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March 16, 2001

Mr. Robert Smith, Planning Director
Merced County, UC Merced Project Office
3351 M Street, Suite 240
Merced, CA 95348

Sent via post and FAX: 209-725-3708

Dear Mr. Smith:

The Western Section of The Wildlife Society (TWS-WS) is pleased to comment on the Notice of Preparation (NOP) for the University Community and Area Plan Environmental Impact Report (EIR). The Wildlife Society is an international, nonprofit, scientific and educational organization serving professionals in all areas of wildlife conservation and resource management. The TWS-WS consists of wildlife biologists working for government agencies, environmental consulting firms, academia, nonprofit organizations, and individuals in California, Nevada, Hawaii, and the Pacific Islands. Since 1954, our membership (currently 800 individuals) has sought to enhance the capability of wildlife professionals in conserving natural diversity, sustaining productivity, and ensuring responsible use of wildlife resources for society's benefit. The principal objectives of TWS include the following:

(1) To develop and promote sound stewardship of wildlife resources and of the environments upon which wildlife and humans depend;
(2) To undertake an active role in preventing human-induced environmental degradation;
(3) To increase awareness and appreciation of wildlife values; and
(4) To seek the highest standards in all activities of the wildlife profession.

The TWS-WS previously informed the University of California (UC) of our opposition to the siting of the 10th UC campus and tracts of houses at and around Lake Yosemite, Merced County. For the reasons we stated in our letter of 22 May 2000, TWS-WS still opposes construction of the campus and community at Lake Yosemite. Again, TWS-WS does not oppose the construction of a 10th campus, as we support higher education, but we believe that campus facility construction must be balanced with the protection of sensitive environmental resources. That is, TWS-WS shares the value of education with the University of California, but disagrees that the next campus must be sited at Lake Yosemite or that its siting there will cause the least environmental harm. While maintaining this position on the project, we offer the following comments on the NOP. Our comments are intended to result in the preparation of an adequate environmental analysis and impact report as well as the least environmentally damaging project.

Process

Public participation is vital and legally mandated under the California Environmental Quality Act (CEQA). The comment review period adopted is within the regulations, but with the complexity of the issues, a voluntary extension of all associated time lines would provide a more adequate time period for public review and comment. A longer comment period would provide TWS-WS a more reasonable opportunity to provide input to the EIR because the TWS-WS cannot adequately respond to NOP's or EIR's within a 30-day comment period, particularly for this complicated project. We request, therefore, an additional 30-60 days for this NOP and other environmental documents to be prepared for the 10th UC campus.

Although this NOP explains that a tiered process of document preparation will be pursued, we are concerned that tiering might result in piecemeal releases of environmental planning and review documents related to the siting at the Lake Yosemite site. Piecemeal releases of documents might inadvertently impede full public participation because the public may lack sufficient resources to review multiple environmental documents which currently will be prepared as separate documents for this project over many years.

A Programmatic EIR was prepared for site selection, and an EIR will be prepared for the Campus Parkway. In order to fully review all potential impacts from this project, TWS-WS would like to have a clear understanding of all anticipated actions related to campus development, including anticipated time lines and decision documentation planned for future phases or activities. Without this information, we may be unduly challenged to adequately consider the project's cumulative effects. We also hope all public input be fully considered in accordance with CEQA guidelines, and that all public comments regarding environmental effects will be fully disclosed and addressed in the EIR. Our hope is the EIR addresses both the literal and overall intent of each comment, and that comments indicating potentials for environmental effects or suggesting alternative actions and/or mitigations that lessen adverse environmental effects are fully and meaningfully considered. Full disclosure, as you know, gains public trust and ensures full CEQA compliance.

Alternatives Analysis

The alternatives analysis should include a broad array of alternatives, such as all the sites proposed in 1994's Programmatic EIR[1]. We note that the 1994 programmatic site-selection EIR is now out dated, and served as a planning document because wildlife surveys of Lake Yosemite were not conducted by consultants. The EIR should re-evaluate the validity of the 1994 decision in light of any new information or changed circumstances related to this site, other sites considered in the 1994 EIR, and any other sites that are reasonable and feasible alternative sites. A thorough alternatives analysis should include a broad array of alternatives, along with assessments of the costs and benefits related to the siting, project design, and mitigation options[2].

