Biological Resources Review
Del Monte Forest Plan
Pebble Beach
Monterey County, California

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August 2010
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1.0 INTRODUCTION

This report has been prepared by Zander Associates to review and update, as necessary, the extensive body of biological resource information contained in the Environmental Impact Report prepared for the Del Monte Forest Preservation and Development Plan (DMF/PDP EIR) and prior studies and environmental documents. It summarizes the existing biological resources information for each area proposed for development in the current Del Monte Forest Plan (DMFP), considers the potential impacts of the DMFP, and presents applicable mitigation measures based on the impact analysis and accepted mitigation measures from the DMF/PDP EIR and subsequent agency agreements.

Numerous biological resource surveys and assessments have been conducted to evaluate development proposals on Pebble Beach Company lands in the Del Monte Forest over a period of more than 20 years. Most of this information is included in the DMF/PDP EIR, its appendices, and various other background documents. Since the Final DMF/PDP EIR was published, Zander Associates has completed additional biological resource assessment work in the Del Monte Forest. Notably, we evaluated the nature and extent of dune substrates in the Spyglass Quarry area (Area M), conducted additional wetlands assessment work, and updated surveys for selected special-status plant species in some areas. In addition, we conducted reconnaissance level surveys of all proposed DMFP development areas during May 2010 to confirm that conditions in the forest relative to vegetation and wildlife habitat characteristics had not substantially changed since more thorough surveys were done. The results of this additional work are incorporated into the following text as appropriate.

Also, subsequent to publication of the Final DMF/PDP EIR, PBC consulted with the U.S. Fish and Wildlife Service on mitigation for impacts to Monterey pine forest and forest resources, notably Yadon’s piperia. PBC also entered into negotiations with the staff of the California Coastal Commission to craft a mutually acceptable development plan for its lands in the Del Monte Forest. The agreements resulting from these agency interactions are also addressed herein as appropriate.

It is not the intent of this report to reiterate and repeat at length the information and analyses that already exist in the record. The DMF/PDP EIR, its technical appendices, and, to a certain extent, the Pebble Beach Lot Program EIR (1999) and its supporting documents contain detailed information on Del Monte Forest biological resources, and those documents are incorporated herein by reference. The purpose of this report is to present an overview of the existing vegetation and wildlife habitat conditions in the proposed DMFP development areas, consider potential impacts, and identify appropriate mitigation measures for the DMFP using the prior environmental analyses with updated information from subsequent agency agreements.

Some areas (principally Del Monte Forest Land Use Plan [LUP] Areas L and J), not proposed for development in the DMF/PDP, have been added as development areas in the current DMFP and are considered below. However, several of the areas proposed for development in the DMF/PDP have been converted to preservation areas in the current DMFP. No development impacts on
biological resources will occur in these areas and impacts and mitigation measures discussed in the DMF/PDP EIR are no longer applicable or relevant to them. These areas include:

- Area C
- Area F-1
- Area F-3
- Area N
- Area O
- Area PQR
- Sawmill Site

2.0 EXISTING CONDITIONS - DMFP DEVELOPMENT AREAS

2.1 Area B (Parking)

Area B consists of Monterey pine forest in association with coast live oak on an approximately 24 acre site. Much of the site is densely forested with a nearly 100% closed canopy. Because of the dense canopy, seedlings and recruits are not abundant; rather, the area supports larger, mature trees with diameters up to and exceeding three feet. The understory vegetation is relatively dense and consists of mesic (moisture-tolerant) shrubs and herbs associated with Monterey pine forest. There is little bare ground except for the fire roads and trails crossing the site. Snags and downed wood are common throughout the area. Scattered Yadon's piperia plants have been found in the center and northern parts of the area. A drainage corridor and some associated riparian vegetation are found along the eastern boundary.

An approximately 3.2 acre area westerly of the western most fire road is proposed for parking for the Spanish Bay Resort. This area is more disturbed than the remainder of the site as evidenced by an abundance of non-native plants including French broom, echium, and acacia.¹ Remnants of a former conveyor trench used to transport sand from the Sawmill Quarry during the construction of the Inn & Links at Spanish Bay are found along the southwesterly boundary of Area B, more or less parallel to Congress Road. The approximately 6-8 foot-deep trench was left open following construction and has since become a “naturalized” part of the forest. The side walls of the trench have eroded and sloughed over time; both the banks and the bottom have been colonized by a variety of native and non-native vegetation.

Although initially characterized as a man-made wetland area,² a thorough assessment in 2008 by both Coastal Commission staff and Zander Associates confirmed that the trench area does not support a prevalence of hydrophytic vegetation nor does it exhibit hydrologic or soils characteristics typically associated with coastal zone wetlands. Under existing conditions

¹ This part of Area B was used historically for maintenance and staging purposes resulting in disturbance associated with the accessibility provided by the fire road.
² Data collected as part of the County’s wetland assessment in 2000 indicated near surface saturation and two dominant facultative wetland plants, rabbitsfoot grass and creeping bent grass, in the bottom of the trench. Consequently, an approximately 200-foot linear feature was mapped as a wetland in Area B as part of that study.
(“normal circumstances”), the area does not meet either federal Clean Water Act or California Coastal Act criteria required to classify it as a wetland.

