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STATE OF CALIFORNIA—THE RESOURCES AGENCY

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Staff: Robert Merrill
Staff Report: December 20, 1996
Hearing Date: January 9, 1997
Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 1-96-30

APPLICANTS: **THE NATURE CONSERVANCY AND THE
MANILA COMMUNITY SERVICES DISTRICT**

PROJECT LOCATION: At two separate locations along the Samoa Peninsula at (1) the Lanphere Christensen Dunes Preserve west of Lanphere Road and (2) in Manila approximately 300 feet west of the intersection of Orange Drive and Peninsula Drive, Humboldt County, APNs 506-201-05 and 400-161-01.

PROJECT DESCRIPTION: Restore dunes and manage dune vegetation by grading, controlled burning, and replanting of native vegetation.

LOCAL APPROVALS RECEIVED: Humboldt County Coastal Development Permit No. CDP-68-95 was approved November 7, 1996, for the portion of the project outside of the Commission's retained jurisdiction. No local approvals are required for the portion of the project within the Commission's jurisdiction.

OTHER APPROVALS REQUIRED: (1) State Lands Commission; and
(2) U.S. Army Corps of Engineers Section 404 Approval.

SUBSTANTIVE FILE DOCUMENTS: (1) Humboldt County Local Coastal Program; and
(2) California Coastal Resource Guide.

STAFF NOTES

1. Standard of Review

The overall project is proposed partially within the Commission's retained jurisdiction and partially within the coastal development permit jurisdiction of Humboldt County. The County has already approved a coastal development

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permit for the portion of the project within its jurisdiction. The subject of Application No. 1-96-30 is limited to the portion of the project within the Commission's jurisdiction. Thus, the standard of review that the Commission must apply to the project is the Coastal Act.

SUMMARY OF STAFF RECOMMENDATION:

Staff recommends approval of the proposed project with conditions requiring the submittal of evidence that the project has received necessary approvals from the State Lands Commission and the U.S. Army Corps of Engineers, and the submittal of monitoring reports that the applicants have proposed to prepare as part of the project. The objective of the project to remove invasive exotic vegetation from the sensitive beach and dune habitat is consistent with Coastal Act goals to maintain, enhance and restore coastal resources. The proposed excavation and filling work within the Commission's jurisdiction will have no significant adverse effects. Therefore, staff believes the proposed project, as conditioned, is consistent with the Coastal Act and recommends approval.

STAFF RECOMMENDATION:

The staff recommends that the Commission adopt the following resolution:

I. Approval with Conditions.

The Commission hereby grants a permit, subject to the conditions below, for the proposed development on the grounds that the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, is located between the sea and the first public road nearest the shoreline and is in conformance with the public access and public recreation policies of Chapter 3 of the Coastal Act, and will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

II. Standard Conditions: See attached

III. Special Conditions:

1. State Lands Commission Review. PRIOR TO ISSUANCE of the coastal development permit, the applicant shall submit to the Executive Director a written determination from the State Lands Commission that:

- a. No State lands are involved in the development; or
- b. State lands are involved in the development and all permits required by the State Lands Commission have been obtained; or

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c. State lands may be involved in the development, but pending a final determination an agreement has been made with the State Lands Commission for the project to proceed without prejudice to that determination.

2. U.S. Army Corps of Engineers Review.

PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the applicant shall submit to the Executive Director evidence that the U.S. Army Corps of Engineers has granted permission for the project authorized herein.

3. Monitoring Reports

The applicants shall submit copies of the monitoring reports proposed as part of the project and required by Humboldt County Coastal Development Permit No. CDP-68-75 to the Executive Director at the same time as those reports are submitted to the County.

4. Archaeological Resources.

The project site is located in an area believed to contain archaeological resources. If any additional archaeological resources are discovered on the project site during construction authorized by this permit, all work that could damage or destroy these resources shall be suspended. The applicant shall then have a qualified archaeologist inspect the project site, determine the nature and significance of the archaeological materials, and, if he or she deems it necessary, develop appropriate mitigation measures using standards of the State Historic Preservation Office.

Should the qualified archaeologist determine that mitigation measures are necessary, the applicant shall apply to the Commission for an amendment to this permit requesting that the permit be amended to include the mitigation plan proposed by the qualified archaeologist. The plan shall provide for monitoring, evaluation, protection, and mitigation of archaeological resources on the project site. Should the archaeologist determine that no mitigation measures are necessary, work on the project site may be resumed.

IV. Findings and Declarations.

The Commission hereby finds and declares:

1. Site Description:

The applicants propose to conduct a vegetation management project at two separate areas of upper beach and foredune along the ocean shoreline of the Samoa Peninsula (see Exhibits 1 and 2). The Samoa Peninsula, which separates Humboldt and Arcata Bays and Mad River Slough from the open ocean, contains one of the largest dune fields in California. As described in the California Coastal Resource Guide, "dunes extending the length of the spit support a rich coastal strand community of rye grass, beach morning glory, sea rocket,

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sandbur, and the endangered Menzies wallflower. On the more stabilized dunes is a forest of beach pine and Sitka spruce, with an under story of California huckleberry and wax myrtle. The Nature Conservancy's Lanphere-Christensen Dune Preserve protects 213 acres of undisturbed dunes, some as tall as 80 feet."

The Nature Conservancy, which maintains the Lanphere-Christensen Dunes Preserve, and the Manila Community Services District, which maintains a large parcel in the Manila dunes for habitat preservation, recreation, and other purposes propose a vegetation management program to keep non-native vegetation from taking over.