Environmental Setting

Descriptions of the environmental setting in the EIR must be complete and sufficient to facilitate full environmental review that results in decisions based on full disclosure. Therefore, descriptions of the environmental setting should discuss temporal dynamics of plant and animal distributions and behavior that integrate with climate cycles and fire cycles

in the project area. The environmental setting should describe both the immediate period of time in which the EIR is being written and past and future time periods to account for cycles of rainfall, fire, and vegetation succession. Inter-annual variation in abundance of vertebrate species is great[3] and is integrated with periodicity of environmental factors[4]. Conditions at the time of the NOP are associated with this variability[5], so the appropriate temporal period representing environmental cycles should be included to consider impacts in their full environmental context. Similarly, the description of the environmental setting should not be confined to the project area. For wildlife species, the appropriate analysis scale for each special-status species should be described based upon the best available scientific information with due consideration to the needs of each species and the magnitude of possible environmental impacts. For wide-ranging species, this area could be substantially larger than the project area, while a smaller (fine) scale analysis within the project boundaries may be necessary for species with smaller ranges.

For all special-status species, the EIR should establish the likelihood of presence on the project area, as well as the likely demographic unit supported there. This step is needed so that estimates can be made of the potential adverse project impacts. Once these impacts are projected, mitigation measures can be formulated to avoid impacts or to offset them so that the mitigation is roughly proportional to the impacts. There are several ways to estimate the impacts.

First, aspects of the environmental setting can be used to estimate the extent to which habitat is available. Because habitat is most effectively defined by the species' use of the environment[6], species should not be pigeon-holed into mapped cover types that compose smaller parts of the environment than they actually use. Habitat is species-specific and complex, so mapped cover types often fail to adequately match the distribution of habitat for any particular species, regardless of whether species are arbitrarily designated as flagship, keystone, or umbrella species[7]. Soils, slope, aspect, nearness to water, availability of refugia, and many other factors often influence where a species will occur, but mapped cover types are usually overly simplistic and constructed from imagery alone (without on-the-ground corrections). This approach of relying on habitat availability then assumes that the species will be present now, in the recent past, or potentially in the future, so long as the study area is also within the species' geographic range. This approach assumes presence based on habitat availability, and has been the approach used by the U.S. Fish and Wildlife Service in recent years. The EIR must adequately disclose the assumptions and methods used to assess habitat and species presence for each species covered in the EIR.

Second, records of species presence in or nearby the project area can be used to verify past presence and to assume possible current or future presence of each species. Such records are available at museums and the California Natural Diversity Data Base maintained by the California Department of Fish and Game. However, a lack of records does not mean that the species has been or is currently absent from the study area. Also, species populations are naturally clustered, and these clusters shift locations periodically[8]. This natural shifting mosaic pattern of abundance means that where species are absent today, they can be present in a few years from now, so long as the habitat remains available and source populations exist.

Third, searches can be conducted to verify presence, and sampling can be conducted to estimate the number of individuals and the demographic units occupying the study area. Like historical records, searches and sampling should not be used to conclude that the species is

absent from the study area. It would be improper to conclude that a species is absent just because professional biologists were unable to find evidence of the species in the project area based upon limited or cursory field visits. Thus, searches and sampling are useful for verification of presence and for making numerical estimates, but may not be useful for narrowing down a list of species to consider in an EIR unless extensive and well designed surveys are conducted following accepted survey protocols. Since many survey protocols require several years of surveys and any surveys can be confounded by uncontrollable variables such as annual climate variations altering the detectability of some species, reliance on surveys to unequivocally determine absence of a species is generally not recommended.

When assessing environmental impacts, it is appropriate to invoke the Precautionary Principle of risk assessment[9]. If species' absence cannot be conclusively determined and habitat for the species exists within the project area, TWS-WS recommends including the species in the EIR analysis of effects.

Once the EIR has identified all the special-status species likely to be present within the project area now or in the near future, then the spatial extent and quality of the habitat should be estimated for each species before and after the project. A before-and-after comparison of both habitat availability and habitat quality is a critical means to estimate the project's impacts. Habitat availability (in spatial units) following the project needs to be compared to habitat availability before the project, and both of these figures need to be compared to the spatial areas of habitat needed to support various demographic units of each species[10]. In this way, the EIR can project the likely changes in number of individuals and in demographic units that will be supported in the area surrounding the proposed UC campus and associated community following the project-caused habitat losses. This approach relies upon existing data (numerical estimates in the published literature), so no new field research is needed. Of course, searches and sampling in the project area can improve the accuracy of estimates of numerical distributions and demographic organization. In addition, TWS-WS recommends that habitat analysis extend into a reasonable future time period to assess longer-term effects of the proposed construction which will ensure that cumulative effects are adequately disclosed. A 50- to 100-year period seems appropriate in this case.

