Planning Sustainable Conservation Projects: Large and Small-Scale Vernal Pool Preserves

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Abstract. The accurate planning of stewardship tasks and costs, and the management of the conservation funding (especially endowments) is as important as managing the biological resources. Acquisition does *not* equal protection or preservation. Without perpetual stewardship, natural systems run the risk of degrading slowly over a number of years or even in a few short years depending upon habitat type, management requirements, and impacts from misuse or surrounding areas. Stewardship cannot continue to occur without the financial resources necessary to support these activities. The necessity of proper and adequate financial planning is described in this paper. Stewardship and financial planning through the Property Analysis Record or "PAR," a database computer program, is introduced. Other strategies such as determining capitalization rates for calculating endowments, public versus private investment portfolios, and overcoming the effects of inflation are discussed. A brief discussion on mitigation demand, conservation banking and a caution regarding the use of habitat conservation plans is included.

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Introduction

Nature is ephemeral, enduring, ever changing, evolutionarily capricious, delicately balanced, tenaciously persistent, humorously outlandish, complex, interwoven, lavish and harsh. Any attempt to prescribe a management regime for such an entity is immediately suspect for its hubris — the idea that we might be able to control, fine tune or 'fix' it, much less understand it.

Nevertheless, this paper will argue that the accurate planning of stewardship tasks and costs, and the management of the conservation funding (especially endowments) is as important as managing the biological resources. Acquisition does not equal protection or preservation. Stewardship, while frequently last on everybody's lists, is a critical component of conservation. Without perpetual stewardship, natural systems run the risk of degrading slowly over a number of years or even in a few short years depending upon habitat type, management requirements, and impacts from misuse or surrounding areas. Stewardship cannot continue to occur without the resources necessary to support these activities, thus the importance of financial planning.

By planning the tasks and financial requirements necessary to protect, monitor, and maintain natural systems over the very long term, we can accomplish a number of goals essential to conservation.

1. We can more accurately estimate whether the mitigation or restoration project planned is a realistic way to solve a conservation problem. Will any set of tasks facilitate the continued existence of those biological resources and physical processes over time? Will the stewardship program allow the evolutionary processes to act upon these resources?

2. We can estimate the cost of tasks required to sustain the conservation project. However, it is nearly impossible to accurately value habitats and species in an economic context.

3. We can make a second reality check. Can the planned conservation project be financed?

4. Finally, we can more likely ensure that adequate resources will be available to conduct stewardship in perpetuity, thereby effectively protecting the resources.

For conservation projects to be successful one must adopt a long-term view. In California, environmental mitigation for species and habitats is a major source of conservation funding. However, a U.S. Fish and Wildlife Service study concluded that of 30 projects, 3-5 years old, in which a total of 540 acres of wetlands were either created or restored, only 38% successfully compensated for lost values to wildlife (June DeWeese, USFWS, Sacramento Field Office, Internal Report 1994). Obviously, these projects were not subject to the discipline of long-term planning (see Figure 1).

What does taking a long-term view mean financially? At the Center for Natural Lands Management this means encouraging larger projects with fewer impacts from surrounding uses, and

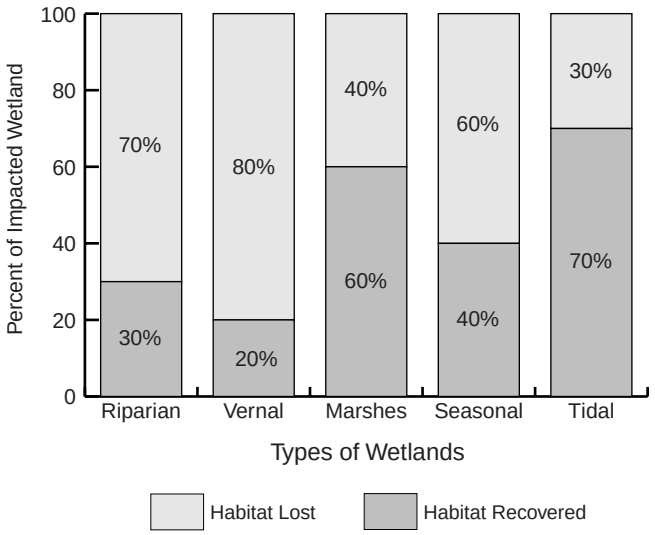

FIGURE 1. Habitat recovered and lost through mitigation. This data is taken from a U.S. Fish and Wildlife Service study of 30 wetland projects 3-5 years old in which a total of 540 acres of wetlands were either created or restored. Only 38% successfully compensated for lost values to wildlife.

