FOREST MANAGEMENT PLAN

For

DEL MONTE FOREST PRESERVATION AND DEVELOPMENT PLAN

Del Monte Forest

Monterey County, California

Prepared for

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Forest Management Plan for the Del Monte Forest Preservation and Development Plan

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1.0 INTRODUCTION

This Forest Management Plan (FMP) for the Del Monte Forest Preservation and Development Plan (DMF/PDP) was prepared for the Pebble Beach Company (PBC) under supervision of Roy Webster, Registered Professional Forester (RPF) #1765. It is required by Monterey County Ordinance § 20.147.050 and made to be a part of the application for DMF/PDP, which is a plan for the preservation and development of PBC-owned property in the Del Monte Forest.

The Del Monte Forest Area Land Use Plan (LUP) and the Del Monte Forest Coastal Implementation Plan require a Forest Management Plan whenever development or tree removal are proposed which require a Coastal Development Permit. The purpose of the Forest Management Plan is to assure that approved land uses are as responsive as possible to the objective of preserving and maintaining the native tree species and forested character of properties within the Del Monte Forest. Removal of significant Monterey pines and coast live oaks (living native trees more than 12 inches in diameter at breast height) must be in accordance with the measures prescribed by the Forest Management Plan for that site. The Forest Management Plan is signed by the Owner and the County and is permanent and binding regardless of a change in ownership. Amendments to the Forest Management Plan are permitted, subject to County approval.

Because the DMF/PDP is a large and complex project comprised of numerous development elements and a major open space dedication component, the FMP format outlined as Attachment 1 in the Del Monte Forest Coastal Implementation Plan, which was designed to be applied to single site projects, has been adapted here to provide a more coherent and integrated presentation of the forest resources and forest resource impacts of the DMF/PDP. All required information to be contained in FMPs for the Del Monte Forest is included here or by reference to other components of the DMF/PDP application such as the Forest Assessment Report or the Resource Management Plan (RMP). Because such information is given elsewhere in the DMF/PDP application, site description particulars such as APN, location, parcel size, and existing land use are referenced for individual project sites only to the degree that they affect the forest resources of the site. Appropriate site and project descriptions are given for each of the major project elements, including tree removal and retention estimates. After these individual site and project descriptions, the required assessment of forest resource impacts and alternatives to minimize such impacts and tree removals are provided for the project as a whole.

1.1 Plot Plan

Plot plans for individual preservation and development areas are located for review in the DMF/PDP application. The plot plans have been prepared by WWD Corporation (Civil Engineers). Since no specific tree removal is proposed for preservation areas, no individual tree detail is necessary unless and until selective tree removal is proposed as a forest management technique. Within development areas, application maps vary in scale and detail with the scope of proposed facilities. At this time, mapping and marking of individual trees proposed for removal is not appropriate. The scale of the application and its combination of preservation and development areas makes it more meaningful to characterize forest resources in terms of acreage and forest type for each LUP designated area. For the forested acreages of each LUP area, tree number estimates were derived from forest inventory research (described later in this

document). The numbers provided are sufficient to determine the extent of tree retention in the preserve areas and evaluate mitigation.

Because of these factors, a set of five figures prepared by Zander Associates showing forested areas by land use and tree removal and retention categories is provided to serve the purposes of a plot plan for this FMP.

1.2 Project Overview

The DMF/PDP is a plan for the preservation and buildout of PBC-owned lands within the Del Monte Forest, a designated planning area within the Monterey County Local Coastal Program (LCP) consisting of eight sub areas and comprising approximately 5,300 acres of land on the Monterey Peninsula (Figure 1). The DMF/PDP proposes to preserve large tracts of forested open space within the Del Monte Forest previously designated by the Del Monte Forest Land Use Plan (DMF LUP) for medium density residential development, convert some land previously planned for residential and resource conservation use to recreation, and renovate existing and provide new visitor serving accommodations and uses.

The DMF/PDP (Figure 1) consists of the following elements:

- Designation and ecological management of over 420 acres of permanent open space forest lands in addition to the 372 acres that were previously dedicated in the Huckleberry Hill Natural Area, the 84 acres in S.F.B. Morse Botanical Reserve, and other previously dedicated open space throughout the Del Monte Forest.
- Construction of a new 18-hole golf course in former subdivision areas M, N, O, U & V.
- Relocation of the existing Equestrian Center to the Sawmill Quarry.
- Construction of a new driving range and teaching facility at The Spanish Bay Resort.
- Improvements to the existing Inn at Spanish Bay and The Lodge at Pebble Beach.
- Creation of residential lots and construction of employee housing units.

The preservation element of DMF/PDP dedicates more than 420 acres as permanent open space forest (not including 200 acres of HHNA that were pre-dedicated as compensation for LUP build out). The plan also includes another 80 acres of retained forest associated with development and recreational uses. Approximately 105 acres of Monterey pine forest habitat will be converted to developed use. Almost 94 of those acres will become recreational open space for golf and associated facilities and not quite 11 acres cleared for residential use. An estimated 6,371 Monterey pine trees greater than 12" diameter at breast height (dbh) will be removed to implement the project, while an estimated 41,172 pines of the same size class will be retained.

1.3 Methodology

A cruise of the entire DMF/PDP area was conducted in April and October 2001. Forest inventory information was collected from 164 1/10-acre sample plots. These plots are situated within each of the designated components of the DMF/PDP. For the first 52 sampling locations, two forestry plots were inventoried per location yielding 104 plots. One plot was placed at the beginning of a 50 meter transect line and the other was placed at the end. The plot at the beginning of the transect line was at or near the edge of a road and the end plot was more interior

into the forest. For the 60 remaining locations, a single plot was inventoried and this plot was placed in the interior of the forested areas.

The same protocol for collecting data was followed in both April and October. All trees within the sample plot were tallied into size categories based on diameter at breast height (dbh); 1"-4", 4"-12", 12"-24" and > 24". Seedlings were counted within a 1/1000-acre area in the center of the 1/10-acre plot (6.6' x 6.6' square). Seedlings were defined as tree specimens less than 12" tall. Pitch canker was evaluated using the characters identified in the University of California Pitch canker Rating System. The characters were used to identify evidence of pitch canker only. Trees with evidence of branch tip kill, leader kill, and stem cankers were tallied as positive for pitch canker. The size classes of the trees exhibiting evidence of pitch canker was not recorded. The number of trees with mistletoe was also tallied, but distinctions by size class were not made. Canopy coverage was estimated visually and recorded by class where Class 1 = 0-25%, Class 2 = 26-50%, Class 3 = 51-75% and Class 4 = 76-100%. The 2001 sampling represents a 2.4% cruise of the Del Monte Forest[1]

The forestry plot data were used to evaluate the current conditions of the Monterey pine forest within the DMF/PDP area with respect to tree density, size class distribution, canopy cover, recruitment and distribution of pitch canker. The data were sorted into distinct groups following the designated components of the DMF/PDP and were converted to provide per acre estimates of tree density (by size class) that were used to estimate number of Monterey pine and coast live oak trees to be removed and to be retained.

[1] A sample size of between 2% and 5% was deemed sufficient to provide a sample mean that adequately characterizes the forest.

2.0 FOREST MAINTENANCE PLAN

Before presenting site descriptions of the various project elements and locations, this general description of Monterey pine forest habitats of the DMF/PDP is provided as a site description of the project area as a whole. These descriptions were developed in concert with Zander Associates, who coordinated and integrated forestry and biological resource sampling and analysis for the project. The general descriptions are supplemented by Site and Project Descriptions for each project component in Section 2.2.

2.1 Description of General Forest Characteristics

PBC-owned property in the Del Monte Forest consists of developed areas and undeveloped lands that support Monterey pine forest. Four main plant associations of Monterey pine forest have been identified in the Del Monte Forest based on associated species and understory characteristics: Monterey pine/coast live oak; Monterey pine with shrubby understory; Monterey pine with herbaceous understory and Monterey pine on young stabilized dunes. Variation in physical environment (soils, hydrology, topography, aspect, microclimate, etc.) and vegetation history influence the forest characteristics and composition of associated species. These characteristics may be either clearly evident or very subtle. The plant associations are not always present as discrete patches that can be easily mapped and quantified. Rather, they occur generally in a continuum, with one type gradually merging into another. The occurrence and distribution of these plant associations are important biologically because they create a mosaic of habitat opportunities within forest stands as well as connectivity for plant dispersal and wildlife movement throughout the forest.

