ENVIRONMENTAL ASSESSMENT
FOR THE SEASCAPE UPLANDS HABITAT CONSERVATION PLAN
FOR THE SANTA CRUZ LONG-TOED SALAMANDER.
SANTA CRUZ COUNTY, CALIFORNIA

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TABLE OF CONTENTS

I. PURPOSE AND NEED FOR THE ACTION

A. Background

The privately owned Seascape Uplands development project site is located in the Seascape section of Aptos in Santa Cruz County, California (Figure 1). It comprises approximately 190 acres of land situated on hilly terrain. The site is adjacent to residential development on west, Bonita Drive to the northeast, San Andreas Road to the east, and a large brushy slope to the northwest (Figure 1). The site is accessed from San Andreas Road. At present, offices owned by the Seascape Land Company and a water tank are the only structures on the site.

In 1985 and 1986, a comprehensive Environmental Impact Report (EIR) was conducted on the Uplands Specific Plan. During the EIR process the possibility of a habitat on the Uplands for the Federally listed endangered Santa Cruz long-toed salamander (SCLTS) was identified. The SCLTS (Ambystoma macrodactylum croceum) is both a State and Federally listed endangered species. To clarify this issue, the landowner retained Herpetologist Stephen B. Ruth, Ph.D., to perform a thorough biological study of the salamander on the Uplands in 1986-87. Dr. Ruth's findings are summarized in Chapter 3. A development plan, which reflected salamander constraints identified by Dr. Ruth as well as other constraints identified during the EIR process, was prepared and is the basis for the Habitat Conservation Plan (See Figure 2).

The project Applicant is Shelter Systems, Inc. and Lampert Properties, also known as Seascape Uplands Joint Venture. Throughout this document the Applicant is referred to as Seascape. Seascape is seeking a Section 10(a)(1)(B) permit from the U.S. Fish and Wildlife Service (Service), Department of the Interior, to allow the incidental take of an endangered species under the Endangered Species Act (Federal Act). Section 9 of the Act prohibits take of federally listed endangered species, including private land. Section 10(a)(1)(B) allows the Service to issue a permit for the incidental take of endangered species in conjunction with an implementing conservation plan (HCP) for the species.

The California Endangered Species Act likewise prohibits the take of endangered species. In order to comply with state law, the landowner is also seeking a 2081 permit under the California Endangered Species Act (State Act) from the California Department of Fish and Game (CDFG). Refer to Appendix A, Conformance with Plans and Policies, for more information these Acts.

B. Purpose

The purpose of the Habitat Conservation Plan (HCP), Section 10(a)(1)(B) permit, and the State 2081 Permit is to allow the County to process a land use permit that would result in an incidental take of endangered species without violating the Federal or State Acts. Without the permits, incidental take is prohibited by Section 9 of the Endangered Species Act and by the California Endangered Species Act. The County and Seascape need the Section 10(a)(1)(B) and 2081 permits to be in compliance with both the Federal and State Acts.

C. Need

The need for the Section 10(a)(1)(B) and 2081 permits is to establish a program for achieving resource protection for the Santa Cruz long-toed salamander at the Seascape Uplands and allow the developer economic use of the land. The HCP for the Seascape Uplands provides for local

conservation goals and incorporates measures to comply with state and federal endangered species policies.

II. DESCRIPTION OF THE ALTERNATIVES INCLUDING THE PROPOSED ACTION

The following chapter describes the Proposed Action and the Alternatives. The environmental consequences of each are described in Chapter 4. The preferred alternative of the U.S. Fish and Wildlife Service is the proposed action.

A.Proposed Action -- Issuance of a Section 10(a)(1)(B) Permit Based on the Present HCP and Implementing Agreements

The proposed action is the issuance of an Endangered Species Act Section 10(a)(1)(B) permit by the U.S. Department of the Interior based on the Seascape Uplands Santa Cruz Long-toed Salamander Habitat Conservation Plan (herein incorporated by reference). Another action is the issuance of a 2081 permit by the California Department of Fish and Game. The Section 10(a)(1)(B) and 2081 permits would authorize the incidental take of the salamander during construction of a proposed 107 unit residential development project on the site. Mitigation for the "take"of the endangered species habitat includes:

- oThe conveyance of approximately 137 acres of land (through dedication or easements) to the State of California), for a Santa Cruz long-toed salamander preserve. The preserve would be managed by a conservation organization (such as the California Department of Fish and Game or The Nature Conservancy).