Two specific locations proposed include: (1) a 0.2-acre site located within the Lanphere-Christensen Dunes Preserve, off of Lanphere Road, and (2) a 0.6-acre site located at Manila Beach and Dunes, west of Peninsula Drive, approximately 300 feet from the intersection of Orange Drive with Peninsula Drive, on property known as 1600 Peninsula Drive (see Exhibits 1 and 2). The first site is owned by The Nature Conservancy. The second site is owned by the Manila Community Services District.

Both sites are along the ocean shoreline edge of the dune system that stretches along the entire extent of the Samoa Peninsula. The topography is typical of dune systems. The first feature inland of the beach is the primary foredune, a low ridge that generally rises no higher above the beach than several feet and runs parallel to the shoreline just above the limit of ordinary wave action. Plants tolerant of sand burial become established above the high tide line and sand transported up from the beach by the wind collects in and around the vegetation. As the plants continue to grow, a ridge of accumulated sand develops and increases in height. Inland of the foredune are non-parallel foredune ridges, dune hollows, a deflation plain, and moving dunes. The specific sites for the proposed project are located along the upper beach and foredune (see Exhibits 4 and 6).

The native vegetation that occurs on the foredunes along the Samoa Peninsula is the endangered plant community known as "foredune grassland." This community is characterized by the presence of *Leymus mollis*, a native dune-building grass. Other grasses and plant species also are commonly found in the foredune grassland. Currently, this plant community is restricted to only two locales, areas around Humboldt Bay such as the project site and at the Point Reyes National Seashore. The community used to be widespread along the coastline north of Monterey Bay, but it has been displaced by European beachgrass, an invasive exotic species that was introduced by man extensively on the West Coast of North America to stabilize dunes starting in the 1800s. The European beachgrass easily out competes the native dune grass, and has spread to displace large areas formerly vegetated with the native dune grass.

The European beachgrass is considered undesirable not only because it out competes and eliminates the native dune grass, but also because the species over stabilizes the foredune to the degree that it cuts off the sand supply

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that would normally be blown from the foredune to the rest of the dune system. Dune systems are dynamic and depend on the movement of sand to sustain themselves. Furthermore, the spread of European beachgrass reduces biological diversity.

Neither of the project sites currently contain populations of certain endangered plant species that are found elsewhere in the Samoa Dunes, including Humboldt Bay wallflower (*Erysimum menziesii* ssp. *eurekense*), beach layia (*Layia carnosa*), and Pink sand verbena (*Abronia latifolia* ssp. *breviflora*). The sites historically provided habitat for the endangered Snowy Plover, but there is no record of current nesting by the Plover at either site. It is hoped, however, that the project will improve habitat for the plover, since these birds require open sand for nesting. The sites do support a rich variety of non-endangered fauna, including small mammals, birds, and invertebrates.

Both of the project sites were historically used by the Native American Wiyot tribe, part of the Algonkian family. The Wiyots depended heavily upon the fish and shellfish resources of Humboldt Bay and the ocean, and their heritage is an important resource within the Humboldt Bay area. There are cultural sites located to the east of the two project sites, but none are located directly on the beach or foredune where the work is proposed.

2. Project Description.

The applicants propose to eradicate European beachgrass from the foredunes at both project sites using a bulldozer, and then burying the grass on the upper beach below the mean high water line (see Exhibits 4 and 6).

The Nature Conservancy and its partners have been restoring areas overrun by European beachgrass on the two sites since 1992 by manual removal of the beachgrass, pursuant to a coastal development permit issued by Humboldt County. According to the applicants, the manual removal method is extremely expensive and time consuming, and sufficient funds are not available to rely solely on this method of restoration. While restoration was in progress at the two sites, a new, incipient foredune developed west of the original foredune, probably due to the lack of seasonal storms and the establishment of European beachgrass in this area. This foredune has since increased in width and height, and is colonized in places exclusively by European beachgrass.

The method of restoration proposed in the current application involves first removing for later replanting after completion of the excavation work, any native plants that are growing in the work areas. Then the bulldozer will be used to excavate the areas on the foredune populated with European beachgrass down to a depth of 2-3 feet. A 3-foot-deep linear trench will be excavated on the upper beach (below Mean High Water) adjacent to the foredune to serve as a burial location for the excavated beachgrass material. The sand removed from the trench will be used to re-fill the excavated area and cap the burial area, to restore the foredune and upper beach to their pre-project

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contours. The applicants note that the proposed restoration technique has been used successfully to remove beachgrass at the Oregon Dunes National Recreation Area.

The project site is bisected by the boundary between the Commission's retained jurisdiction and the coastal development permit jurisdiction of Humboldt County. As the boundary follows the Mean High Tide line, the foredune where the European beachgrass will be removed lies within the County's jurisdiction and the upper beach area where the burial trench will be excavated lies within the Commission's retained jurisdiction. Humboldt County granted Coastal Development Permit No. CDP-68-95 for the work on the foredune on November 7, 1996.

The extent of area to be affected by the excavation work at the Lanphere Christensen Dunes Preserve site is an area approximately 30 feet wide by 800 feet long. Within this area, approximately .2 acres of beachgrass would be removed. A total of 968 cubic yards of grading would occur within the Commission's jurisdiction at this site, balanced between cut and fill.

The extent of area to be affected by the excavation work at the Manila Beach and Dunes site is an area 42 feet wide by 2,200 feet long. Within this area, approximately .6 acres of beachgrass would be removed. A total of 2,904 cubic yards of grading would occur at this site, balanced between cut and fill.