- *Monterey Pine in Association with Coast Live Oak:* This plant association tends to represent the older stages of forest succession on the deeper soils of the Monterey Peninsula. It occurs as a canopy of Monterey pine varying from 20-80% cover with a subcanopy of coast live oak varying from 20-60% cover; in well developed pine/oak forest, total absolute canopy cover exceeds 100%. The herbaceous layer is variable, but it is usually sparse due to shade.

- *Monterey Pine in Association with Woody Understory:* This plant association is characterized by a tree stratum that may be very sparse (10-20% cover) or relatively dense (up to 60-70%), with a woody understory of various shrubs. Trees in this type of forest plant association are generally small to moderate in size. The shrub stratum varies as a continuum without sharp distinctions from a mesic shrub association [coffeeberry, poison oak, coyote brush, bush monkeyflower, California lilac (*Ceanothus thyrsiflorus*), snowberry (*Symphoricarpos* spp.), and California blackberry (*Rubus ursinus*)] to central maritime chaparral [primarily Manzanita (*Arctostaphylos* spp.), huckleberry, and Monterey ceanothus (*Ceanothus cuneatus* var. *rigidus*)]. The herb layer is either absent where shrubs are dense, or apparent in gaps between shrubs.

- *Monterey Pine in Association with Herbaceous Understory:* The tree canopy in this plant association varies from essentially closed (nearly 100% cover) to quite open (less than 40% cover). Canopy trees vary in trunk size (diameter at breast height, or dbh) from moderate (12 inches) to large (over 30 inches), and the shrub layer is virtually absent. The herbaceous layer varies from a slightly drier association of tufted hairgrass (*Deschampsia caespitosa*), blue

wild-rye (*Elymus glaucus* ssp. *glaucus*), thingrass (*Agrostis pallens*), and various herbs, to a more mesic association of pacific reedgrass (*Calamagrostis nutkaensis*), California canary grass (*Phalaris californica*), and occasional sedges (*Carex* spp.) and rushes (*Scirpus* spp.).

- *Monterey Pine on Young Stabilized Sand Dunes:* This plant association is of very limited occurrence, primarily in the vicinity of sites L and M and off-site at Spanish Bay. It is composed of patches of forest that are in the process of colonizing recently stabilized dunes. Areas between the patches are dominated by dune scrub species such as mock heather (*Ericameria ericoides*), beach sagewort (*Artemisia pycnocephala*), and beach evening-primrose (*Camissonia cheiranthifolia* ssp. *cheiranthifolia*). The understory in larger pine patches includes coast live oak, bush monkeyflower, California blackberry, bracken fern, and coffeeberry. Canopy closure is variable (40-70%), and the trees are moderate - to large - sized in dbh but may be relatively short-lived. Another unique aspect of this plant association is that the trees tend to retain their lower branches. The lower branches become twisted and curve down into contact with the ground, then rise again. This plant association provides wildlife habitat because of the unusual abundance of snags and downed trees and the diverse character of the understory. In stands of other plant associations these lower branches are frequently lost.

The soils within the DMF/PDP area are divided into 8 types as mapped in the Monterey County Soil Survey and are related to the substrate on which they have developed. The soil types include: Baywood sand, dune land, Tangair fine sand, Narlon loamy fine sand, Sheridan coarse sandy loam, Santa Lucia shaly clay loam, Elder very fine sandy loam, and pits and dumps. Most of the soils are developed on sand or sandy loam over granitic bedrock. In general, the soils not developed on beach or dune deposits are moderately shallow, with bedrock exposed at the ground surface or buried at depths of 3 to 6 feet. These soils tend to be moderately well drained, but the erosion potentials are highly variable because of differences in surface gradients. Nearly level topography south of Point Joe gives way to progressively steeper lands to the east and south, culminating around Huckleberry Hill and Pescadero Canyon. Moderately deep, clayey loam soils have developed on the marine terraces cut in silty sandstone or weathered shale.

2.2 Description of Project Components

2.2.1 Proposed Golf Course and Associated Facilities

Site Description

The proposed golf course will be developed on approximately 214 acres in Areas MNOUV. Approximately 116 acres of that total are forested, with the balance containing lands in recreational use, paved roads and areas disturbed by previous quarrying operations. Such lands include: the current Pebble Beach Equestrian Center toward the south (Area U in part), the existing driving range between Stevenson Drive and Forest Lake Road in the southeast (Area V in part), and previously disturbed areas associated with the Spyglass Quarry toward the north (Area M in part). The forested areas occur more or less in the center between these disturbed areas and are traversed by Stevenson Drive and Drake Road (primarily Areas N, O and parts of U, M & V) (see Figure 3). These forested areas occur primarily on Narlon soils and support a

mixed understory vegetation common throughout the Del Monte Forest. This central part of the golf course site supports Monterey pine forest of varying character with understory associations ranging from herbaceous and woody species on predominantly drier slopes in Area O and parts of Areas N & V to more mesic conditions supporting moisture-tolerant herbaceous understory plants, especially toward the westerly ends of Areas N & U. Several special-status species and seasonal wetlands have been identified and mapped in the area (see accompanying Special-Status Species and Wetlands reports). The forest in this area is surrounded by a variety of uses (e.g. Cypress Point Club, Pebble Beach Driving Range, Pebble Beach Equestrian Center, Spyglass Quarry, residential neighborhoods, Spyglass Golf Course) and fragmented by existing trails and roads through and adjoining the area, including Stevenson Drive, Bristol Curve, Sombria Lane, and Drake, Ondulado and Portola Roads as well as two other gated, wide, unpaved roads in Area V.

Project Description

The project will construct a new 18-hole golf course in former subdivision areas M, N, O, U & V. Approximately 61 acres of Monterey pine forest, already fragmented by paved and unpaved roads and equestrian trails, would be removed to allow golf course improvements. Of the retained 55 acres of forest, approximately 4.25 acres is proposed to have the underbrush hand cleared within the golf course layout (see Figure 3). Special status species including Hooker's manzanita and Yadon's piperia will be affected by development of the course. These species are widespread throughout the Del Monte Forest. Species of more limited distribution in the Del Monte Forest including Pacific Grove clover and Hickman's onion will be avoided. All delineated wetland habitats in the area will be avoided with appropriate setbacks (see Wetlands report).

Construction of the golf course will also affect existing disturbed areas. The entire Equestrian Center/Collins Field area will be recontoured to construct the golf course. Areas between and abutting golf holes will be restored with approximately 15 acres of planted native pines and an additional 32 acres of other native landscape elements. Landscape management guidelines and appropriate forest maintenance standards (see RMP) will be established in the areas surrounding the golf course to maintain these forest elements in a natural condition.

Golf course construction will also involve the removal of over five acres of paved roadways within the interior of the site including Bristol Curve, Stevenson Road, Drake Road and Portola Road. Bristol Curve will be entirely eliminated, and Stevenson Road will be realigned. Infrastructure improvements along Stevenson/Forest Lake Roads and Ondulado/Alva Roads are considered components of the golf course project in this FMP.

Tree Removal

Construction of the course and all additional recreational and resort-related facilities in Areas MNOUV will involve the removal of an estimated total of 4,371 Monterey pine trees over 12" dbh and 61 oak trees over 12" dbh. Infrastructure improvements along Stevenson and Forest Lake Roads will result in the removal of 40 Monterey pine and 2 coast live oak over 12" dbh. Improvements along Ondulado and Alva Roads will remove 11 Monterey pine over 12" dbh.

Table 1 summarizes the forest acreage and trees removed and retained for all of the project components.

Tree Retention

Approximately 55 acres of forested lands within the proposed golf course will remain undeveloped and will be managed as a natural forest (see Table 1). An estimated total of 3,916 Monterey pine trees over 12" dbh and 55 oak trees over 12" dbh will be retained (Table 1).

2.2.2 New Equestrian Center

Site Description

The Pebble Beach Equestrian Center will be relocated to the Sawmill Quarry, an area previously disturbed by excavation for sand mining. The quarry area was mined continuously until the early 1980's; attempts at restoration on these highly impacted sites have been only marginally successful. The approximately 45.48-acre area is comprised of an upper and lower site bounded on the north, east and south by Huckleberry Hill and the S.F.B. Morse Botanical Reserve. The Equestrian Center will occupy portions of both the upper (18.13-acre) and lower (27.35-acre) sites with most permanent buildings and uses on the upper portion and temporary events and overflow parking in the lower area. Existing vegetation consists mostly of sparse plantings of Gowen cypress, Bishop and Monterey pine with limited understory. Large open areas remain, especially on the lower site. Small wetland areas, probably created by exposure of sub surface seepage as a result of mining, occur in both portions of the former quarry.

