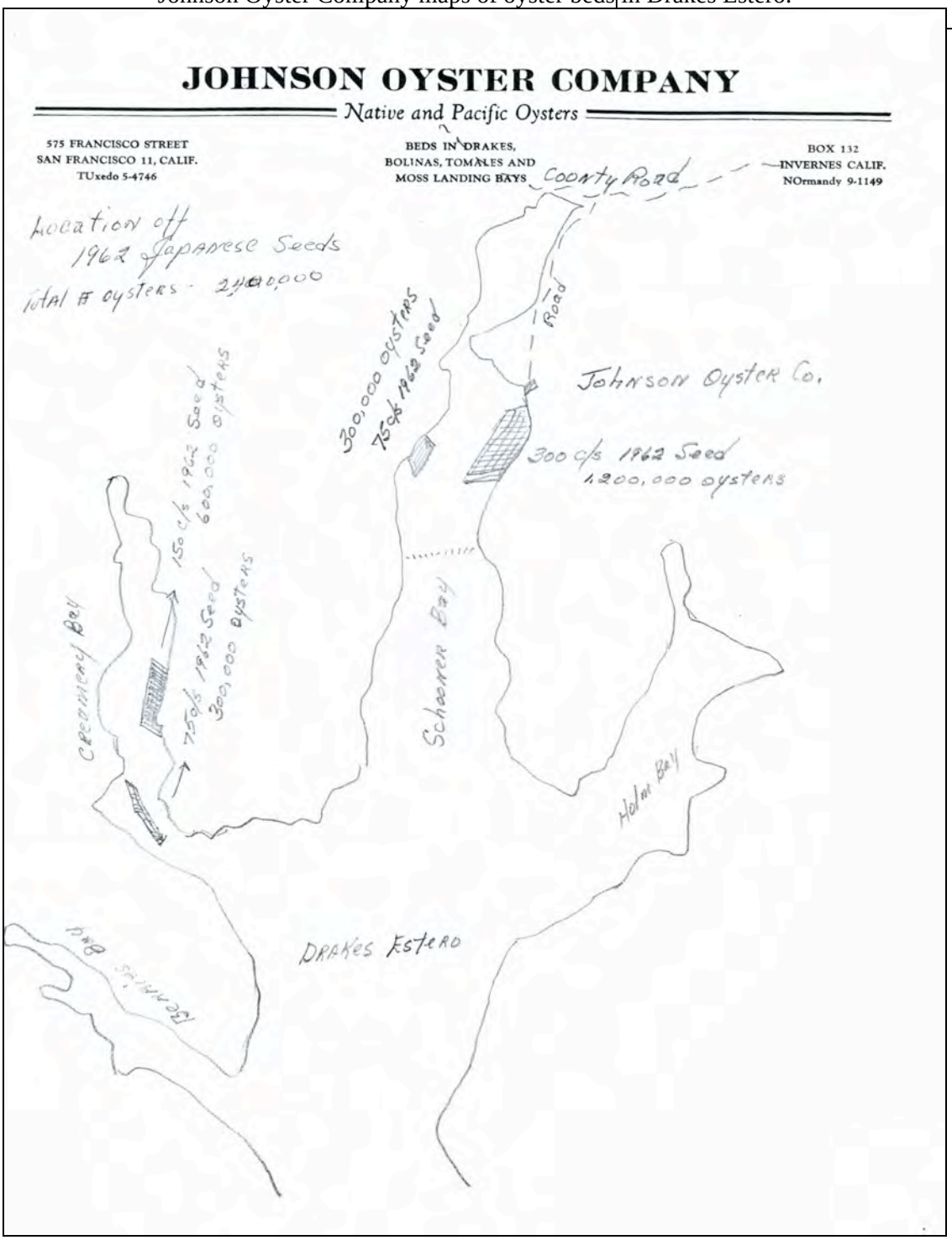
Johnson Oyster Company maps of oyster beds in Drakes Estero.



Makiko Johnson private papers.