The bulldozer will access the site via Mad River County Park, which is located approximately four miles north of the Lanphere Christian Dunes Preserve site and seven miles north of the Manila Dunes site. The bulldozer will travel down the waveslope of the beach as much as possible, to avoid trampling any dune habitat. Because the bulldozer will be kept on-site, few trips back and forth from Mad River County Park will be necessary.

Work is proposed over a 3-year period, with most work occurring during the summer months when the beach is wider and higher, and when the high tides generally do not reach the site. Although the project may not be completed for three years, the actual time spent at each work site will be considerably shorter. The applicants estimate that work at the Lanphere Christensen Dunes site should take 1-3 weeks and the work at the Manila Dunes site should take a maximum of 8 weeks.

The proposed restoration work is being funded in part by the U.S. Fish & Wildlife Service, who manages the nearby Humboldt Bay National Wildlife Refuge. The work will be carried out by the U.S. Fish and Wildlife Service, the National Guard, or a private contractor.

The applicants propose to monitor the site both before and after project implementation. The monitoring program will examine the vegetation and physical changes that occur as the result of the heavy equipment treatment to determine (1) whether follow-up manual removal of recurring beach grass is required, and (2) whether revegetation with native species is necessary or

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appropriate. This information will be useful for designing future vegetation management projects. A copy of the proposed monitoring plan is attached as Exhibit 7.

3. Filling and Dredging of Coastal Waters

The proposed project involves the excavation and placement of fill within coastal waters. The excavation and filling work within the Commission's jurisdiction includes the work involved in excavating and refilling the burial trench on the ocean side of the incipient foredune. The excavation involved in removal of the European beachgrass from the incipient foredune lies above the Mean High Tide line and is both outside of coastal waters and outside of the Commission's jurisdiction. A total of approximately 3,872 cubic yards of sand and vegetative matter will be excavated and placed within the Commission's jurisdiction, including 968 cubic yards within an approximately one-quarter-acre-area at the Lanphere Christensen Dunes site and 2,904 cubic yards within an approximately one-acre-area at the Manila Dunes site.

Section 30233 of the Coastal Act provides as follows, in applicable part:

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following [eight purposes, including...]

(7) Restoration purposes

...

The above policy sets forth a three part test for all projects involving the filling and dredging of coastal waters and wetlands. A proposed filling or dredging project must satisfy all three tests to be consistent with Section 30233. The three tests are:

- A. That the project is for one of the eight stated uses permissible under Section 30233;
- A. that adequate mitigation measures have been provided to minimize adverse environmental effects of the proposed project; and
- C. that the project has no feasible less environmentally damaging alternative.

A. Permissible Use for Filling and Dredging

The proposed project satisfies the first test for approvable filling and dredging projects set forth by Section 30233 as the proposed fill is allowable

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for "restoration purposes" under Section 30233(a)(7). The project is proposed as a restoration project for the Samoa Dunes to remove and help prevent the spread of European beachgrass, an exotic, invasive species. As noted previously, European beachgrass easily out competes the native dune grass, and has spread to displace large areas formerly vegetated with the native dune grass plant community, which is globally endangered. The European beachgrass is considered undesirable also because the species over stabilizes the foredune to the degree that it cuts off the sand supply that would normally be blown from the foredune to the rest of the dune system. Dune systems are dynamic and depend on the movement of sand to sustain themselves. Furthermore, the spread of European beachgrass reduces biological diversity. By removing the European beachgrass from the project site, the proposed project will help restore the dune system to its native condition. Therefore, the Commission finds that the proposed project is for "restoration purposes," and thus is an allowable use for a filling and dredging project pursuant to Section 30233(a)(5) of the Coastal Act.

B. Feasible Mitigation Measures.

The second test set forth under Section 30233 is whether feasible mitigation measures can be employed to minimize the proposed fill project's adverse environmental effects.

As noted above, the project is proposed as a restoration project to enhance the natural environment at the project sites. As proposed, the project will not have significant adverse environmental effects within the Commission's jurisdiction. Although the proposed project will include altering the topography of the beach to excavate the burial trench, this impact will only be temporary and is not significant. The project description includes refilling the trench with sand and vegetative matter excavated from the incipient foredune outside of the Commission's jurisdiction and restoring the original contours of the beach within a few weeks or less of the initial disturbance of the beach.

The sandy beach areas to be disturbed do not contain sensitive habitat as the beaches are unvegetated in these locations and rare and endangered plant and animal species found elsewhere within the beach and dune system of the Samoa Peninsula such as the as Humboldt Bay wallflower, beach layia, and Pink sand verbena, and the endangered Snowy Plover are not present at the two development sites. As noted previously, the applicants believe the project will serve to enhance habitat for the plover.

Although European beachgrass will be buried at the site as part of the project, the applicants indicate there is no danger that the European beachgrass will not start growing at the burial locations and thereby spread its destructive effects to another area of the beach and dune system because the European beachgrass will not survive in these areas. Although the beachgrass typically is found in close proximity to sea water, the species cannot survive the full exposure to salt water that occurs in areas subject to

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tidal action. As the burial sites are located seaward of the Mean High Tide Line, the applicants expect that the beachgrass will not become established at the burial sites.

Finally, the bulldozer to be used in the excavation and filling work will access the site via Mad River County Park and the unvegetated waveslope, thereby avoiding sensitive habitat areas where the equipment could easily crush and uproot vegetation and disturb wildlife. Bringing the bulldozer through the dunes from the east rather than down the waveslope from the north would allow for a much shorter trip than the four miles the bulldozer will need to travel from Mad River County Park to access the Lanphere Christensen Dunes site and the seven miles the bulldozer will need to travel to access the Manila Dunes site. However, traveling the longer route is the only way to avoid sensitive habitat areas. The applicants have received approval from the Humboldt County Planning Division to drive the bulldozer to the project sites pursuant to a County ordinance that regulates vehicle use within the beach and dunes area. The ordinance restrict such use to the waveslope, as proposed.