The forest character is delineated as follows:

- Forest Type 1: Residual, undisturbed forest where all trees were naturally seeded. Aside from the presence of over-mature trees, this forest type may also be defined by the mature state of the understory. The understory is dominated by huckleberry (*Vaccinium ovatum*), manzanita (*Arctostaphylos spp.*), salal (*Gaultheria shallon*), and small multi-stemmed coast live oak (*Quercus agrifolia*).
- Forest Type 2: A forest stand that was planted following mining operations that has relatively higher growth rates. This forest stand has a relatively high density of trees dominated by tall pines with few cypress, and little to no understory species.
- Forest Type 3: A forest stand that was planted following mining operations that has relatively moderate growth rates. This forest stand has a relatively high density of trees that grow at a relatively retarded rate. Species composition is dominated by pines, however cypress makes up 1/3 of the tree population. Understory consists of exotic-invasive plants such as acacia, French broom and a variety of non-native grasses.
- Forest Type 4: A forest stand in which tree planting was attempted after mining operations but since these areas have little-to-no soil required for tree establishment, trees are very sparse in number and in shape. Trees grow at the lowest rate within this development area.

TABLE 1
DMF/PDP: FOREST ACREAGE AND TREES REMOVED AND RETAINED

DMF/PDP AREAS				MONTEREY PINE								COAST LIVE OAK					
Designation	**Forest Acreage**			**Removed**				**Retained**				**Removed**			**Retained**		
	Existing	Removed	Retained	4-12"	12-24"	24"+	Total	4-12''	12-24''	24"+	Total	4-12"	12"+	Total	4-12"	12"+	Total
B[2]	24.34	2.2	21.34	66	48	64	178	664	487	642	1793	55	13	68	554	133	687
C	29.05	16.9	12.15	406	693	321	1420	292	498	231	1021	321	237	558	231	170	401
Inn[3]	--	0.48	--	22	30	--	52	--	--	--	--	--	--	--	--	--	--
Lodge[4]	--	--	--	4	15	7	26	--	--	--	--	23	44	67	--	--	--
F-2[5]	19.5	2.92	--	312	190	26	528	1774	1078	149	3001	--	--	--	--	--	--
F-3[6]	16.81	1.34	8.63	118	42	5	165	1361	480	62	1903	--	--	--	--	--	--
I-2[7]	18.72	2.53	--	89	127	--	216	567	810	--	1377	--	--	--	--	--	--
J	--	--	0.8	--	--	--	--	40	82	8	130	--	--	--	24	--	24
K[8]	10.62	0.22	--	23	17	1	41	1071	780	42	1893	14	2	16	655	104	759
MNOUV[9]	116.0	60.84	55.16	4808	3823	548	9179	4302	3420	496	8218	428	61	489	386	55	441
Eq.Center[10]	41.22	16.5	13.05	1031	267	16	1314	1749	848	65	2662	271	1	272	1109	--	1109
Corp.Yard[11]	--	--	--	1	7	--	8	--	--	--	--	--	--	--	--	--	--
PQR[12]	245.88	1.59	233.05	159	111	13	283	24429	17101	1954	43484	29	13	42	4397	1954	6351
G	47.92	0	47.92	0	0	0	0	8146	2588	288	11022	--	--	--	--	--	--
H	53.15	0	53.15	0	0	0	0	4199	3721	691	8611	0	--	0	53	--	53
I-1	40.48	0	40.48	0	0	0	0	5181	3198	364	8743	0	--	0	1822	--	1822
L	18.15	0	18.15	0	0	0	0	980	672	417	2069	0	--	0	200	--	200
Subtotal	**681.84**	**105.52**	**503.88**	**7039**	**5370**	**1001**	**13410**	**54755**	**35763**	**5409**	**95927**	**1141**	**371**	**1512**	**9431**	**2416**	**11847**
HHNA[13]			200	0	0	0	0	9000	6800	1000	16800	0	--	0	1800	--	1800
Total		**105.52**	**703.88**	**7039**	**5370**	**1001**	**13410**	**63755**	**42563**	**6409**	**112727**	**1141**	**371**	**1512**	**11231**	**2416**	**13647**

[2] Area B tree loss estimates assume 2.2 acres removed for employee housing development; trees retained based on remaining undeveloped acreage. Retained forest acreage credit applies only to 21.34 acres dedicated open space.
[3] Forest acreage loss at The Inn at Spanish Bay assumes 0.48 acre of landscape forest removed for guestroom additions; tree loss based on actual counts.
[4] No forest habitat acreage loss will occur as a result of improvements at The Lodge at Pebble Beach; loss of landscape trees based on actual counts.
[5] Area F-2 tree loss estimates assume 2.92 acres removed for residential development; trees retained based on remaining undeveloped acreage. No credit for retained forest acreage.
[6] Area F-3 tree loss estimates assume 1.34 acres removed for residential development; trees retained based on remaining undeveloped acreage. Retained forest acreage credit applies only to 8.63 acres dedicated open space.
[7] Area I-2 tree loss estimates assume 2.53 acres removed for residential development; trees retained based on remaining undeveloped acreage. No credit for retained forest acreage.
[8] Area K tree loss estimates assume 0.22-acre removed for residential development; trees retained based on remaining undeveloped acreage. No credit for retained forest acreage.
[9] Acreages for new golf course include only forested areas. Tree loss estimates include improvements at Ondulado/Alva Roads and at Stevenson Drive/Forest Lake Road.
[10] Equestrian Center tree loss estimates include both planted and native Monterey pine and planted Bishop pine within the development footprint. Tree loss estimates also include improvements at entry and at Congress Road. Credit for trees and forest acreage retained applies only to undeveloped areas designated as native forest (Forest Type 1—see text).
[11] Corporate Yard employee housing will not remove habitat or trees. However, tree losses from Sunridge/Lopez Road improvements are included here.
[12] Area PQR tree loss estimates assume 1.59 acres removed by residential development; trees retained based on remaining undeveloped acreage. Retained forest acreage applies only to ±233 acres dedicated to open space forest.
[13] Pine trees retained in HHNA may include a combination of Bishop and Monterey pine. No estimates made for native Gowen cypress retained.

Project Description

Buildings, stables and other permanent structures (e.g. covered arena for event functions) would occupy the upper 18.13-acre quarry area. Overflow parking and other temporary activities would be located on the lower 27.35-acre portion of the site. Construction of the new Equestrian Center facilities in the Sawmill Quarry area will result in the removal of Monterey pines, Bishop pines and Gowen cypress that were all planted as part of quarry reclamation. However, some naturally established Monterey pines and coast live oaks growing in the relatively undisturbed native forest area at the southeast boundary of the area will also be removed. Approximately 13 acres of native forest on the edges of the new facility will be retained and will provide an opportunity for restoration and ultimately add to the Huckleberry Hill preservation acreage.

Tree Removal

Approximately 13.5 acres of the reclaimed quarry area that currently supports planted trees would be cleared for Equestrian Center facilities (see Figure 4). An additional 3-acre area at the southeastern boundary of the site that supports native undisturbed forest (Type 1) will be developed. Tree loss estimates for the four forest types described previously are presented in Table 2 (see also Figure 4). Although not technically native Monterey pine forest under existing conditions, the tree losses that will result from development of the new Equestrian Center on previously mined substrates have been factored into the tree removal estimates and mitigation ratios for the DMF/PDP.

Table 2
Del Monte Forest Plan Equestrian Center Development Tree Removal Estimate

Forest Type (Acres)			Monterey Pine (Removed)				Bishop Pine (Removed)			Coast Live Oak (Removed)			Gowen Cypress (Removed)		
	Existing	Removed	1"-4"	4"-12"	12+	Total	1"-4"	4"-12"	Total	1"-4"	4"-12"	Total	1"-4"	4"-12"	Total
Type 1	16.2	3.15	158	134	16	308	0	0	0	599	268	867	0	0	0
Type 2	6.74	1.77	97	159	159	415	0	0	0	0	0	0	18	0	18
Type 3	8.28	6.92	127	542	58	727	219	162	381	0	0	0	369	150	519
Type 4	10.0	4.69	141	0	0	141	47	0	47	0	0	0	47	0	47
Total	41.22	16.53	523	835	233	1591	266	162	428	599	268	867	434	150	584

Tree removal estimates for improvements of the entry to the new Equestrian Center and improvements along Congress Road are not indicated in Table 2 but were included in the overall tree loss estimates for the Equestrian Center as presented in Table 1. The improvements along Congress Road are expected to remove 61 Monterey pine (20 < 12" and 41 > 12" dbh). The entryway improvements will remove 23 Monterey pine (14 < 12" and 9 > 12" dbh) and 1 coast live oak (> 12" dbh).
NOTE: Table 1 tree loss totals for the new Equestrian Center do not include the <4" dbh size class, Table 2 does.