planning the financial means for perpetual stewardship both to compensate for those remaining impacts and to maintain the health of the system. We conduct stewardship planning and financial planning through the Property Analysis Record or "PAR," a database computer program developed with grants from the National Fish and Wildlife Foundation, the Packard Foundation and several other private foundations.

The two goals of the PAR—creating biologically and financially sustainable projects—are inextricably related. More specifically, *a financially sustainable conservation project is irrevocably linked to dedicated funds commensurate with the stewardship tasks necessary to maintain a given standard of biological resources in perpetuity.*

In the PAR, the project's biological requirements and standards are considered first. The purpose for protecting the resources; management goals defined by statute, permit or otherwise; the extent, type and quality of resources; the area's shape, size, special status species, edge surroundings and locational context are all determinants of the activities necessary for a site's maintenance. Stewardship needs are evaluated as tasks. As contrasted to the condition of habitat or a species, costs for tasks can be estimated.

The tasks surrounding a conservation project are varied but generally fall into the following categories.

Acquisition. This category includes costs associated with acquiring the property, either in fee title or via conservation easement. Examples of costs include escrow costs, fundraising for purchase costs, permit acquisition and site inspection.

Site Construction/Maintenance. This category includes planning costs, site preparation (debris removal), soil and water tests, equipment rental, and capital costs such as structure, fencing and road construction.

Biotic Surveys. This category encompasses habitat and species inventories, monitoring and reporting. Specialized research is not generally considered a part of the management costs.

Habitat Restoration. Costs included in this category are site planning, restoration planning, habitat preparation (e.g., prescribed burning, topsoil manipulation, seed collection, salvage operations, erosion control methods, spraying, and invasive, exotic species removal), planting or other revegetation, and irrigation to name a few. These are usually limited term items and similar tasks that are an ongoing part of habitat maintenance are located in the following category.

Habitat Maintenance. Tasks included in this category follow-up on the activities identified/performed under habitat restoration. These activities provide a direct benefit to the habitats for which an area is preserved. Such tasks usually involve maintenance of ecological processes, such as prescribed fire or grazing. They often include the removal or continued removal of invasive exotic plant and animal species through hand removal, cutting, mowing, spraying, or trapping. Other tasks support native species through ongoing revegetation or vegetation maintenance, erosion control, fuel zone maintenance, artificial nesting or breeding structures, etc.

Water Project. This category addresses tasks associated with the development of wetland projects. Tasks include water supply planning, infrastructure improvements and maintenance, water quality testing, and permit acquisition.

Water Management. Most wetland species in California have adapted to specific water regimes. In many restored or created wetland systems, such regimes must be maintained through active management. Tasks include the hours necessary to change and monitor water levels, and the cleaning, maintenance, and replacement of structures such as channels, culverts, dikes and gates. Some projects must pay water-pumping charges, and others must purchase water and electricity.

Public Services. Tasks in this category are related to projects that incorporate public access. This category includes the development of public access and infrastructures such as trails, visitor centers, establishing interpretive exhibits and so forth. Public services are also those tasks performed for the benefit of property owners, neighbors, associated agencies, and visitors to the area. Such services are often designed to provide an indi-

rect benefit to the resources under management. These services include the maintenance of improvements such as trails and signs, maintenance of interpretive displays, production of interpretive/educational materials, and enforcement.

General Maintenance. This is category includes sanitation control, dumping, restrooms and portable toilet facilities.

Reporting. This category includes regular species inventories and monitoring reports, activity reports, photo documentation, database maintenance, production and updates of management plans and fire response/prescriptive burn plans, and any other materials necessary to manage the site. This category may also include coordination with adjoining biological managers through participation in activities such as a Coordinated Resource Management Plan (CRMP). In addition, compliance monitoring, a task designed to ensure that property management complies with conservation easement terms or development agreements, comes under this heading. Compliance monitoring requires site inspections, and may require non-compliance notification and contacts with the appropriate authorities.