The project will involve the removal and replanting of a limited amount of native vegetation in locations where the bulldozer will be operating inland of the Mean High Tide line for replanting after completion of the grading work. There is a risk that the removed native vegetation will not survive the transplanting. However, this aspect of the project occurs outside of the Commission's jurisdiction. The site of the transplanting work is, however, within the coastal development permit jurisdiction of Humboldt County. The County has conditioned the coastal development permit it granted for the portion of the project within its jurisdiction to require implementation of the proposed monitoring program to ensure that the transplanting will not cause a significant loss of native vegetation. The proposed monitoring program will be used in part, to determine if follow-up replanting of native revegetation will be necessary. Thus, the project as proposed is self-mitigating to avoid significant impacts to native vegetation.

Therefore the Commission finds that the project as proposed will employ feasible mitigation measures to minimize adverse environmental effects, consistent with Section 30233 of the Coastal Act. To ensure that the project has been conducted as proposed, the Commission attaches Special Condition No. 3, which requires the applicants to submit copies of the proposed monitoring reports to the Executive Director. As the project is one of the first to propose vegetation management within the Samoa dunes utilizing heavy equipment, the information generated by the monitoring program will also be valuable for the review of similar projects that might be proposed in the future.

C. Alternatives.

With regard to the third test, it appears that there are no other feasible less environmentally damaging alternatives to the proposed project. Only two alternatives have been identified which would result in less filling and

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excavations work than the proposed project, including (1) the no project alternative, and (2) manual restoration of the foredune.

i. The No Project Alternative. This alternative would involve doing nothing to halt the spread of European beachgrass over the foredune area. As discussed previously, allowing the beachgrass to spread would cause additional degradation of the Samoa Beach and Dunes system. As noted previously, European beachgrass is out competing and eliminating the native dune grass, is reducing biodiversity in the area, and is endangering the dune system by over stabilizing the foredunes and limiting the sand supply needed to sustain the rest of the dune system. Therefore, the Commission finds that the project alternative is not an environmentally less damaging alternative.

ii. Manual Restoration Efforts. As noted previously, the applicants have conducted previous restoration efforts utilizing manual labor rather than mechanized equipment. Such efforts could be done in a manner that would minimize the removal of native vegetation to a greater degree than the proposed method and could require a lower amount of total excavation and fill work that through the use of mechanized equipment as proposed. Although such efforts will continue to have their place and will be valuable as part of an overall restoration program, it is not feasible to perform the specific work proposed as part of the current project manually. The European beachgrass has been spreading at a rate faster than the applicants can feasibly eradicate manually.

According to the applicants, the manual removal method is extremely expensive and sufficient funds are not available to rely solely on this method of restoration. The applicants report the cost of manual restoration is approximately \$30,000 per acre. In addition, manual removal is very time consuming. While a previous manual restoration was in progress at the two sites, European beachgrass spread to create a new, incipient foredune west of the original foredune. This foredune has since increased in width and height, and is colonized in places exclusively by European beachgrass. Therefore, the Commission finds that the use of manual restoration at the project sites would not be a feasible alternative to accomplish the project objectives.

D. Conclusion

In conclusion, the Commission finds that the proposed filling and dredging project, as conditioned, is consistent with Section 30233 of the Coastal Act in that (1) the proposed filling and dredging is for "restoration purposes," a permissible use for filling and dredging under subsection (7) of Section 30233(a); (2) the project as proposed will employ feasible mitigation measures to minimize adverse environmental effects; and (3) no feasible less environmentally damaging alternatives have been identified.

4. Archaeological Resources:

Section 30244 of the Coastal Act states that where development would adversely affect archaeological resources, reasonable mitigation measures shall be required.

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Areas east of the project sites have been identified by the Humboldt County Public Works, Natural Resources Division as one of 117 archaeological sites within the Humboldt Bay area. The sites are associated with the Native American Wiyot tribe, part of the Algonkian family. The Wiyots depended heavily upon the fish and shellfish resources of Humboldt Bay and the ocean, and their heritage is an important resource within the Humboldt Bay area.

Although the Wiyots likely used the specific locations where the restoration work is proposed, the only cultural sites found in the area are east of the project sites. The Humboldt County Public Works, Natural Resources Division has concluded that if all ground disturbance is restricted to the west side of the original foredunes, there should be no disturbance of recorded sites. However, the possibility exists that important resources may still be present. Therefore, the Commission attaches Special Condition No. 4 to this permit. Special Condition No. 4 requires that all construction shall cease should any additional archaeological resources be discovered during construction, and that an archaeologist must then inspect the property and recommend appropriate mitigation measures. Therefore, the Commission finds the proposed development, as conditioned, to be consistent with Coastal Act Section 30244.

5. Public Access.

Coastal Act Section 30210 requires that maximum public access opportunities be provided when consistent with public safety, private property rights, and natural resource protection. Coastal Act Section 30211 requires that development not interfere with the public's right of access to the sea where acquired through use. Coastal Act Section 30212 requires that public access from the nearest public roadway to the shoreline and along the coast be provided in new development projects, except in certain instances, as when adequate access exists nearby. In applying Sections 30210, 30211, and 30212, the Commission is limited by the need to show that any denial of a permit application based on those sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential public access.