Tree Retention

Approximately 13 acres of the native forest surrounding the quarry would remain undeveloped and all the delineated wetland areas on the site would also be avoided with appropriate setbacks. An estimated 913 Monterey pine greater than 12" dbh will remain along the periphery of the development area. There are no oak trees with a dbh over 12" as site soils limit oak growth. The understory contains a significant element of regeneration with 1,749 Monterey pines and 1,109 oaks in the 4"-12" dbh size class.

2.2.3 New Driving Range

Site Description

A new driving range, golf teaching facility and additional parking are proposed on an approximately 29.05-acre parcel known as Area C, located at the southeast corner of 17 Mile Drive and Congress Road at The Inn at Spanish Bay. Relatively undisturbed forest currently exists within this parcel. Both Monterey pine and coast live oak share the canopy in this area with a mix of mesic herbaceous and shrubby vegetation in the understory. There are small patches of chaparral species on the drier portions of the site, but most of the site supports dense, moisture-tolerant understory vegetation with relatively low pine seedling regeneration and recruitment. Some of the largest and most abundant oak trees observed in the forest occur in this area and in the adjacent Area B (see below). No special-status species have been recorded from the area, but a small wetland has been delineated near the southwestern corner of the parcel. The density and mesic nature of the understory as well as the relatively limited pine regeneration and co-dominance of oak trees and pines in the overstory may be attributable in part to the nature of the underlying soils (mapped as Baywood Sands). Slopes are gentle to moderate.

Project Description

A new driving range and a ±3,000 sq. ft. golf teaching facility are proposed for LUP Development Area C. The driving range site would also provide 301 parking spaces for employees, guests and driving range users. Approximately 17 acres of Monterey pine forest habitat would be removed by construction of these facilities, leaving an estimated 12 acres of native forest principally along the parcel perimeter and including the southwestern section of the parcel.

Tree Removal

Construction of the driving range and associated facilities in Area C will result in the removal of an estimated total of 1,014 Monterey pine trees over 12" dbh and approximately 237 oak trees over 12" dbh. Tables 3 and 5 provide a breakdown of the tree removal estimates.

Tree Retention

Approximately 12 acres of forested lands will remain undeveloped and will be managed as a natural forest. An estimated total of 729 Monterey pine and 170 oaks over 12" dbh will be retained.

2.2.4 The Inn at Spanish Bay

Site Description

The areas immediately around the existing facilities at The Inn at Spanish Bay are best characterized as landscaped forest. Approximately one-half acre of this forest will be removed by expansion of the existing guestrooms at The Inn at Spanish Bay.. A sparse canopy of native pines and oaks remains in many of the developed areas, adjacent to golf courses and parking lots, and along cart paths and trails. Landscaping with a variety of native and adapted ornamental plants has occurred in most areas adjacent to the facilities and non-native species like French broom and iceplant still require annual control in many of the less visible areas. The effects of pitch canker have been severe in the Spanish Bay area, with some of the highest tree losses from the disease in the forest.

Project Description

Construction of new buildings, remodeling of existing buildings, construction of additional parking areas (both above and below ground) and other improvements are proposed to add visitor accommodations and meeting space, improve interior resort operations, increase parking and improve circulation, and generally enhance the recreational resort experience at this facility. Less than 0.5 acre supporting landscaped Monterey pine will be affected by the Spanish Bay improvements. A mix of mostly herbaceous natives, introduced landscape materials and non-native invasive species in the understory will be displaced. No substantial habitat values will be lost, but the removal of this area constitutes a forest habitat impact that factors into the replacement ratio calculation discussed above.

Tree Removal

Expansion of The Inn will result in the removal of 30 Monterey pine trees over 12" dbh. Tables 3 and 5 provide a breakdown of the tree removal estimates.

Tree Retention

It is anticipated that all landscape trees surrounding The Inn at Spanish Bay that are not affected by construction will remain.

2.2.5 The Lodge at Pebble Beach

Site Description

The existing facilities at The Lodge at Pebble Beach occupy approximately 35 acres on several parcels. No forest habitat acreage loss will occur as a result of the improvements at The Lodge but some landscape trees will be removed for construction of the project components.

Project Description

The purpose of the project is to expand options for visitor serving accommodations at The Lodge, increase the efficiency of service to Lodge patrons, and improve accessibility to services for residents, guests, and visitors to this area of the Del Monte Forest. The project consists of several components, including: Colton Building - construction of a 20-unit guestroom building fronting the south side of the 1st Fairway of Pebble Beach Golf Links; Fairway One House - removal of the existing 5-guestroom Fairway One House and adjacent Cart Barn, and construction of 43 guestrooms over a 149 space underground parking garage; Meeting Facility - renovation and addition to the existing meeting facility; Parking and Circulation - realignment of parking and circulation around the existing Lodge meeting facility and construction of a new underground garage; and minor infrastructure improvements.

Tree Removal

Construction of the facilities for The Lodge will result in the removal of 22 Monterey pine trees and 44 coast live oak trees over 12" dbh that are included in the existing landscaping. Tables 3 and 5 and Figure 2 provide a breakdown of the tree removal estimates.

Tree Retention

It is anticipated that all landscape trees surrounding The Lodge that are not affected by construction will remain.

2.2.6 Employee Housing

Site Description

Employee housing is proposed for two areas of the forest: near the existing PBC Corporate Yard and in Area B. The former site is located in a previously cleared and disturbed area adjacent to the active quarry near the existing corporate offices and is heavily used for storage, and as a materials handling and staging area without any substantial biological resource value. Accordingly, developments to the PBC Corporate Yard are not addressed further in this report. The other area of employee housing will be located on approximately three acres at the northwest corner of Area B and is addressed below (see also Figure 5).

Area B (24.34 acres) is located at the intersection of 17 Mile Drive and Congress Road. The employee housing site is on and west of an unpaved forest road designated as Fire Road #11 in the Fire Defense Improvement Plan. Most of the proposed housing site has been used in the past for various forest and recreational operations (e.g. the excavated trench for the conveyor that transported sand to construct Spanish Bay passes through the site) and is depicted as disturbed in the DMF LUP. The forest character of Area B is very similar to Area C (Spanish Bay Driving Range). Monterey pine and coast live oak share the canopy with a mix of dense, mesic herbaceous and shrubby vegetation in the understory. There is relatively low pine seedling regeneration and recruitment. Large oak trees occur in this area and some localized occurrences of special-status species (Yadon's piperia) were recorded during 1995 and 2001 surveys. The

area is adjacent to the Navajo Tract and Rip Van Winkle Park, both of which are dedicated forest open space areas.

Project Description

Approximately three acres at the disturbed western tip of Area B will be rezoned to accommodate development of employee housing and 2.2 acres of forest will be removed for construction of four, two-story buildings. Approximately 21.34 acres of native forest in Area B will be dedicated as permanent open space, and combined with the 0.8 acre of remaining forest in the three-acre development parcel, will allow the retention and ecological management of the majority of the site adjacent to the Navajo Tract. Infrastructure improvements along Sunridge and Lopez roads are included in the project description for the employee housing because they are necessitated by development of the PBC Corporate Yard.

Tree Removal

Construction of employee housing units on this site will result in the removal of an estimated total of 112 Monterey pine trees over 12" dbh and approximately 13 oak trees over 12" dbh. Infrastructure improvements along Sunridge/Lopez Roads necessitated by development of the PBC Corporate Yard will remove 7 Monterey pine greater than 12" dbh. Tables 3 and 5 and Figure 2 provide a breakdown of the tree removal estimates.

Tree Retention

Limited development of the site will result in the retention and ecological management of approximately 22.14 acres of forest in Area B. An estimated 1,129 Monterey pine and 133 oak trees greater than 12" dbh will be retained within this forest.

2.2.6 Residential Lots

Site Description

New residential lots are proposed on portions of Areas F-2, F-3, I-2, K and P. Areas F-2 and F-3 abut Poppy Hills Golf Course and are located on the edges of the Huckleberry Hill Natural Area/S.F.B. Morse Botanical Reserve. Both of these areas are characterized by a Monterey pine canopy with occasional Gowen cypress and a mix of more xeric chaparral and herbaceous understory. Each exhibits disturbance due to fragmentation and proximity to roads and the golf course. Special-status species including Yadon's piperia, Hooker's manzanita and Hickman's onion are found in these subdivision areas. Area I-2 is a strip of undeveloped Monterey pine forest with primarily herbaceous understory along Viscaino and Ronda Roads and Poppy Hills Golf Course (approximately 18.72 acres). Yadon's piperia has also been found here. Area P is a part of the larger Area PQR with the subject lots located adjacent to existing houses and streets at the northwestern boundary of the area. Monterey pine with predominantly herbaceous understory characterizes this part of Area P. Area K is a relatively small (10.62 acres) isolated area located lower in the forest just above Stevenson Drive and Spyglass Hill Golf Course. Forest characteristics on this site tend towards mesic conditions with a mix of herbaceous and shrubby understory. Yadon's piperia is also found in this area.