- oThe landowner would pay $300,000 into an endowment which would be used to fund the long-term management of the preserve. The endowment would be payable to the State Controller.

- oEach individual homeowner would pay an annual assessment of $120.00 per year to augment the endowment fund. The assessments would be adjusted for inflation each year. The cumulative annual funding generated by the endowment and homeowners assessment would average about $27,000 per year.

- oLandowner would pay the direct costs of enhancing presently degraded habitat and existing migration corridors, for maintaining the existing breeding pond, and for monitoring development activities.

- oLandowner would pay for the construction of two additional breeding ponds on the site and provide salamander undercrossings under roads to facilitate migration.

The following mitigation measures shall reduce impacts in the herbaceous riparian habitat and wetlands areas:

1. Rubber-tired equipment shall be used when building the ponds to minimize ground disturbance in habitat areas.

2. Access to the ponds shall avoid the herbaceous riparian area to the extent feasible:

1. Seascape Uplands Santa Cruz Long-toed Salamander Habitat Conservation Plan

The following description is a summary taken from the Seascape Uplands Santa Cruz Long-toed Salamander Habitat Conservation Plan (HCP). The current Seascape Uplands project plan consists of the subdivision of approximately 107 single family lots on 43.8 acres and the dedication of a 7.24 acre site to the County for affordable housing.

The objectives of the Seascape Uplands Santa Cruz long-toed salamander Habitat Conservation Plan are to set aside enough habitat of the salamander at the Seascape Uplands development site to sustain a viable healthy breeding population in perpetuity and allow the development of a residential development project which would provide for the creation, enhancement, protection, and maintenance of the Seascape Uplands salamander preserve.

The Santa Cruz County Local Coastal Plan includes a provision for protecting environmentally sensitive habitats. The protective ordinance sets forth specific standards for approving conditions of any proposed

development in environmentally sensitive habitat areas and in areas adjacent to the essential habitat of rare and endangered species. The SCLTS is specifically identified as a sensitive species in the ordinance. The Seascape Uplands SCLTS HCP reflects provisions of the County Sensitive Habitat Ordinance (refer to Appendix A).

The HCP specifies which areas of the site can be disturbed by development activities and which areas are to be set aside as a SCLTS preserve. It also includes a list of measures the developer must undertake to mitigate impacts on the salamander habitat. The measures include among other things: erecting a habitat fence between areas to be disturbed by grading and areas which are to remain undisturbed, enhancing habitat in the preserve area, providing salamander road tunnels to facilitate salamander migration, creating two additional breeding ponds, and improving the existing pond.

During the project development phase, the Seascape Uplands SCLTS HCP would be funded directly by the developer. That is the developer would

pay to carry out all activities described for the initial development phase as well as pay for the initial start-up costs.

Long-term funding to maintain and enhance the habitat contained in the preserve would be paid for through 1) interest on a $300,000 endowment which would be paid by the landowner before project construction takes place, and 2) the collection of a $120 annual assessment from each of the project residents. Approximately $27,000 a year would be generated from the endowment interest and the homeowners assessment. The endowment fund would be paid to the State Controller. The annual assessments would be paid to the Endangered Species Management Authority and would be adjusted for inflation each year. The funds would be used to maintain and enhance the habitat in perpetuity.

Participants to the HCP would include the landowner, the Service, and the California Department of Fish and Game. Other participants may be The Nature Conservancy, and the County. All parties to the HCP would be signatories to the Seascape Uplands HCP Implementation Agreement (incorporated by reference). The agreement would legally assure that each party carries out the specific provisions of the plan assigned to them. The HCP can be amended under certain conditions described in Chapter 5 of the HCP.

Impacts on the Santa Cruz long-toed salamander from the development of the Seascape Uplands residential development project would be mitigated by the implementation of the Habitat Conservation Plan described in Chapters 4 and 5. These measures include:

- oSetting aside a large portion of the Seascape Uplands (137 acres) as a SCLTS preserve.