2.2 Area F-2 (Residential)

Area F-2 compromises approximately 19.5 acres of Monterey pine forest (herbaceous and woody understory subtypes) in a roughly rectangular shape surrounded on all sides by Poppy Hills Golf Course. The entire site is planned for subdivision into 16 residential lots of an average of 1.11 acres in size. The northern end of Area F-2 is forested by Monterey pine, with scattered clusters of isolated Gowen cypress and Bishop pine. Toyon and coffeeberry are shrub co-dominants in the northern quarter and huckleberry, Monterey manzanita, and shaggy bark manzanita are co-dominants in the shrubby understory throughout the site. However, shrubs gradually become more widely separated toward the central and southerly part of the site which has been used historically as native plant nursery annex and staging area. As the shrubs thin, grasses, sticky monkeyflower, and a variety of non-natives predominate the forest floor. Gowen cypress were planted along the northern boundary of Area F-2 as mitigation when Poppy Hills Golf Course was constructed. Some Bishop pines are located near Gowen cypress in the northern portion of the project area and also near the fire road that crosses the site. A relatively small and scattered population of Yadon's piperia can be found in this area, supporting approximately 514 plants during the 2004 census. The southern third of the subdivision also supports a medium density understory of Hooker's manzanita, while the northern two-thirds supports a low density understory. Pine rose is also found on the site.

2.3 Area I-2 (Residential)

Area I-2 is an approximately 18.7 acre, relatively narrow, linear strip of remnant Monterey pine forest (woody understory and oak subtypes) along the southern side of Poppy Hills Golf Course, bordered by Vizcaino Road on the west and Ronda Road on the south. The entire area is planned for subdivision into 16 residential lots of an average of 1.14 acres in size. The Monterey pine forest on this site is relatively open, and the trees are of mixed ages. Some trees reach 80 feet in height, however, most are in the range of 60-70 feet. A moderate number of coast live oak also occur on the site. Scattered woody shrubs including coyote brush, Monterey manzanita and sticky monkeyflower are represented in the understory, but nowhere do they form impenetrable stands. Forbs and grasses, including hairgrass and wildrye, grow in the openings. Yadon's piperia occurs primarily in the western half of this site, totaling about 203 plants in the 2004 census. Most of the subdivision is covered by a high density Hooker's manzanita understory. There is a deep erosion gully through the northerly part of the site, but it does not support aquatic habitat or wetland plants. Under federal regulations, erosion gullies are not considered “waters of the United States.”

2.4 Area J (Residential)

Area J consists of approximately 9.4 acres off Spyglass Woods Drive proposed for subdivision into five residential lots averaging 0.76 acre each with four preservation areas totaling 5.58 acres. The property consists of a relatively isolated patch of Monterey pine forest adjacent to the developed Spyglass Woods subdivision and the 12th and 13th holes at Spyglass Hill Golf Course. Understory vegetation is characteristic of slightly more mesic (moist) conditions. The site is cut by two ephemeral tributary headwater forks of Seal Rock Creek. The intermittent stream
channels provide for some riparian and wetland habitat but these areas are also dominated by Monterey pine.

Area J is divided into three distinct segments that are separated from each other by Spyglass Woods Drive, existing homes, and stream channels. The smallest of the sections is adjacent to Stevenson Drive and North of Spyglass Woods Drive, where the confluence of stream channels at a relatively level section of ground supports a mesic plant community of primarily upland or facultative-upland riparian species. This vegetation includes numerous seedling pines, blackberry, poison oak, wax myrtle, acacia, bracken fern, sword fern, rush, sedge, willow herb, fireweed, pampas grass, baby tears, and introduced annual grasses. The drainage channels in this section are also densely vegetated and contain many exotic species that significantly contribute to total cover.

The southernmost section bounded by Stevenson Drive to the west and south of Spyglass Woods Drive is made up of an uneven-aged stand of Monterey pine. The understory in this section provides 100 percent cover with herbaceous plants contributing 70 percent cover, and shrubs making up the remaining 30 percent. Sedge is a dominant herbaceous plant.

In the southwestern portion of this section there is a deeply incised stream channel. The vegetation along the channel differs from the rest of the section by the more numerous and larger specimens of coffeeberry, wax myrtle, currant, and ferns.

The third section is northeast of the other two. This section is dominated by two stream channels that converge to the west of the section and then run into the wetland section. A sloping ridge between the two stream channels is dominated by a mostly-closed canopy of mature Monterey pine with a moderate number of snags and downed wood. Coast live oak trees form an intermediate canopy layer of about 40 percent cover. The stream channels are also dominated by mature Monterey pine, but there are more snags and larger gaps in the canopy. Oak trees are more numerous along the shoulders and banks of the stream channels and a well established stand of coast redwood trees occurs along the southern stream channel.

The stream channels, riparian plant community, and wetland created by the joining of the stream channels would be considered an environmentally sensitive habitat area (ESHA) under the LUP. A high density population of Yadon's piperia occurs in patches on each of the three portions of this subdivision, supporting approximately 2,400 plants. Approximately nine acres of Monterey pine forest (herbaceous and woody understory subtypes) occurs in Area J.