Project Description

A total of 33 new lots are proposed in the DMF/PDP. For the purpose of this analysis, a cleared area of approximately 0.22-acre (9,580 square feet) is assumed for each lot, with additional allowances in some subdivisions for infrastructure improvements. Where appropriate, the remaining area of each lot/subdivision will be maintained in a natural state.

All of the proposed lots occur in small, fragmented parcels or as infill development at the periphery of larger areas. Lot development in Areas F-2 (10 lots) and F-3 (4 lots) will result in the loss of approximately 4.3 acres of Monterey pine forest with a chaparral understory at the margins of Huckleberry Hill. Approximately 2.5 acres of forest land in Area I-2 will be converted to development for 11 lots with access directly off Viscaino and Ronda Roads. Development of seven lots in Area P will remove approximately 1.6 acres of Monterey pine forest land at the northerly border of Area PQR. One residential lot in Area K will remove 0.22 acre of forested land in that subdivision. Thus, a total of approximately 8.6 acres of forested land will be removed as a result of the residential component of the DMF/PDP.

Tree Removal

Construction of residential lots in Areas F-2, F-3, I-2, K and P will result in the removal of an estimated total of 532 Monterey pine trees over 12" dbh and approximately 13 oak trees over 12" dbh. Table 3 provides a breakdown of the estimated losses and retention of Monterey pine trees (≥ 12"dbh) associated with each residential subdivision area.

Table 3
DMF/PDP Residential Component: Summary of Forest Acreage and Pine Tree Removal and Retention

Subdivision Designation	Total Area	# of Lots	Estimated Forest Acres Removed	Estimated Pine Trees Removed (≥ 12" dbh)	Estimated Forest Acres Remaining	Estimated Pine Trees Remaining (≥ 12" dbh)
F-2	19.5	10	2.92	216	16.58	1227
F-3	16.81	4	1.34	47	15.47	542
I-2	18.72	11	2.53	127	16.19	810
K	10.62	1	0.22	18	10.4	822
P	12.83	7	1.59	124	11.24	877
Total	77.65	33	8.6	532	69.88	4278

After construction is complete, property owners shall be subject to management guidelines defined in this plan and the Resource Management Plan when considering landscape designs and urban tree maintenance.

Tree Retention

Where appropriate, the remaining area of each lot/subdivision will be maintained in a natural state. In Area F-2, an estimated 1,227 Monterey pine greater than 12" dbh will be retained within the remainder of the undeveloped portion of the subdivision. In Area F-3, an estimated

542 Monterey pine greater than 12"dbh will be retained in the remainder of the undeveloped portion of the subdivision. In Area I-2, an estimated 810 Monterey pines greater than 12" dbh will be retained within the remainder of the undeveloped subdivision. In Area K, an estimated 822 Monterey pines and 104 oaks greater than 12" dbh will be retained within the remainder of the undeveloped subdivision. All native Gowen cypress observed in Areas F-2 and F-3 will be retained.

NOTE: The forest inventory plots sampled in Areas F-2, F-3, I-2 contained no oaks, therefore, there are no estimates for removed or retained oaks.

2.2.7 Preservation Areas

Site Description

Over 620 acres of Del Monte Forest lands (including the 200 acres of Huckleberry Hill pre-dedicated as compensation LUP build out) with a diversity of habitat subtypes and sensitive species will be designated and managed as permanent open space forest under the DMF/PDP. Some of these preservation areas (Area PQR, Huckleberry Hill) are large, unfragmented blocks of forest habitat, several (Areas G, H, a portion of F-3) are contiguous with these large blocks, others (Areas B & L) add to the acreage of an existing preserve area, thereby enhancing its habitat value. With the addition of these habitat lands, the area of undeveloped forest that will be under permanent preservation totals over 1,100 acres or about 80% of the remaining undeveloped forested lands in the Del Monte Forest. The estimated numbers of Monterey pine forest acreage and trees that will be retained and preserved in the preservation areas established by the DMF/PDP are summarized in Table 4.

Project Description

The designated preservation areas will be subject to monitoring and ecological management and restoration in accordance the Resource Management Plan for the project and the OSAC Forest Maintenance Standards adopted for each parcel. Ongoing elements of use and management will include hiking and equestrian trail access, required fuel hazard reduction, maintenance of approved fire suppression access roads, control of invasive non-native plants, and active forest regeneration projects where needed.

Tree Removal

It may be necessary to remove certain trees in accordance with the recommendations of the RMP to implement forest maintenance standards and/or improve the health of the stand. Major areas of tree removal are not anticipated in the preservation areas.

Tree Retention

The permanent open space forest preserves are to be managed for the long term health and sustainability of the native Monterey pine forest. Appropriate OSAC Forest Maintenance Standards are to be applied to these areas as described in the RMP.

2.3 Mitigation of Tree and Habitat Losses

With the dedication of over 423 acres of open space forest, combined with the 200-acre portion of the Huckleberry Hill Natural Area previously dedicated by the LUP to mitigate remaining forest buildout, mitigation for the DMF/PDP approaches a 6:1 ratio of forest set aside to compensate for the forest habitat losses associated with its development components (Table 4). This ratio far exceeds the agreement (3:1 ratio) reached with the California Department of Fish and Game (CDFG) for the Lot Program and CDFG's original recommendation of a 4:1 ratio for forest set aside to offset forest acreage impacts (Hunter 1999a & b). As CDFG further agreed, "Mitigation based on total acreage impacted would also address loss of trees over 12" dbh, as required by the LUP" (Hunter, 1999a). The estimated number of trees (both greater and less than 12" dbh) retained in these new open space forest areas is also shown in Table 4. Thus, the DMF/PDP is self-mitigating for forest acreage and tree removal impacts in response to PBC's consultation with CDFG.

Table 4
DMF/PDP: Forest Acreage & Tree Preservation in New Open Space Forest

Preservation Areas	DMF LUP OSF(Ac)	New OSF(Ac)	Total OSF (Ac)	Estimated Monterey Pine Retained in New OSF by Diameter Class			Estimated Coast Live Oak Retained in New OSF by Diameter Class		
				4-12"	12"+	Total	4-12"	12"+	Total
B	6.2	15.14	21.34	454	772	1226	379	91	470
F-3	0.0	8.63	8.63	758	301	1059	--	--	--
G	14.59	33.33	47.92	5666	2000	7666	--	--	--
H	29.78	23.37	53.15	1846	1940	3786	23	--	23
I-1	11.24	29.24	40.48	3743	2573	6316	1316	--	1316
J	0.0	0.8	0.8	40	90	130	24	--	24
L	0.0	18.15	18.15	980	1089	2069	200	--	200
PQR	88.00	145.05	233.05	14505	11313	25818	2611	1160	3771
Subtotal	**149.81**	**273.71**	**423.52**	**27992**	**20078**	**48070**	**4553**	**1251**	**5804**
HHNA*	200		200	9000	7800	16800	1800	--	1800
Total	**349.81**	**273.71**	**623.52**	**36992**	**27878**	**64870**	**6353**	**1251**	**7604**

*OSF acreage for HHNA includes the pre-dedication of approximately 200 acres of Monterey pine forest to compensate for losses associated with LUP build out.

In addition to the dedication of new open space forest preserves, the DMF/PDP includes retained forested lands around the new golf course, equestrian center and driving range that will be managed under appropriate forest maintenance standards. These areas will provide natural buffers and transitional habitat between preserved and developed portions of the forest. Forest maintenance standards will be applied to all of the preservation areas within the DMF/PDP as described in the RMP.

The DMF/PDP also provides opportunities for replanting trees throughout the preservation and retained forest areas as well as within and around development areas. As noted previously, an estimated 15 acres of native Monterey pine trees will be replanted adjacent to the new golf course facilities. Recommended planting spacings could vary from 10' (435 trees per acre) to 16 feet (170 trees per acre). Using an average of 300 trees per acre, approximately 4,500 Monterey pines could be planted over the 15 restored acres. Monterey pine and other native trees will also

be incorporated into the landscaping around the equestrian center, driving range and employee housing in accordance with the recommendations of the RMP.

Standard mitigation measures to protect trees during construction activities are included at the beginning of Section 4.3 of the MANAGEMENT AGREEMENT, and should be required for all project elements where tree removal for construction will occur adjacent to areas where native trees are to be retained.

