

**THE AMERICAN RIVER PARKWAY:
PROTECTING ITS INTEGRITY AND PROVIDING WATER FOR
THE RIVER RUNNING THROUGH IT**

A REPORT ON THE AUBURN DAM POLICY ENVIRONMENT

**A Public Report from the
American River Parkway Preservation Society:
September 24, 2006**

Our Vision

**We want our Parkway, seven generations from now, to be a
vibrant, accessible, and serene sanctuary, nourishing and
refreshing the spirit of all who enter it.**

Our Mission

**Preserve, Protect, and Strengthen the American River Parkway,
Our Community's Natural Heart**

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Table of Contents

Section	Page(s)
Organizational Leadership	3
The Pastoral Ideal	4
Executive Summary	5 – 7
Introduction	8 – 12
• Auburn Dam: A Taboo Subject (p. 12)	
Sacramento Flooding History Since 1950	13 – 15
Providing Water & Protecting the Parkway’s Integrity	16 – 39
• Optimal Thinking (p. 17)	
• Environmentalism as Religion (p. 19)	
• Public Leadership (p. 32)	
• Water Power (p. 35)	
• The Salmon (p. 35)	
• Beauty Dams Create (p. 37)	
Agenda for Policy Discussion	41 – 42
Conclusion	43 – 45
Appendix #I: ARPPS Strategy	46 – 51
Appendix #II: Chronology of Auburn Dam	52 – 55
References	56 – 58

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The Pastoral Ideal

“The pastoral ideal has been used to define the meaning of America ever since the age of discovery, and it has not yet lost its hold upon the native imagination.

“Since 1964, the rise of environmentalist ideology has pushed the pastoral ideal increasingly toward nature, striving to redefine the meaning of America in fully primitivist terms of the wild.

“Public policy debate over the environment and the meaning of America has been clamorous these thirty years. Its terms were succinctly put by Edith Stein:

“The environmental movement challenges the dominant Western worldview and its three assumptions:

- *Unlimited economic growth is possible and beneficial.*
- *Most serious problems can be solved by technology.*
- *Environmental and social problems can be mitigated by a market economy with some state intervention.*

“Since the 1970s we've heard increasingly about the competing paradigm, wherein:

- *Growth must be limited.*
- *Science and technology must be restrained.*
- *Nature has finite resources and a delicate balance that humans must observe.”*

(R. Arnold, 1996)

Executive Summary

1) Introduction: Our report looks at the oppositional environment surrounding the building of the Auburn Dam to shed light on its motivation and origin; as the public supports building Auburn Dam and few fully understand the opposition to the project.

2) Auburn Dam: A Taboo Subject: Even though there is general agreement that the option providing the highest level of flood protection is the Auburn Dam, during the public discussion for months after the New Orleans floods and our own scare in New Years 2006, there was scarcely a mention of the dam in local media flood coverage.

3) Sacramento Flooding History Since 1950's: In addition to our brief history, there is a comprehensive history from the American River Water Authority which can be accessed at www.americanriverauthority.org Public Outreach page.

4) Providing Water & Protecting the Parkway's Integrity: The Parkway Plan's founding primary goal is "To provide, protect and enhance for public use a continuous open space greenbelt along the American River extending from the Sacramento River to Folsom Dam".

However, the River Corridor Management Plan's (the de facto Parkway Plan) primary founding purpose prioritizes "Preserve the flood-carrying capacity and ensure the long-term reliability of existing and planned flood-control improvements" as more important.

The only option capable of resolving the policy contradiction is the Auburn Dam.

5) Optimal Thinking: Leavenworth (2206) interviewed Retired Brigadier General Gerald E. Galloway, a civil engineer who led a White House Study in 1993 to report on what caused the floods in the Midwest, and who probably knows as much about flooding as anyone in the country.

Galloway made several good points, chief among them that the country needs to set a 500 year level of protection from flooding as the standard, and notes what level the Dutch and Japanese feel is appropriate:

The Dutch, the Japanese, have a 10,000- year level of protection. Their attitude is let's do what we need to do to prevent a catastrophe. It requires a commitment to do something. It might be more than strengthening the levees.

6) Environmentalism as Religion: “Today, one of the most powerful religions in the Western World is environmentalism. Environmentalism seems to be the religion of choice for urban atheists.” (Michael Crichton)

7) Public Leadership: Understanding why the struggle against the technological solutions to the natural forces that can destroy natural resources, like unrestrained flooding in the Parkway, is so often fervent; can help shape what it is that we should be seeking from our public leadership.

8) Water Power: Auburn Dam will produce about 600 mega watts of electricity, almost as much as that lost by the shutdown of the Rancho Seco nuclear power plant.

9) The Salmon: Salmon need properly cold water running at the right flow for the optimal conditions in which to spawn and grow. In the past, before dams were built on the rivers to control the water for people to live safely and have a stable water supply, the salmon could venture as far up the river as needed.

Now, it takes the storage of water in larger dams to have enough to provide for human communities and the salmon, and in the case of the American River fall-run of the Chinook salmon, it is going to take an Auburn Dam.

10) Beauty Dams Create: We often hear about the natural beauty that will be lost when the Auburn Dam is built, but it may also create beauty as Sens (2006) notes:

On a bright blue day in June, we were gazing out at the Hetch Hetchy Reservoir from the top of the O'Shaughnessy Dam...Hetch Hetchy Valley now lies submerged under several hundred feet of water, and the dam is seen by many not only as a scar but as a symbol of misplaced priorities.

What seemed to me, as...I walked the trail to Wapama Falls, a path etched along the water's edge, was that in covering one beauty, the dam had managed to create another. The sheer valley walls rise abruptly from the waters like the sides of a great granite tub, their outlines casting a quivering reflection in the mirror of the reservoir's surface. Just ahead, the impressive cascade of Wapama Falls was weeping freely, draining the park's north-western snowpack. (p.48)

11) Agenda for Policy Discussion: a) Government Leadership should seek the optimal solution for flood protection, at the 500 year level, while remembering economic, equity, and efficiency concerns.

b) Environmental leadership should consider this statement from Michael North, president of Greenstar.

[Environmentalists are mistaken to think that] protecting endangered species and ecosystems is more important than protecting people, communities, and culture. Implicitly, by their actions, environmentalists sometimes overlook the historic human element, the fact that people are part of the global ecosystem too. Environmentalists would never actually say this, of course, but sometimes their actions express it. (Grist)

c) Business leaders should consider the importance of protecting, at a 500 year level, the economic engine value of the Parkway, which is estimated by Dangermond to be \$364,207,034 in 2006.

Introduction

Our report looks at the oppositional environment surrounding the building of the Auburn Dam, to shed light on its motivation and origin; as the public supports building Auburn Dam, as the 2006 J. D. Franz Research Inc. survey revealed (58% El Dorado County, 59% Placer County, 62% Sacramento County); and few fully understand the ongoing opposition to the project.

The two issues, Parkway protection and the protection of Sacramento, become fused as the primary value of the Parkway is its location in the heart of the Sacramento metropolitan area, and what threatens the whole threatens the heart.

We look at the oppositional environment as it is becoming increasingly common for those just learning of the threat Sacramento faces from flooding, and how only Auburn Dam can protect us at the 500 year level, to ask: “How can anyone be against this?”

Two current objections—earthquake danger and expense—have been addressed. For information on the extensive level of earthquake research that has been done see Appendix # II (Chronology of the Auburn Dam 1920-1989). Regarding the expense issue: the current estimated cost to build the dam is \$3 to \$5 billion, dwarfed by the \$14 to \$30 billion in damage a major flood will cause when, not if, it comes.

A recent study’s conclusions, McCarthy (2006) estimating what would happen if levees broke in Natomas, the Pocket area and near CSUS:

- 102 square miles would be flooded to an average depth of 11 feet.
- 63,800 structures would be flooded
- Houses in 85 square miles of the area would be essentially destroyed.
- 157,000 people would be threatened by a flood depth of 6 feet or more, and 118,000 would be in areas with 10 feet of flooding.
- Fatalities might range up to 500, assuming the flooding resembled Hurricane Katrina.
- Sacramento International Airport would be under 15 feet of water and put out of service.

- Damage to property would be \$11.2 billion, including \$9.2 billion worth of homes.

[The study] “also noted that an assessment by SAFCA in 2000 estimated that more than 300,000 employees would be adversely affected, including all workers in the city of Sacramento. The workers would cumulatively lose \$10 billion in annual income, and 300,000 of the jobs would be lost for a year. (p. 41)

Our organization feels that the optimal way to maintain the integrity of the American River Parkway, and protect the region, is to increase the water supply in the American River Watershed by constructing the Auburn Dam.

Approximately 2.7 million acre feet in an average year, is run-off from the 1,875 square miles of the American River watershed, three times the capacity of Folsom Dam. Being able to retain that water and the extra run-off in wet years is a key element in allowing the managers of the dams on the American River to have the option of controlling the temperature and flow of Lower American River water, particularly during dry years, to create optimal conditions for the salmon, recreation, and habitat protection.

Protecting the integrity of the Parkway infuses the goals Sacramento County Planning and Community Development Department (1985) created for the Parkway Plan:

GOALS

- To provide, protect and enhance for public use a continuous open space greenbelt along the American River extending from the Sacramento River to Folsom Dam; and
- To provide appropriate access and facilities so that present and future generations can enjoy the amenities and resources of the Parkway which enhance enjoyment of leisure activities; and
- To preserve, protect, interpret and improve the natural, archeological, historical and recreational resources of the Parkway, including an adequate flow of high quality water, anadromous and resident fishes, migratory and resident wildlife, and diverse natural vegetation; and

- To mitigate adverse effects of activities and facilities adjacent to the Parkway; and
- To provide public safety and protection within and adjacent to the Parkway. (p. 2-1)

According to this plan (currently being updated but the goals are not part of the update and remain unchanged) the Parkway was designed for the enjoyment of human beings recreating in a natural sanctuary which needs continual enhancement and improvement to realize its dream of providing, protecting, and enhancing, for all of us, the natural heart of our community.

Contradicting this priority is the Lower American River Task Force’s Report (2002)—the de facto Parkway Plan—whose purpose places the flood-carrying capacity value above the recreational value.