Office Maintenance. This category includes all items necessary for the establishment and maintenance of a field office. This is generally a separate field or preserve office specifically assigned to a project and not covered under normal administrative costs associated with the project. Insurance, taxes and fees, furniture, office equipment, computer software and hardware are some of the items included in this category.

Field Equipment. All field equipment necessary to conduct stewardship activities are included in this category. This includes vehicles, Global Positioning Systems (GPS), surveying equipment, cameras, video equipment, radios, scopes and binoculars, etc.

Operations. Operations are site-specific activities which are administrative in nature and include items such as producing contracts, recording documents, processing endowments, accounting, budgeting, travel, training, exemption filings, and contract maintenance.

ESTIMATING COSTS

To estimate the cost of a task requires an understanding of its components and its dimensions, how much of the task is needed, how often should it be done, and by whom. This budgeting process is conducted daily in the private market where it is generally assumed that costs, whether for labor or goods, will be based on market prices. That occasionally a special deal can be wrangled does not invalidate the rule of market prices over the long-term. Perversely, it has been tempting in conservation circles to assume less than market prices for conservation projects — even when perpetuity is the goal.

Precisely because biological resources are managed to ensure that they last, any cost assumptions must avoid special discounting factors that may apply to one time and place. For instance, if a volunteer group is to conduct exotic species control in the early years of a project this does not necessarily mean they can be expected to provide this service forever. Just because a government agency is able to contribute a service or a piece of equipment one time, does not mean that they will have the budget or inclination to do so in subsequent years. Further, since volunteer time and donations provide something of real economic value, it is hardly rational, given the perpetual nature of a conservation project, to reduce estimates of financial resources needed to maintain natural areas in the long-term. If a conservation project is established with financial resources based on less than market prices, its condition may be seriously threatened whenever market prices again prevail.

INFLATION

One of the major challenges of perpetual stewardship, and a goal of developing the PAR, is to cope with inflation. The effect of inflation on a perpetual project is insidious. Costs will continue to creep upward despite the best economic governance from Washington. Figure 2 demonstrates the change in costs of typical land management activities and items as influenced by inflation.

Since 1961 the average rate of inflation has been 4.85 percent. (The inflation rate is defined as the Consumer Price Index, all urban consumers). At this actual annual rate of inflation, a $100,000 endowment established in 1960 would be worth $17,000 by the end of 1996 in current dollars (see Figure 3). Figure 4 illustrates the comparison of inflation and investment returns from 1961 through 1995.

Therefore, the most important feature of a financially sustainable conservation project is that the funding for stewardship overcome the effect of inflation. The difficulty then is not that we must project the inflation rate, but that we need to estimate the budget needed to maintain the habitat in perpetuity, and a budget is based on tasks. This is the where the expertise of the land manager is key.

By arriving at an average annual cost of stewardship, we have sufficient knowledge to ensure sustainable conservation funding from a variety of sources. If a special district is appropriate to support the project, the special district documentation needs to cite the beginning budget and require it be adjusted for inflation each year. For example, a project that begins by costing $1,000 during the first year, would require the district to provide $1,020 during the succeeding year if inflation is 2%. If an

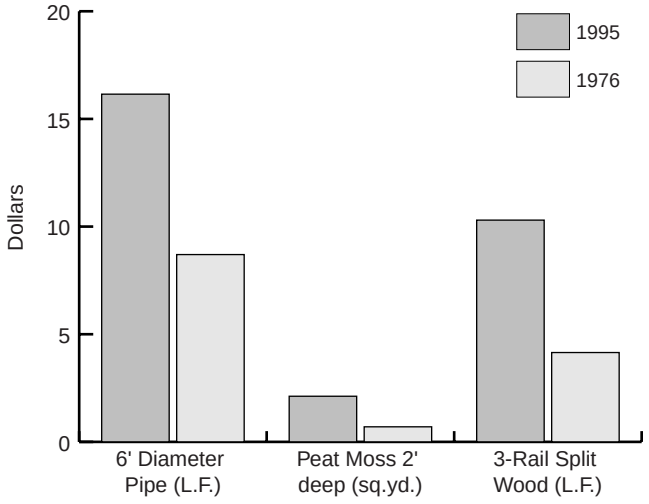

FIGURE 2. Comparing actual prices and inflation. The goods shown in this example compare costs between 1976 and 1995 and show the effect of inflation on actual prices and purchasing power.