All field searches and sampling should follow agency protocols that are available for various special-status species. All searches and sampling should be performed by professionals who hold appropriate permits issued by the California Department of Fish and Game and U.S. Fish and Wildlife Service. In support of this standard, the EIR should include the names, qualifications, and permit numbers of all field personnel. Searches and sampling for rare animal species is difficult and often requires a high level of intensity to detect presence. All methods available to detect presence[11] should be used, if necessary, including visual and acoustical searches for individuals or their sign, as well as all live-trapping methods.

Impacts Assessment

The environmental analysis of the campus and associated community should include a complete and thorough cumulative impacts assessment that includes the growth-inducing impacts of the university campus and the proposed Campus Parkway. This assessment should be conducted across temporal and spatial scales that are appropriate to the impacts to the various species of the area, such as American badger, bobcat, coyote, and kit fox, and such as the extent and multi-annual cyclic hydrological behavior of the watershed

encompassing the local streams and vernal pools[12]. In rendering conclusions about direct, indirect, and cumulative impacts of the proposed project, the EIR should rely on the highest scientific and wildlife professional standards[13] and the best available data for endangered species conservation[14] since so many special-status species occur in the area.

The analysis should also include consideration of how fragmentation of the agricultural landscape will affect the long-term economic condition of Merced County agriculture and the effects on wildlife species if agricultural areas are managed for different land uses. The analysis should consider the impacts of increased air pollution, as well as increased light and noise pollution. For example, the analysis should consider the impact of nitrates fallout into and around the remaining vernal pools of the region, and how this nitrogen loading might affect plant species composition and biological integrity of vernal pool ecosystems.

Mitigation

To demonstrate that roughly proportional mitigation will be achieved, the EIR should demonstrate that similar numbers and similar demographic organizations will be generated as compared to those lost to the campus and associated community. Typically, habitat banking, enhancements, and restoration can achieve this level of mitigation *only* by involving very large areas[15]. In order to achieve this level of mitigation in the face of great uncertainty about the effectiveness of mitigation measures and about future cumulative impacts, TWS-WS suggests that the EIR adopt an adaptive management plan which includes specific direction to apply pre-specified new prescriptions or mitigation measures[16]. In addition, where reasonable choices exist between different mitigations, the EIR should explain why alternative mitigation measures were not used or it should incorporate these mitigations in additional alternatives to allow the decision-maker an opportunity to compare the costs and benefits in an economic, operational, and ecological perspective.

If off-site mitigation is considered, TWS-WS recommends that the UC either restore habitat where it had occurred originally but has since been degraded or destroyed, or it should connect habitat patches that have been disconnected for some time. Either of these mitigation measures would likely increase the regional numbers of individuals and the viability of the demographic organization while the same species is being impacted by the proposed project. Because these types of restoration activities are extremely difficult to evaluate for ecological effectiveness, mitigation measures should be implemented well in advance of activities that adversely affect on-site resources. If these types of mitigations are developed, TWS-WS strongly encourages a scientifically based monitoring plan be developed to evaluate the long-term effectiveness of these mitigations. The EIR should very clearly indicate a long-term commitment of funds and resources to complete this monitoring.

The operational units of the mitigation plan should consist of individuals, demes, populations, and/or metapopulations rather than mapped cover types or "habitat types." If surrogate variables or umbrella-style cover types are determined to be the only reasonable and feasible measures that can be evaluated, then they must be rigorously and quantitatively related to the operational units they are meant to represent. We recommend that the EIR determine what mitigation measures are reasonable and feasible based upon scientific and technical considerations and not economic considerations. This recommended approach gives the decision-maker a full array of project opportunities and project economics balanced with environmental risks and benefits.