2.5 Area K (Residential)

Area K consists of two existing legal lots totaling 10.62 acres on either side of Stevenson Drive and adjacent to the 8th and 11th holes of Spyglass Hill Golf Course, respectively. These two lots are proposed for subdivision into a total of eight lots with an average lot size of 0.66 acres and preservation areas totaling 4.61 acres. Monterey pine forest with a primarily mesic shrubby and herbaceous understory is the dominant plant community in Area K. A few species associated with central maritime chaparral are also present, but these occur infrequently. A high density population of Yadon's piperia occurs in patches on this subdivision, supporting approximately 5,900 plants.
A Seal Rock Creek tributary and its associated riparian corridor cross the site, and a seasonal wetland of approximately one-third of an acre is found next to Stevenson Drive. Water flows through a culvert under Stevenson Drive and runs from the road edge down toward the 8th tee of the Spyglass Hill course. The stream channel is deeply incised; in one section it is approximately 18 feet deep and 30 feet across. A broad, relatively level area along the eastern side of the stream channel (northerly side of Stevenson Drive) acts as a flood plain. This area is seasonally wet and is vegetated by obligate and facultative hydrophytes. In this wetland, mature pine trees have fallen to produce an open overstory and a sunny clearing. A large amount of downed wood in this area increases the biological value of this habitat. In addition, discharges from two culvert outfalls from Spyglass Hill Golf Course on the southerly side of Stevenson Drive have created saturated conditions, flowline drainages, and ponding along the southwesterly boundary of Area K. Rushes, sedges, rabbitsfoot grass, and other hydrophytes have colonized the areas in and adjacent to these introduced water sources. Under these “new normal circumstances”, the saturated/ponded areas, drainages, and associated vegetation would most likely qualify as wetlands under both the Clean Water Act and the Coastal Act. The stream channels and the riparian and herbaceous wetland plant communities would also be considered ESHA under the LUP.

California red legged frogs (federally listed as a threatened species) have been observed further downstream in Seal Rock Creek and along the water hazards on the 12th and 14th holes of the Spyglass Hill Golf Course. The Seal Rock Creek tributary and associated wetland areas in Area K provide potential movement corridors, and possibly even breeding opportunities for red legged frogs.

2.6 Area L (Residential)

Area L consists of an approximately 18.50 acre forested area bordering the 6th and 7th holes of Spyglass Hill Golf Course, with a portion adjacent to Indian Village on the opposite side. Under the DMFP, only the western half of the area is proposed for development, into 10 residential lots with an average size of 0.72 acres. The remnant dune area on the western end of the site and the eastern half of 9.98 acres are proposed as preservation areas.

Densely-vegetated Monterey pine forest is the dominant plant community in Area L. The understory is composed of the more mesic shrubs and herbs associated with Monterey pine forest. Coast live oak trees are especially well developed in this area. The western border of the site transitions to remnant dune stabilized by Monterey pines and coastal strand plants associated with coastal sand dunes. These dunes are known to support several special status plant species including Menzies wallflower, Monterey spineflower, and Monterey Indian paintbrush. One of the only known extant populations of the state and federally listed Hickman's potentilla and a population of the state listed Pacific Grove clover occur in an open area on the adjacent Indian Village property to the west of Area L. In 2004, several individual Yadon's piperia plants were found in one patch at the very eastern end of Area L, adjacent to Stevenson Drive, in an area proposed for preservation. However, the area is not well suited to support this species because of its dense canopy and understory cover.
Several tributary stream channels to Seal Rock Creek cross the eastern portion of Area L. Plants growing along these drainages include cattail, rush, sedge, blackberry, Pacific reed grass, horsetail, currant, coffeeberry, wax-myrtle, and chain fern. In addition, a culvert outfall at the northerly edge of the 6th fairway of the Spyglass Hill Golf Course discharges into an apparently man-made drainage ditch running more or less parallel (in a northerly direction) to the edge of the remnant dune on the western end of the area. This drainage is culverted under the main access road into the Indian Village picnic area and then flows into Seal Rock Creek. Rushes, sedges, and other hydrophytes have colonized the areas in and adjacent to this drainage. Under these “new normal circumstances”, the drainage and associated vegetation would most likely qualify as wetlands under both the Clean Water Act and the Coastal Act. The stream channels, drainages, and wetland areas on the site would also be considered ESHA under the LCP. Finally, these areas could provide potential movement corridors for red-legged frogs which are known to occur in the adjacent Seal Rock Creek drainage.

2.7 Area M (Small Hotel/Residential)

The DMFP proposes a small hotel with associated facilities and parking and a spa on approximately 16 acres of this approximately 51.80 acre site, with 35.65 acres in preservation area. In lieu of the small hotel, ten residential lots of an average of 0.88 acres could be developed under an alternative scenario.

Area M (also known as Spyglass Pit) is located in an area of disturbed and remnant sand dunes. Much of the site has been excavated and the remaining dunes vary from degraded to relatively natural. Vegetation varies in type from ruderal to coastal stand to Monterey pine forest. The most prominent feature on the site is the pit left over from previous sand mining operations, which has now been used for placement of fill from the Casa Palmero project, storage and staging areas for construction projects, and other purposes. Below the lower (western) edge of the fill area is an area of much degraded sand dunes. The amount of sand varies from none to at least a few feet deep. Plants found in this section include golden wattle, yellow bush lupine, and coyote brush. A drainage ditch crosses this area and diverts water toward the northwest. Water is of intermittent flow and the ditch does not support any wetland plant species.