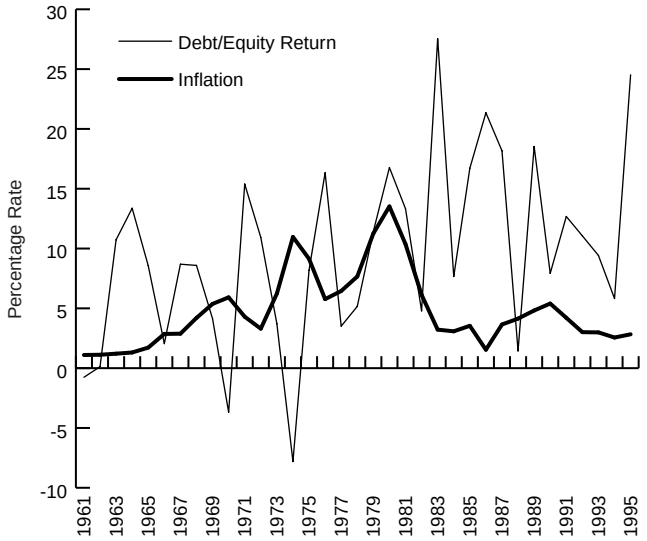

FIGURE 4. Comparison of rates of inflation and investment return. This figure shows how the debt/equity return on an investment is affected by the inflation rate.

endowment is in order, the size of the endowment would be established using the beginning stewardship cost plus the average inflation rate. The size of the endowment will also be dependent upon its projected rate of investment return. This brings us to capitalization rates.

CAPITALIZATION RATES

The capitalization rate is the rate at which an endowment fund can be expected to generate interest that will be available for stewardship expenditures. For example at a 10% capitalization rate, a $50,000 endowment would generate $5,000 annually for stewardship. Looked at another way, the capitalization rate specifies the amount of endowment required to generate a given amount of stewardship funds each year. In the previous example, if annual stewardship needs equaled $5,000 but the capitalization rate was 5%, then a $100,000 endowment would be needed. The calculation is:

$$\frac{\text{Average Annual Stewardship Costs}}{\text{Capitalization Rate}} = \text{Endowment}$$

Note that the capitalization rate is the divisor so that the higher the capitalization rate, the lower the resulting endowment, as shown in Table 1.

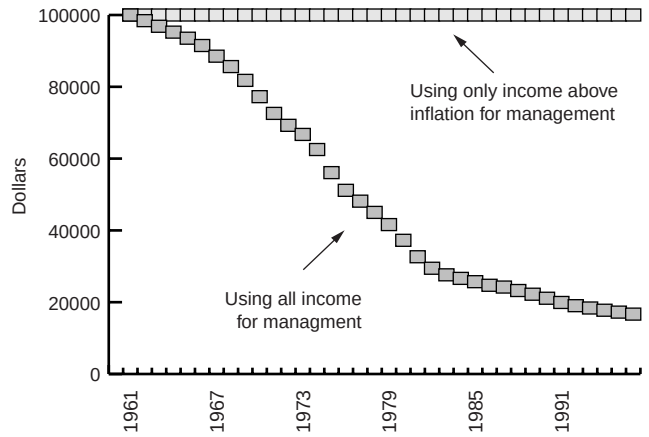

FIGURE 3. Purchasing power of an endowment after inflation. This figure represents the effect that inflation has on the purchasing power of a $100,000 endowment. In 1961, the purchasing power equalled $100,000. By 1995, the original $100,000 had the purchasing power of $17,000 due to the effects of inflation. This result emphasizes the need for active fund management.