3.0 PROJECT ASSESSMENT

The long-term sustainability of native stands of Monterey pine in the Del Monte Forest through preservation and management of forest resources is a principal component of the DMF/PDP. The DMF/PDP eliminates medium density residential uses planned for large tracts of forested lands contiguous with existing forest open space and allows only permanent resource conservation uses and practices on those lands. There will be a loss of some forest acreage and trees. The proposed golf course, driving range, recreation/resort and limited residential uses will result in the direct loss of approximately 105 acres of the existing inventory of undeveloped Monterey pine forest habitat and removal of an estimated 6,371 Monterey pine trees greater than 12" dbh. However, the DMF/PDP also establishes preservation areas totaling more than 620 acres that include large contiguous blocks of forest containing a diversity of habitat subtypes and special-status species and are well distributed across various geomorphic surfaces. These preservation areas provide almost a 6:1 mitigation ratio for the forest habitat losses associated with the development components of the DMF/PDP.

A discussion of impacts associated with the components of the DMF/PDP follows.

3.1 Discussion of Impacts

Table 5 presents a summary of forest acreage and tree losses associated with the DMF/PDP and Figure 2 summarizes tree removal for each of the designated components. Note that no naturally occurring Gowen cypress will be removed as a result of the DMF/PDP proposal.

Table 5
DMF/PDP: Summary of Forest Acreage & Tree Removal

Development Area	Est Acres Removed	Estimated Monterey Pine Removed by Diameter Class			Estimated Coast Live Oak Removed by Diameter Class		
		4-12"	12"+	Total	4-12"	12"+	Total
Golf Course-MNOUV	60.8	4808	4371	9179	428	61	489
Equestrian Center*	16.5	1031	283	1314	271	1	272
Driving Range-C	16.9	406	1014	1420	321	237	558
Inn at Spanish Bay	0.5	22	30	52	--	--	--
Employee Housing-B	2.2	66	112	178	55	13	68
Residential Units	8.6	701	532	1233	43	15	58
Lodge at Pebble Beach	n/a	4	22	26	23	44	67
Corporate Yard	--	1	7	8	--		--
Total	**105.5**	**7039**	**6371**	**13410**	**1141**	**371**	**1512**

* The total affected acreage, including reclamation areas, and estimated losses of both natural and planted Monterey pines and planted Bishop pines are shown for the Equestrian Center. See Table 1 for a breakdown for each pine species and estimated losses of planted Gowen cypress.

These tree and forest acreage removal figures are then combined with figures for trees and forest acreage retained under the DMF/PDP in Table 1 to give a complete numeric picture of overall project impacts on affected forest resources. A number of footnotes are included to clarify factors and assumptions used in calculating these estimates.

In summary, a total of 105.5 acres of Monterey pine forest will be removed for development under the DMF/PDP, mostly for golf course or associated recreation facilities. This constitutes approximately 7.5% of the remaining undeveloped forest acreage within the Del Monte Forest[14]. However, over 500 acres (not including HHNA) will remain undeveloped. Approximately 420 acres of this will be dedicated as Open Space Preserve, protected from future development and the remainder will be managed as Open Space Forest in accordance with the applicable OSAC Forest Maintenance Standards defined in the RMP.

Construction of the proposed facilities has the potential to remove an estimated 6,371 ≥ 12" dbh Monterey pine and an estimated 371 ≥ 12" dbh coast live oak. However, an estimated 41,172 ≥ 12" dbh Monterey pine and an estimated 2,416 ≥ 12" dbh coast live oak will be retained within the DMF/PDP areas. Additional site specific native tree planting in the development areas can further increase the native tree inventory.

3.2 Alternatives Analysis

Several previous proposals for the Del Monte Forest included significantly more developable area and consequently more tree loss than what would result through implementation of the DMF/PDP. For example, of the more than 273 acres of additional open space forest to be permanently dedicated under the DMF/PDP, approximately 265 acres were zoned and planned for development under the DMF LUP prior to passage of Measure A. By design, the DMF/PDP reduces further fragmentation of the forest by locating new development adjacent to existing developed or disturbed areas and proposing preservation areas in large blocks that are contiguous with existing dedicated open space. Though there will be a loss of approximately 105 acres of forest, tree losses will be minimized to the extent practicable and more than 420 acres of forest (not including HHNA) becomes permanent open space and removed from future threats of piecemeal development.

Another means of evaluating the effectiveness of the DMF/PDP proposal in minimizing tree loss is to compare it with the lowest projected tree loss under the "environmentally superior alternative" defined by the County of Monterey in its Pebble Beach Lot Program FEIR (June 1997). In this document, the County estimates the number of Monterey pine ≥12" dbh to be removed at between 11,100 to 12,092 trees. The number of Monterey pines with ≥12" dbh to be removed under the DMF/PDP is estimated at 6,371 trees, reducing the impact by 4,729 to 5,721 trees (about 45%) over the previous plan.

3.3 Assessment of Project Components

3.3.1 Proposed Golf Course

The course has been designed with sensitivity for the surrounding natural environment. The golf course has been designed to avoid all wetlands, many of the known locations for special-status plant species in this area, and maintain setbacks from these resources consistent with the DMF LUP. Nearly half of the course (Holes 3, 4, 5, 6, 7, 8, 9, & 10) would be constructed on lands

[14]Assumes approximately 1,400 acres of natural and urban forest stands of Monterey pine forest remain undeveloped within the Del Monte Forest today.

with limited forest resources, having been used for the Pebble Beach Equestrian Center. Three other golf holes (Holes 15, 16 & 17) would be constructed on previously mined and disturbed areas associated with the Spyglass Quarry, designated as a Rehabilitation Area by the DMF LUP. Landscape management guidelines and appropriate forest maintenance standards (see RMP) will be established in the areas surrounding the golf course to maintain these forest elements in a natural condition.

Some Hooker's manzanita and Yadon's piperia, will be affected by development of the course but these species are also found at other sites within the DMF/PDP area that will be preserved. Species of more limited distribution including Pacific Grove clover and Hickman's onion will be avoided. All delineated wetland habitats in the area will be avoided with appropriate setbacks (see Wetlands report).

Approximately 55 acres of forested lands within the proposed new golf course will be retained and will be managed in accordance with the recommendations in the RMP. In addition, the entire Equestrian Center/Collins Field area will be recontoured and restored with replanted pine and native landscaping. Finally, several of the roads that now run through the area will be removed, providing opportunity for rehabilitation and replanting of over five acres of area that is currently paved. Approximately 15 acres of new replanted areas of pines will abut the golf course along with an additional 32 acres of other native landscape elements. Plant materials, especially special-status plants like Yadon's piperia, will be salvaged prior to grading and introduced into the newly recontoured and rehabilitated areas (see also Special-Status Species report). Landscape management guidelines and appropriate forest maintenance standards (see RMP) will be established in the areas surrounding the golf course to maintain these forest elements in a natural condition.

Numerous golf course location and design alternatives have been reviewed. The current proposed location and design has the least impact upon forest resources of all previously considered plans. PBC has made a concerted effort to enhance and improve visitor-serving uses and to impact as little of the relatively undisturbed sites as possible. Redevelopment of obsolete facilities and previously disturbed areas is testimony to this effort. Furthermore, PBC is proposing to include much of the remaining forest around the golf course in a conservation area that will be managed as open space forest pursuant to the measures described in the RMP.

Recommendation to minimize tree removal impacts: When clearing and grading limits have been staked for construction within existing Monterey pine forest, the clearing contractor, the golf course designer, and the qualified forester for the project should meet to review the actual condition of the trees along the project perimeter. This will allow minor adjustments to be made to preserve and protect especially large, healthy and valuable trees as well as to determine those trees that threaten life or property along the edges of the area being cleared. A second review may be advisable after trees have been removed from the majority of the area to be cleared as it is easier to visualize both project requirements and possible minor revisions at that time.

3.3.2 New Equestrian Center

Reclamation of the Sawmill Quarry site was required with termination of the original silica mining and subsequently with approval of the Spanish Bay project, but planted trees have not

become well-established on the disturbed and relatively barren substrates remaining in the borrow areas. Both short term and long term impacts associated with construction of the equestrian center in this area will be minimal. The retention of 13 acres of native forest on the edges of the new facility will act as a buffer to the adjacent Huckleberry Hill Natural Area, provide an opportunity for restoration and ultimately add to the Huckleberry Hill preservation acreage. An active non-native species eradication program associated with the day to day Equestrian Center operations could greatly improve the present degraded quality of the habitat on the periphery of the quarry area (see RMP). Controls on equestrians and other users of the Huckleberry Hill trail system are proposed so that increased use does not result in habitat degradation in the HHNA.