The proposed project does not have any significant adverse impact on public access. The beach and dune system is used extensively by hikers, fishermen, and other public access users. The proposed development would preclude public access users from using limited portions of the the upper beach and foredune areas proposed for excavation during the time of construction. However, the applicants indicate that the construction periods will be very short, requiring only 1-3 weeks at the Lanphere Christensen Dunes site and a maximum of 8 weeks at the Manila Dunes site. Furthermore, the project will not block access to and along the beach or dune system. Only relatively narrow strips of upper beach and dune area no greater than 42 feet wide would be affected by the project. Thus only a relatively tiny portion of the expanse of beach and dune in the area will be affected.

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Driving the bulldozer the several mile journey to the project sites from Mad River County Park would temporarily affect public access users along the wave slope. However, this impact also is not significant. The bulldozer will be stored at the project sites during construction to minimize trips back and forth. During the brief times that the bulldozer might pass someone on the beach, the public access user can simply move out of the way.

Finally, the proposed project will not increase the burden on existing public access facilities as it will do nothing to increase density and bring more people to the site.

Therefore, as no significant adverse impacts of the proposed development on public access have been identified, the Commission finds that it is not appropriate to require public access through a special condition of this permit and finds that the project as proposed is consistent with Sections 30210, 30211, and 30212 of the Coastal Act.

6. State Lands Commission Review.

The portions of the project within the Coastal Commission's jurisdiction are located seaward of Mean High Tide, where the State of California holds a fee ownership. In addition, the site may be subject to a public trust easement. Any such easement and the fee owned lands are under the jurisdiction of the State Lands Commission. To assure that the applicant has a sufficient legal property interest in the site to carry out the project and to comply with the terms and conditions of this permit, the Commission attaches Special Condition No. 1 which requires that the applicant submit a copy of an approval for the project from the State Lands Commission or a statement that the State Lands Commission declines to assert jurisdiction at this time.

7. U.S. Army Corps of Engineers Review.

The project requires review and approval by the U.S. Army Corps of Engineers. Pursuant to the Federal Coastal Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the U.S. Army Corps of Engineers, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. To ensure that the project ultimately approved by the Corps is the same as the project authorized herein, the Executive Director attaches Special Condition No. 2 which requires the applicant to submit to the Executive Director evidence of U.S. Army Corps of Engineers approval of the project prior to commencement of the project.

8. CEOA:

Section 13096 of the Commission's administrative regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as conditioned by any conditions of

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approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(i) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment.

As discussed above, the project has been mitigated to ensure that the project will not adversely affect potential archaeological resources that may be present. The project, as conditioned, will not have a significant adverse effect on the environment, within the meaning of CEQA.

For purposes of CEQA, the lead agency for the project is Humboldt County. The County adopted a mitigated negative declaration for the project on November 7, 1996.

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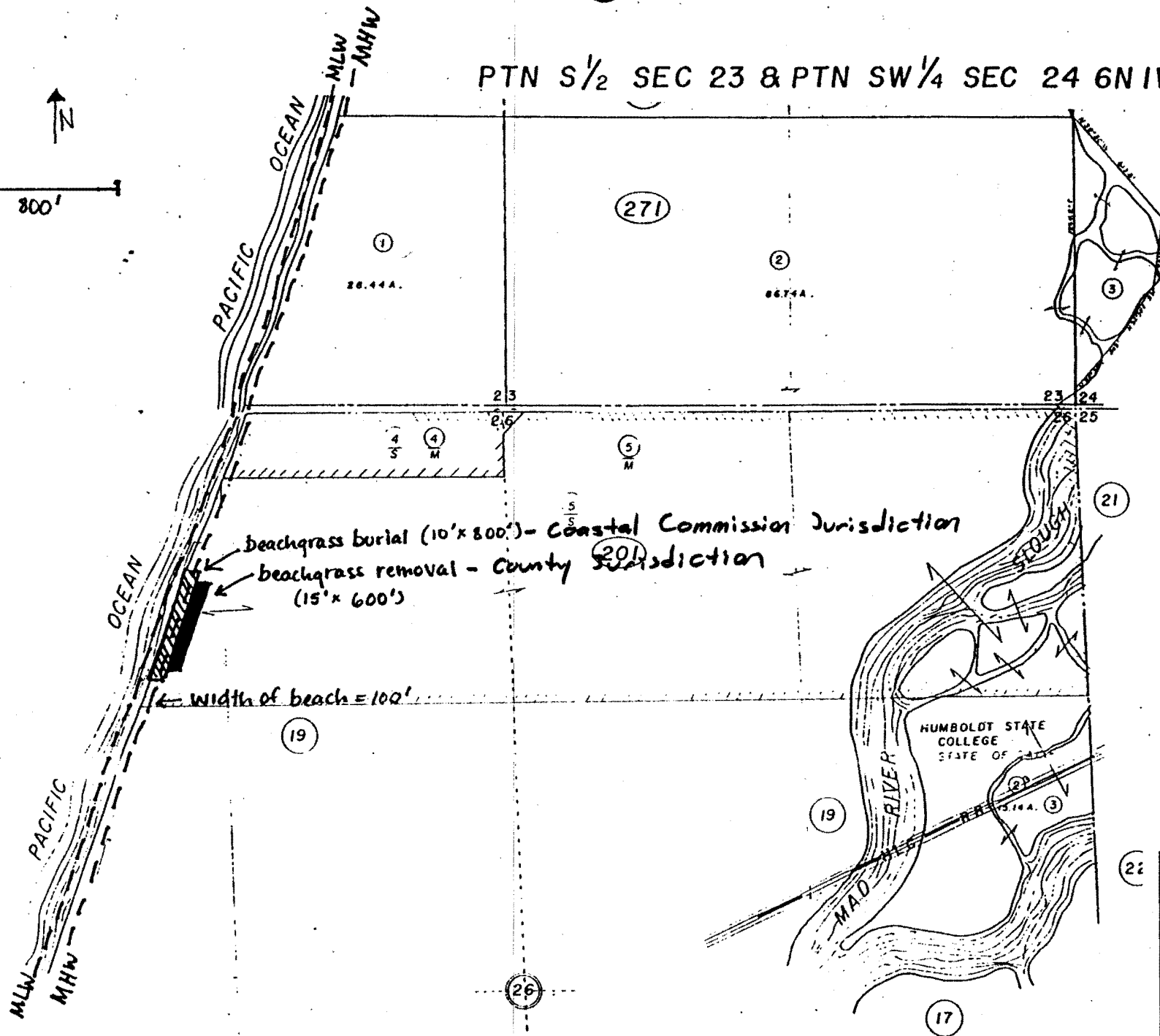
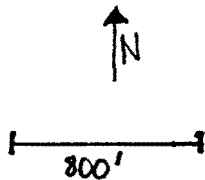
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ATTACHMENT A