It is assumed that endowments will be invested to earn funds for stewardship and to offset increasing costs due to inflation. Therefore, the capitalization rate that should be used reflects the spread in earnings between invested returns and inflation. Table 2 illustrates the relationships. If investment returns average 10%, inflation is 4.5%, and the cost of investing/managing funds is 0.5%, the spread is 5%. By using a 5% capitalization rate, the endowment can pay out 5% of its funds each year for stewardship, pay out 0.5% for money management fees, and retain 4.5% to offset inflation.

If the endowment was calculated at a 10% capitalization rate in this example, all funds would have to be paid out for stewardship costs and the endowment would become a sinking fund where inflation would drive its earnings value toward zero. Table

TABLE 1. How to calculate the capitalization rate.

Amount to Invest to Earn X Amount per Year
X = $1,500 and the Capitalization Rate = 5% Amount to Invest = $1,500/0.05 = $ 30,000

2 is an example of an inflation adjusted endowment fund that provides for annual expenditures and reinvestment.

Obviously, investment rates of return are highly variable. The rate of return will depend upon the investment portfolio, the time period, and stochastic events affecting markets. We have used the period since 1960 to the present as a guide because it is long enough to avoid inordinate skewing due to business cycles, oil shocks, and interest rate changes. As we are establishing perpetual endowments, it is important to use guideposts that reflect more than just a few years experience. In fact, the actual numbers over this period indicate that a slightly lower capitalization rate would be more appropriate in the long run. A rate between 4.0 and 4.5 percent may prove to be necessary.

INVESTMENT PORTFOLIOS

The preceding discussion is applicable to a balanced portfolio, i.e. one that includes both debt issues (eg., CDs, bonds) and equity issues (eg., stocks) in a variety of maturities. However, endowments administered by the state of California or local agencies are restricted by Government Code Section 53600 in order to protect the public's money for relatively short-term expenditures. Investments are limited to federal, state, and local bonds, certificates of deposit, corporate notes and short-term corporate bonds. The typical return for this type of portfolio is a maximum 7%. Using an inflation rate of 4.5% (plus 0.5% management fees) would result in a capitalization rate of just 2%. This means that government-administered endowments must generally be twice the size of balanced portfolio endowments to produce the same level of stewardship dollars (Table

TABLE 2. Inflation adjusted endowment illustration.

	Amount	Percent
Endowment	$400,000	100.0%
Investment earnings	$36,000 - $38,000	9.0% - 9.5%
Inflation re-invested into endowment	$18,000 - $16,000	4.5% - 4.0%
Investment management fee	$2,000	0.5%
Stewardship income – used for current expenditures and reserves	$18,000 - $20,000	4.5% - 5.0%

TABLE 3. The effect of Capitalization rates.

Annual Funding Requirement for Stewardship	Capitalization Rate	Endowment Required
$20,000	1.0%	$2,000,000
$20,000	2.5%	$800,000
$20,000	5.0%	$400,000
$20,000	10.0%	$200,000

3). Besides higher returns, balanced portfolios have the advantage of flexibility. Funds can be moved between equities and debt as returns and risk varies. As interest rates climb and economic activity slows, balanced portfolios can move more funds into debt. However debt portfolios must sell their lower rate issues into a declining market to take advantage of higher rates. As interest rates fall and economic activity increases, balanced portfolios can either retain higher rate issues or move back into equities while debt portfolios must sit tight.

The factor that tends to offset some of the advantages of a balanced portfolio is the higher volatility of stocks. In trying to evaluate this, we have compared the return year by year for various sequences of the 1961 to date investment return series. On the debt side we used treasury bills, municipals and long term treasuries. On the equity side, we allowed the equity portion of the portfolio to vary between 40% and 60% of the total depending upon movement in the market. Depending upon the sequence of the series, debt portfolios actually need to be anywhere from 25% to 70% higher than balanced portfolios. Since it difficult to know whether flexibility benefits in a balanced portfolio has been fully accounted for, we would recommend a close evaluation of government endowments. Capitalization rates of 2.0% to 2.5% for government endowments should be accurate. However, in cases where a higher capitalization rate is assumed, the value of the endowment earnings will inevitably decline. If such projects were set aside as mitigation and additional taxpayer dollars are used to offset these declines, the public ends up providing a subsidy to private development projects.