- oMinimizing impacts of development through the establishment of a strict set of development conditions).

- oProviding a permanent funding source which would pay costs of long-term protection, enhancement and monitoring of the preserve.

- oProviding a long-term preserve steward which would assure HCP conditions are carried out.

B. No Project Alternative

Under the No Project alternative (denial of the Section 10(a)(1)(B) permit), take of the Santa Cruz long-toed salamander would not be legally authorized by the USFWS. This would leave the developer subject to violation of the Endangered Species Act should the site be developed.

In the short-term the salamander would be protected from take under Section 9 of the Endangered Species Act. The site would remain in private ownership with no salamander management or habitat enhancement programs in effect.

Denial of the permit may cause the landowner to abandon development of the site altogether. The landowner could decide to donate the site to a public agency or to a land trust agency, such as the Nature Conservancy or the Trust for Public Lands, for tax purposes.

Since the land use designation of the property allows development, the landowner could continue to seek approvals of an economically feasible project which avoids direct take of any SCLTS. Under this scenario, the landowner would have to prove that the development would avoid any destruction of salamanders and that it would not adversely affect the salamander's use of important habitat.

Under this alternative present day conflicts between private property rights and endangered species would not be resolved.

The site is easily accessible because it is within an urban area and adjacent to urban residential development. The landowner may lose the incentive to protect and enhance the existing habitat of the salamander if development of the site is not approved. As part of a good faith effort to protect habitat while the HCP was being prepared,

the landowner hired security guards to patrol the property for illegal trespassers. Before the security force was in place, the site was regularly used by off road motorcyclists. Past motorcycle use of the site caused damage to salamander habitat. If the project is denied, the landowner may decide to eliminate the security patrol. Other casual access use of the site would also continue to threaten the salamander.

According the SCLTS expert, Steve Ruth, the berm surrounding the breeding pond is currently experiencing significant erosion on one side. In addition, the pond has experienced moderate siltation over the past few years. The SCLTS HCP contains provisions to make improvements to the pond. Although the pond presently provides a valuable breeding site for the salamander, it may become less and less valuable as its condition deteriorates. Within a few years the pond may no longer hold enough water to allow for salamander breeding. Under the No Project alternative, the landowner may not make, or allow others to make, needed improvements to the breeding pond.

The invasive plant species found on the site, primarily pampas grass and eucalyptus trees, without management, would continue to spread and degrade native habitat. However, since the threat is not a severe one, this effect would probably not become critical for several years.

C. 1985 Specific Plan Alternative

In 1985 the Aptos Seascape Corporation proposed a 551 unit development on the 193 acre Uplands site. This project, along with the Benchlands project, was the subject of a Draft Environmental Impact Report (EIR), prepared in August 1985 by LSA Associates, an Environmental Consulting firm hired by the County of Santa Cruz. That project would have resulted in the permanent loss of 104 acres of the site (53%) to development. Although the existing breeding pond was not to be disturbed by development, the plan was not sensitive to the habitat requirements of the salamander.

The 1985 plan did not adequately reflect biological constraints of the site. The proposed 1990 plan is the result of a two year intensive study of the population of the SCLTS at the Seascape Uplands which provided specific data on the nature and amount of sensitive habitat and migration corridors. The 1990 plan minimizes loss of sensitive habitat, maintains migration corridors through the use of salamander tunnels, calls for the elimination of invasive non-native species and enhancement of migration corridors, and provides a long-term funding program to be use for protection and maintenance of the habitat by a conservation organization.

D. Public Purchase Alternative

An alternative to development of the site is purchase of the site by a public agency which intends to maintain the site as a salamander preserve. The site could also be purchased by a private land trust agency, such as the Nature Conservancy or Trust for Public Lands, and maintained as a preserve. Under this alternative there would be no take of the Santa Cruz long-toed salamander at the Seascape Uplands.

Since the site currently has a land use designation under the Santa Cruz County Local Coastal Plan which allows for some residential development, the landowner would expect to receive fair market value of the property based on that land use. Fair market value of the site has been estimated at 7 million dollars (Seascape Land Company, March 1990). According to the landowner, no public agency has sought to purchase the property, therefore an actual sale price has not been contemplated.