Besides siting the project in the least environmentally sensitive area, TWS-WS recommends that the site be surrounded by buffer zones permanently protected in conservation easements, fee title acquisitions, or other equivalent methods. We generally discourage habitat restoration and off-site introduction or translocation as mitigation measures because success cannot be fully assured and other alternatives exist. We regard genetic contamination of otherwise unaffected populations as intolerable. When restoration is pursued, TWS-WS recommends that it be directed to mitigate impacts of projects approved prior to environmental regulations, or wherever the mitigation can have the greatest restorative impact. Restoration should be tailored to the project site based on the assembly of local species and habitats. Formulation of the goals of the restoration project and the courses of action intended to achieve those goals should precede implementation. Pre-impact site conditions should be determined, and the restoration plan should consider land contours, soil types, erosion patterns, and pre-impact hydrologic conditions. Study of the targeted species should be thorough so as to identify their total distribution, habitat descriptions of occupied site and symbiotic relationships with other species. The plan should consider propagation techniques, re-introduction strategy, invasive species controls, site protection, public access, adaptive management approaches, and other factors. Finally, a monitoring program should be sufficiently rigorous to assess restoration success, as well as to augment the knowledge base related to related restoration efforts.

Regarding adjacent, offsite mitigation, TWS-WS recommends limiting public access to protected habitat areas through fencing or other means, and that the species and habitat conditions be monitored to detect intrusion and subsequent impacts caused by construction and operation activities. Public education should be implemented regarding the values of these areas, and off-site populations should be protected permanently through conservation easement, mitigation banking, or land acquisition. These areas should be sufficiently large to support a biologically secure, reproducing population of each special-status species affected by the project, including sufficient space to maintain a buffer zone of habitat around the population. The surrounding land uses should be considered, as well as expected future land uses. The design of the site boundary and management plan should be scientifically based, utilizing information from baseline studies and natural history data for each species. The contract should specify the rights of the grantee, the grantors rights and uses, and restrictions of undesirable activities, and it should include language that binds the terms and conditions of the contract in perpetuity, regardless of fee title transfers. The contract should protect the site from unintended land use changes, intentional introduction of undesirable exotic species, and uncontrolled public access, and it should protect the right of the grantee to enforce compliance with the terms of the easement.

The mitigation exchange ratio should meet or exceed 1:1 for most species, thereby accounting for no net loss of individuals and habitat area. Where needed, off-site compensation areas should be enhanced by reducing impacts caused by on-going activities such as over-grazing by livestock or dumping of hazardous materials or trash. Translocations, if they must be performed, should be preceded by detailed inventories of species occurring at the receiving site, accompanied by a feasibility assessment regarding persistence and avoidance of genetic contamination. These should also occur at the appropriate time of year, following proper handling and propagation methods in consultation with the regulatory agencies. Furthermore, all translocations should be completed and shown to be successful prior to the initiation of project activities.

We recommend that the mitigation design, implementation measures, and reporting methods be clearly documented, along with who or which agencies are responsible for

achieving clearly defined success criteria. Assurances should be provided in writing that certain performance criteria of the mitigation plan will be realized, and guaranteed by a negotiable performance security large enough to complete the mitigation and to pursue alternative mitigation measures should the implementation be incomplete or the objectives fail to be achieved. Five years of monitoring the success of the mitigation should be the minimum time period before returning the performance security, however, monitoring programs could be longer depending on the resource.

Summary

We are committed to assisting the planning process for the 10th UC campus now and in the future, and we sincerely thank the UC for considering fully these comments and recommendations. We look forward to seeing the EIR which we trust will become a model for other projects in California to follow in the future. A longer comment period would have provided TWS-WS a better opportunity to assist with the EIR preparatory process. However, TWS-WS can provide additional detailed and specific comments and suggestions on the NOP for the University Community Plan EIR if you will accept them over the next 30-60 days. In addition, I would like you to consider the TWS-WS as an information and technical resource during the planning process should these resources, including professional peer review, be needed. Thanks again, and please contact me at the letterhead address, phone numbers, and email address if additional information is needed.

Sincerely,

Barrett A. Garrison, President

[1] Only some public comments on the 1994 Programmatic resulted in EIR changes, and these changes were mostly corrections of facts or minor text changes. We recommend full public participation with the environmental review and analysis related to the project's EIR. Decisions related to the 10th UC campus should be fully disclosed with full consideration of all issues brought by all those who participate in the process.

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[13] see Smallwood, K. S., A. Gonzales, T. Smith, E. West, C. Hawkins, E. Stitt, C. Keckler, C. Bailey, and K. Brown. 2001. Suggested standards for science applied to conservation issues. *Transactions of the Western Section of the Wildlife Society* 36:40-49.

[14] e.g., see Smallwood, K. S., J. Beyea and M. Morrison. 1999. Using the best scientific data for endangered species conservation. *Environmental Management* 24:421-435.

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