Purpose of the River Corridor Management Plan

The purpose of the River Corridor Management (RCMP) is to institute a cooperative approach to managing and enhancing the Lower American River (LAR) corridor’s aquatic and terrestrial ecosystems, flood-control systems, and recreation values within the framework of the 1985 American River Parkway Plan ...Implementation of the RCMP is expected to

- Improve and increase aquatic and terrestrial habitats and improve ecological functions in a manner that will contribute to the health of the targeted species found in the LAR.
- Preserve the flood-carrying capacity and ensure the long-term reliability of existing and planned flood-control improvements, and
- Preserve and enhance the LAR’s wild and scenic recreation value. (p. 1)

This plan changes the primary founding vision for the Parkway from: “To provide, protect and enhance for public use a continuous open space greenbelt along the American River extending from the Sacramento River to Folsom Dam;” (Parkway Plan, p. 2-1) to: “Improve and increase aquatic and terrestrial habitats and improve ecological functions in a manner that will contribute to the health of the targeted species found in the LAR.” (Task Force Plan, p. 1)

The RCMP also sets the priority to, “Preserve the flood-carrying capacity and ensure the long-term reliability of existing and planned flood-control improvements...” above the recreational priority, “Preserve and enhance the LAR’s wild and scenic recreation value.” (Task Force Plan, p. 1)

This has happened out of necessity as there is no flood control mechanism available other than the river flowing through the Parkway and the levees keeping it in the channel. The Auburn Dam, however, could resolve this contradiction by allowing greater control of the water during periods of flood risk.

A third objection comes from many who have suggested restricting development, especially suburban development, as a response to flood danger. This objection also folds into the natural flood protection option, which, considering a report by American Rivers (2006), appears to be primarily effective with small towns that can move their residents easily, or small rivers easily controlled, but would not provide much help for major cities with big rivers such as Sacramento.

This option would also be disastrous to our regional growth, driven by suburban development and would be counter to American’s housing preferences clearly established over many decades, noted by Kotkin (2005):

Following World War II, the pace of suburbanization in America again accelerated, accounting for a remarkable 84 percent of the nation’s population increase during the 1950’s. (p. 117)

Suburbia, triumphant in the world’s leading economy, also swept successfully through virtually every part of the advanced industrial world. Compared with the option of living closely packed in apartment complexes, most human beings seemed to define their personal “better city” as a little more space and privacy, and perhaps even a spot of lawn. Noted Edgardo Contini, the prominent Los Angeles urbanist and Italian immigrant: “The suburban house is the idealization of every immigrant’s dream—the vassal’s dream of his own castle. Europeans who come here are delighted by our suburbs. Not to live in an apartment! It is a universal aspiration to own your own home.” (p. 122)

Auburn Dam: A Taboo Subject

Even though there is general agreement that the option providing the highest level of flood protection is the Auburn Dam, during the public discussion for months after the New Orleans floods and our own scare in New Years 2006, there was not a mention of the dam in local media flood coverage.

Eventually, through letters to the editor, being mentioned by guests on news and talk show hosts, and a prominent developer's article in the local business journal about the peculiar taboo about not discussing Auburn Dam as an option; the local media entered it into discussion, though still characterizing it as unworkable.

The thinking that would cause the construction of a dam to be taboo in a flood protection policy discussion is curious, and by exploring some of the deeper roots of modern environmentalism, perhaps we can come to a better understanding of such fervent resistance to discussing the obvious flood protection solution to Sacramento's problem of being the most unprotected of any major city in the nation from flooding.

We will try to do that, provide some history to set the discussion, and wend our way through the various connective tissues holding this complex policy issue together.

Sacramento Flooding History Since 1950

This historical perspective from Arrandale (2005) looks at Sacramento flooding:

Around the country, 15,000 miles of dirt levees serve as the final line of flood defense for major cities, rural communities and undeveloped farmlands. Federal projects built roughly half, but most are now maintained — often haphazardly — by local governments and flood-control districts. Corps inspectors drive by once a year to check for signs that tree roots, animal burrows or other obvious changes are undermining the structure's integrity. "It's not a detailed examination. They can send a 'buck up' letter if a city is not doing a good job," says Galloway, now an engineering professor at the University of Maryland.

If faulty levees fail, Galloway worries that heavily populated parts of St. Louis, Dallas, Denver, Houston, Tacoma, Los Angeles, St. Paul and Louisville could be flooded. At greatest risk, many experts believe, is California's state capital. "If I were living in Sacramento," Galloway says, "I'd be very concerned."

CLOSE CALLS

Sacramento, in fact, is just as vulnerable as New Orleans. "Katrina was a wake-up call for anybody who lives behind a levee," says Sacramento Mayor Heather Fargo.

The city grew up where the American River rushes down from a steep Sierra Nevada watershed to feed into the Sacramento River. It relies on 125 miles of earthen levees, many dating to the early 1900s. Quite possibly, those defenses could give way if heavy rains roll in from the Pacific Ocean and melt Sierra Nevada snows above the city. The resulting flood could inundate virtually the whole city, surrounding the California state capitol with water and driving 400,000 residents from their homes.

In 1862, Governor Leland Stanford was rowed through Sacramento's streets to take his oath of office in the Capitol. Following that episode, Sacramento tried to protect itself by raising the downtown district by 15 feet and later by building hodgepodge levee defenses. To hold floodwaters upstream, the federal government finished building Folsom Dam on the American River 23 miles above Sacramento; in the mid-1960s, a bypass channel was built to divert 80 percent of the Sacramento River away from the city's core. But some levees, built when land was still being farmed, were too low and too flimsily maintained to handle even a 50-year flood, leaving Sacramento and the surrounding regions exposed.

Indeed, Sacramento has eluded close calls in each of the past two decades. In January 1986, jet-stream winds sped warm Pacific rainstorms straight from

Hawaii (a phenomenon that's been dubbed "the Pineapple Express") and thawed heavy Sierra Nevada snowpacks. For 10 days, "we had a whole series of storm systems charging right at us, and we would have lost our levees if there'd been just a few more hours of rain," recalls Stein Buer, the Sacramento region's flood-control chief. Sacramento barely escaped again in the winter of 1997, when the heaviest Pacific storms swerved north of the American River watershed.

After the near-miss in '86, local governments began reinforcing levees and raising them by three feet. Two years from now, two-thirds of the city will be protected against a 100-year flood, freeing homeowners from the federal government requirement that they buy flood insurance. "We do think that a 100-year level of protection is pretty minimal," Fargo says, so California politicians are pressing Congress and the Corps to expand floodwater storage capacity behind Folsom Dam. This summer, however, the Corps tripled its original \$215 million cost estimate for Folsom improvements.

Meanwhile, the metropolitan area's population of 1.5 million continues to grow, and development is extending onto delta farmlands behind questionable rural levees. This summer, the state agreed to pay \$428 million to 3,000 residents whose homes were flooded when the 1986 storms broke one Yuba County levee 40 miles north of the capital. In June 2004, a levee 10 miles from Stockton, California, collapsed suddenly in good weather, and 19 square miles of cropland was flooded under an average of 12 feet of water, causing \$100 million in damage. It took seven months to pump the water out and repair the breach.

With the delta sinking and sea levels rising due to global warming, geologists at the University of California at Davis calculate there's a two-out-of-three chance in the next 45 years that an earthquake or winter storm will breach enough levees to disrupt water deliveries to Los Angeles and other Southern California cities for months or even years.

A system designed almost 100 years ago can't support the amount of change that's going on here, but so far we've shown no willingness to invest enough to fix the problem," says Jeffrey Mount, one of the UC-Davis scientists. In November, Congress appropriated \$38 million over the next year to start beefing up Folsom Dam and keep shoring up Sacramento's levees. It also approved \$12 million to continue Napa's project and dedicated \$750,000 to emergency levee assessments in the vast delta where the Sacramento and San Joaquin rivers flow into San Francisco Bay." (no page number)

1956 Folsom Dam was authorized in 1944 and completed in 1956. Engineers had predicted it would take a year to fill Folsom, built to provide 500 year protection from

flooding for Sacramento based on the projections used at that time. However, in 1956 a record storm hit Sacramento and the storm filled Folsom Dam in a week.

1964 In 1964 another record storm hits Sacramento and Folsom Dam is downgraded from 500 year protection to 120 year protection.

1986 In 1986 another record series of storms hits Sacramento and, barely escaping serious flooding, dam operators release more water into the Lower American River (134,000 cubic feet per second (cfs) than it is designed to carry (115,000 cfs), and Folsom is again downgraded, this time to 60 year protection.

1997 In 1997 another record storm hits Sacramento, but fortunately for Sacramento, the heaviest run-off occurs farther north. The rains continued into April and Discovery Park was generally flooded until June.

2006 New Year's moderate weekend floods caused millions of dollars in damage but the panic caused—due to the September 2005 flooding in New Orleans—far outweighed the actual flood risk, and led to an unprecedented level of public focus on the flood danger facing Sacramento lasting most of the year. Discovery Park was, once again, generally flooded until June.

There is a much more comprehensive history from the American River Water Authority which can be accessed at www.americanriverauthority.org (Outreach Page)

Providing Water & Protecting the Parkway's Integrity

Our water strategy is the building of the Auburn Dam, raising Folsom Dam, and strengthening the levees, and on May 22, 2006 we put out this press release:

THE AMERICAN RIVER PARKWAY PRESERVATION SOCIETY ANNOUNCES SUPPORT FOR AUBURN DAM, AMERICAN RIVER LEVEE STRENGTHENING, AND RAISING THE HEIGHT OF FOLSOM DAM

Sacramento, CA: May 22, 2006: The Society is announcing its support for the construction of the Auburn Dam, the strengthening of the American River levees, and the raising of Folsom Dam, to protect the natural and recreational integrity of the American River Parkway, the health of the salmon, and flood protection for Sacramento.

In January we announced our support for a major new dam on the American River to capture and control the American River Watershed run-off, which, through flood-condition releases from Folsom Dam, was devastating one of the most important parkways in the country.

Since then we have witnessed the following:

- Discovery Park closed more often than open since Christmas due to flooding.
- Continued erosion of the Parkway threatening many old growth trees, other habitat and wildlife, and the bike trail. [Mayhew Area]
- Salmon deaths at Nimbus (1.2 million in the past month) due to dissolved gas supersaturation from the necessary and prolonged high run-off releases from Folsom and Nimbus Dams.

In January we felt that the proposed Auburn Dam design, planned for the North Fork of the American River, and the storage lake it would create, needed to be larger to accommodate the changing future conditions of climate, development, and public policy.

Since then, based on the continued and focused interest by national, state, and local government on flood protection and water supply in the Sacramento region, we are now confident that the planning for Auburn Dam will embrace the changing needs of the region, and, with the proposed raising of Folsom Dam and American River levee strengthening, will provide the storage, (and flow capacity when needed) to protect the integrity of the Parkway, the health of the salmon, and provide 500 year flood protection to the Sacramento region.