Due to the presence of the endangered species, the actual market value may be less than 7 million dollars. In fact, there may not be any private parties willing to purchase the site until the endangered species constraint is resolved. The landowner may thus be persuaded to sell the property to a public agency for less than the estimated fair market value.

Potential funding sources for purchase include the Federal Land and Water Conservation Act, the State Wildlife Conservation Board, and the State Wildlife Protection Act of 1990.

If mitigation funds were to become available solely for purchase of the site, additional moneys would be needed to protect and manage the site for the salamander. In the near term, the salamander could survive on the site with minimal management, however, after a few years, erosion and siltation problems at the breeding pond and the spread of invasive exotic plants would need to be addressed. The preserve managing entity would have to obtain a Section 10(a)(1)(B) permit or a scientific collecting permit in order to undertake certain management activities needed to enhance and protect the existing habitat.

Under this alternative, funds used to purchase the site would not be allowed for purchase of other valuable endangered species sites where there is no landowner participation. Public monies would be used to purchase the 190 acre site. Under the proposed plan, 137 acres of the site would be conveyed to the public (through dedication or easements) at no cost, and private money would be used to enhance and provide long term protection of the habitat.

E. Environmentally Preferred Alternative

The environmentally preferred alternative is public purchase of the site as a salamander preserve. This alternative would result in no take of the salamander, no loss of secondary and marginal habitat, and no disruption of existing migration routes resulting from the development of houses and roads.

Under this alternative all 190 acres of the site would be preserved. The loss of 53 acres of the site would be avoided. Uncertainties about whether the salamanders would use tunnels constructed under roads when traveling between the breeding pond and other habitat would become mute. The selection of this alternative as the environmentally preferred alternative is contingent upon assurances that public monies are not only available for purchase of the property, but also for providing for long-term management of the salamanders and its habitat in perpetuity.

Lack of a definitive funding source for public purchase and long-term management makes implementation of the Public Purchase alternative remote and speculative. The alternate Environmentally Preferred alternative is the proposed project. The proposed project guarantees that 137 acres of the site containing the most important habitat would be set aside as a salamander preserve and protected and managed in perpetuity. The existing breeding pond would be improved and two new breeding ponds created on site. Invasive exotic plant species would be controlled and additional plantings of native species would be used to upgrade marginal habitat areas. There would also be annual surveys of the salamander population to assist in determining future management strategies at the Seascape Uplands.

III. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The 190 acre Seascape Uplands project site is located in the Seascape section of Aptos in Santa Cruz County, California (refer to Figure 1).

A. Site Vegetation

The Seascape Uplands site comprises several distinct vegetation communities. As part of the SCLTS study, Stephen B. Ruth, Ph.D. mapped the vegetation on the site using recent air photos. The air photo map was ground truthed to assure the plant communities were accurately mapped. The dominant plant communities on the site are grassland and evergreen forest. Less dominant communities are coastal scrub, woody riparian, eucalyptus forest, and herbaceous riparian (see Figure 3).

Rare plant surveys were conducted for the 1985 EIR and during the Ruth study. None were found during those surveys.

B. Santa Cruz Long-toed Salamander Life History and Population Status Summary

The following discussion is summarized from Ruth's report on the population biology of the Santa Cruz long-toed salamander on the Seascape Uplands.

Some of the Seascape Uplands property and adjacent land is habitat for an endangered amphibian, the Santa Cruz long-toed salamander (Ambystoma macrodactylum croceum). The salamander is a "mole" salamander meaning it spends much of its life underground in small animal burrows. Mole salamanders are usually large and robust and have a broad flattened head.

Many are brightly colored. Long-toed salamanders are a form of mole salamander which have unusually long toes relative to the rest of their body parts.

The Santa Cruz long-toed salamander lives in dark, moist, cool places where there is little danger of drying out and little exposure to predators. They are most active at night and during rainy periods. Because the salamander larvae are aquatic the adults must breed in water. Breeding sites are often temporary ponds or other freshwater marsh or wetland habitat. Each wet season, adult salamanders migrate to a breeding site, often traveling great distances. Adults mate at the breeding site. Females typically lay between 200 to 300 eggs. The eggs hatch into larvae which grow in the pond until they transform into juveniles. At this stage they become terrestrial and can venture away from the pond. After the breeding season, adults often move out of the pond area although some may remain. Most juveniles leave the vicinity of the pond during fall rains.