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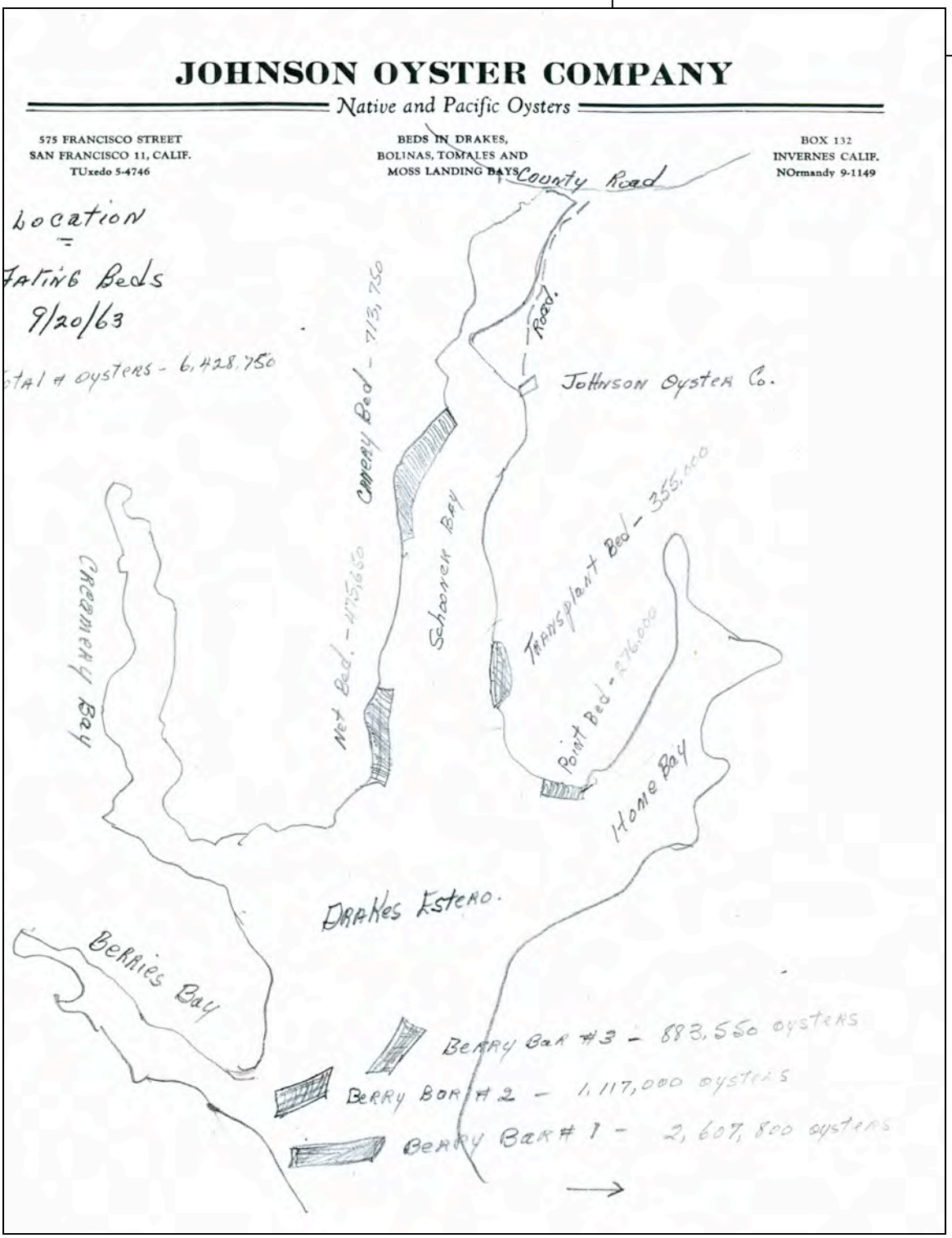