To the west of the fill area are degraded dunes, also only a few feet high. The vegetation includes both shrubby and herbaceous native plants, as well as iceplant, pampas grass, and golden wattle. Where there is adequate depth of sand, special status species including Tidestrom's lupine, sand glia, Monterey spineflower, and dune layia can be found. Portions of this section also contain many clay shards which are the remnants of targets used by a gun club that formerly occupied this area.

The southern portion of the site is more densely vegetated and has suffered fewer impacts than the northern part. This southern area contains dunes covered with Monterey pines, coastal strand, and smaller areas of coastal bluff scrub vegetation. The main grove of pines on the highest dune is outside the subdivision limits. Smaller groupings of pines are scattered about the long southern side and extending west within the boundaries of the subdivision. In between these groups of pines, the sand is covered by coastal strand plants, and occurrences of Tidestrom’s lupine, beach layia, and other special status dune plants can be found.
Weeds are common throughout the site and beyond the site boundaries. Pampas grass and golden wattle are quick to invade disturbed ground and are a nuisance in these situations. French broom is also common in disturbed soil but can also invade natural areas where the soil is not disturbed. Iceplant is common on the sand areas and dominates sizable patches. This invasive weed seems especially prevalent under the pines and about their perimeter. Iceplant excludes native vegetation as it forms dense mats that native plants have great difficulty penetrating.

The pit was mined for sand since at least the 1930s. Historic photographs indicate large (over 30 feet deep) deposits of sand and extensive removal of those deposits over a period of several decades. Obvious site conditions, historic documents, and anecdotal evidence indicate that the sand resource was scraped away to the subsurface in many locations of the pit. The LUP designated a remnant dune (Signal Hill Dune) and mapped its boundaries based on the extent of remaining native dune forms following the mining. In the mid 1990s, PBC, in collaboration with Coastal Commission and Monterey County staff, mapped a boundary of dune limits on the ground to identify the location of environmentally sensitive (dune) habitat. This boundary was based on surface observations of past disturbance and the location of special-status species of plants. On April 22, 2008, Coastal Commission and PBC staff walked the area and reevaluated the limit line. Coastal Commission staff identified a new limit line based on existing surface conditions as a result of this site visit but agreed that the line might be adjusted with subsurface assessment. Subsurface assessment conducted during May 2008 resulted in further reevaluation of that limit line which became the basis for an agreement on development limits between PBC and the Coastal Commission staff.

2.8 Area U (Residential)

Area U consists of 20.3 acres of somewhat disturbed Monterey pine forest with a relatively open canopy and an understory dominated by grasses, with some shrub cover. The area is bounded by Drake Road on the north, Sombria and Stevenson Roads on the west and east, and the Pebble Beach Equestrian Center on the south. Area U is proposed for subdivision into seven residential lots with an average lot size of 0.79 acres and 16.21 acres of preservation area.

Bent grass and California oat grass are common and shrubs include bracken fern, blackberry, and poison oak. Non-native species such as French broom, large periwinkle, and myoporum are common throughout this area. Yadon's piperia is scattered throughout the eastern (preserved) portion of Area U, where approximately 1,400 plants were found. One large wetland area occurs in the western (preserved) portion of the site and three smaller wetland areas are found in the eastern (also preserved) portion of the site. These wetland areas consist primarily of dense stands of Pacific reed grass.

Drainage from the adjacent Equestrian Center flows through a man-made ditch near the center of the site and through a culvert under Drake Road. A plunge pool has formed where this drainage surfaces at the western edge of Drake Road. This feature, referred to in various background documents as Drake Pool, is the area where a single red legged frog was observed in 2002.

2.9 Area V (Residential)

Area V consists of approximately 25.9 acres including the Pebble Beach Driving Range and surrounding forest to the northeast. The driving range occupies approximately five acres of the
parcel while the remainder of the site is occupied by relatively sparse Monterey pine forest with an open herbaceous understory. Under the DMFP, the cleared portion of Area V, presently devoted to the Practice Range, would be subdivided into 14 lots of an average size of 0.5 acres. The lots would extend into somewhat sparse Monterey pines on the margins of the cleared Practice Range. The northern portion of Area V, consisting of 15.33 acres of undeveloped Monterey pine forest, would remain intact as preservation area.

The understory along the edge of the driving range has been disturbed over time and consists primarily of open ground colonized by annual, non-native grasses and herbaceous species. Invasive species including kikuyu grass, wattle, pampas grass, and French broom are also common in the area along with some natural regeneration of Monterey pine. The site generally drains toward a pronounced low wetland area dominated by a dense understory of Pacific reed grass along its westerly boundary with Stevenson Drive. This area would be preserved as part of the DMFP.

One individual Hickman’s onion plant was found along Drake Road and two Hooker’s manzanita individuals were observed in the northwest quadrant of the site during surveys conducted in 2008. Relatively abundant Yadon’s piperia occurrences were observed in the northeastern quadrant of the parcel (i.e. above the driving range) during these same surveys and approximately 3,800 piperia plants were counted in the northern forested areas of the site during the 2004 census.

2.10 Collins Residence (Residential)

The Collins Residence consists of two existing single family lots at the northwest end of Collins Field. The area contains one house and several outbuildings with very little tree canopy and no native habitats. Shrubs and trees that are present are mostly landscape species. No sensitive habitats or species have been found in this area.