Historically the SCLTS was widespread in temporary ponds and freshwater marsh habitats in the coastal summer fog belt south of Santa Cruz and north of Monterey. Urbanization and agriculture have caused a major decline in the number and water quality of ponds and freshwater marshes. With this decline has been a corresponding decline in the number and populations of the animal. At present 7 verified populations are known to exist. The largest population is found at Valencia Lagoon in Aptos, two to three miles north of the Seascape site. The Seascape Uplands population is the second largest known population of the salamander. Smaller populations exist at: Ellicott Pond in Aptos, Bennett/Sturve Pond and McClusky Slough in northern Monterey County, and at Moro Cojo and the Calabasas area of Watsonville (see Figure 4).

The SCLTS was listed as endangered by the federal government in 1966 and by the State in 1970. It is thus protected by both the United States Endangered Species Act and the California Endangered Species Act. It is also protected by the County of Santa Cruz through a sensitive habitat protection ordinance.

Between February 1986 and March 1987 Stephen B. Ruth performed an intensive mark recapture study at the Seascape Uplands to determine the population status and habitat requirements of the salamander. A series

of traplines were placed in strategic locations on the site. Salamanders caught in the traps were marked and released on the opposite side of the trapline. From this study population estimates, migration data, dispersal patterns, and other information was determined.

A total of 5016 Santa Cruz long-toed salamanders were trapped and marked during the study. From the mark recapture data, Ruth estimated that there were between 1408 and 1538 breeding SCLTS individuals on the site during the period of his study. This population level is considered good for an area the size of the Seascape Uplands.

The highest SCLTS activity took place at the breeding pond. Much of the movement occurred in and out of woody riparian, wet coastal scrub, and woodland vegetation communities. Ruth expects that substantial numbers of animals reside in the herbaceous riparian, wet annual grassland, and coastal scrub communities within the pond watershed.

C. SCLTS Habitat Requirements and Habitat Categories on the Site

Upon completion of the Seascape Uplands SCLTS study, Ruth assessed habitat value and mapped habitat categories on site. The categories are shown in Figure 5 and described below. The purpose of defining the habitat categories was to provide site planning guidelines to minimize development impact on the salamander.

Essential Habitat. The habitat of greatest concern is considered essential to the survival of the SCLTS. There are 11.7 acres of essential habitat on the project site. It comprises the area of the breeding pond and the immediate adjacent riparian and coastal scrub vegetation. There should be no loss of essential habitat.

Adjacent Primary Habitat. This habitat comprises the hillside to the east of the pond containing woody riparian and evergreen forest vegetation. There are 17 acres of adjacent primary habitat on the site. According to Ruth, loss of significant amounts of primary habitat would likely affect the salamanders ability to sustain itself at the Seascape Uplands.

Adjacent Secondary Habitat. Secondary habitat areas include migration corridors and vegetation communities suitable for supporting salamanders but which are a greater distance from the pond making them less valuable than primary habitat. There are 57.4 acres of adjacent secondary habitat on the site. According to Ruth loss of some of the secondary habitat would not pose a significant threat to the salamander depending on the location of the habitat and extent of loss.

Adjacent Marginal Habitat. Marginal habitat areas identified on the site contribute little to the survival of the SCLTS there. Much of the marginal habitat has vegetation which does not support the animal (e.g. grassland and eucalyptus) or is too distant from the breeding source to be valuable. The site contains 107.1 acres of marginal habitat. Loss of greater amounts of this habitat would probably not pose a threat to the salamander.

IV. ENVIRONMENTAL CONSEQUENCES OF PROPOSED ACTION AND ALTERNATIVES

A. Proposed Action

1. SCLTS Habitat Loss and Impact on Species Survival

The primary impact of the Seascape Uplands Santa Cruz Long-toed Salamander Habitat Conservation Plan would be the loss of habitat of the salamander. The impact analysis below is based on the amount of habitat lost from development -- both the temporary loss of habitat resulting in project grading and permanent habitat loss from the development.