HABITAT CONSERVATION PLANS

The PAR method of evaluating conservation projects provides justification for the continued development of habitat conservation plans (HCP) and Natural Communities Conservation Plans (NCCP). Such plans are believed to result in larger and more ecologically beneficial conservation projects. Fortunately, many principles of conservation biology guiding the design and management of natural areas also tend to increase the cost efficiency of stewardship on a per acre or per species basis. Per

acre stewardship costs decline in large, connected, unfragmented preserves with low edge to interior ratios not only as a result of economies of scale, but also because such preserves tend to be more ecologically viable and therefore require less intensive management. The impact of size and design (e.g., edge, connectivity, topography, etc.) on costs is vividly demonstrated in the PAR analysis of a wide variety of preserves in varying habitats. Figure 5 provides an illustration of the relationship between preserve size and maintenance costs based on a 22 project sample.

The actual costs of each individual project will vary and are dependent upon many factors, and should still be evaluated carefully. One factor that tends to increase management costs of even large planned conservation projects is the fact that they usually begin as a series of smaller, scattered parcels. The cost to manage these early properties, sometimes for years, prior to achieving final conservation project design can be higher on a per acre basis than it would be for the entire project if completed at once. This is a cash flow problem which must be addressed. Secondly, an HCP or other large conservation project may lose significant savings through a multiplicity of conservation managers. If many different entities are involved in managing various parts of the conservation project, fixed costs will take up a larger portion of costs than otherwise. Many tasks may be duplicated, and coordination and communication time will tend to increase.

Habitat conservation plans have increased in popularity in recent years. The authors caution against the continued use of large-scale planning efforts such as HCPs without clearly defining long-term management and monitoring responsibilities and sufficient, guaranteed funding sources. Many ill conceived plans have been approved without proper planning and assignment of long-term habitat responsibilities and with no identified funding amounts or sources. These plans result in a "smoke and mirrors" approach to compensating for impacted habitat values and impede bona fide conservation efforts. Well thought out and systematic monitoring programs as a component of HCPs are critical to determining whether or not long-term goals are being met.

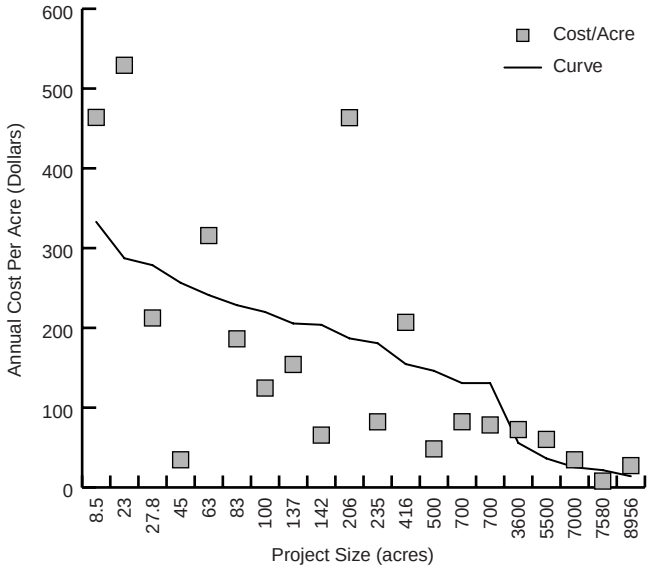

FIGURE 5. Management costs per acre. Provides an illustration of the relationship between preserve size and maintenance costs based on a 22 project sample.

MITIGATION CREDIT DEMAND

Since thousands of acres of conservation lands protected in California over the last few years have occurred in the form of mitigation projects, and in the light of recent interagency agreements to facilitate the establishment of HCPs, Natural Community Conservation Planning programs, and mitigation and conservation banks, such projects will become an increasingly important component of natural areas conservation in the future. Mitigation banks or conservation banks and individual mitigation projects must conduct all of the same financial planning discussed earlier in this paper. However, additional factors that affect the financing of mitigation projects must also be considered to ensure their success.

By balancing the size of the bank against the developable area and the need for mitigation credits, the total cost of the mitigation project can theoretically be recovered over time. The demand for mitigation credits, however, is a function of the rate of development as well as the formula used to allocate mitigation requirements among development projects.