The present proposal for development provides for the least amount of impact to residual, undisturbed forest resources. Given the poor state of the forest resources on this site, it is preferable to develop the previously impacted forest and preserve additional native forest. This proposal satisfies the intent of Monterey County to reduce the impact on native forest resources.

Recommendation to minimize forest habitat impacts: 1) To protect the drainage channels in the adjacent HHNA and/or S.F.B. Morse Botanical Reserve, site runoff should be collected and distributed as recommended in the Ecological Management Plan (EMP) prepared for the DMF/PDP (Questa Engineering 2002). 2) Impacts of increased use of existing roads and trails within the HHNA and the S.F.B. Morse Botanical Reserve should be monitored and protective measures implemented if necessary.

3.3.3 New Driving Range

The new driving range has been designed with sensitivity for the surrounding natural and public environment. The remainder of the site, including the delineated wetland and appropriate setback area, will be retained. Habitat values in these remaining areas would be reduced by fragmentation, but with appropriate management and maintenance, the undeveloped lands on the boundary of the driving range could provide some habitat continuity with adjacent preserved lands. Landscape management guidelines and appropriate forest maintenance standards, especially regarding the use of native landscape materials and controlling the establishment and spread of non-native invasive plant species like French broom (see RMP), will be established in the remaining natural areas surrounding the new range. Maintenance standards have been developed to maintain the freshwater wetland area at the southwestern corner of the site (see also Wetlands report).

The distribution of forest resource is fairly uniform across Area C. The selection of the specific location for the driving range was refined to minimize forest impacts adjacent to Spanish Bay.

3.3.4 The Inn at Spanish Bay and The Lodge at Pebble Beach

No substantial habitat values will be lost as a result of the proposed expansion of the Inn at Spanish Bay or the improvements to The Lodge at Pebble Beach. Nevertheless, the removal of trees in these areas was included in the overall forest impact assessment and calculation of replacement ratios. Both short and long-term impacts will be negligible.

There are no alternatives that would substantially lessen the impact on forest resources or minimize tree removal for either of these project components.

3.3.5 Employee Housing

Rezoning of an approximately three acre area at the disturbed western tip of Area B and development of just over two acres within it will not substantially affect long term forest values on the site and will allow the retention and ecological management of the majority of the site (22.14 acres) adjacent to the Navajo Tract. Non-native invasive plants have become established in the proposed development area and provide a seed source for spread to other areas. Proximity to residential areas already results in heavy use of Area B for recreational purposes, which can be detrimental to native habitat values. Appropriate forest maintenance standards, such as controlling establishment and spread of non-native invasive plant species and appropriate limitations on access and use of the area are being proposed in the preservation areas surrounding the employee housing site (see RMP).

The distribution of forest resource is fairly uniform across Area B, other than the disturbed site, which overlaps with the proposed employee housing area. Consequently, there is no alternative location within Area B that would reduce the impacts upon forest resources over that proposed.

3.3.6 Residential Lots

All of the proposed residential lots occur in small, fragmented parcels or as infill development at the periphery of larger areas. No large tracts of natural forest will be adversely affected by these proposed residential lots. Impacts upon the forest resources both short-term and long-term will be minimal. Area F-2 currently serves as the PBC nursery annex and materials storage yard and is heavily disturbed. All lots proposed as part of the DMF/PDP were designed to have sufficient size to allow for building sites while avoiding or minimizing removal of sensitive resources such as Gowen cypress, Hooker's manzanita, Yadon's piperia and Hickman's onion. Site-specific forest management plans will be completed for each lot as it is developed. Encroachment into the Huckleberry Hill NHA/S.F.B. Morse Botanical Reserve, riparian areas, wetlands or other sensitive areas will also be avoided by design. For example, lots in Area F-3 are large (1.5 acre minimum) and clustered away from the Huckleberry Hill/S.F.B. Morse Botanical Reserve boundary. Open space forest dedication (through easement or deed restriction) of over eight acres in Area F-3 will accompany the lot designation in this area. All lots in Area P are located immediately adjacent to existing residential development to avoid degradation of the large open space forest of Area PQR.

Recommendations to minimize tree removal and forest habitat impacts: 1) Each proposed new residential lot should have an individual FMP amendment prepared for the lot once specific housing designs are prepared to guide development so that forest habitat and tree losses are minimized. 2) Landscaping in the Corporation Yard where employee housing will be constructed, Area F-2, Area F-3, and Area I-2, should follow the guidelines in the RMP in order to avoid contaminating native Gowen cypress areas in Huckleberry Hill with either pollen or volunteer seedlings from Monterey cypress which is not native to the site.

3.3.7 Preservation Areas

The addition of DMF/PDP Open Space Forest effectively forms several large unfragmented blocks of forest habitat that include a diversity of habitat subtypes and occur over a range of geomorphic surfaces. Special-status species, remnant dunes, riparian corridors and environmentally sensitive habitats are also contained within these preservation areas. The conservation value of enlarging and consolidating existing open space as proposed in the DMF/PDP is extremely important. All of the existing open space areas of any size that are not already surrounded by development are expanded and their connectivity is greatly increased and new areas are added. The preservation and management of these forest habitats will contribute to the long-term sustainability of native stands of Monterey pine, especially as it relates to the Del Monte Forest.

4.0 MANAGEMENT AGREEMENT

4.1 Management Objectives

Minimize erosion (in order to prevent soil loss and siltation).
Preserve natural habitat (includes native pine forest, understory vegetation, and associated wildlife on site).
Prevent forest fire (i.e., uncontrolled fires).
Preserve scenic forest canopy, as located within the Critical Viewshed (i.e., visible from Highway 1 or any other public viewing area).
Preserve landmark trees.

4.2 Definitions

Forest Management Area (FMA). That land identified in the DMF/PDP and this FMP.

Landmark tree. Any native tree more than 24" in diameter or which is designated as visually or historically significant, exemplary of its species, or more than 1,000 years old.

Significant tree. Any native tree more than 12" in diameter.

Retained tree. Any significant tree not shown for removal on an approved final site plan submitted in compliance with Coastal Development Permit.

Diameter (dbh). Thickness of main trunk of tree as measured 4'6" above the average ground surface at base of tree ("diameter at breast height").

Dripline. The outer edge of the area beneath the crown of a tree.

Greenbelt. An area around the construction zone which, for purposes of fire protection, is kept free of highly flammable vegetation and is stabilized with green, growing plants.

Pine. Unless otherwise identified in more detail, pine means Monterey pine (*Pinus radiata*).

Resource Management Plan (RMP). A separate document prepared in conjunction with the applications of Pebble Beach Company for the DMF/PDP. It provides management and monitoring prescriptions for the Monterey pine forest and associated natural resources included in the preservation areas of the DMF/PDP.

4.3 Management Measures

Tree Care During Construction

To protect trees during construction activities, the following measures, adapted from the Residential and Architectural Standards for Del Monte Forest, shall be strictly adhered to:

1. Around each tree or group of trees to be preserved adjacent to construction sites, a boundary of orange snow netting supported by wood or metal stakes (or functional equivalent) shall be erected along the approximate driplines of such protected trees or closer where specifically approved by a qualified forester, arborist, or the County of Monterey. Where guidance of a tree professional is used, encroachment into the dripline of retained trees may occur in order to minimize tree removals.
2. No excavation, storage of excavated fill, equipment, or construction materials, nor parking of vehicles is permitted within the driplines of these fence-protected trees.
3. No soil may be removed from within the dripline of any tree and no fill of additional soil can exceed two inches (2") within the driplines of trees, unless it is part of approved construction, is reviewed by a qualified forester or certified arborist, and approved by Architectural Review staff.
4. Bark injury to any tree from equipment or materials is not acceptable and is prevented by faithfully respecting the tree protection fencing required above.
5. Roots exposed by excavation must be pruned to promote callusing, closure and regrowth, and should be recovered as soon as possible if tree health is to be reasonably maintained. All tree work shall be monitored by a qualified forester or certified arborist and work completed by qualified tree service personnel.
6. All tree work shall be monitored by a qualified forester, certified arborist, or tree professional and work completed by qualified tree service personnel.
7. Site specific and individual tree recommendations per individual residential lot shall be addressed on each individual lost as specific site plans for construction are developed.