Makiko Johnson private papers

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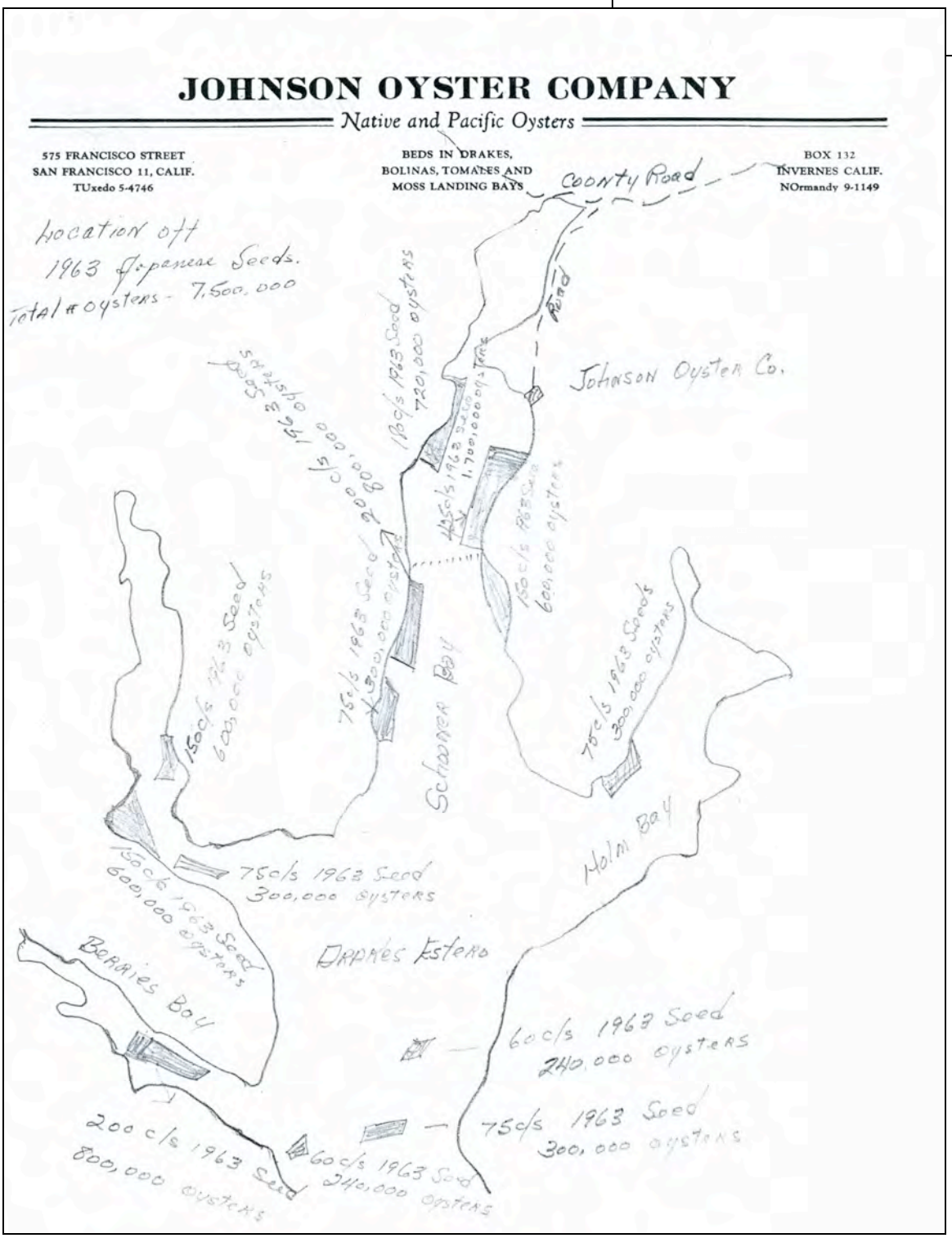