2.11 Corporation Yard (Residential)

The Corporation Yard development area is the site of a former quarry, now reclaimed and recontoured. It is adjacent to the PBC corporate yard offices, a vehicle maintenance building, and indoor and outdoor storage areas. Portions of the site along the northern and southern boundaries support Monterey pine forest, including revegetated slopes from the former quarry operations. The northern corner also contains some oaks. A drainage detention pond below the site continues to function for its intended purpose. This pond is located considerably lower in elevation than the developed areas and is at the base of a relatively steep slope leading up to these areas. It therefore is fairly isolated from disturbance associated with the development.

2.12 Equestrian Center/Collins Field (Redevelopment)

The Equestrian Center/Collins Field area is entirely developed with barns, arenas, parking areas, and sports field. Monterey pine forest is virtually absent from this area, except for thin strips along the northern and western borders. The area is regularly cleared of vegetation for major equestrian events and for overflow parking. Collins field is maintained turf grass with areas of natural grass along the edges.
The DMF/PDP Draft EIR reported a population of Pacific Grove clover within the Equestrian Center. Subsequent surveys have not identified any individuals of Pacific Grove clover in this same area. However, some remnant occurrences of Pacific Grove clover were found at the western edge of Collins field in a natural grassland area during surveys conducted in 2008. These occurrences were confirmed during Zander Associates reconnaissance surveys in May 2010.

2.13 Lodge at Pebble Beach (Additions)

The additions to the Lodge at Pebble Beach will occur within existing disturbed areas and therefore will not be removing native habitats. The proposed Colton Building will be situated on an existing parking area that is bordered by mostly planted Monterey pine and coast live oak trees. The Fairway One/Beirne improvements will reconfigure and add to existing buildings at the edge of the fairway. While no native habitats will be affected by these improvements, there are large, landscape oak trees present, particularly within the Fairway One/Beirne project area that may be removed. No sensitive species or habitats are known to occur in either of these areas.

2.14 Inn at Spanish Bay (Additions)

The additions to the Inn at Spanish Bay are proposed within a strip of remnant Monterey pine forest between the existing hotel buildings and the fairway. This strip contains very dense areas of young Monterey pine, mixed with larger coast live oak. The understory is thick with duff and woody debris. There are few tall pine trees, and where the dense stands of younger trees are absent, the understory contains ceanothus, currant, blackberry, bracken fern, and poison oak. No sensitive species are known to occur in this area.
3.0 IMPACTS & MITIGATION MEASURES

3.1 Monterey Pine & Forest Habitat

3.1.1 Impacts

Approximately 52.5 acres of undeveloped native Monterey pine forest habitat including approximately 3,850 Monterey pines and 187 coast live oaks greater than 12 inches diameter at breast height (dbh) would be removed or converted to a suburban forest as a result of DMFP build-out. This assessment assumes that undeveloped Monterey pine forest within each residential building envelope would either be removed or substantially converted to suburban forest through removal of native understory, suppression of natural overstory regeneration, and absence of effective forest ecosystem practices. Table 3.1 below summarizes these impacts by DMFP development area.

Table 3.1 Summary of Monterey Pine Forest and Tree Removal Impacts

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<th>MPF to be Removed (acres)</th>
<th>Tree Removal</th>
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Monterey pine forest impacts have been reduced substantially from the earlier DMF/PDP proposal, notably with the elimination of a new golf course in Areas MNOU&V, a new Spanish Bay Driving Range in Area C, new lots in Area PQR, and reduced development levels in most other areas. Nonetheless, undeveloped Monterey pine forest is a sensitive natural community and will require adequate mitigation to offset the losses associated with the DMFP.

3.1.2 Mitigation

PBC proposes to mitigate for Monterey pine forest habitat and tree loss by preserving through formal dedication (conservation easement or equivalent) over 635 acres of PBC owned land in
the Del Monte Forest as per its December 2009 agreement with the staff of the California Coastal Commission as follows:

- All of the PBC’s remaining land in Pescadero Canyon (approximately 246 acres)
- All of PBC’s remaining land adjacent to Huckleberry Hill nature preserve (approximately 120 acres)
- All of the sensitive habitat area previously proposed for golf course development under Measure A (approximately 137 acres)
- All of the sensitive habitat area previously proposed for golf driving range development under Measure A (approximately 29 acres)
- All of the sensitive habitat area previously proposed for equestrian center development at Sawmill Gulch under Measure A (approximately 42 acres)

PBC also entered into a Memorandum of Understanding (MOU) with the U.S. Fish and Wildlife Service in September 2007 obligating PBC to dedicate over 500 acres of Monterey pine forest habitat on PBC owned lands. In addition, PBC proposes to implement a forest wide ecological resource management program intended to provide added value to preserved forest areas by increasing the ecological functions within retained forest areas and promoting long term sustainability. These measures combined will offset losses to Monterey pine forest habitat and tree loss associated with build-out of the DMFP.