(ARPPS Press Release, May 22, 2006)

Optimal Thinking

We feel that it is important to think in the optimal way about protecting ourselves and the Parkway from the devastating effects of flooding.

The level of flood protection we should seek is 500+ years, and Auburn Dam is the only option providing that.

We live in an area nature has designed to flood on a regular basis and it is only through human will and engineering that we now are able to live here at all; and it will be through that same will and engineering ingenuity that we can continue to live here safely.

With a clear record of flooding in our history, with New Orleans still in our minds, and with the relatively moderate News Year's storms, and the immoderate sense of panic they caused to remind us; perhaps it is finally time to begin thinking optimally about flood protection, rather than the just-enough-to-get-by approach characterizing too much of the recent public discussion.

Human engineering has created optimal levels of flood protection that can now take us beyond just being able to survive here, to actually being able to not really have to worry much again about flooding.

Too much of the recent discussion about Sacramento flooding talks about being able to predict the storms that will flood our community to give us time to be evacuated, and affording the flood insurance we need to buy to cover our losses. That is prudent thinking but it is not optimal thinking.

Optimal is a good word. The Oxford defines it thus: "Best, most favorable...an optimal decision comes as close as possible to achieving a given objective."

Those of us who live in the floodplain (virtually all of Sacramento) don't want to evacuate and allow insurance to rebuild our homes and vainly try to replace the irreplaceable contents of a lifetime.

We want to see optimal protection, coming as close as possible to achieving the given objective of providing our family, our fellow citizens and their families, the highest level of safety and security in our homes, businesses, and churches, that is possible to obtain from the absolute certainty of eventual catastrophic flooding.

Optimal thinking is doing whatever we can do to ensure that there is no possibility of flooding, that should be our "given objective", rather than being able to run away from the flooding while calling our insurance agent as he also runs away, which should only be the absolute last resort.

Optimal thinking is what the Dutch and Japanese apply to flooding. They are the world's experts on flooding, possessing the need and the will to protect their citizens from floods.

Stoner (2005) contrasting New Orleans and the Netherlands said:

As the world now knows, not the river [Mississippi] but the lake [Pontchartrain] was the cause of the terrible flooding of New Orleans. The lake rose as the storm surged water in from the Gulf and added rains of its own, and it soon broke through a couple of levees....

Lake Pontchartrain is geologically very similar to the Zuider Zee in the Netherlands. [where thousands died in flooding over the centuries] But the Zuider Zee has been tamed by human engineering. A 1918 act initiated the project after flooding two years before, and by 1932 a dam had been completed across its mouth. Some land behind the dam has been reclaimed in polders, some for dwelling, some for farming. What is essential is that the Zuider Zee has never flooded with waters from a North Sea storm since the project was completed, even in 1953 when a winter storm devastated Holland's then-unprotected south. The replacement of individual dikes with a uniform dam and sea wall...effectively removed vulnerability from the Zuider Zee. A modern series of movable sea walls and dikes has since been built in the southern region, allowing continued tidal flow in fair weather but closable in foul. Modern engineering, with increasing sensitivity to the natural environment so far as is consistent with protecting

human life, has restored to the “Low Countries” of Europe the kind of wealth they had known several years before.” (p. 23-24)

This is optimal thinking—the Dutch way—and is the way in which we should be approaching our flood protection.

Environmentalism as Religion

It is certainly not the way Leslie (2005) sees dams and the flood protection they provide, much preferring the free-flowing river:

Hoover’s (Dam] image became one of the nation’s most popular exports: after it, every country wanted dams, and every major country, regardless of ideology, built them. Between Hoover and the end of the century, more than forty-five thousand dams—dams at least five stories tall—were built in 140 countries. By now the planet has expended \$2 trillion on dams, the equivalent of the entire 2003 U.S. government budget. The world’s dams have shifted so much weight that geophysicists believe they have slightly altered the speed of the earth’s rotation, the tilt of its axis, and the shape of its gravitational field. They adorn 60 percent of the world’s two-hundred-plus major river basins, and the water behind them blots out a terrain bigger than California. Their turbines generate a fifth of the world’s electricity supply, and the water they store makes possible as much as a sixth of the earth’s food production. Take away Hoover Dam, and you take away a bearing, a confidence, a sense of what nations are for.

Yet in a sense, that’s what’s happening. Even if Hoover lasts another eleven hundred years (by which time Bureau of Reclamation officials say Lake mead will be filled with sediment, turning the dam into an expensive waterfall), its teleological edifice has already begun to crumble. In seven decades we have learned that if you take away Hoover, you also take away millions of tons of salt that the Colorado once carried to the sea but that have instead been strewn across the irrigated landscape, slowly poisoning the soil. Take away the Colorado River dams, and you return the silt gathering behind them to a free-flowing river, allowing it again to enrich the downstream wetlands and the once fantastically abundant, now often caked, arid, and refuse-fouled delta. Take away the dams, and the Cocopa Indians, whose ancestors fished and farmed the delta for more than a millennium, might have a chance of avoiding cultural extinction. Take away the dams, and the Colorado would again bring its nutrients to the Gulf of California, helping that depleted fishery to recover the status it held a half century ago as an unparalleled repository of marine life. Take away the dams, finally, and the Colorado River returns to its virgin state: tempestuous, fickle, in some stretches astonishing....[however what also is lost is] **Hoover provides 90 percent of Las Vegas’s water...take away Hoover, and you might**

also have to take away the Allied victory in World War II, which partly depended on warplanes and ships built in Southern California...and take away modern Los Angeles, San Diego, Phoenix: you reverse the twentieth-century shift of American economic power from East Coast to West. (pp.4 – 5, highlighting added)

This is the thinking that places nature above human beings, this is the thinking that sees—as one leader of a local environmental organization once said to me—“human beings are a cancerous virus upon the earth”.

It is the type of thinking that philosophy professor Dr. Alston Chase (2001) warns us about:

From America’s long-term infatuation with primitive wilderness the [environmental] movement derived the notions that preservation meant “restoring” these prehistoric “conditions” by leaving nature alone. From preservationists such as Thoreau and Muir it inherited a Calvinistic certainty in the righteousness of its cause which justified moral exclusion of those deemed to be damned.

Borrowing from European ideas, it transformed ecology from a promising science into a highly political one. From thinkers such as Hegel and Naess it derived a monistic metaphysics justifying activism and absolutism, **and a belief that nature was the source of political truth.** The vision of all things as interconnected led to the idea that all things were equally valuable. Positing ecosystem health as the supreme value diminished the standing of individuals.

Out of this odd coupling of mystical American ideals with systematic European philosophies rose a doctrine that was neither fascist nor entirely home-grown but something new—biocentrism, which held that the best way to preserve nature was to leave it alone, and that the supreme good to which society should dedicate itself is not human happiness, but the health of nature. The ecosystem became the model for culture, and global survival was deemed to depend on promoting “diversity” by social engineering or by force. (p. 412, highlighting added)

Forgotten were essential American traditions Chase noted: “If humanity is the standard of value, then policies must be measured by the extent to which they enhance human life.” (ibid. p. 417) and the natural preservation principles embodied by the work of Fredrick Law Olmstead and the English Garden Ethic which influenced him, also noted by Chase:

Rather than halting or reversing disturbances [in nature], we should embrace change. Rather than excluding man from the garden, we should welcome his cultivation of it. Rather than feeling compelled by metaphysical imperatives to save pseudoscientific “ecosystems,” we should seek to sustain a variety of landscapes simply because they please us.” (ibid. p. 418)

The Parkway, surely one of the most beautiful urban parks in the country precisely because it embraces one of the most beautiful and historically significant rivers in the country, needs preservation, protection, and strengthening; and, perhaps most of all, because it pleases us.

The concept of protecting the natural world, including animals, for purely utilitarian reasons (or by the very wealthy as exotic pets) was ancient, but protection for its own sake was much newer and the concept of conservation began in the middle ages, as Thomas (1983) writes:

The earliest use of the term ‘conservation’ (originally ‘conservacy’) seems to have been in connection with the river Thames. The Lord Mayor and Alderman of London were ‘conservators’ of the statues made in the later Middle Ages for the upkeep of the river and thus came to be entrusted with its ‘conservacie’. ‘The word “conservacie”’, explained a later commentator, ‘doth extend itself to the preservation of the stream, and the banks of the river, as also the fish and fry with the same’ (John Scow, *A Survey of the Cities of London and Westminster*, enlarged by John Strype (1720), i.38) (p. 276)

The protection of all creatures of the natural environment also grew out of religion as Thomas (1983) tells us:

There was therefore nothing new about the artificial preservation of ornamental or unfamiliar creatures or the cherishing of exotic birds and animals for amusement and display. More novel, however, was the growth of inhibitions about eliminating any wild animals, whether ornamental or not. ‘We dispute in [the] schools’ wrote John Bulwer in 1653, ‘whether, if it were possible for man to do so, it were lawful for him to destroy any one species of God’s creatures, though it were but the species of toads and spiders, because this were taking away one link of God’s chain, one note of his harmony.’ The continuation of every species was surely part of the divine plan.

The modern idea of the balance of nature thus had a theological basis before it gained a scientific one. It was belief in the perfection of God's design which preceded and underpinned the concept of the ecological chain, any link of which it would be dangerous to remove. The argument for design contained a strong conservationist implication, for it taught that even the most apparently noxious species served some indispensable human purpose. (p. 278)

American environmentalism, though rooted in its English history, grew out of the conservation work of President Theodore Roosevelt, and became environmentalism partly through the work of his sometime traveling companion, and Sierra Club founder, John Muir.

Morris (2001) describes a trip Roosevelt and Muir took in 1903:

...Roosevelt lay high in Yosemite, on a bed of fragrant pine needles, looking up at the sky. On all sides soared the cinnamon-colored shafts of sequoia trees. He had the feeling that he was "lying in a great solemn cathedral, far vaster and more beautiful than any built by the hands of man." Birdsong filled the arches as the sky darkened. He identified the treble tessitura of hermit thrushes, and thought it "an appropriate choir for such a place of worship."

His companion was John Muir, the glaciologist, naturalist, and founder of the Sierra Club. Since early youth, Muir had roamed Yosemite, carrying little more than "some bread and tea in an old sock," returning to civilization as infrequently as possible. At sixty-five, he knew more about the park, and loved it more passionately, than any other American. Roosevelt had booked his exclusive services well in advance: "I want to drop politics absolutely for four days, and just be out in the open with you."