Standard Conditions

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. **Compliance.** All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.
4. **Interpretation.** Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.
5. **Inspections.** The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.
6. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
7. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

PTN S $\frac{1}{2}$ SEC 23 & PTN SW $\frac{1}{4}$ SEC 24 6N1W



DETAIL OF SITE 1

EXHIBIT NO. 3
APPLICATION NO. 1-96-30
LANPHERE DUNES
SITE LOCATION

PROJECT DEVELOPMENT PLAN SITE 1

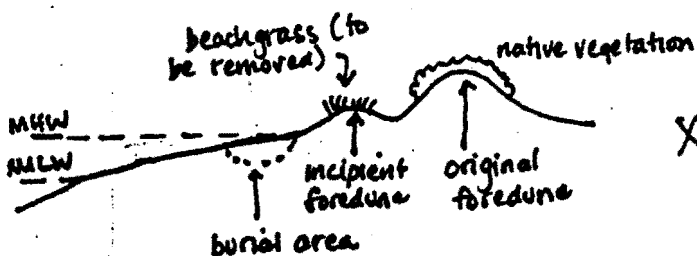
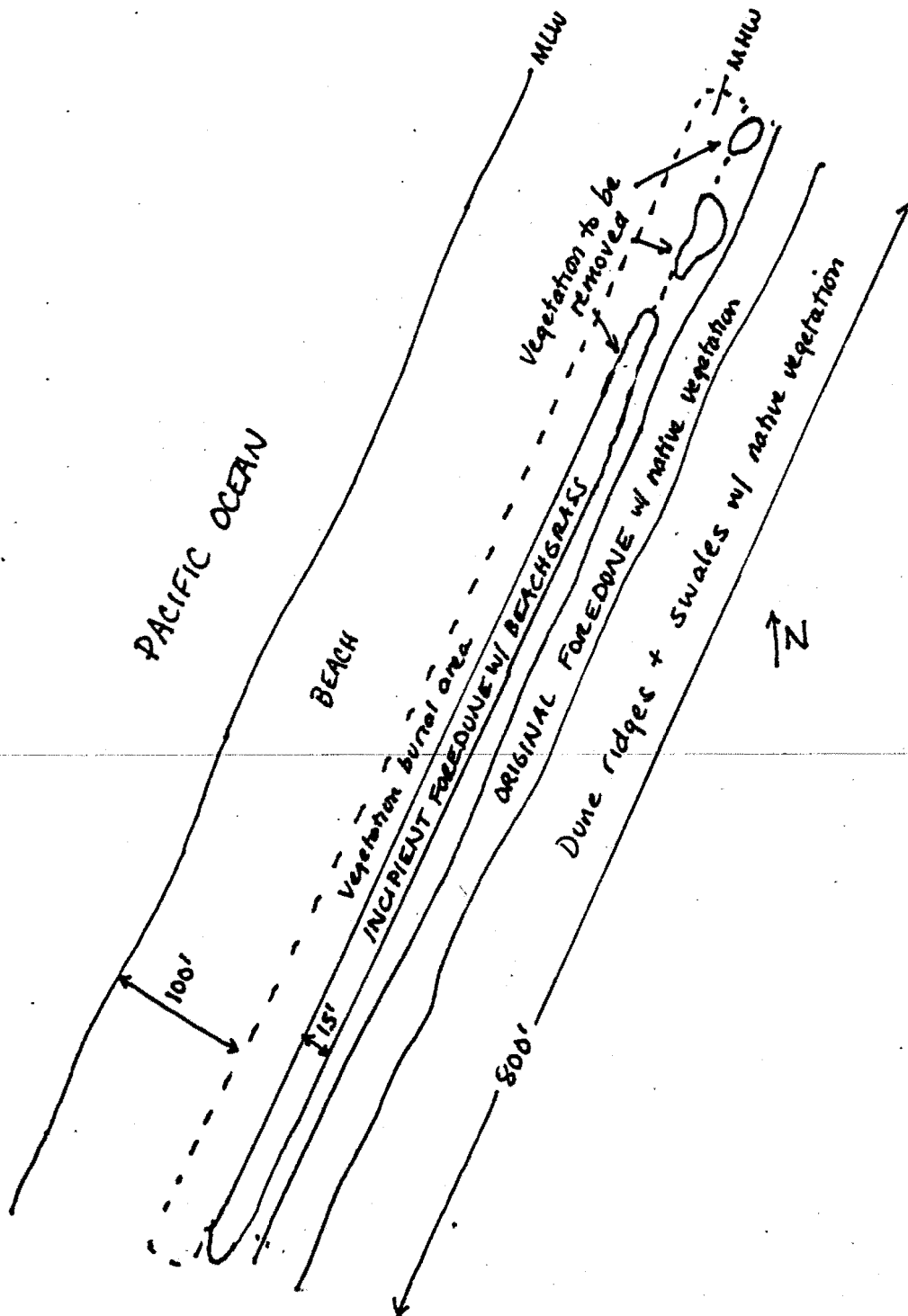