Makiko Johnson private papers

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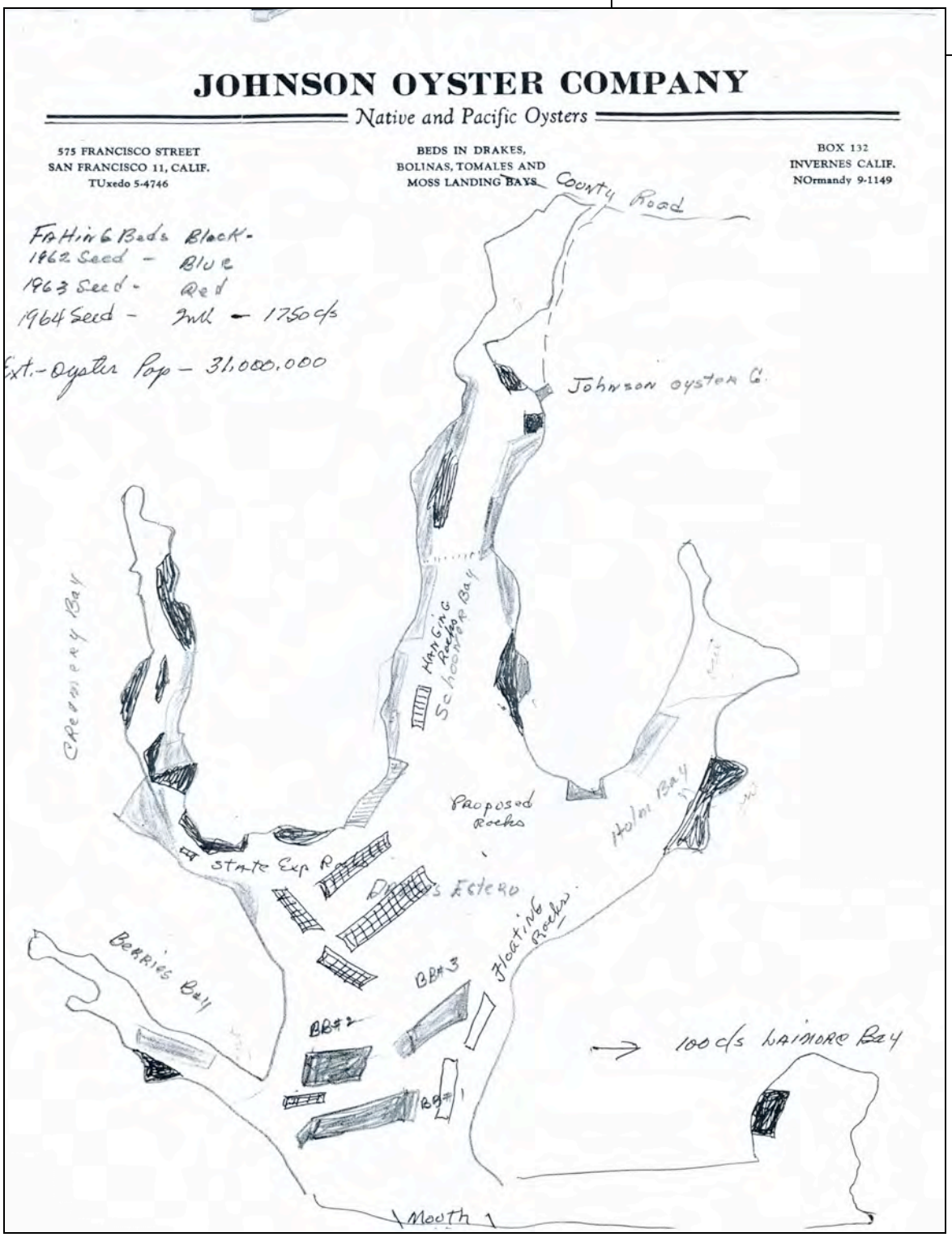