The President was disappointed to find that Muir had no ear for bird music. He was Wordsworthian rather than Keatsian, revering only "rocks and stones and trees." Garrulous, erudite, and wall-eyed, he talked a pure form of preservation that Roosevelt was not used to hearing. He had no patience with the utilitarian "greatest good for the greatest number" policy of Chief Forester Gifford Pinchot, the President's very good friend. Conservation favored business at the expense of nature, and property rather than beauty. "The 'greatest number' is too often found to be number one."

Whatever resonance such views found in the President's own developing awareness of the "democracy" of national parks, he would have preferred to hear less of Muir and more of the hermit thrushes. Eventually he fell asleep, in the piney air. Another bird chorale saluted him at dawn.

For the next forty-eight hours, the boy in Roosevelt, never quite suppressed, reveled in his wild surroundings. “This is bully!” he yelled, when Muir burned a dead tree for him and the sparks hurtled skyward. After another night out, he awoke at Glacier Point, and was intrigued to find himself under four inches of snow. “This is bullier!”

On May 17 [1903] he came down from the peaks in dusty khakis, his eyes sparkling, “I never felt better in my life!” Muir, too, was elated, having confessedly fallen in love with the President’s “interesting, hearty and manly” personality. The substance of their camping conversations remained tacit, suggesting some philosophical difference on the subject of Gifford Pinchot. Muir won at least an immediate presidential order to extend the California forest through the Mount Shasta region, and a promise that Yosemite’s over-commercialized valley would be ceded back to the national park system. Roosevelt’s next conservation statement, on 19 May, was obstinately utilitarian, yet an eloquent plea later that day echoed the preservationist sentiments he had expressed at the Grand Canyon. **Speaking in Sacramento, he begged Californians to preserve their “marvelous natural resources” unimpaired. “We are not building this country of ours for a day. It is to last through the ages.** (pp. 229-231, highlighting added)

However, it was the publication of Rachel Carson’s *Silent Spring* that created the story framing that propelled the environmental movement forward.

Her memorable opening pages, which framed the story in tragic terms, enlisting all in a great cause, became a paradigmatic anthem.

There was once a town in the heart of America where all life seemed to live in harmony with its surroundings...Then a strange blight crept over the area and everything began to change...There was a strange stillness...The few birds seen anywhere were moribund; they trembled violently and could not fly. It was spring without voices. On the mornings that had once throbbed with the dawn chorus...of scores of bird voices there was now no sound; only silence lay over the fields and woods and marsh. (Carson, 2000, p.17)

While the movements and organizations founded by Muir, and inspired by Carson become the foremost evangelists of modern environmentalism, perhaps the most important person in regards to the broader study of nature in America was John Burroughs.

Burroughs—loved dearly by Roosevelt who called him ‘Oom John’—is described by Kanze (1993), who tells us about the effect he had on nature study, America’s most popular recreation.

In the late twentieth century, among active forms of recreation, nature study is more popular than baseball, football, and tennis combined. According to recent estimates, more than 80 million Americans watch birds, and they spend more than \$14 billion annually on birdseed, nesting boxes, feeders, baths, binoculars, books, and travel. Impressive as these figures are, they are not comprehensive. In the woods, meadows, deserts, prairies, and oceans of the world, bird-watchers are joined by hordes of avocational botanists, herpetologists, mammalogists, nature photographers, whale watchers, mycologists, entomologists, and others with particular interests. “Ecology” is a buzzword among children and adults. Around the world, national parks, established as reservoirs of solitude, serve as meeting places for movie stars and heads of state. To sleep in the woods at Yellowstone and Yosemite, it is often necessary to reserve a campsite more than a year in advance. No suburban town is complete without a “nature center”.

The nature study movement is a juggernaut. Among the men and women who helped to get it rolling, Henry Thoreau, John Muir, Rachel Carson, and a few others proponents of conservation and the simple life stand out. But the single greatest push may have come from the writing of John Burroughs. As Paul Brooks observed in *Speaking for Nature* (Houghton Mifflin, 1980), Burroughs made more converts to nature appreciation than anyone else, and “they and their successors have been fighting our conservation battles ever since.”

If I were asked to bestow a single honorific upon Burroughs, I would call him the Father of Recreational Nature Study. Unlike Thoreau, who used nature as a rock from which to mine ethical principles, and Muir, who sang of the sublime beauty of wilderness, Burroughs looked upon the natural world as a source of simple joy. (p. 142)

Roosevelt (1999) in a letter to Burroughs, said:

Dear Oom John:—Every lover of outdoor life must feel a sense of affectionate obligation to you. Your writings appeal to all who care for the life of the woods and the fields, whether their tastes keep them in the homely, pleasant farm country or lead them into the wilderness. It is a good thing for our people that you should have lived; and surely no man can wish to have more said of him. (p. v.)

The focus on conservation and nature study lasted for many years, but then, largely because of Rachel Carson's writings, the work of the Sierra Club and similar groups, it slowly became modern environmentalism, about which a recent report by Shellenberger & Nordhaus (2004) said:

Environmentalism is today more about protecting a supposed "thing"—"the environment"—than advancing the worldview articulated by Sierra Club founder John Muir, who nearly a century ago observed, "When we try to pick out anything by itself, we find it hitched to everything else in the Universe." (p. 9)

In an interview with Michael North, president of Greenstar, from *Grist Magazine* (2004), a couple of the practical aspects of this are explored:

Grist: What's one issue about which you disagree with other environmentalists?

Michael North: That protecting endangered species and ecosystems is more important than protecting people, communities, and culture. Implicitly, by their actions, environmentalists sometimes overlook the historic human element, the fact that people are part of the global ecosystem too. Environmentalists would never actually say this, of course, but sometimes their actions express it -- and people in developing countries detect this quickly.

Grist: What could the environmental movement be doing better or differently to attract new people?

Michael North: Have a more constructive attitude toward business, especially small businesses and entrepreneurs, who are creating all the jobs these days and employing more and more people. Environmentalists often treat business people as exploiters and polluters, as the enemy. They try not to, but their instincts need a lot of retraining. Even very large global businesses (like Shell, BP, HP, many others) can see the moral and practical value of sound environmental practice and will do real, influential things if you communicate thoughtfully with them, learn to listen, and reward them when they do something positive.

As practiced currently, environmentalism clearly has strong political and even religious aspects. Environmental groups who lead the efforts to stop the building of dams or new development, seem to be acting in a way that is almost religious in its intensity, but with clear political objectives.

This blending is political religion and has been with us, in many forms, for quite awhile, as the British historian, Michael Burleigh (2005) reminds us:

[...] the areas where politics and religion intersect...what are called 'political', 'secular' and 'civil' religions, and how these related to Christianity... (p.xi)

The term 'political religion' has a more venerable history than many may imagine...the aristocratic scholar Alexis de Tocqueville...[made reference to it] when he wrote about the Jacobins during the French Revolution... (p. 3)

Perhaps a harsh comparison, but this from a talk given by Michel Crichton (2003) might be as harsh:

I have been asked to talk about what I consider the most important challenge facing mankind, and I have a fundamental answer. **The greatest challenge facing mankind is the challenge of distinguishing reality from fantasy, truth from propaganda.** Perceiving the truth has always been a challenge to mankind, but in the information age (or as I think of it, the disinformation age) it takes on a special urgency and importance.

We must daily decide whether the threats we face are real, whether the solutions we are offered will do any good, whether the problems we're told exist are in fact real problems, or non-problems. Every one of us has a sense of the world, and we all know that this sense is in part given to us by what other people and society tell us; in part generated by our emotional state, which we project outward; and in part by our genuine perceptions of reality. In short, our struggle to determine what is true is the struggle to decide which of our perceptions are genuine, and which are false because they are handed down, or sold to us, or generated by our own hopes and fears.

As an example of this challenge, I want to talk today about environmentalism. And in order not to be misunderstood, I want it perfectly clear that I believe it is incumbent on us to conduct our lives in a way that takes into account all the consequences of our actions, including the consequences to other people, and the consequences to the environment. I believe it is important to act in ways that are sympathetic to the environment, and I believe this will always be a need, carrying into the future. I believe the world has genuine problems and I believe it can and should be improved. But I also think that deciding what constitutes responsible action is immensely difficult, and the consequences of our actions are often difficult to know in advance. I think our past record of environmental action is discouraging, to put it mildly, because even our best intended efforts often go awry. But I think we do not recognize our past failures, and face them squarely. And I think I know why.

I studied anthropology in college, and one of the things I learned was that certain human social structures always reappear. They can't be eliminated from society. One of those structures is religion. Today it is said we live in a secular society in which many people—the best people, the most enlightened people—do not believe in any religion. But I think that you cannot eliminate religion from the psyche of mankind. If you suppress it in one form, it merely re-emerges in another form. You can not believe in God, but you still have to believe in something that gives meaning to your life, and shapes your sense of the world. Such a belief is religious.

Today, one of the most powerful religions in the Western World is environmentalism. Environmentalism seems to be the religion of choice for urban atheists. Why do I say it's a religion? Well, just look at the beliefs. If you look carefully, you see that environmentalism is in fact a perfect 21st century remapping of traditional Judeo-Christian beliefs and myths.

There's an initial Eden, a paradise, a state of grace and unity with nature, there's a fall from grace into a state of pollution as a result of eating from the tree of knowledge, and as a result of our actions there is a judgment day coming for us all. We are all energy sinners, doomed to die, unless we seek salvation, which is now called sustainability. Sustainability is salvation in the church of the environment. Just as organic food is its communion, that pesticide-free wafer that the right people with the right beliefs, imbibe.

Eden, the fall of man, the loss of grace, the coming doomsday—these are deeply held mythic structures. They are profoundly conservative beliefs. They may even be hard-wired in the brain, for all I know. I certainly don't want to talk anybody out of them, as I don't want to talk anybody out of a belief that Jesus Christ is the son of God who rose from the dead. But the reason I don't want to talk anybody out of these beliefs is that I know that I can't talk anybody out of them. These are not facts that can be argued. These are issues of faith.