EXHIBIT NO. 4
APPLICATION NO. 1-96-30
LANPHERE DUNES
SITE PLAN



PROJECT DEVELOPMENT PLAN
SITE 2

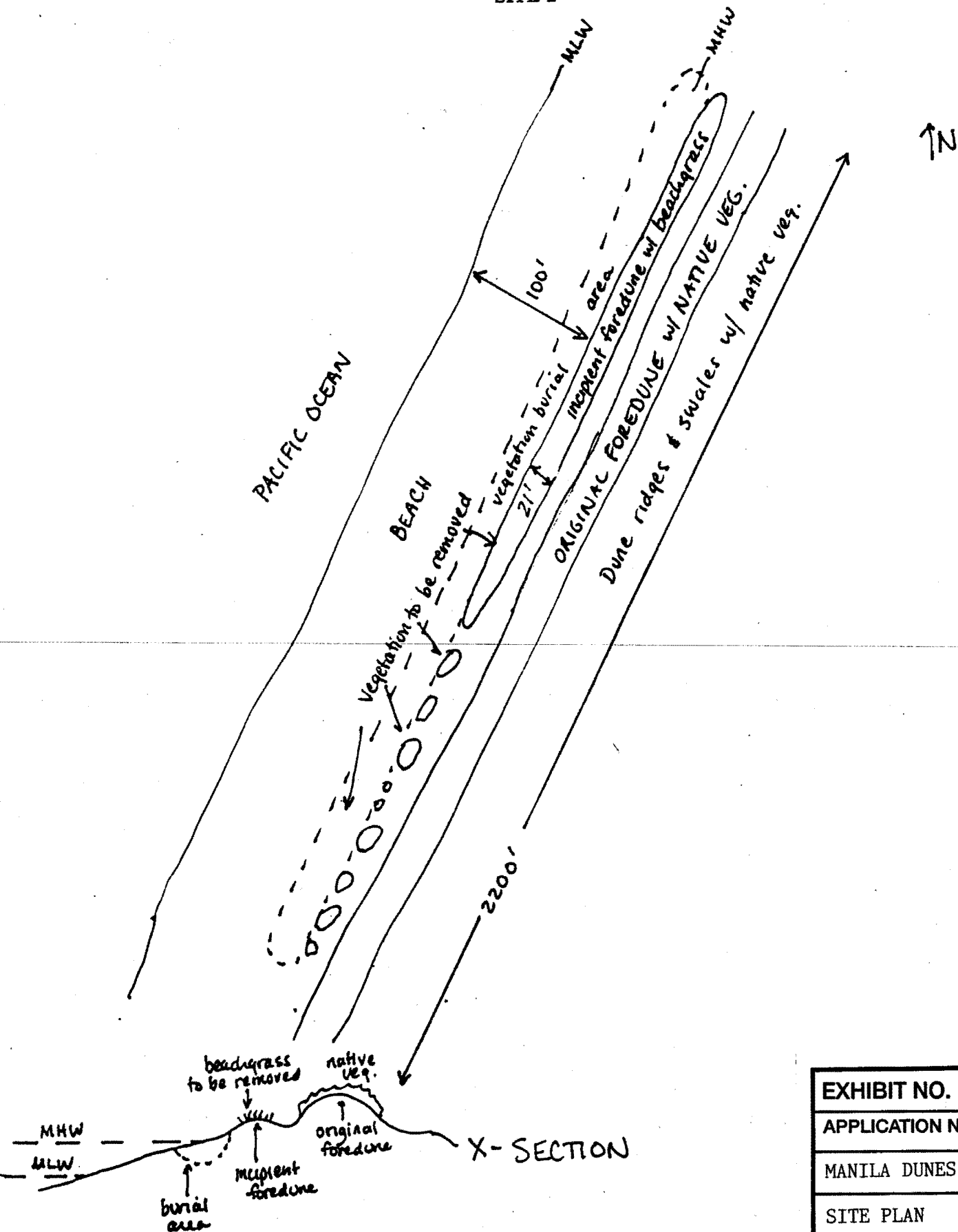


EXHIBIT NO. 6
APPLICATION NO. 1-96-30
MANILA DUNES
SITE PLAN

MONITORING PLAN
for Heavy Equipment Removal of European Beachgrass
on an incipient foredune
at the
Lanphere-Christensen Dunes Preserve

EXHIBIT NO. 7
APPLICATION NO. 1-96-30
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ELEMENT: Native Dunegrass Series

COMMON NAME: Foredune grassland

SITE NAME: Lanphere-Christensen Dunes Preserve

RANK: G1 S1

DATA STORAGE: Preserve files

PREPARED: Andrea Pickart, Area Ecologist 5/22/96

ELEMENT SUMMARY

Northern foredune grassland is characterized by the presence (\pm dominance) of Leymus mollis, a native dune-building grass. This "grassland" is generally restricted to the primary foredune and is also distinguished by a relatively low species diversity, presumably due to harsher conditions including salt spray and occasional overwash (TNC 1989). Sawyer and Keeler-Wolf (1995) have classified this community as the Native dune grass series.