Makiko Johnson private papers

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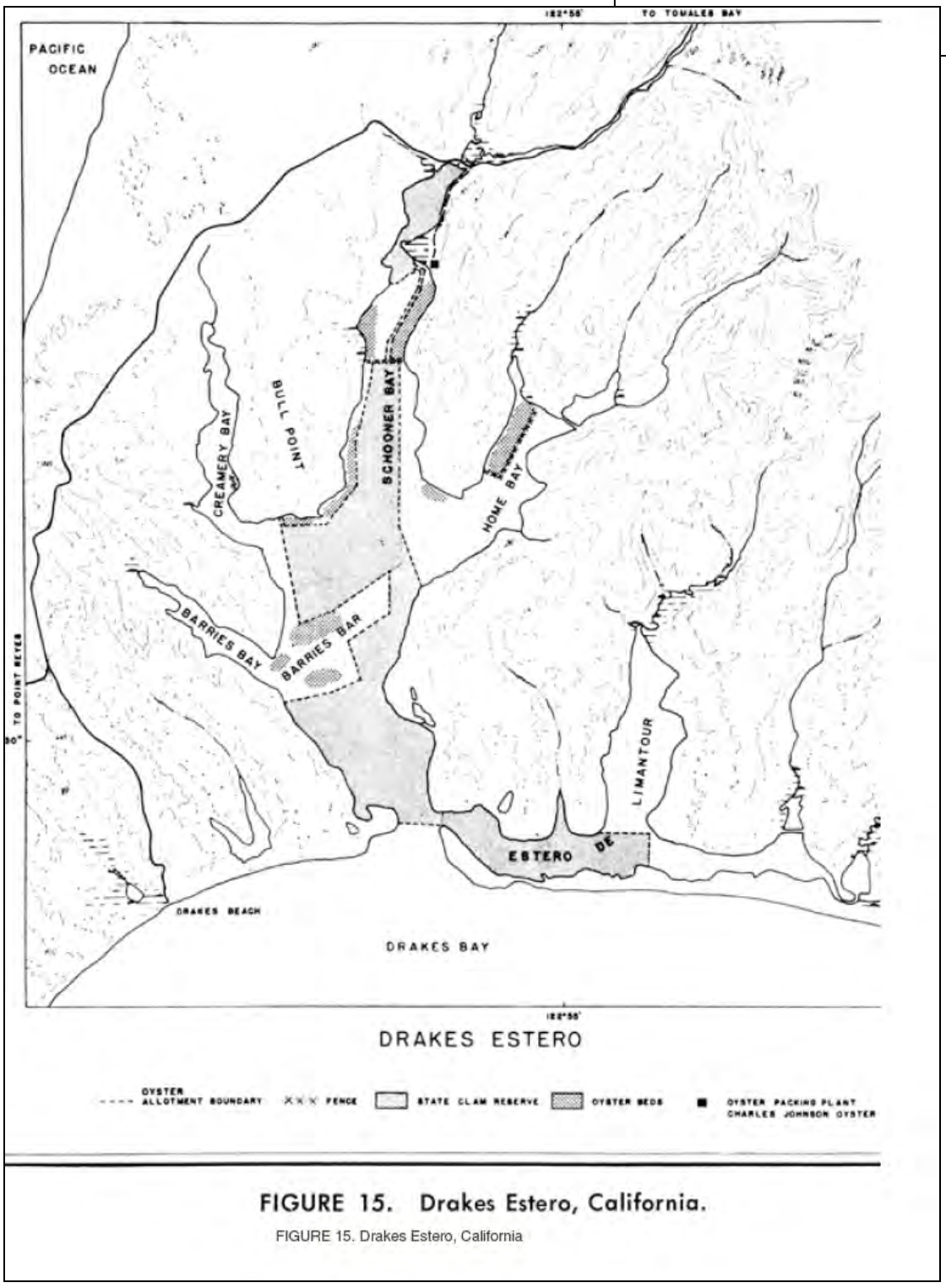

FIGURE 15. Drakes Estero, California.

FIGURE 15. Drakes Estero, California

Map showing the oyster allotment in Drakes Estero in the late 1950s.
California Department of Fish and Game, *Fish Bulletin 123*, p. 62.