3.2 Remnant Dunes

3.2.1 Impacts

Remnant dunes occur on the boundaries of two DMFP development areas: Area M and Area L. These dune features have been avoided by design and should not be directly affected by project development. The remnant sand dunes in Area M, part of the Signal Hill ESHA, lie outside of the proposed development footprint based on systematic assessment work conducted in 2008 (see existing conditions description above). Plant surveys conducted along the development boundary in May 2010 confirmed that none of the special-status plants associated with the Signal Hill Dune occurred within the proposed development area. The remnant dune in Area L is located at the westerly entrance to the area. An existing access road (The Dunes) from 17 Mile Drive will provide the primary access to the new residential area. Lot lines and building envelopes in this area will be set back over 100 feet from the toe of slope of the dune. However, indirect impacts (e.g. from increased human presence, drainage) could occur in these areas.

3.2.2 Mitigation

Design and engineering plans for project elements in Areas M and L that border and/or pass through remnant dune features should include measures to avoid indirect impacts on remnant dunes. Such measures could include curbs, bollards, fences, or other barriers to inadvertent encroachment at key dune interfaces; drainage improvements that direct runoff away from dune areas; etc. In addition, as part of its forest wide ecological resource management program (see above), PBC would include a dune restoration and preservation element that expands on activities already underway in dune areas at Spanish Bay and other areas along 17 Mile Drive. Activities could include non-native species control, outplanting of native dune species, trail establishment and delineation, educational signage, and public outreach (brochures, docents,
etc.). The latter activity will be especially important for guests at the small hotel in Area M and residents in Area L.

3.3 Riparian Areas and Wetlands

3.3.1 Impacts

Riparian and wetland areas occur primarily in Areas J, K, & L. Tributaries to Seal Rock Creek extend near or through all three of these development areas. In some cases, runoff from adjacent areas (e.g., golf course fairways) has also resulted in drainages, ponding, and seasonally saturated areas that support hydrophytes (moisture tolerant plants). These areas have been mapped and generally avoided through project design, usually with 100 foot setbacks. However, there is a possibility that some wetland areas may be directly affected by development improvements, especially in Area L where the entrance road will cross a drainage that flows from the 6th fairway of the Spyglass Hill Golf Course into Seal Rock Creek. Indirect effects on wetland areas, notably at the southwesterly end of Area K, could also occur as a result of nearby residential development without appropriate design and management considerations. A previously mapped feature associated with a former trench in Area B was reevaluated in 2008 and determined not to be a wetland (see existing conditions description above). Similarly, a man-made drainage ditch that discharges runoff from the equestrian center through Area U to a culvert under Drake Road and the unvegetated erosion gully in Area I-2 are not considered wetlands.

3.3.2 Mitigation

Improvement plans (grading, drainage, road widening) for Areas K & L should be reviewed by a qualified wetlands biologist to assure that there will be no direct impacts on wetlands in these areas. In the event that some minor wetland fill may result from development activities (e.g., culvert extension for access road construction/widening in Area L), the U.S. Army Corps of Engineers and other appropriate agencies should be notified. Wetland enhancement in these areas could compensate for any losses. Design and engineering plans should also include measures to avoid indirect impacts on wetlands, especially from drainage improvements that could adversely affect the existing hydrological characteristics of wetland areas. As with dune areas, educational signage and public outreach (brochures, docents, etc.) could be effective in informing residents and others of the values of wetland and riparian areas.

3.4 Bishop pine/Gowen cypress

3.4.1 Impacts

The Bishop pine/Gowen cypress association occurs as a forest element within the Huckleberry Hill Natural Area and extends into some adjacent areas on the boundaries of the HHNA. Development of residential lots in Area F-2 would result in loss of some scattered Bishop pine and Gowen cypress, mostly along the northerly end of the area. However, Area F-2 is separated from the HHNA by fairways of the Poppy Hills Golf Course; Gowen cypress were planted along the northerly boundary of the site when Poppy Hills was constructed. Thus, even though some losses of individual Gowen cypress and Bishop pine would occur with build-out of Area F-2, they would not be considered representative components of the Bishop pine/Gowen cypress association. In addition, previous plans for residential development of Area F-3, an area directly
adjacent to the HHNA that supports the Bishop pine/Gowen cypress association, have been revised; Area F-3 is now included in the DMFP as a preserve area.

### 3.4.2 Mitigation
Avoid removal of individual Bishop pines and/or Gowen cypress trees in Area F-2 if feasible. In the event that avoidance is infeasible, replace lost trees at a suitable (minimum 1:1) ratio in an appropriate preservation area (e.g., Area F-3).

### 3.5 Special Status Species
Numerous special status species known or suspected to occur in the Del Monte Forest have been identified in the various background documents referenced previously. Following is a brief assessment of the DMFP’s potential effects on a selected list of these species most probably at issue. Other species not addressed here could also be affected by the project, either directly or indirectly. The DMF/PDP EIR and other background documents provide a comprehensive assessment of these species.

#### 3.5.1 Yadon's piperia

**Impact**

Eight of the project development sites and most of the proposed preservation areas contain occupied habitat for Yadon's piperia, which is federally listed as endangered and is a CNPS List 1B species. Based on the current DMFP plans and the results of the 2004 *P. yadonii* census (Zander Associates 2004), Yadon's piperia would be directly impacted in six of the development areas (F-2, I-2, J, K, U, V) and only to a limited extent in Areas J, U, and V. The Yadon's piperia occurrences in Area L and Area B are not within the proposed development site. Based on the assumption that all of the piperia in Areas F-2 and I-2 would be lost, most of the piperia in Area K would be impacted, and estimating the extent of piperia occurrences in Areas J, U, and V that are within proposed development areas, the DMFP could result in the loss of approximately three acres of occupied habitat and an estimated 6,000 individual plants of Yadon's piperia. Based on individuals, this number represents a loss of approximately 4% of the known population within the Del Monte Forest.