As much as 53 acres of the property would be disturbed by project construction. Of this about 8 acres of this would be temporarily disturbed and reclaimed as habitat. The following is a breakdown of habitat loss by the habitat categories.

Essential Habitat. The habitat of greatest concern is considered essential to the survival of the SCLTS. There are 11.7 acres of essential habitat on the project site. Project grading would have no impact on the essential habitat.

Adjacent Primary Habitat. This habitat comprises the hillside to the east of the pond containing woody riparian and evergreen forest vegetation. There are 17 acres of adjacent primary habitat on the site. Project grading would impact as much as 2 acres (12%) of adjacent primary habitat.

Adjacent Secondary Habitat. Secondary habitat areas include migration corridors and vegetation communities suitable for supporting salamanders but which are a greater distance from the pond making them less valuable than primary habitat. There are 57.4 acres of adjacent secondary habitat on the site. Project grading would result in the loss of up to 16.5 acres (29%) of this habitat.

Adjacent Marginal Habitat. Marginal habitat areas identified on the site contribute little to the survival of the SCLTS there. Since much of the marginal habitat has vegetation which does not support the animal (e.g. grassland and eucalyptus) or is too distant from the breeding source to be valuable. it is not considered sensitive Santa Cruz long-toed salamander habitat. The site contains 107.1 acres of marginal habitat. Permanent development would result in the loss of up to 26.5 acres (25%) of marginal habitat.

Cumulative Loss of Sensitive Habitat. According to Dr. Ruth, the

essential, adjacent primary, and adjacent secondary habitats are considered sensitive SCLTS habitat. Of the 86 acres of sensitive habitat found on the site, 18.5 acres would be disturbed by project grading (21.5%). This degree of loss is acceptable given the assurances provided by the HCP for long-term enhancement and protection of the remaining habitat and implementation of other mitigation measures contained in the plan (see Chapter 4.2 and 4.3).

Impact on Species Survival. Dr. Stephen Ruth provided recommendations for the protection and management of the Seascape Uplands SCLTS population in his final biological report (Sept. 1989). In his recommendations section, Dr. Ruth states:

> "the findings of the (population) study indicate that some level of residential development is compatible with the Seascape Uplands salamander habitat. It appears that a carefully designed residential development plan may provide an opportunity to guarantee enhancement of the existing habitat and future protection of a long-toed salamander population, as well as addressing some immediate concerns. This Plan can also further Service objectives for the salamander by protecting an additional population of A. m. croceum."

Dr. Ruth believes that the development project allowed under this HCP would not appreciably reduce the likelihood of the long-term survival of the Santa Cruz long-toed salamander at the Seascape Uplands. In fact the plan would probably assure the maintenance of a self sustaining population at the Seascape Uplands.

Implementation of the mitigation measures set forth in the HCP would minimize direct impact on the SCLTS during project construction so that less than 1% of the population of the SCLTS at the Seascape Uplands would be lost (Steve Ruth, pers. comm. October 1990).

Development of the project may result in some loss of individual salamanders on a seasonal basis from road kills if the salamanders cross over roads rather than use migration tunnels. Impact on the population from road kills is expected to be insignificant because: 1) migration takes place only a few days a year, and 2) migration would take place during non-peak hour traffic when traffic volumes are low.

Impact on Salamander Migration Resulting from Road Construction. The use of amphibian tunnels under roads to reduce mortality from road crossings is a relatively new phenomenon. As a result there is some question about how affective the proposed tunnels may be in facilitating migration accross roads and reducing road mortality at the Seascape Uplands. In addition the tunnels could increase salamander mortality if

predators, such as skunks and raccoons, find it easy to catch salamanders at tunnel entrances.

Tunnels have been used successfully in Europe for toads and other amphibians for several years (Thomas Langton, pers. comm.). Tunnels were placed under a road on Henry Street in Amherst, Mass. so that the spotted salamander (*Ambystoma maculatum*) could get from upland habitat to a breeding pond on the other side of Henry Street. The tunnels have been in place for three years during which time they have been monitored by Robert Winston and others at the Massachusetts Audubon Society and the U. of Mass. The salamander crossing success rate at the Henry Street

tunnels has been estimated at 80-90% (Robert Winston, pers. comm.). Mr. Winston has found that the placement of drift fencing along the migratory path assists in funnelling the salamanders into the tunnels.