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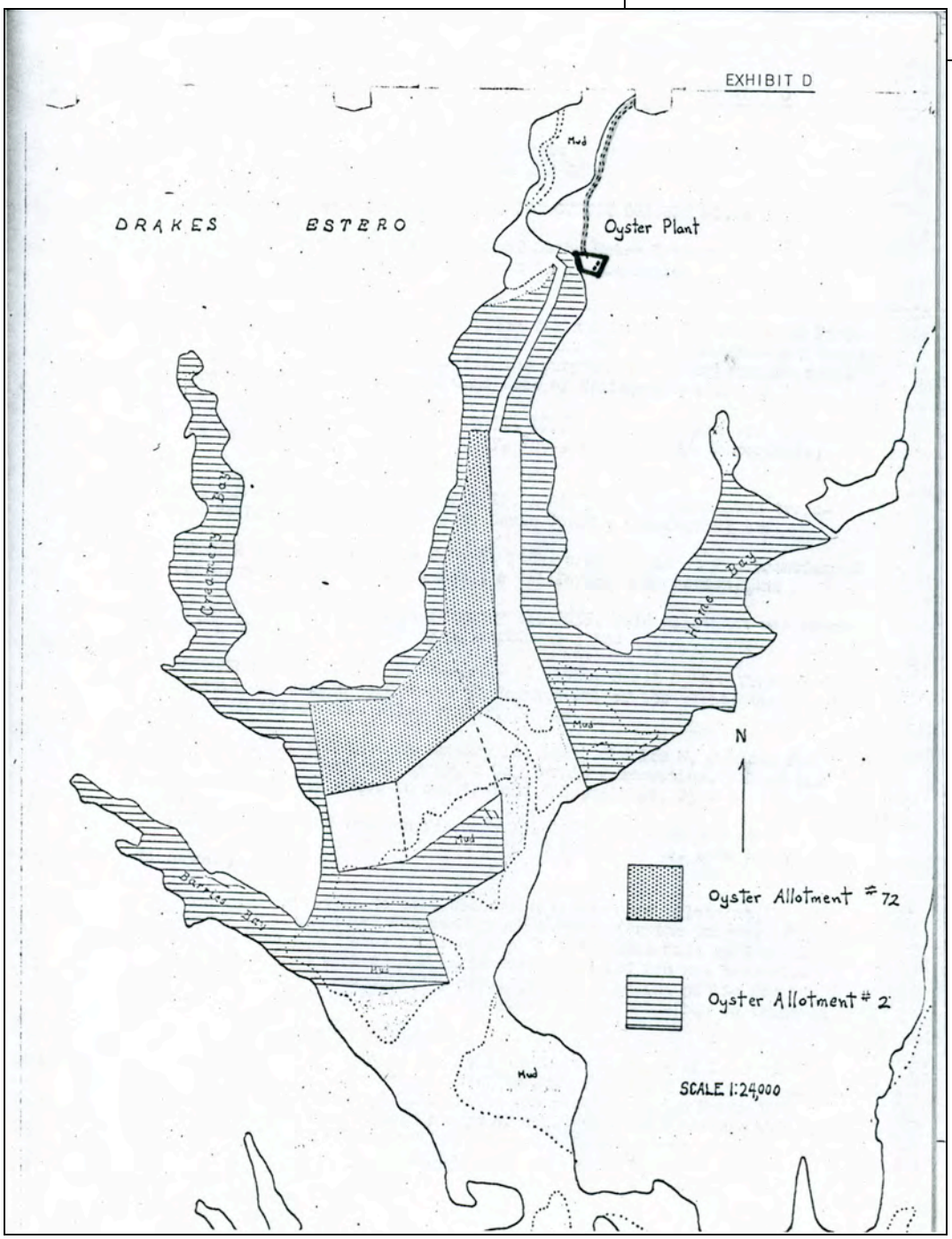

Oyster allotments in Drakes Estero in 1972. (Exhibit D from Harding Appraisal Company "Appraisal Report & Economic Study, Johnson Oyster Company, Point Reyes National Seashore, Point Reyes California," 1972, File: Tract 02-106, Central Files, PRNS)