Indirect effects to piperia within retained forest could include:
- trampling of plants by humans, equestrians, and pets;
- mowing and other road maintenance activities;
- changes in soil and hydrologic conditions from increased irrigation and runoff;
- increased exposure to fertilizers and herbicides from adjacent residential areas;
- spread of invasive nonnative plants from landscaped areas that may displace Yadon's piperia; and
- potential for increased herbivory and browsing from deer and rabbits.

**Mitigation**

PBC entered into a Memorandum of Understanding (MOU) with the U.S. Fish and Wildlife Service in September 2007 obligating PBC to dedicate over 500 acres of Monterey pine forest
habitat known to support Yadon’s piperia on PBC owned lands. This agreement would result in the preservation of approximately 123 acres of occupied habitat containing over 117,000 individual Yadon's piperia plants. In addition, PBC proposes to implement a forest wide ecological resource management program intended to provide added value to preserved forest areas by increasing the ecological functions within retained forest areas and promoting long term sustainability. These measures combined should offset losses to Yadon’s piperia associated with buildout of the DMFP.

3.5.2 Gowen Cypress

**Impact**

Area F-2 contains native occurrences of Gowen cypress, which is federally listed as threatened and a CNPS List 1B species. Construction activities associated with developing some of the residential lots within Area F-2 could result in the removal of up to 16 scattered Gowen Cypress.

**Mitigation**

Same as proposed under paragraph 3.4.2 above for the Bishop pine/Gowan Cypress association.

3.5.3 Pacific Grove Clover

**Impact**

Redevelopment in the Equestrian Center/Collins Field could disturb or remove Pacific Grove clover, a state-listed rare and a CNPS List 1B species. This population is one of seven occurrences known from the Del Monte Forest, but occurs in an area of existing development and heavy equestrian and other usage (the species has been observed to do well under disturbed conditions). In 1996, the population observed in the Equestrian Center was estimated to be 0.4 acre in size and consisting of approximately 10,000 individuals (Jones & Stokes 1996). This population has not been observed within the last five years. However, an additional, smaller population was discovered at the west end of Collins Field during surveys conducted in 2008. This population is at the edge of the proposed Driving Range and is estimated to be no more than 0.2 acre in size. These plants could be affected or disturbed by activities associated with the proposed Driving Range. Another population of Pacific Grove clover occurs at the Indian Village site adjacent to Area L. This population could also be indirectly affected by increased runoff and other factors associated with nearby development.

**Mitigation**

The small population of Pacific Grove clover at the edge of Collins Field should be avoided by design if feasible. Alternatively, material (e.g., seeds, young plants) could be salvaged prior to construction, propagated and included as a managed habitat element of the Driving Range with procedures to ensure its long term survival. Since PG clover is a State of California listed rare species, consultation with and authorization from the California Department of Fish and Game would probably be required for its removal and handling.
Indian Village. Specific management and enhancement methods for these Pacific Grove clover populations should be incorporated into the site-specific RMPs, annual workplans, and monitoring reports for these areas.

3.5.4 Hooker's Manzanita

Four of the project sites (Ares F-2, I-2, U, and V) contain occupied habitat for Hooker's manzanita, a CNPS List 1B species. The DMF Plan would result in the loss of two of these occurrences, in Areas F-2 and I-2, totaling approximately 34 acres of habitat. These occurrences are already fragmented by development because they occur along the edge of the Poppy Hills Golf Course. The occurrences within Areas U and V are located in the designated preservation areas for those sites.

The project would preserve about 114 acres of Hooker's manzanita habitat in the Preservation Areas that will be dedicated and managed in perpetuity for the benefit of Monterey pine forest and the association of species it supports. This acreage represents a preserved/conserved ratio for Hooker's manzanita of more than 3:1. The largest occurrence of Hooker's manzanita found in the Del Monte Forest would be preserved and protected in perpetuity within the HHNA.

The DMF/PDP EIR concluded that project impacts on Hooker's manzanita were less than significant. Since the area of Hooker's manzanita to be impacted by the DMFP is reduced from the DMF/PDP, and the preserved/conserved ratio is increased (greater than 3:1), then the same conclusion applies for the DMFP. Therefore, no additional mitigation is required.

3.5.5 Hickman's Onion

Hickman's onion, a CNPS List 1B species, occurs only in one development area (Area V) and the most recent surveys found only one individual along Drake Road. This occurrence is within the proposed greenbelt open space area but could be indirectly affected by trampling by pedestrians. The project would preserve about 5.6 acres of Hickman's Onion habitat in the Preservation Areas.

Based on the small amount of impact and the large acreage that would be preserved as part of the project, the project would not adversely affect Hickman's onion. This conclusion is consistent with the impact analysis for the DMF/PDP. No mitigation is required.

3.5.6 Sandmat Manzanita

Area F-2 is the only project development site where an occurrence of sandmat manzanita has been recorded; this occurrence would likely be affected as a result of development of this area. The project would preserve 18 occurrences in Areas F-3, H, I-1, and PQR. The large number of plants in the southern portion of Area PQR is the largest occurrence of sandmat manzanita in the Del Monte Forest and is proposed for preservation. None of the other locations inventoried in the development or preservation areas are considered significant occurrences.