Although design and construction of the salamander migration tunnels would be done in consultation with salamander experts, tunnel design experts, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game, the following measures have been included to assure the protection of salamanders from possible attacks from predators (skunks, raccoons, etc.) waiting at the tunnel entrances.

1. Grating which extends for some distance over the drift fences shall be placed over each tunnel entrance. The specific design for the grating can be finalized before construction, however, it shall be constructed in such a way as to provide cover for the SCLTS as they move from the terrestrial habitat to the drift fences and tunnels. The mesh size of the grating shall be such that it allows SCLTS to easily pass through, but precludes mammalian predators from passing through. The grates should extend out to meet terrestrial plant cover to provide continuous protection.

2. Vegetation which would provide cover for the salamander shall be planted up to the grating edge or roadway. The vegetation cover should adjoin the grating mentioned above and also cover as much of the drift fences as practicable. This would protect salamanders from visual observation by predators while passing through the tunnels or over the roads.

Timing of Vegetation Clearing Prior to Project Development. The HCP states that vegetation clearing of dense vegetation should take place prior to project grading and that it should be done in January and February during the salamander breeding season when salamanders are migrating and the ground is moist. Due to uncertainties as to the

actual timing of wet weather conditions the following measure has been added to clarify when vegetation clearing of the development area should take place.

1. Manual vegetation clearing that would be conducted to minimize take prior to grading shall occur at least three months in advance of grading to allow SCLTS sufficient time to disperse to other protected sections of the project site. The clearing shall be done during the rainy season when most salamander activity is concentrated at the breeding pond.

Presence of Parasitic Flatworm at Breeding Ponds. There is some concern that pond improvement activities conducted under the HCP may enhance survivability of the parasitic flatworm. The flatworm could have an affect on the productivity of the SCLTS. The following measure addresses this concern.

1. Studies of the affects of pond maintenance activities on the populations of parasitic flatworm and its affect on the productivity of

the SCLTS should be conducted. Maintenance activities at the pond should be modified based on the results of the studies.

2. Impacts on Other Species of Concern

The SCLTS HCP includes several measures to mitigate take of the SCLTS and its habitat. In addition to the salamander, there are other species which reside on the property which are important to the ecology of the site. Burrowing animals, such as gophers, moles, and mice, build underground tunnels and holes which are used by the SCLTS as cover for protection against enemies, heat, and sunlight. These burrowing animals are often considered pests by homeowners and are subject to pest control activities. Large scale pest control activities which could be conducted by landowners may result in significant losses of burrowing animals at the Seascape Uplands.

The site contains certain vegetation that, although may not be important for the survival of the SCLTS, is unique to the site and provides habitat for other species found on the site. There are areas of grassland which support many species of native grasses. Some of the groves of eucalyptus trees provide nesting habitat for raptors. These areas could be affected by enhancement measures carried out for the SCLTS.

The following measures have been included to address these other species:

1. Management activities at the Seascape Uplands Santa Cruz long-toed salamander preserve shall consider the needs of burrowing animals such as gophers, moles, and mice. In order to protect burrowing animals from harm, each residence in the project area shall record a Covenant, Condition, and Restriction (CC&R), running with the land, which states that, unless otherwise stated by the Endangered Species Management Agency, any burrowing animal control activities performed on the property will use non-lethal methods. Areas identified as conservation easements shall be off-limits to any control measures for burrowing animals, unless specifically approved by the Service.

2. Management activities conducted at the Seascape Uplands Santa Cruz long-toed salamander preserve should consider the needs of any rare or unique plant species found at the preserve as long as management of those species does not conflict with management of the site for the SCLTS.

3. Indirect Impact of Development

Urban development not only creates impacts from ground disturbance, but also has associated indirect impacts resulting from occupancy of the homes. The project would generate roughly between 400 and 450 residents. Such an increase in human presence at the salamander preserve would result in the following indirect impacts:

- oslight degradation of air quality from automobile exhaust,
- opotential degradation of water quality from an increase in impervious surfaces up slope from habitat,
- o increase in the demands for open space caused by project residents,
- oincrease use of the site by dogs and other pets,
- o increased in potential for litter to drift into habitat,

The HCP would help mitigate indirect impacts of development through the long term funding provided by the endowment and/or homeowners mitigation fee assessment. The funds generated by the homeowners assessment would pay for continued monitoring of the habitat for human encroachment, HCP violations, litter clean up, etc.