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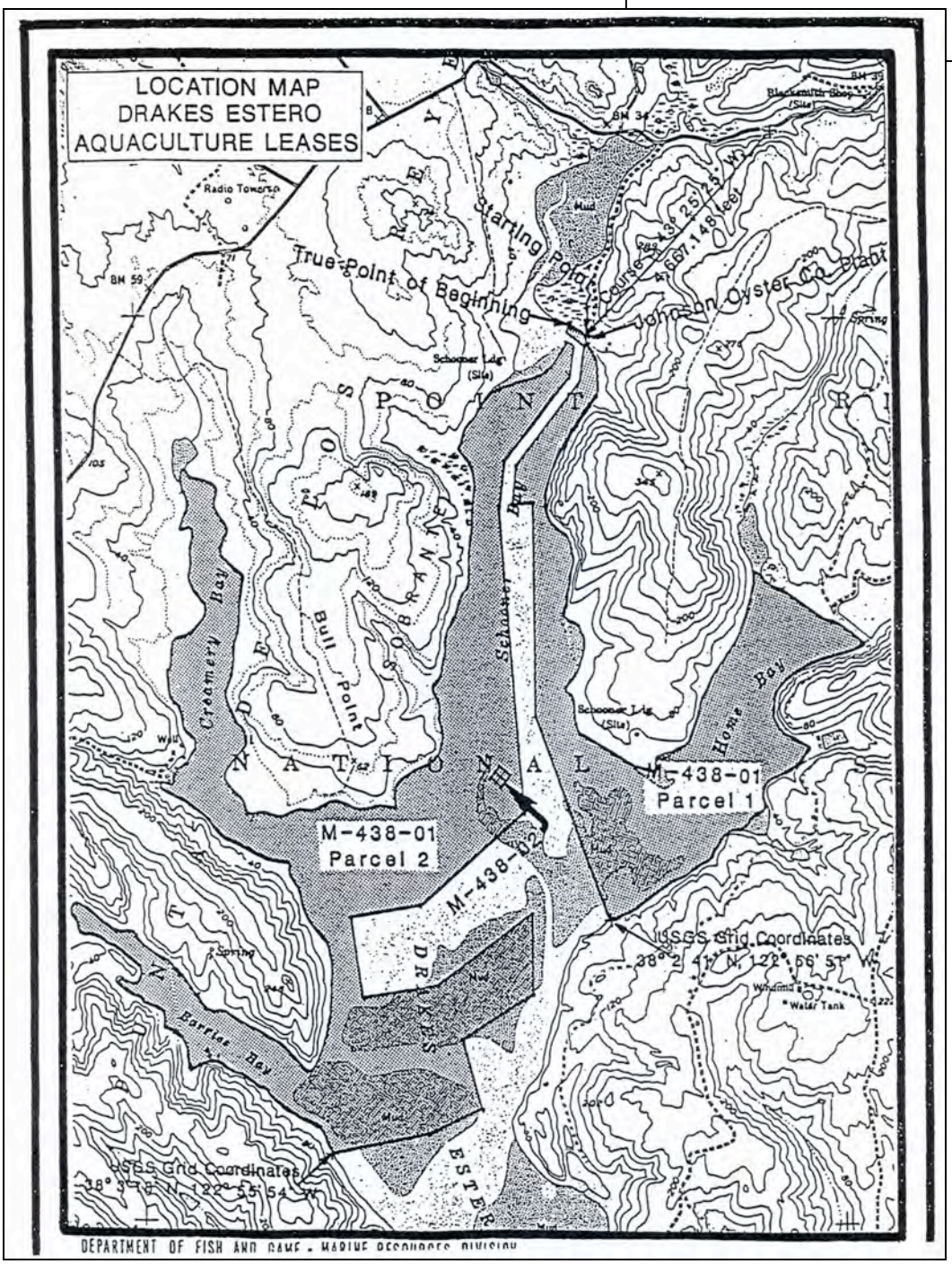

Graphic shows the two parcels associated with Lease No. M-438-01 and the one acre designated for scallop culture M-438-02 as of 2005. "Amendment No. 2 to Indenture of Lease" File: State Water Bottom Leases M-438-01, Aquaculture and Bay Management Project, Marine Region Aquaculture, California DFG, Eureka, California.

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Current Photographs

Photo 1. Looking southwest along the oyster plant access road

Photo 2. Looking northwest along the oyster plant access road where is skirts the marsh.

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Current Photographs

Photo 3. Looking north over the processing area: Processing plant in center, public boat launch parking at top of photo, left of access road.

Photo 4. Looking southeast to the residential area. Main house in front, right of center

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Current Photos continued:

Photo 5. North and west sides of the processing plant. View to SE

Photo 6. South wall of processing plant, View to NNW

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Current Photos continued:

Photo 7. East wall of the processing plant.

Photo 8. East and north walls of the office/warehouse.

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Johnson Oyster Company
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Current Photos continued:

Photo 9. West and south walls of the office/warehouse.

Photo 10. South and east walls of the shop.

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Current Photos continued:

Photo 11. North and west walls of the shop showing the plywood addition.

Photo 12. Looking northwest to the stringing shed. Note the roof damage.