Tree Removal. No significant tree will be removed without a Coastal Development Permit (other than trees designated for removal on an approved Tree Removal Plan) unless the removal includes one of the following: a) removal is consistent with the forest maintenance standards in the RMP; b) removal of non-native or planted tree; c) removal of tree posing an immediate danger to life or structures; d) thinning of dead native tree or live tree less than 12" in diameter; e) prescribed burning , crushing or lopping which do not materially disturb underlying soils; f) a Timber Harvest Plan which has been required for commercial logging in accordance with State requirements: or if the Zoning Administrator of Monterey County determines that the removal includes:

1) removal of diseased trees (especially pitch canker infected) which threaten to spread the disease to nearby forested areas as verified in writing by a qualified professional forester selected from the County's list of consulting foresters; or
2) removal of trees in accordance with a previously approved Forest Management Plan, including trees mentioned as possible removals earlier in this Plan.

Due to extensive future tree mortality expected from pine pitch canker, this Forest Management Plan assumes that any such future removals would be considered approved in advance upon confirmation in a qualified forester's report rather than triggering an FMP amendment, notification requirement, and separate Coastal Development Permit. *When removing any tree infected with pine pitch canker, sanitary disposal techniques will be utilized, in accordance with current procedures employed by Pebble Beach Company and principles delineated by the Pitch Canker Task Force, to minimize the risk of spreading the disease.*

Application Requirements. Where a Coastal Development Permit is required, trees proposed for removal will be conspicuously marked by flagging or paint. Proposed removal of native trees will be the minimum necessary for the proposed development. Removal not necessary for the proposed development will be limited to that required for the overall health and long-term maintenance of the forest, as verified in this plan or in subsequent amendments to this plan.

Landmark Trees. All landmark trees adjacent to construction sites will be protected from damage if not permitted to be removed under a Coastal Development Permit, or as a diseased tree which threatens to spread the disease to nearby healthy trees, or as a dangerous tree which presents an immediate danger to human life or structures.

Dead Trees. Because of their wildlife habitat value (particularly as nesting sites for insect-eating birds), large dead trees beyond the greenbelt may be left in place at owner's discretion. Smaller dead trees will normally be removed in order to reduce fire hazard. Because no Coastal Development Permit is needed for their removal, dead trees within the DMF/PDP area may be removed at the convenience of the owner.

Thinning. Due to expected impacts of pine pitch canker over the next number of years, no live Monterey pine tree less than 12" dbh shall be cut or removed, unless a forester's report confirms that they are a hazard, should be removed to decrease potential for disease or pest problems, or should be thinned to promote the growth of neighboring trees. Trees less than 12 inches dbh may be thinned for the above purposes confirmed by a forester's report without first obtaining a Coastal Development Permit.

Fire Prevention. During the construction phase, fire risks will be high due to the numbers of people and equipment involved. Meetings will be held between the contractors, the California Department of Forestry and Fire Protection, and Pebble Beach Community Services District Fire Department to coordinate fire prevention activities. Periodic on-site fire prevention inspections will be conducted by fire authorities. Contractors will be expected to be familiar with and abide by appropriate fire regulations contained in the 4000 series of the Public Resources Code.

Use of Fire (for Clearing, Etc.). Open fires will be set or allowed within the DMF/PDP area only as a forest management tool under the direction of the California Department of Forestry and Fire Protection authorities, pursuant to local fire ordinances and directives.

Clearing Methods. Brush and other undergrowth, if removed, will be cleared through method(s), which will not materially disturb the ground surface. Hand grubbing, crushing, and mowing will normally be the methods of choice. Areas laid bare by clearing, other than firebreaks, will be sown with native vegetation according to the guidelines provided in the Resource Management Plan. Sowing of cleared areas will be completed prior to the onset of the winter rainy season.

Irrigation. In order to avoid further depletion of groundwater resources, prevent root disease, and otherwise maintain favorable conditions for the native forest, irrigation will, as much as practicable be confined to developed areas unless otherwise authorized by a professional forester.

Exotic Plants. Care will be taken to eradicate, and to avoid introduction of, the following pest species, all of which are currently found within the DMF/PDP area:

Pampas grass
Genista (Scotch broom, French broom)
Periwinkle

Eradication procedures will follow the guidelines in the Resource Management Plan

Forest Products. The tree removal phase of this project will generate a considerable volume of forest products. These products will be in the form of sawlogs, cordwood, chips or combinations thereof. Pebble Beach Company will obtain the necessary approvals from and work cooperatively with the appropriate agencies to insure that this commodity is properly and fully utilized. Efforts will be made to avoid disposal of the forest products in sanitary landfills. Disposal of material infected with pine pitch canker will be done in accordance with current procedures employed by Pebble Beach Company and principles delineated by the Pitch Canker Task Force, to minimize the risk of spreading the disease.

Forest Open Space. The DMF/PDP establishes large, unfragmented Monterey pine forest preserves that are connected to other habitats and habitat areas. The preserve areas include Huckleberry Hill and Area PQR which encompass most of the remaining undeveloped watershed of Seal Rock Creek and Sawmill Creek (Huckleberry Hill and associated new open space forest preserve areas) and Pescadero Creek (PQR and the adjacent Pescadero Canyon open space forest area). The designation of new open space forest habitat areas adjacent to Huckleberry Hill (Areas G, H, F-3 and I-1) enhance and expand the habitat connectivity and buffer area around the HHNA established by the LUP and provide additional high value habitat. These preserves allow adequate separation from residential and other uses, natural processes of forest decay and regeneration, wildlife movement, opportunity to consider use of prescribed fire, and the ability to implement an ecological management and monitoring program less constrained by proximity to urban, suburban and active recreational uses. Smaller areas to be preserved include Area L, which enhances the habitat values and expands the protections for the sensitive species in the Indian Village area, and Area B, which adds to the Navajo Tract and Rip Van Winkle Park forest preserve. The location, configuration, and improved edge to area ratio of these areas will help assure the long-term sustainability of the Monterey pine forest ecosystem in the Del Monte Forest.

The DMF/PDP establishes large habitat preserve areas that enable ecologically-based habitat management of the forest. Elements of the management program are detailed in the Resource Management Plan and may include replanting, localized short-term removal of competing vegetation, control of non-native species, the creation of gaps, and possible limited use of prescribed fire, if warranted and allowed.

While prescribed burning may be the ideal management procedure for Monterey pine from a purely ecological perspective, safety and liability issues pose strict limitations on its use in the Del Monte Forest. In addition, strictly controlled, small, prescribed burns may not produce the desired results based on recent experience in the forest. Assuming that controlled burns are generally infeasible or inadvisable, other treatments may be used to good advantage to create

forest patches, such as physical removal of individual or small groupings of common shrubs that would compete with tree seedlings for light and/or water.

4.4 Amendments

The Monterey County Director of Planning may approve amendments to this plan provided that such amendments are consistent with the provisions of the originally approved or subsequent Coastal Development Permit. Location specific amendments to this Forest Management Plan will be required for proposed tree removal not shown as part of this Plan or when the proposed removal requires a Coastal Development Permit (for example: construction of a home on one of the 33 residential lots created by the DMF/PDP).

4.5 Compliance

It is further understood that failure to comply with this Plan will be considered failure to comply with the conditions of the County Development Permit.

4.6 Transfer of Responsibility

This Plan is intended to create a permanent forest management program for the site. It is understood, therefore, that in the event of change in ownership this Plan shall be as binding on the new owner(s) as it is upon the present owner. As a permanent management program, this Plan will be revised as needed to stay current with the best ecological and scientific information available with respect to forest management and trends in the Del Monte Forest in particular.

4.7 Signatures

Forest Management Plan Prepared by:

Luis Garcia-Bakarich, Associate Forester — Date: 9/23/02

and

Roy Webster, RPF #1765 — Date: 9/23/02

Owners' Agreement to Provisions of the Plan:

Mark Stilwell, Executive Vice President — Date: 9/25/02

Forest Management Plan Approved by:

Director of Planning, Monterey County — Date

5.0 EXHIBIT SECTION

Contents:

APN Numbers for Designated Components of the DMF/PDP

Figures 1-5

APN Numbers for Designated Components of the DMF/PDP

DMF/PDP Area	APN Parcel Number(s)
B and C	007-101-041
Inn	007-091-028
Lodge	008-423-030, 008-423-019, 008-423-031, 008-431-009, 008-423-029
F-2	008-032-004
F-3	008-032-006
I-2	008-031-014
J	008-561-020
K	008-022-031
MNOUV	008-241-008, 008-242-007, 008-272-010, 008-272-011, 008-311-011, 008-312-002, 008-313-002, 008-313-003, 008-321-006, 008-321-007, 008-321-008, 008-321-009
Equestrian Center, Corporation Yard, G, HHNA	008-041-009
PQR	008-171-009, 008-171-022
G	008-041-009
H	008-031-015, 008-034-001
I-1	008-031-017
L	008-021-007