Northern foredune grassland is frequently dominated by the grasses Leymus mollis and Poa douglasii, but may also contain significant amounts of Ambrosia chamissonis, Lathyrus littoralis, and Abronia latifolia (Pickart 1987). Subdominants include Calystegia soldanella, Cakile maritima, Camissonia cheiranthifolia and others (Johnson 1963). Historically, this community was widespread along foredunes north of Monterey, California, but is now restricted to two locations at Humboldt Bay and Point Reyes (Holland 1986). The primary cause of decline is displacement by the introduced European beachgrass, Ammophila arenaria. Ammophila is thought to outcompete native foredune species, including Leymus, by superior photosynthetic nitrogen use efficiency. Ammophila fixes more carbon per unit of blade nitrogen than Leymus, resulting in the production of more live blade area and vegetative buds, slower rates of blade senescence and reduced dry matter and nitrogen allocation to roots (Barbour et al. 1985). It has been hypothesized that Ammophila is actually a weak competitor that dominates through its ability to alter its habitat through trapping of new sand, thereby avoiding resource competition (van der Putten et al. 1988). Ammophila has been planted repeatedly on the North Spit for

stabilization purposes (Van Hook 1983, Buell 1992). Unlike Leymus, it is not restricted to the primary foredune, and has spread throughout the spit.

Northern foredune grassland floristically intergrades with Northern foredune. The boundary between them is transitional, occurring near the crest of the primary foredune if a continuous foredune ridge occurs. When foredunes are aligned with prevailing wind rather than parallel with the beach, Northern foredune grassland can extend inland small distances. Otherwise, a transition into Northern foredune occurs, marked by an increase in plant diversity. Northern foredune is known locally as dune mat, and has been classified by Sawyer and Keeler-Wolf (1995) as the Sand verbenas-beach bursage series.

Artemisia.

In addition to European beachgrass, foredune grassland is threatened by the introduced iceplant (Carpobrotus edulis and C. edulis x chilensis). These species do not, however, occur on the incipient foredune.

Restoration of beachgrass-invaded foredunes has been carried out at the Lanphere-Christensen Dunes Preserve pursuant to a plan developed by TNC (Miller 1994). Removal has been accomplished using manual techniques and California Conservation Corps labor. Due to the labor intensity of these methods, restoration has been very costly (approximately \$30,000/acre). After restoration was in progress, a new, "incipient" foredune developed west of the original foredune. This is a typical, cyclical process, with the feature being removed by waves during winter months. However, this new feature did not disappear, possibly because of lower storm intensity, or possibly because of increased sediment deposits. The new feature was soon colonized by beachgrass, which has since spread and increased the amount of acreage. TNC does not have additional funds to remove this area of beachgrass manually. For this reason, the use of heavy equipment to remove beachgrass is being proposed. This method has been used successfully elsewhere on the West Coast (U.S. Forest Service 1994; 1995a,b). The U.S. Fish and Wildlife Service has agreed to carry out the actual work in summer 1996.

MONITORING OBJECTIVES

The purpose of the monitoring program is to determine 1) vegetation changes occurring as the result of the heavy equipment treatment, and 2) physical changes occurring as a result of the treatment. We are interested both in the success of the treatment as measured by recurrence of beachgrass, and in the regeneration of native species. Monitoring will enable us to make a determination of whether follow-up manual removal of recurring beachgrass is required, and also whether revegetation with native species is necessary or appropriate.

MONITORING DESIGN

1) Changes in vegetation.

A. Density of European beachgrass. A total of 16 permanent .5-m-wide transects will be established perpendicular to the beach at randomly selected intervals along the treated

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area. The total number of culms of resprouting beachgrass will be recorded at monthly intervals beginning immediately after treatment. All beachgrass resprouts will be removed after each monitoring interval (along with all other resprouts in the treatment area).

B. Native plant regeneration. One-half of the treated area will be revegetated with native dune grass salvaged from the treated area or collected nearby (collection will be done to prevent any damage to existing native areas). Within the 16 transects, ½ of which will occur in revegetated areas, total number of live native dunegrass culms will be counted, and total cover of native species will be ocularly estimated.

2) Physical Changes.

Topographic profiles will be taken along the south side of each of the 16 transects, half of which will be located in revegetated areas. The profiles will be tied to a benchmark placed at the north end of the treated area. Therefore, elevations will be relative and not absolute, but will permit us to estimate net gain/loss of sediment. An additional 8 transects will be placed randomly to the north and south of the treated areas as a control.

SCHEDULE

Topographic monitoring will be conducted prior to treatment to establish baseline conditions. Monitoring will be repeated immediately after treatment and 3 month intervals for one year thereafter. Vegetation monitoring will begin immediately after treatment and will be repeated monthly for a period of one year.

LOCATION

Monitoring will be conducted at the Lanphere-Christensen Dunes Preserve.

REFERENCES

Barbour, M.G., T.M. De Jong and B.M. Pavlik. 1985. Marine beach and dune plant communities in: B.F. Chabot and H.A. Mooney, editors, Physiological ecology of North American Plant communities. Chapman and Hall. New York.

Buell, A.C. 1992. A history of the introduction and spread of *Ammophila arenaria* on the North Spit of Humboldt Bay, California. M.S. thesis, Humboldt State University, Arcata, California.

Holland, R. 1986. Preliminary descriptions of the terrestrial natural communities of California. California Department of Fish and Game, Non-Game Heritage Program, Sacramento, California.

Johnson, J.W. 1963. Ecological study of dune flora, Humboldt Bay. M.A. Thesis, Humboldt State University, Arcata, California

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