The loss of sandmat manzanita in Area F-2 would not result in a substantial adverse effect, either directly or through habitat modifications, on the species because the project would affect a small portion of the species' range. Sandmat manzanita losses were greater for the DMF/PDP, but were determined to be less than significant. Due to a reduction in the impact and increased
preservation area under the DMFP, project impacts on sandmat manzanita are less than significant and no additional mitigation is required.

3.5.7 Pine Rose

Impact

Pine rose, a CNPS List 1B species, has been identified on three project development sites: Areas F-2, I-2, and L. Project development in these areas could result in the removal of some of these plants. However the project would preserve pine rose in Areas G, H, I-1, and other areas of the forest. Pine rose has a limited distribution (it is known from only six other occurrences statewide, five of which occur in Monterey County). The DMF/PDP EIR concluded that potential adverse effects on pine rose should be mitigated though a program of avoidance and/or salvage and relocation.

Mitigation

Conduct preconstruction surveys for pine rose in Areas F-2, I-2, and L to identify the location and extent of the species in these areas. Avoid and protect pine rose occurrences, where feasible, by installing protective fencing prior to construction. Remove and replant pine rose where avoidance is not feasible. Incorporate proposals for restoration of this species to suitable sites into the site-specific RMPs and annual work plans.

3.5.8 Hickman’s Potentilla

Impact

A population of Hickman’s potentilla, a state and federally listed endangered species only known from two locations in coastal California, occurs at the Indian Village site adjacent to Area L. This population could be indirectly affected by increased runoff and other factors associated with nearby residential development.

Mitigation

Design and engineering plans for build-out in Area L should include appropriate measures to protect the population of Hickman’s potentilla at Indian Village. Specific management and enhancement methods for this Hickman’s potentilla population should be incorporated into the site-specific RMP, annual workplan, and monitoring report for Area L.

3.5.9 California Red-Legged Frog

Impact

The California red-legged frog (CRLF) is a federally listed threatened species. It was found at the following locations in the Del Monte Forest during surveys conducted by WRA Environmental Consultants in 2002 and 2003:
• in a plunge pool in a drainage ditch along Drake Road and in a seasonal pond in a drainage in Area N; and
• along the lower portion of Seal Rock Creek below Forest Lake Road to the mouth of the creek and along the margins of several water hazards on the Spyglass Hill Golf Course near tributaries of Seal Rock Creek.

In addition, other suitable aquatic habitat was identified in the following areas, but no CRLF were observed in these areas during the 2002 and 2003 survey:

• portions of the tributaries of Seal Rock Creek that cross through proposed preservation areas in Area I-1;
• portions of the riparian drainage on the east side of the proposed preservation area in Area B;
• portions of Sawmill Gulch tributaries within SFB Morse/HHNA adjacent to the Sawmill site and to Congress Road;
• portions of the tributaries of Pescadero Creek;
• two quarry detention ponds on the Corporation Yard site;
• several water hazards on the Spanish Bay and Poppy Hills golf courses;
• several freshwater marsh wetlands within Area C; and
• wetlands within Areas N, U, V, H, PQR, and the HHNA.

Based on information to date, the lower portion of Seal Rock Creek is occupied breeding habitat. This area appears to be the center of the known Del Monte Forest population of CRLF.

Other suitable aquatic habitat within the Del Monte Forest may provide foraging and dispersal habitat (and breeding habitat where conditions are appropriate), although no consistent CRLF use of areas outside of lower Seal Rock Creek) has been identified.

California red-legged frogs and their upland and aquatic habitat could be directly or indirectly adversely affected by the following project-related activities:

• Construction and grading for the residential lots in Areas J, K, & L and possibly Areas U and V.
• Increased disturbance by pedestrian and equestrian traffic in and near riparian areas or other suitable habitat adjacent to development, especially in Areas J, K, & L.

Mitigation

Authorization from the USFWS may be required if it is determined that the DMFP could result in the incidental take of CRLF. The following avoidance minimization and mitigation measures shall be implemented to reduce effects on CRLF. If authorization from USFWS is required, any additional measures included in that authorization shall also apply.

• Conduct pre-construction surveys in all upland areas within 300 feet of aquatic habitat scheduled for temporary disturbance. It may be necessary to construct temporary exclusion fencing to prohibit CRLFs from entering construction areas. Capture and relocation of
CRLF to nearby suitable habitat by a qualified (and USFWS authorized) biologist may also be necessary.

- Use signs and fencing as necessary during construction to maintain the designated permanent buffer around all suitable aquatic habitat adjacent to development areas.
- Implement worker education programs before and during construction as needed and include information on CRLF.
- Have a qualified biologist present as needed during all construction activities within suitable CRLF habitat, including upland habitat within 300 feet.
- Design new breeding habitat along Seal Rock Creek in accordance with criteria to establish CRLF habitat.
4.0 REFERENCES


__________, 2010. California Natural Diversity Data Base. CDFG Natural Heritage Division, Rancho Cordova, CA


Pebble Beach Company. 2009a. Letter from William Perocchi and Peter Ueberroth to Peter Douglas, Executive Director, California Coastal Commission re; Compromise Del Monte Forest LCP Amendment Project. December 14, 2009