The rate of development of residential, commercial, industrial and public uses is affected by the underlying economic condition of the area, attitudes towards growth, and the form of growth dictated by markets and local planning regulations. The conversion rate, for instance, between housing units and land absorbed for this purpose varies widely.

MITIGATION ALLOCATION

The formula used to allocate mitigation requirements may vary considerably and the choice of formula has many ramifications. At one extreme, mitigation may be required only of those properties that contain certain biological resources and only "onsite," on the acreage containing those resources. At the other extreme, mitigation requirements may be placed on all properties considering that all development consumes some environmental resources. For convenience, we may call these two extremes "impact allocation" and "consumptive allocation."

The benefits of impact allocation are generally thought to be fairness—only those developments directly impacting the re-

source by removal or degradation are burdened with mitigation requirements. This choice is also easier politically because there are fewer people affected. On the negative side, the cost of mitigation is spread over fewer acres, therefore, the cost of mitigation per acre of affected habitat is relatively high. In addition, these properties may suffer an economic handicap in comparison to other properties and be slower to develop than the economic growth rate in the community. Therefore, the very properties needed to support the mitigation project may be disadvantaged. Finally, the cost of operating the mitigation program is increased because every property will still need to be examined to determine their impact on resources resulting in developer uncertainty and significant increases in the cost and time required to develop.

The benefit of consumptive allocation is simplicity. All developable parcels are allocated a fee based upon total acreage regardless of their exact direct impact. Developer uncertainty, additional studies of impact, and negotiations with agencies are eliminated. The cost per acre of the mitigation project is reduced because the mitigation project cost is spread over a larger number of acres. The mitigation requirements cause no economic disadvantage for one property over another. Finally, mitigation credit demand is much easier to forecast because it is based upon the rate of development rather than the form of the mitigation allocation. On the other hand, consumptive allocation policies tend to be hard to implement since many in the community will be affected.

Habitat Conservation Plans and Natural Community Conservation Plans represent a hybrid between the impact allocation and consumptive allocation scenario. Such plans tend to allocate fees based on total acreage within a defined area, as in the consumptive allocation method. However, such programs can in some cases be narrowly defined geographically (particularly with HCPs), which results in many of the disadvantages of an impact allocation method.

SUMMARY

Accurate conservation planning cannot be accomplished without a detailed and exhaustive evaluation of the stewardship tasks and costs. We must carefully evaluate all conservation projects from both an economic and biological perspective to ensure that perpetual, professional stewardship is accounted for and that adequate funds are available for these activities. No longer can we leave the conservation of California's biodiversity to agencies that are under-funded and under-staffed, to organizations composed entirely of volunteer labor forces, to the anticipated generosity of others for contributed goods and services, or to ever-changing political entities that are not focused on habitat conservation. If we are to be successful in habitat conservation efforts three things must happen. First, we must realize that we are in the business of conservation. That means using standard business practices and procedures, having a clear understanding of project goals and costs, producing line-item budgets and legally binding contracts, and diligent, faithful negotiations, and being able to communicate in universal terms (generally economics). These are qualities that the new generation of biologists and conservation planners will hopefully be better equipped with to more successfully achieve the conservation of biological resources.

Second, the need to maintain public support through environmental education and awareness of the issues is critical to maintaining the laws, regulations and political support which allow for habitat conservation projects. Third, we must use the best biological information available in planning conservation projects. The small, isolated 5-acre vernal pool preserves in the midst of thousands of homes is ludicrous. These are areas which provide value as open space for the community but they are not ecologically sustainable habitats. More proactive planning in conjunction with local, state and federal agencies must occur to effectively develop conservation areas based on principles of landscape ecology, conservation biology and the best resource management science available. The implementation of these three items will greatly further the success ratio of biodiversity that we are able to maintain for future generations.

APPENDIX I. Example budget.