And so it is, sadly, with environmentalism. Increasingly it seems facts aren't necessary, because the tenets of environmentalism are all about belief. It's about whether you are going to be a sinner, or saved. Whether you are going to be one of the people on the side of salvation, or on the side of doom. Whether you are going to be one of us, or one of them. (Highlights in original, 2003)

Perhaps the most astute analysis comes from the Vatican's Pontifical Council (2003) who examines it under the rubric of the *New Age*:

2. *New Age* is not a movement in the sense normally intended in the term “New Religious Movement”, and it is not what is normally meant by the terms “cult” and “sect”. Because it is spread across cultures, in phenomena as varied as music, films, seminars, workshops, retreats, therapies, and many more activities and

events, it is much more diffuse and informal, though some religious or para-religious groups consciously incorporate *New Age* elements, and it has been suggested that *New Age* has been a source of ideas for various religious and para-religious sects. *New Age* is not a single, uniform movement, but rather a loose network of practitioners whose approach is to *think globally but act locally*. People who are part of the network do not necessarily know each other and rarely, if ever, meet. In an attempt to avoid the confusion which can arise from using the term “movement”, some refer to *New Age* as a “milieu”, or an “audience cult”. However, it has also been pointed out that “it is a very coherent current of thought”, a deliberate challenge to modern culture. It is a syncretistic structure incorporating many diverse elements, allowing people to share interests or connections to very different degrees and on varying levels of commitment. Many trends, practices and attitudes which are in some way part of *New Age* are, indeed, part of a broad and readily identifiable reaction to mainstream culture, so the word “movement” is not entirely out of place. It can be applied to *New Age* in the same sense as it is to other broad social movements, like the Civil Rights movement or the Peace Movement; like them, it includes a bewildering array of people linked to the movement's main aims, but very diverse in the way they are involved and in their understanding of particular issues....

2.3.1 The perennial philosophical question of the one and the many has its modern and contemporary form in the temptation to overcome not only undue division, but even real difference and distinction, and the most common expression of this is holism, an essential ingredient in *New Age* and one of the principal signs of the times in the last quarter of the twentieth century. An extraordinary amount of energy has gone into the effort to overcome the division into compartments characteristic of mechanistic ideology, but this has led to the sense of obligation to submit to a global network which assumes quasi-transcendental authority. Its clearest implications are a process of conscious transformation and the development of ecology. The new vision which is the goal of conscious transformation has taken time to formulate, and its enactment is resisted by older forms of thought judged to be entrenched in the status quo. What has been successful is the generalisation of ecology as a fascination with nature and resacralisation of the earth, Mother Earth or *Gaia*, with the missionary zeal characteristic of Green politics. The Earth's executive agent is the human race as a whole, and the *harmony and understanding* required for responsible governance is increasingly understood to be a global government, with a global ethical framework. The warmth of Mother Earth, whose divinity pervades the whole of creation, is held to bridge the gap between creation and the transcendent Father-God of Judaism and Christianity, and removes the prospect of being judged by such a Being...

2.3.4.1 But it is not only something which affects young people; the basic themes of esoteric culture are also present in the realms of politics, education and legislation. *It is especially the case with ecology*. Deep ecology's emphasis on biocentrism denies the anthropological vision of the Bible, in which human beings are at the centre of the world, since they are considered to be qualitatively

superior to other natural forms. It is very prominent in legislation and education today, despite the fact that it underrates humanity in this way.. The same esoteric cultural matrix can be found in the ideological theory underlying population control policies and experiments in genetic engineering, which seem to express a dream human beings have of creating themselves afresh. How do people hope to do this? By deciphering the genetic code, altering the natural rules of sexuality, defying the limits of death...

2.3.4.3 The move from a mechanistic model of classical physics to the “holistic” one of modern atomic and sub-atomic physics, based on the concept of matter as waves or energy rather than particles, is central to much *New Age* thinking. The universe is an ocean of energy, which is a single whole or a network of links. The energy animating the single organism which is the universe is “spirit”. There is no alterity between God and the world. The world itself is divine and it undergoes an evolutionary process which leads from inert matter to “higher and perfect consciousness”. The world is uncreated, eternal and self-sufficient. The future of the world is based on an inner dynamism which is necessarily positive and leads to the reconciled (divine) unity of all that exists. God and the world, soul and body, intelligence and feeling, heaven and earth are one immense vibration of energy.

James Lovelock's book on the Gaia Hypothesis claims that “the entire range of living matter on earth, from whales to viruses, and from oaks to algae, could be regarded as constituting a single living entity, capable of manipulating the Earth's atmosphere to suit its overall needs and endowed with faculties and powers far beyond those of its constituent parts”. To some, the Gaia hypothesis is “a strange synthesis of individualism and collectivism. It all happens as if *New Age*, having plucked people out of fragmentary politics, cannot wait to throw them into the great cauldron of the global mind”. The global brain needs institutions with which to rule, in other words, a world government. “To deal with today's problems *New Age* dreams of a spiritual aristocracy in the style of Plato's *Republic*, run by secret societies...”. This may be an exaggerated way of stating the case, but there is much evidence that gnostic élitism and global governance coincide on many issues in international politics.

Everything in the universe is interrelated; in fact every part is in itself an image of the totality; the whole is in every thing and every thing is in the whole. In the “great chain of being”, all beings are intimately linked and form one family with different grades of evolution. Every human person is a *hologram*, an image of the whole of creation, in which every thing vibrates on its own frequency. Every human being is a neurone in earth's central nervous system, and all individual entities are in a relationship of complementarity with others. In fact, there is an inner complementarity or androgyny in the whole of creation. (n.p. web document)

Thomas (1983) writing of the development of environmental and related attitudes in the eighteenth century:

The embarrassment about meat-eating thus provides a final example of the way in which, by the end of the eighteenth century, a growing number of people had come to find man's ascendancy over nature increasingly abhorrent to their moral and aesthetic sensibilities. This was the human dilemma: how to reconcile the physical requirements of civilization with the new feelings and values which that same civilization had generated. It is too often assumed that sensibilities and morals are mere ideology: a convenient rationalization of the world as it is. But in the early modern period the truth was almost the reverse, for, by an inexorable logic, there had gradually emerged attitudes to the natural world which were essentially incompatible with the direction in which English society was moving.

The growth of towns had led to a new longing for the countryside. The progress of cultivation had fostered a taste for weeds, mountains, and unsubdued nature. The new-found security from wild animals had generated an increasing concern to protect birds and preserve wild creatures in their natural state. Economic independence of animal power and urban isolation from animal farming had nourished emotional attitudes which were hard, if not impossible, to reconcile with the exploitation of animals by which most people lived. Henceforth an increasingly sentimental view of animals as pets and objects of contemplation would jostle uneasily alongside the harsh facts of a world in which the elimination of 'pests' and the breeding of animals for slaughter grew every day more efficient. Oliver Goldsmith wrote of his contemporaries that 'they pity and they eat the objects of their compassion'. The same might be said of the children of today who, nourished by a meat diet and protected by a medicine developed by animal experiments, nevertheless take toy animals to bed and lavish their affection on lambs and ponies. For adults, nature parks and conservation areas serve a function not unlike that which toy animals have for children; they are fantasies which enshrine the values of which society as a whole cannot afford to live.

By 1800 the confident anthropocentrism of Tudor England had given way to an altogether more confused state of mind. The world could no longer be regarded as having been made for man alone, and the rigid barriers between humanity and other forms of life had been much weakened. During the religious upheavals of the 1640s and 1650s contemporaries had been shocked to hear sectaries like the Ranter Jacob Bauthumley asserting that 'God is in all creatures, man and beast, fish and fowl, and every green thing.' But, in a secularized form, this kind of pantheism was to become very general in the eighteenth century, when it was widely urged that all parts of creation had a right to live; and that nature itself had an intrinsic spiritual value. Not everyone now believed that mankind was uniquely sacred. Some Romantics preferred the once-condemned mystical view that 'each shrub is sacred, and each weed divine', as William Blake put it, 'Every thing that lives is Holy.'

Of course, most people in practice, like G. M. Trevelyan himself retained their faith in the primacy of human interests, even if they lamented the effect of material progress on the natural world.

Whether trees, or animals, ought to be preserved 'for their own sakes' [wrote Trevelyan] is an interesting question on which different opinions might be held. But the argument for the preservation of natural scenery and the wild life of English fauna and flora may be based on motives that regard the welfare of human beings alone, and it is those arguments alone that I wish here to put forward. To preserve the bird life of the country is required in the spiritual interests of the human race, more particularly of the English section of it, who find such joy in seeing and hearing birds.

As Trevelyan implied, it was not for the sake of the creatures themselves, but for the sake of men, that birds and animals would be protected in sanctuaries and wild-life parks. In 1969 the United Nations and the International Union for the Conservation of Nature defined 'conservation' as the rational use of the environment to achieve the highest quality of living for mankind.'

But even in the early modern period there were some perhaps hypersensitive persons who were prepared to go further than this. For them it was increasingly difficult to accept the primacy of human needs when to do so involved inflicting pain on domestic animals or eliminating whole species of wild ones. In more recent times these difficulties have been widely perceived. Today there are writers of books who refer to the extermination of the wolf as a 'pogrom' or 'holocaust'; and the law journals carry articles on whether trees have rights.

The early modern period had thus generated feelings which would make it increasingly hard for men to come to terms with the uncompromising methods by which the dominance of their species had been secured. On the one hand they saw an incalculable increase in the comfort and physical well-being or welfare of human beings; on the other they perceived a ruthless exploitation of other forms of animate life. There was thus a growing conflict between the new sensibilities and the material foundations of human society. A mixture of compromise and concealment has so far prevented this conflict from having to be fully resolved. But the issue cannot be completely evaded and it can be relied upon to recur. It is one of the contradictions upon which modern civilization may be said to rest. About its ultimate consequences we can only speculate. (pp. 300-303)

Aptly wrapping up this section is the seminal essay in which Arnold (1996) remarks on the use of the pastoral ideal:

The pastoral ideal has been used to define the meaning of America ever since the age of discovery, and it has not yet lost its hold upon the native imagination.

Since 1964, the rise of environmentalist ideology has pushed the pastoral ideal increasingly toward nature, striving to redefine the meaning of America in fully primitivist terms of the wild....

...Public policy debate over the environment and the meaning of America has been clamorous these thirty years. Its terms were succinctly put by Edith Stein:

The environmental movement challenges the dominant Western worldview and its three assumptions:

- Unlimited economic growth is possible and beneficial.
- Most serious problems can be solved by technology.
- Environmental and social problems can be mitigated by a market economy with some state intervention.

Since the 1970s we've heard increasingly about the competing paradigm, wherein:

- Growth must be limited.
- Science and technology must be restrained.
- Nature has finite resources and a delicate balance that humans must observe. (no page number, web document)

Public Leadership

Understanding why the struggle against the technological solutions to the natural forces that can destroy natural resources, like unrestrained flooding in the Parkway, is so often fervent; can help shape what it is that we should be seeking from our public leadership.

In this decision- making process, the ongoing threat of pineapple-express storms, fueling the recent flooding in 1986 and 1997, are a crucial factor, as Dettinger (2005) concludes:

The long-term perspective taken here reveals that, historically, El Nino conditions have favored having more low-altitude precipitation (relative to the usual highaltitude orographic [influence of mountains on precipitation, airflow etc.] enhancement) that, falling most often as rain rather than snow, may tend to increase flood risks. Pineapple express patterns and the flood risks that they entail, on the contrary, appear to have been favored by near-neutral (non-El Nino) tropical conditions during El Nino-rich decades (warm phases of the Pacific Decadal Oscillation).