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Current Photos continued:

Photo 13. Looking southeast to the rear of the stringing shed and the privacy fence.

Photo 14. Looking west over the pier from the vicinity of the shop. Note conveyor.

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Current Photos continued:

Photo 15. Looking west to the floating dock. Loaded barges are parked next to the dock.

Photo 16. Looking NW to the concrete bollards in front of the processing plant.

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Current Photos continued:

Photo 17. Oyster larvae tanks. View to northwest.

Photo 18. Row of six abandoned fiberglass tanks.

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Current Photos continued

Photo 19. Shell punching shed, view to east.

Photo 20. Looking SSE to shell storage area.

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Current Photos continued

Photo 21. Shipping container modified to house the cannery.

Photo 22. Northeast and northwest walls of the main house.

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Current Photos continued

Photo 23. Southwest wall of the main house, taken from ridge top west of residential area.

Photo 24. Northwest and southwest sides of the workshop.

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Current Photos continued

Photo 25. Northeast wall of the cabin. Note the original and subsequent additions.

Photo 26. Northwest and southwest walls of the cabin.

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Current Photos continued

Photo 27. First of three double-wide mobile homes in the residential area. View to SW.

Photo 28. Second of three double-wide mobile homes in the residential area. View to SE.

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Current Photos continued

Photo 29. Third of three double-wide mobile homes in the residential area. View to NW.

Photo 30. Mobile trailer used as business office. View to SW.

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Current Photos continued

Photo 31. Looking southeast to the front wall of the well house.

Photo 32. Oyster rack in Drakes Estero.

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Current Photos continued

Photo 33. Detail of tag marking rack

Photo 34. Overview of rack in disrepair.

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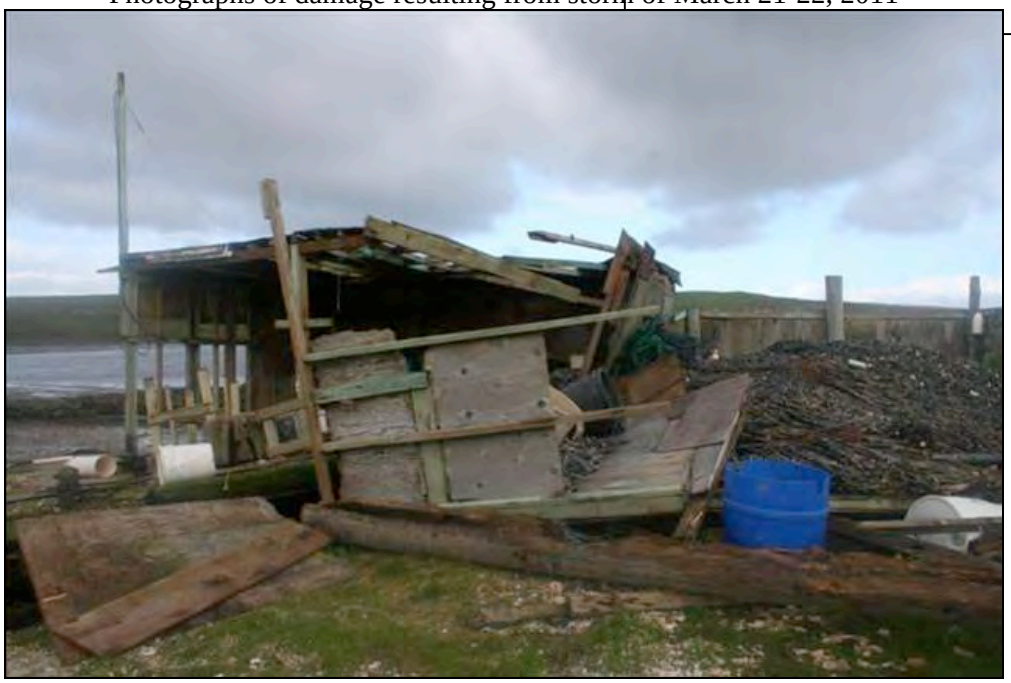
Photographs of damage resulting from storm of March 21-22, 2011



Damaged stringing shed, looking northwest.

Destroyed floating dock and damaged pier, looking southeast.

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Damaged secondary dock, looking north.

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