PROPERTY ANALYSIS RECORD – Initial & Capital (I&C) and Ongoing Task Database

Expenditure	Specification	Unit Type	Unit Count	Unit Cost	I&C Years	I&C Costs	Ongoing Years	Ongoing Cost
CAPITAL IMPROVEMENTS								
Fence - Installed	Post &Cable, 2.5'	Lin. Ft.	1100	3.5	1	$3,850.00	30	$128.33
Fence - Installed	Post &Cable, 6'	Lin. Ft.	990	8	1	7,920.00	35	226.29
Gate	Materials	Item	3	200	1	600.00	30	20.00
Lock	Padlock	Item	4	17	1	68.00	5	13.60
Vehicle Barrier	Concrete posts	Post	8	36	1	288.00	35	8.23
BIOLOGICAL SURVEYS								
Wildlife Biologist	Field Svy. & Reports	L. Hours	20	23.13	1	462.60	1	462.60
Plant Ecologist	Field Svy. & Reports	L. Hours	20	23.13	1	462.60	1	462.60
Ornithologist	Gnatcather survey	L. Hours	12	23.13	1	277.56	1	277.56
Invertebrates	Field Svy. & Reports	L. Hours	12	23.13	1	277.56	1	277.56
Permit	USFWS Trapping	Item	2	23.13	1	46.26	2	23.13
REPORTING								
Management Plan	Report – Initial	L. Hours	40	23.13	1	925.20	0	0.00
Management Plan	Report – Updates	L. Hours	20	23.13	0	0.00	5	92.52
Database Management	Report	L. Hours	16	23.13	1	370.08	1	370.08
Photodocumentation	Survey	L. Hours	4	23.13	1	92.52	3	30.84
Photo Materials	Film/Process	Roll	2	13	1	26.00	3	8.67
PUBLIC SERVICES								
Access Control	Enforcement	L. Hours	20	23.13	1	462.60	3	154.20
Patrolling	4 hrs/wk	L. Hours	220	23.13	1	5,088.60	1	5,088.60
Sign	21"x14" Polyethn	Item	52	3	1	156.00	7	22.29
Trail	Maintenance	L. Hours	20	15.63	1	312.60	1	312.60
Interpretive Literature	Labor	L. Hours	16	23.13	1	370.08	1	370.08
Interpretive Literature	Copying 5000 copies	Page	5000	0.08	1	400.00	1	400.00
Community Outreach	Meetings	L. Hours	8	23.13	1	185.04	1	185.04
Compliance Monitor	Inspections	L. Hours	8	23.13	1	185.04	1	185.04
HABITAT MAINTENANCE & ENHANCEMENT								
Exotic Plant Control	Spraying	L. Hours	20	15.63	1	312.60	1	312.60
Exotic Plant Control	Roundup	Gal.	1	57	1	57.00	1	57.00
Exotic Plant Control	Mowing	L. Hours	8	15	1	120.00	2	60.00
Exotic Plant Control	21" Mower - Rental	Hour	8	15	1	120.00	2	60.00
Fire Breaks	Disk 7200'x30'wide	5 Acres	5	125	1	625.00	1	625.00
OFFICE MAINTENANCE								
Liability	Property	Acre	270	0.27	1	72.90	1	72.90
Maps - US/GS 7.5	Purchase	Item	3	4.5	1	13.50	5	2.70
GENERAL MAINTENANCE								
Sanitation Control	Pick-up	L. Hours	50	15.63	1	781.50	1	781.50
Hauling	Haul	Mile	30	0.25	1	7.50	3	2.50
Trash Can	Plastic	Item	4	35	1	140.00	5	28.00
Trash Liners	Liners	Item	1	7	1	7.00	1	7.00
FIELD EQUIPMENT								
Vehicle	Fuel	Mileage	600	0.26	1	156.00	1	156.00
Binoculars	Binoculars	10X50	0.1	400	1	40.00	5	8.00
Spotting Scope	Scope	40X	0.1	300	1	30.00	10	3.00
Tripod	Tripod	Item	0.1	175	1	17.50	8	2.19
Cellular Phone	Phone - 3 watt	Item	0.1	100	1	10.00	5	2.00
Chemical Sprayer	5 Gallon	Item	1	63	1	63.00	5	12.60
Power Tools	Hand	Item	1	500	1	500.00	5	100.00
Other	Misc. Equipment	Item	1	250	1	250.00	1	250.00
TOTAL						$26,149.84		$11,662.85