The project would also affect other issues which do not relate to the salamander habitat such as aesthetic impacts, and impacts on public services and transportation corridors. These and other specific impacts of the project are assessed in a separate environmental document being prepared under the direction of Santa Cruz County.

4. Wetlands Delineation and Project Impacts on Wetlands

The wetlands at the Seascape Uplands were defined in March 1990

using the Unified Federal Method. The wetlands are shown in Figure 6. The wetlands are contained within the boundary of the herbaceous riparian area mapped by Dr. Stephen Ruth in 1989. The boundary of the wetlands primarily coincide with the riparian vegetation and areas of low slope. Pits were dug on either side of the apparent boundary to determine soil conditions. The wetlands contain hydric soils, hydrophytic vegetation, and appropriate hydrology. Non-wetlands within the herbaceous riparian unit contain hydrophytic vegetation and possible hydrology, but do not include hydric soils. Non-wetlands outside of the riparian corridor do not exhibit any of the wetland criteria. Because this is the fourth year of a drought, it is feasible that the current wetland is smaller than it would be in years of normal or above normal rainfall. In this study the wetlands are defined by the current extent of hydric soils.

The housing development at Seascape Uplands would not directly impact on-site wetlands. Two new ponds proposed to enhance the habitat of the Santa Cruz Long-toed Salamander would be located in existing wetlands and would entail grading and filling in the wetlands in order to create a berm which would act as a dam for the ponds. The area of wetlands expected to be filled for these two ponds is less than one-tenth of an acre. Filling in wetlands is regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. The Corps must review this proposal to determination of whether a permit is required. The methodology used and details of the delineation is included in Appendix B.

B. Project Alternatives

1. No Project Alternative

Under the No Project alternative the landowner could cease the existing security patrol of the site thus opening up the site for possible impacts from off-highway vehicle use and other forms of vandalism. The pond would not be maintained. The berm surrounding the pond is currently experiencing significant erosion on one side as well as moderate siltation. Left alone the pond may not be able to hold enough water to maintain a breeding site for the salamander. The invasive plant species found on the site, primarily pampas grass and eucalyptus trees, without management would continue to spread and degrade native habitat. The result could be a significant degradation of salamander habitat and ultimate loss of the existing Seascape Uplands population.

2. 1985 Specific Plan Alternative

Impacts of the 1985 Specific Plan alternative were discussed in

the 1985 EIR for the proposed project. According to the EIR the project would result in the following:

- significant loss of essential and other sensitive habitat of the Santa Cruz long-toed salamander,
- loss of individuals of the salamander,
- loss of salamander migration corridors, and
- increased sedimentation of the breeding pond.

3. Public Purchase Alternative

Under the Public Purchase alternative no salamander habitat would be lost at the Seascape Uplands and there would be no disruption of salamander migration corridors resulting from the development of houses and roads. If funding was available to purchase the site and provide for long-term management and enhancement, this would be the environmentally preferred alternative. Without such funding, the proposed project is environmentally preferred.

V. BIBLIOGRAPHY

Draft Uplands Specific Plan, Seascape Properties, Sedway Cooke Associates, September 1983

Environmental Impact Report, Seascape Uplands and Benchlands Specific Plan, Prepared by Larry Seeman Associates, August 1985, and Response to Comments, March 1986

Seascape Uplands Santa Cruz Long-toed Salamander Study, By Stephen B. Ruth, Ph.D., September 1989

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VI. PUBLIC INVOLVEMENT

A. How Environmental Assessment is Distributed

Upon the submittal of the Section 10(a)(1)(B) Permit application, a notice of the availability of this Environmental Assessment and the HCP will be published in the Federal Register by the Service. The public and other interested parties will be able to review and comment on the proposed action during the public comment period. A distribution list is included in Appendix C.

B. Entities/Persons Consulted

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