Furthermore, this long-term perspective confirms our suspicion that the risks for flood generation in the American River basin are special in several ways. With its broad expanses of moderate-altitude terrain and its near equal mix of rainfed and snowmelt runoff, the basin is particularly sensitive to storm-by-storm variations

in the amounts and distributions of rainfall. The orientation of the western slopes of the Sierra Nevada in the modulated year-to-year increases in orographic precipitation enhancement during La Nina winters, rivaled in the Sierra Nevada only by the southern ramparts of the range where topography may favor El Nino orographic enhancements. **Pineapple express storms bring particularly warm and wet storms to the area and thus pose important flood risks. On long-term average, the American River has the dubious distinction of being situated beneath the margins of most intense precipitation associated with pineapple-express circulations and of being situated at the point in the Sierra Nevada and Cascades where pineapple-express circulations (on average) bring the warmest temperatures.** (p. 72, highlighting added)

Leavenworth (2206) interviewed Retired Brigadier General Gerald E. Galloway, a civil engineer who led a White House Study in 1993 to report on what caused the floods in the Midwest, and probably knows as much about flooding as anyone in the country.

Galloway made several good points, chief among them that the country needs to set a 500 year level of protection from flooding as the standard and notes what level the Dutch and Japanese feel is appropriate:

The Dutch, the Japanese, have a 10,000- year level of protection. Their attitude is let's do what we need to do to prevent a catastrophe. It requires a commitment to do something. It might be more than strengthening the levees.

Let's hope our attitude begins to approach that of the Dutch and Japanese, that what is important is to "prevent a catastrophe."

It is also important to remember that, like the Dutch, we have reclaimed our valley from flood water, as Joan Didion (2003) reminds us in her book about growing up in Sacramento:

Yet this river [the Sacramento] that had been from the beginning his ([her great-great-grandfather] destination has one regularly and predictably given, during all but the driest of those years before its flow was controlled or rearranged, to turning its valley into a shallow freshwater sea a hundred miles long and as wide as the distance between the coast ranges and the foothills of the Sierra Nevada: **a pattern of flooding, the Army Corps of Engineers declared in 1927,**

more intense and intractable than that on any other American River system including the Mississippi.

This annual reappearance of a marsh that did not drain to the sea until late spring or early summer was referred to locally not as flooding, but as “the high water”, a seasonal fact of life....

The creation of the entirely artificial environment that is now the Sacramento Valley was not achieved at one stroke, nor is it complete to this day. Bulletins on when and where the rivers would crest, on the conditions of levees and the addresses of evacuation centers, remained into my adult life the spring commonplaces of Sacramento life, as did rumors that one or another levee had been (or was being, or would be) covertly dynamited by one or another agency looking to save one or another downstream community. During years when repeated storms rolling in from the Pacific coincide with an early melting of the Sierra snowpack, levees still break, sections of interstate highways get destabilized by the rising water table, and the big dams go to crisis mode, trying to save themselves by releasing water as they get it, unchecked, no control, the runoff from the pack running free to the sea.” (pp. 20 & 22, highlighting added)

When the plans were being drawn up in the 1930's to protect the valley from the floods one dam, Shasta, was engineered for 800 feet rather than its current 600 (which would have tripled its storage), Oroville Dam at 700 was built, and Auburn Dam at 700 feet was also proposed.

Had all these projects been completed as and when planned, we would not have had the flooding nor water shortage difficulties we have had since.

By building the Auburn Dam, in addition to preventing a catastrophe by protecting us against flooding, we will also be able to provide year-round integrity to our crown jewel, the American River Parkway; having the ability to draw properly cold waters at the proper flow for the salmon run, and predictable stable flows for optimal public recreation.

Water Power

The Auburn Dam will also have impact on our electrical power grid. Water power, while not as singular now (how far we have come using technology) as in the middle ages, as Gies (1994) remarks:

In seeking ways to multiply the feeble strength of man, medieval Europe found its most effective instrument in the vertical waterwheel, the world's chief prime mover until the invention of the steam engine. Neither Rome nor China succeeded in harnessing its power to the extent that medieval Europe did. Terry Reynolds summarizes the encompassing role it achieved in the high Middle Ages: "The house medieval man lived in might have been made of wood sawed at a hydropowered sawmill...The flour he ate...the oil he put on his bread...the leather of the shoes he put on his feet and the textile he wore on his back...the iron of his tools...the paper he wrote on" all were produced in part with the aid of waterpower." (pp.288-289)

Auburn Dam will produce about 600 mega watts of electricity, almost as much as that lost by the shutdown of the Rancho Seco nuclear power plant.

In a time when blackouts are still a threat, as they were in the summer of 2006 during our record breaking (11 days over 100 degrees in July) hot weather, this is an important consideration.

The Salmon

Protecting the salmon is a core part of our work and our second guiding principle is:

"What's good for the salmon is good for the river."

Continuing pressure on the river, whether through flooding, illegal sewage discharge, or taking water for new development, hurts the salmon and other aquatic life.

People want to live in Northern California, so it is not surprising that development continues at record levels. Each new city in our area brings new pressure for growth, more opportunity for sewage accidents, and more potential harm to the salmon. Salmon need properly cold water running at the right flow for the optimal conditions in which to spawn and grow. In the past, before dams were built on the rivers to control the water for people to live safely and have a stable water supply, the salmon could venture as far up the river as needed.

Now, it takes the storage of water in larger dams to have enough to provide for human communities and the salmon, and in the case of the American River fall-run of the Chinook salmon, it is going to take an Auburn Dam.

The fall run of the American River Chinook salmon is central to the Parkway, and the Chinook, also known as the king salmon, has been a central part of the history of California well before the Europeans arrived, as Moyle (2002) describes:

No family of fish has excited as much interest through the centuries as the Salmonidae, at least in the Western world. The Salmonidae contains legendary fishes: salmon, trout...[and] have been around since the Eocene, and most species have probably been extant for millions of years. (Stearley 1992) However, their present distribution and abundance have been strongly shaped by Pleistocene events. (p. 242)

Hundley (2001) points to their prevalence and importance:

...the highly prized king salmon [Chinook] that once could be found in abundance in 650 miles of uninterrupted California waterways. Fish served, therefore, as a major part of the diet for many Indians.” (pp. 16-17)

The salmon were important to the Indians living along the American River and the Indians of the Pacific Northwest, as Debo (2003) shows:

They [American River area Indians] killed deer or water fowl...caught and dried the salmon that came up the...rivers. Living in a warm climate, they built the lightest of shelters and wore the scantiest of clothing...The Indians of the Pacific Northwest...depended largely on the salmon runs, catching the great fish in

skillfully made traps. Among their dances was the Chinook, which was supposed to bring the warm wind to melt the snow. (p. 20)

Debo (2003) also remarks on the salmon's role in the life of the Nez Perces:

The explorers [Lewis & Clark] noted the importance of the salmon runs in the economy of these river people. The Indians gathered at the falls and narrows of the streams, and as the great fish came up, the men caught them in nets or traps set in weirs. The women cleaned and dried them on scaffolds, then pounded them into a powder between stones and packed the powder in baskets of grass matting lined with salmon skin. (p. 106)

Kroeber (1976) on the Maidu's [American River area Indians] sustenance:

The list of animals disdained as food was small. Foremost was the dog...then the wolf and coyote...the buzzard is the only bird mentioned...Invertebrates were freely eaten; worms, the larvae of yellow jackets...grasshoppers, crickets, locusts, and fresh water mussels were relished...Of fish, the salmon came first, in the region of the larger streams and next the lamprey eel, whose extraordinary fatness appealed to the Indian's palate much as it did to the Roman's. (p. 409)

During the Lewis & Clark Expedition, in the period of August 13 to August 31, 1805, just after crossing the Continental Divide at Lemhi Pass on today's Montana Idaho border, the Expedition encountered the first Shoshone war party ever seen by an American.

It was a peaceful visit and a significant part of it was when Meriwether Lewis was given a gift,

...on his return to his tepee, a warrior gave him a piece of fresh-roasted salmon, "which I eat with a very good relish, this was the first salmon I had seen..." (Ambrose, 1996, p. 271)

Beauty Dams Create

We often hear about the natural beauty that will be lost when the Auburn Dam is built, but it may also create even a greater beauty, as Sens (2006) points out

On a bright blue day in June, we were gazing out at the Hetch Hetchy Reservoir from the top of the O'Shaughnessy Dam, the concrete cork in the Tuolumne River. Until the 1920's, when the dam was built to quench San Francisco's thirst for water, this was Yosemite's other valley, smaller in scale but comparable in majesty to its more famous sibling to the south. Hetch Hetchy Valley now lies submerged under several hundred feet of water, and the dam is seen by many not only as a scar but as a symbol of misplaced priorities.

What seemed to me, as Braun and I walked the trail to Wapama Falls, a path etched along the water's edge, was that in covering one beauty, the dam had managed to create another. The sheer valley walls rise abruptly from the waters like the sides of a great granite tub, their outlines casting a quivering reflection in the mirror of the reservoir's surface. Just ahead, the impressive cascade of Wapama Falls was weeping freely, draining the park's north-western snowpack. (p.48)

This is a point well remembering in the continuing debate about Auburn Dam, that although it will cover beauty it will also create new beauty, as yet unseen. Here are recent photos of the beauty of which Sens spoke, beauty which the dam has created.

The Hetch Hetchy Valley the Dam Created (July 2006)



Current View of the Hetch Hetchy Valley

(Photo by [John Kane](#))

Sent by **Tom Hawes**, Water Conservation
Program Coordinator, Castaic Lake Water Agency.



The Trails

(Photo: SFPUC)



The Falls

(Photo: SFPUC)

"The Hetch Hetchy reservoir today is a beautiful, pristine wilderness where hikers and backpackers can experience solitude, wildflowers, and a wilderness experience around miles of trails maintained by the SFPUC and the National Park Service," says **Tony Winnicker**, Director of Communications, **SFPUC**.

[**SFPUC Hetch Hetchy Home Page**](#)

Agenda for Policy Discussion

1) For Government Leadership: Consider the optimal solution for flood protection, at the 500 year level, the Auburn Dam; while remembering economic, equity, and efficiency concerns.

- When weighed against the minimum \$14 - \$30 billion potential damage costs of a major flood, the \$3 - \$5 billion estimated maximum costs to build the Auburn Dam seems an economically sound decision.
- The biggest losers in a major flood, as we have witnessed so tragically in New Orleans, are the poor and the equity argument to protect them at the optimal level from flooding they are ill-equipped to respond to, seems obvious.
- It is certainly efficient, when considering flood protection strategies, to consider the revenue produced by the reduction in flood insurance costs, hydropower, and recreational assets (weighed against those lost from the flooding) Auburn Dam will produce as opposed to solely relying on non-revenue producing levees.

2) For Environmental Parkway Organizations: Consider this statement from an interview with Michael North, president of Greenstar, from *Grist Magazine* (2004):

Grist: What's one issue about which you disagree with other environmentalists?

Michael North: That protecting endangered species and ecosystems is more important than protecting people, communities, and culture. Implicitly, by their actions, environmentalists sometimes overlook the historic human element, the fact that people are part of the global ecosystem too. Environmentalists would never actually say this, of course, but sometimes their actions express it...

a) The environmental movement has been good for our country as it has dramatically increased the awareness of all of us to the importance of taking care of our precious natural resources; but we have reached the point where the convergence of environmental awareness by the public, government, and business, needs little further adversarial driven reminders to do more.

b) It is truly time to work together to build and preserve our community and the Parkway which is its heart.

3) For Business Organizations: Consider the importance of protecting, at a 500 year level, the economic engine value of the Parkway, which is as Dangermond (2006) noted:

In 2006, the estimated annual direct and indirect spending for all Parkway related goods and services in the greater Sacramento area rose to \$364,207,034. This represents a 41% increase from the \$259,034,030 estimated in the year 2000. (p. 15)

a) Business leadership is crucial in seeking optimal protection and it appears the support for Auburn Dam is growing.

4) For Individual Users: Consider the value of optimal solutions for flood protection at the 500 year level, and encourage public leadership (governmental and environmental) to do so also.

a) Individuals suffer the most from major flooding and have the ability, through either the organizations or government leaders they interact with, to play a major role in the decisions made to protect from it.

5) For Religious Traditions: Reflect on the theology and beliefs of your tradition and consider the value of pursuing optimal solutions to flood protection in light of that reflection.

a) The spiritual values of our Parkway are evident to all, and religious traditions are able to speak to the importance of protecting that spiritual sanctuary like no other sector of our community.

Conclusion

Building the Auburn Dam is the only reasonable alternative to provide optimal protection for the American River Parkway and the Sacramento region. By providing enough water to provide optimal flow and temperature conditions for the salmon throughout the normal cycle of dry and wet years will also meet the primary founding goal of the Parkway—providing recreation—by stabilizing water flow well below flood conditions.

Opposing arguments often cite the negative effects of Folsom Dam which will be amplified with Auburn, usually pointing to the restriction on the natural river flow and the resulting degradation (by their arguments) of the natural cycle of flooding; which arguments they provide as the starting point of their opposition, as a Sacramento County Parkway Planning Document (2006), notes:

Construction of dams and levees has provided flood protection, water supply, hydropower generation, and recreation opportunities. However, these facilities have also had severe and unintended consequences on the vegetation, wildlife, fisheries, and aquatic habitat of the river. Dams, including Old Folsom Dam (completed in 1893), North Fork Debris dam (completed in 1939), and the modern Folsom Dam and Nimbus Dam (part of the Central Valley Project completed in 1955), and the levee system were constructed, in part, to provide flood protection to the Sacramento metropolitan area, which was built largely in the river floodplain. The flood protection provided by these facilities has protected the city of Sacramento from numerous major floods and currently protects more than \$30 billion in commercial, industrial, and public buildings as well as more than 400,000 people residing in the historic floodplain.

...Construction of Folsom and Nimbus dams in 1955 permanently blocked upstream migration of fish above the lower 23 miles of the American River [the Parkway]...Dam construction effectively cut off the supply of upstream sediments to the LAR [Lower American River], resulting in a deepening of the river channel since the 1950's. In several locations, the channel has degraded to its previous bed elevation and it is thought that the mining debris that once filled the channel of the LAR has been completely removed by river flows and gravel mining. [That's good isn't it?]. However, the surrounding floodplain remains at its post-mining elevation, thereby creating a strong differential between the hydrology and floodplain elevation. This disconnection of the river from its historic floodplain greatly constrains the natural maintenance, regeneration and

expansion of riparian habitat. With reduced frequency of seasonal flooding and a deeper water table on the high floodplain, the riparian forest regenerates more slowly and some vegetation communities along the river have gradually changed to habitats that provide less value to wildlife and fish. **These impacts coupled with reduced frequency of seasonal flooding and a deeper water table on the high floodplain have altered the vegetarian communities along the river to habitats that provide less value to wildlife and fish.**

(pp. 10-11: highlighting in original)

However, we feel that the legitimate starting point of the discussion is acknowledgment of the reality of the existing (and growing) population and the ongoing development that provides homes, jobs, education, spiritual nourishment, and cultural enrichment for all of those who are moving here.

Starting from this point in our discussion, it is clear to us that controlling the water we have, allowing us to increase water supply, is what is needed for the Parkway and the Sacramento region, and the Auburn Dam provides that like nothing else.

California is one of the most complex water systems in the world and as Hundley (2001) reminds us:

The battles [over water] have sometimes been between and among those groups Traditionally identified as providing “water leaders’ or as being part of a “water establishment,” “water industry,” and “water lobby”—that is, those whose collective actions have straitjacketed the state’s rivers and given California its reputation as a water imperialist. This “establishment,” however, has never been a monolith driven by a single purpose or vision, save the idea that water (and nature generally) exists to serve humankind. Rather, as this account has suggested, it has consisted of many discrete groups, both in and outside the state, each with its own (frequently changing) agenda that has sometimes led to conflict...at other times to foot-dragging...and on still other occasions to compromises and alliances resulting in a major undertaking... The alliances have often been fleeting but their frequency and composition have been such as to create in California the world’s largest and most complex hydraulic system. The success of that system in promoting growth has ironically intensified internal competition for water, especially between urban and agricultural interests, and made less likely those city-farm alliances that produced the monumental projects of the past. (p. 544-545)

In closing, a quote from Gallagher (1993) to remember—in a much larger way—why we do this:

Neither they nor their ideological opponents are bad guys, and both groups have legitimate concerns. The real problem is that they have very different ideas about what nature is for. If it is to survive in all its complexity, an awful lot of people from very diverse groups must agree that nature is a mother lode of inner as well as material resources that in some way enriches everyone, from the Sierra club elite to city slickers who never set foot in a park. Although we often overlook or disparage as romantic the effects of natural stimuli on our well-being, an expanding body of eclectic research shows that almost all of us rely on nature—whether it is sprouting from a flowerpot or stretching as far as the eye can see—to excite our senses, restore our nerves, invite us to play, enhance our social bonds, and supply meaning and metaphor to our lives. (p. 202)

Our Vision

We want our Parkway, seven generations from now, to be a vibrant, accessible, and serene sanctuary, nourishing and refreshing the spirit of all who enter it.

APPENDIX # I
The American River Parkway Preservation Society Strategy
July 2004 - July 2009
(As posted to our website in July of 2004)

Our strategy, after almost a year of work, review and comment by our membership, has now been finalized and is presented here and posted on our website www.arpps.org .

Preserving the American River Parkway for as Long as the River Runs Through It

Introduction

The leadership in our community has a responsibility to reach above all of the recent confusion about the Parkway and create a vision that preserves, protects and strengthens this treasured resource in perpetuity.

This strategy is our contribution to that effort, and relies on using and adapting existing organizational and funding structures, which can:

- Provide permanent funding
- Provide effective management

Implementing this plan will not be easy, but we believe our public leaders can rise to the task of creatively assuming the responsibility vested in them by the public and provide community leadership to preserve, protect, and strengthen this national treasure.

We, our children, and generations yet to come, are counting on them to do exactly that.

Strategic Summary

The American River Parkway is the most valuable natural resource in our community and one of the most valuable in the nation. To preserve it, building on the foundation of our five guiding principles, we propose the following:

(1) Preserving the Parkway is not an option, it's a necessity.

- Work to ensure a long-term funding goal of building a permanent financial endowment for perpetual Parkway funding support.
- Work to ensure the creation of the American River Parkway as a National Heritage Area, a program of the National Parks Service, but locally managed by a nonprofit conservancy.

National Heritage status, while allowing Parkway land ownership to remain as is, and allowing for a local conservancy to manage the Parkway, would ensure a federal funding stream long enough to develop endowment funding, and provide additional benefits that national stature endows upon a natural resource.

- Work to ensure an existing nonprofit conservancy assumes management of the Parkway, recruiting executive leadership with academic and experiential credentials in nonprofit administration and fund development, and embrace social enterprise fund raising strategies proven successful in other parks.

A local management conservancy can build a fund development strategy of committed local leadership and social entrepreneurship, through targeted capacity building of Parkway organizations and related social enterprise ventures compatible with the conservancy mission.

(2) What's good for the salmon is good for the river.

- Work to ensure the availability of whatever amount of water is needed to ensure optimal flow and temperature for the salmon.

To provide optimal water temperature and water flow for the salmon, it is necessary to increase the water storage capacity of the American River Watershed, providing cooling waters and increasing or decreasing flow when needed. While the suggested increase of the water storage capacity of Folsom Dam will benefit the salmon, the community

should be prepared to further increase water storage capacity, if needed. The increased pressure on the river, (primarily population-driven), will eventually destroy the river's capacity to provide the salmon the optimal conditions they need.

(3) Social and environmental justice call upon us to help the poor and distressed person, and the poor and distressed community.

- Work to ensure all stakeholders realize public safety and compassion for the homeless, illegally camping in the Parkway in North Sacramento, should be equal responsibilities addressed by Parkway management, homeless advocacy organizations, and local government.

The public safety issue must be of equal concern to helping the homeless. Rapes, murders, beatings, assaults, and robberies occur regularly in the North Sacramento area of the Parkway, and many in the North Sacramento community are justifiably fearful about venturing into it. As a community, we can never give up on the vision that public compassion and public safety are compatible concepts.

(4) If it can be seen from the Parkway, it shouldn't be built along the Parkway.

- Work to ensure visual intrusion by new development is absolutely prohibited forever, with no mitigation.

Private property owners are not to be faulted for wanting to build large homes or commercial buildings along the Parkway, as it offers some of the most beautiful development sites in our area. However, none of us wants to see the Parkway become Malibuized. Confusion about the building regulations, as now exists, encourages that type of development. National Heritage Area status and the accompanying elevation in oversight will begin to offer the type of protection from visual intrusion caused by new

development that current, virtually unregulated, Parkway development is now threatening.

(5) Regarding new Parkway usages, inclusion should be the operating principle rather than exclusion.

- Work to ensure local public ownership and local conservancy management operate under the guiding principle that the Parkway belongs to all of the people, who have an inalienable right to recreate within the commons.
- Work to ensure there are designated seats on the Parkway conservancy management board of directors for organized recreational and sports users, as well as other organized stakeholders.

As a locally managed National Heritage Area, the management position regarding use of the Parkway will become more inclusive. We will encourage a local conservancy management structure that incorporates all stakeholders and brings organized, responsible users to the decision making process by creating designated seats on the conservancy board of directors. We all want to encourage responsible usage of the Parkway, as legitimate usage is the best antidote to illegitimate usage.

Implementation Summary

1) Build a critical mass of public support for creating the American River Parkway National Heritage Area with local management, endowed funding, and folding the five guiding principles of the Society into management's mission.

- **Society Leadership and Membership:** Through a continual campaign of informational mailings, public presentations, meetings, fund development, and ongoing community marketing, we will work to build a Society leadership team representative of the community, and a stable membership base of at least 5,000.

2) Educate the relevant communities: business, religious, educational, public, nonprofit, and government, of the value of the strategy and ask for their help in implementing it.

- **Business Community:** Working with chambers of commerce within the Parkway community, we will work to establish a Parkway task force in each chamber, whose charge is to understand the national heritage value of the river and Parkway, as well as the contribution of a safe and accessible Parkway to the economic vitality of the region.

Too few people know that the Parkway is an economic engine that “generates an estimated \$259,034,030 in annual economic activity in the local economy.” (2000 figures) We will also work to involve local business in the development and maintenance of additional Parkway nature centers, encouraging a local community building and co-creation process that will enhance responsible usage of the Parkway.

- **Religious Community:** We will work with the interfaith pastoral leadership of the region’s religious communities to help create a pastoral letter on the value of the American River Parkway to our community and the nation, by embracing all ethnic and cultural groups whose history helped build our Parkway heritage and our spiritual and reflective life. As one model for this we would look to, *The Columbia River Watershed: Caring for Creation and the Common Good*, an International Pastoral Letter, by the Catholic Bishops in the United States and Canada.
- **Educational Community:** The educational community will be encouraged to become involved in academic research enriching the National Heritage Area status and the importance of the Parkway to our region. As a National Heritage Area, the Parkway can become a major ground of environmental, biological, natural resource, park and greenway management research that will help grow the capability of the community to preserve this national resource.

- **Public Community:** Public forums will be encouraged to clarify the problems facing the Parkway, the advantages of creating a National Heritage Area under local management with endowed funding, and the strategy of implementation. The public, as the major supporter and user of the Parkway, needs continual information about the great treasure we have in our midst, and the increasing importance of preserving its natural and created beauty for future generations.
- **Nonprofit Organizations:** Nonprofit organizations working to preserve regional history, and Parkway organizations, will be encouraged to join together to help create a National Heritage Area. We will provide capacity building resources about social enterprise concepts, strategic planning, fund development, board development, communications & marketing, the benefits of collaborative management, and how to become more closely aligned to the ongoing community needs and issues throughout the entire Parkway.
- **Government:** Working with public leadership, we need to establish the case for creating the American River Parkway National Heritage Area, managed by a local non profit conservancy. Public leaders can help develop long-term funding for the Parkway, by working with community leadership to develop and build the capacity of conservancy management. Public officials will be encouraged to bring their leadership to the planning process and support the designating of the American River Parkway as a National Heritage Area.

Review & Update

- This plan is scheduled to be reviewed and updated every five years.

APPENDIX # II
Chronology of Auburn Dam (1920-1989)

- 1920's Auburn Dam included in State water planning.
- 1940 MR=5.7 earthquake in Chico/Oroville area.
- 1944 Congress authorized Folsom Dam & Reservoir with 450,000 acre feet of storage.
- 1948 Congress increased Folsom Reservoir storage size to 1,000,000 acre feet.
- 1955 Folsom Dam was completed at cost of \$94 million. This dam prevented damage in the Sacramento area from the Christmas flood of the same year exceeding this cost. This Christmas flood helped initiate the need for additional flood protection studies and the Auburn Dam solution.
- 1963 Congressman Bizz Johnson introduced legislation to authorize the Auburn-Folsom South unit of the American River Division of the Central Valley Project.
- 1965 (July) Congress authorized the Auburn-Folsom South Unit for construction (PL 89-161). Acquisition of land and construction began in 1967.
- 1965 Another Christmas flood was minimized in the Sacramento area due to Folsom Dam. This again saved the capital area from flood damage which far exceeded the cost of Folsom Dam
- 1966 MR=4.6 earthquake in Chico/Oroville area.
- 1972 California State Water Resources Control Board established Directive-1400 to be implemented when Auburn Dam is completed. Until completion, Directive-893, requiring 250 & 500 cubic feet per second flows would continue as required flow levels in the Lower American River.
- 1974 (May 13) United States Bureau of Reclamation awards contract for foundation excavation and treatment of Auburn Dam to the Auburn Contractors (Ball, Atkinson & Arundel)
- 1975 (Aug 1) MR=5.7 earthquake occurs near Oroville; 50 miles north of Auburn.
- 1975 (Aug 11) A United States Bureau of Reclamation (USBR) engineers and geologists task force start internal reviews of Foothills fault system and the potential

- EQ activity at the Auburn Dam site. Task force members were R. Farina, A. Viksne, L. Cast, & J. Gilbert.
- 1975 (Nov) USBR task force recommends studies of the Foothills fault system and potential EQ activity.
- 1976 (May 5) USBR contracts with Woodward Clyde Consultants (independent geological consultants) to study seismicity of region around Auburn Dam site.
- 1976 (Jun 9) Failure occurred of USBR's newly completed earth and rockfill Teton Dam in Idaho.
- 1976 (July) USBR hires five-member board of independent geological and engineering consultants to guide and review the investigations and findings. They include: **Drs C. Allan**-California Institute of Technology, **Ray Clogh**-University of California, Berkeley; **R. Johns**- Stanford University; **L. Johnson**- University of California, Berkeley; and **L. Serafim**- Portugal.
- 1976 (Sept 1) California Department of Water Resources advises USBR that earthquake design parameters used for Auburn Dam were inadequate.
- 1976 (Dec 3) USBR sponsors geologic tours of Auburn Dam site to review status of seismic investigations. They included: United States Geologic Service; USCB; California Division of Mines & Geology, and California Department of Water Resources.
- 1977 (Feb 22) President Carter reveals he will cut \$39.7 million from fiscal year 1978 Auburn Dam budget along with eliminating some 18 other water projects in the western United States.
- 1977 (Jun 28) Woodward-Clyde revealed their findings and recommended earthquake design criteria: MR=6.5, FM=0.8 ft.
- 1977 (mid) California retained a consulting board of eminent geologists, seismologists & design engineers. The six members included: **G. Housner, J. Blum, D. Cambell, A. O'Neil, and H. Seed.**
- 1977 (Aug) President Carter approves the \$39.7 million for Auburn Dam. USBR releases their 3 volume Report on Auburn seismic evaluation.

- 1978 (Jan 17) Woodward-Clyde (after 16 months of study) deliver their final volume of an 8 volume seismic report: “Earthquake Evaluation of the Auburn Dam Area”.
- 1978 (Jul 13) United States Geologic Services presents their technical review of Woodward-Clyde’s study and recommends: MR=6.5-7.0, FM=3.0 ft.
- 1978 (Jul 28) USBR releases a 6 volume supplemental report of the earthquake study, and the findings of the 5 independent Auburn consultants.
- 1978 (Sept 14) USBR proposed design criteria as: MR=6.5 (2 miles from dam site), FM=1.0 inch.
- 1979 (Jan 4) California Department of Water Resources: Consulting Board for Earthquake Analysis, recommended: MR=6.5, FM=5.0 inches.
- 1979 (Jan 25) Secretary of the Interior, C. Andrus says Auburn Dam will have to be redesigned because of earthquake hazards.
- 1979 (Mar 5) California Department of Water Resources: Consulting Board for Earthquake Analysis, recommended: MR=6.5, FM=5.0 inches minimum and 9.0 inches preferred.
- 1979 (Jul 30) Secretary Andrus approved the earthquake design parameters: MR=6.5, FM=9.0 & Ground Response Acceleration (GRA) =0.5 g in the one second portion of the spectrum.
- 1980 (Aug 11) Feasibility level designs were completed for a rockfill and curved gravity alternatives for Auburn Dam.
- 1980 (Dec 30) Andrus announces a safe dam can be built at Auburn but we must resolve the Lower American River controversy. Selection of the alternate dam was ‘Curved Gravity-3’ with 600 megawatt power plant.
- 1984 President Reagan announced a new national policy calling for non-federal cost sharing for financing water projects. A Federal-State Auburn Dam Task Force was established to find ways to accomplish this.
- 1985 Bechtel International hired to determine a less costly option to Curved Gravity-3, such as Rolled Compacted Concrete.
- 1986 (Feb) Record runoff floods demonstrate that Sacramento Metropolitan area is extremely vulnerable to flooding from the American River. Folsom Dam was hours away from losing control.

- 1987 (July) USBR released the “Auburn Dam Alternative Study” which evaluated five alternative sizes. Purpose was to assist in making informed judgments on the level of flood protection needed.
- 1987 (Sept) After 3 Congressional hearings, U. S. Corps of Engineers initiated a ‘dry dam’ study for the Auburn Dam site.
- 1988 (Sept) American River Authority (ARA) informed USBR that it could contribute \$700 million to cost-share water and power costs for the 2.3 million acre feet multipurpose dam.
- 1988 (Sept) Interior Department’s Assistant Secretary announced an Auburn dam cost-sharing negotiating team to negotiate with interested California parties and in particular, the ARA.
- 1989 (Dec) The Central Valley Project Water Association passed a resolution to oppose integration of Auburn Dam into the Central Valley Project.
- 1989 (Apr) ARA, San Joaquin County and Sacramento area water agencies said they’d support funds for water supply.

Abbreviations: MR = Magnitude on Richter Scale
FM = Foundation (horizontal) Movement

Acknowledgements: This chronology was compiled by Mike Schaefer for his presentation to the Auburn Dam Council on (10/2/05) and to the American River Authority on (6/17/06). Most of the information came from USBR’s geology consultant Wendel Carlson in his report titled, INTERIM CONSTRUCTION GEOLOGY REPORT, AUBURN DAM, dated November 1990.

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