Investing for Prosperity

Enhancing California’s Resources to Meet Human and Economic Needs

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THE RESOURCES AGENCY
STATE OF CALIFORNIA
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Recognition of the Public Trust

"Contemporary history displays our nation suicidally eating up its own mighty resources."

Livy (59 B.C. – A.D. 17)
Preface to History of Rome
(translation by Michael Grant)

"The prosperity of our people depends directly on the energy and intelligence with which our natural resources are used. It is equally clear that these resources are the final basis of national power and perpetuity."

President Theodore Roosevelt
Opening Address, National Governors' Conference, 1908

"Upon our own generation lies the responsibility for passing on to the next generation the prospects for continued well-being."

Resources for Freedom
Paley Commission Report to President Truman, 1952

"Many a civilization has fallen with its forests and eroded with its soil. . .California will build for the future, not steal from it. And as we do we will know in our hearts that patriotism is not just defending the country of our fathers, but preparing the land of our children."

Governor Edmund G. Brown Jr.
Inaugural Address
January 8, 1979
History provides examples of nations that have fallen because they did not properly value, preserve, or invest in their natural resources. Shocking projections from recent studies such as the Global 2000 Report and the North-South study by the Brandt Commission illustrate the potentially disastrous consequences of present trends. Both studies emphasize that the wise management of renewable resources is the key for survival.

Investing for Prosperity outlines goals of resource investments between now and the year 2000. It charts a destiny course for the Resources Agency, describing positive, realistic actions which will halt resource decline and provide greater hope for future Californians.

The cornerstone of our program is to use the remaining revenues from state tidelands oil and other sources to invest aggressively in renewable natural systems and energy resources. By maintaining and rebuilding our soils, fisheries, forest lands, and recreational resources, and by changing our water and energy policies to emphasize conservation, we can restore the wealth and vitality of our resource base as a rich inheritance for future generations.

I ask your support in this effort to translate into reality our shared goal of beneficial resource management.

Huey D. Johnson
Secretary for Resources
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INTRODUCTION

Even in a State as richly endowed in resources as California, some very disconcerting statistics began to emerge in resource assessments a few years ago. We discovered that California's oil production had peaked in 1968. Our salmon fisheries had declined to only 40 percent of their historical levels and timber production in California had declined steadily since 1958. Five million acres of California's 16 million acres of forest land were either lying fallow or not producing timber at full potential. At the local level, cities such as Oakland had budgets for tree removal, but were not spending a penny to plant new trees. All these disturbing trends were observed at a time when many nations of the world were experiencing financially ruinous dependence on imported oil, extensive deforestation, and diminishing fisheries.

It thus became clear that we are entering an era in which our economic prosperity, the condition of our environment, and the quality of our lives will be determined by how carefully we utilize our remaining nonrenewable resources and by how successfully we enhance and sustain our renewable resources.

The short time horizon of traditional year-to-year budget planning in state government is on a far different time scale than the natural resources it seeks to manage, in which it takes 20 years to grow a tree and more than three budget years to rear a salmon. We have had a California water plan and a highway plan, but never an integrated plan to manage all of our renewable natural resources over the time span of decades.

Five to ten-year planning is routinely used in many industries, such as electrical utilities, chemical, and aircraft corporations. Many other companies spend their days making tactical responses to turbulent markets over which they have little control. In these circumstances, and often in government, the overwhelming dominance of short-term pressures causes too little attention to be paid to the problems of the next decade, still less of the next century. So we drift into trouble which preventive action and careful investment could have avoided. Clearly, the time has come when State government must provide leadership for progressive adjustment to uncertainties of resource availability over the long term.

Investing for Prosperity is a twenty-year plan for investing in California's resources. It is based on the solid foundation of the past two years of concerted effort to reorder priorities in State government. The beginning
steps have already been taken to provide for enhancing the natural resources that are the real wealth of California. The importance of these resources to the prosperity and well-being of California's citizens has been clearly affirmed by the California Legislature. By overwhelming bipartisan votes, the Legislature has enacted and the Governor has signed a number of bills creating an unprecedented foundation for resource enhancement in the next two decades. These programs include:

**The Forest Improvement Act (AB 3304, Calvo),**
signed by Governor Brown on September 26, 1978.
Passed in the Assembly 79-0
Passed in the Senate 38-0

This bill consists of enabling legislation that provides for an urban forestry program and permits cost-sharing funds for reforestation on small private landholdings of less than 5,000 acres.

**The Forest Resources Development Fund (AB 320, Calvo),**
signed by Governor Brown on September 19, 1979.
Passed in the Assembly 67-9
Passed in the Senate 22-0

This bill established, for the first time, the principle that income from the sale of timber on state-owned forests would be returned and reinvested to improve forest productivity in California.

This year over 10,000 acres are being reforested from the Forest Resources Development Fund. Sixty-eight contracts have already been signed in areas from Santa Cruz County northward to Oregon, and in the North and Central Sierras. An additional 75 contracts are in negotiation.

Under the urban forestry program, more than 50,000 trees have been planted in Oakland, Los Angeles, Needles, and San Francisco.

**The Renewable Resources Investment Fund (SB 201, Wilson),**
signed by Governor Brown on September 27, 1979.
Passed in the Assembly 78-1
Passed in the Senate 32-0

This legislation provided $10 million to develop wood energy, help restore salmon stocks, and develop water conservation and water reclamation projects.
Using this fund, 2 million yearling salmon have been raised and released in California streams. These yearlings are expected to provide about 50,000 returning fish for spawning. In addition, the California Conservation Corps has cleared 100 miles of formerly blocked streams. These open streams will provide suitable habitat for 250,000 spawning salmon returning from the sea this year.

Water conservation kits have been distributed to 330,000 households in the Humboldt Bay area, and in Santa Barbara and Ventura Counties. These kits will enable savings of 337,000 barrels of oil per year by reducing fuel consumption for water heating.

The Geothermal Resources Fund (AB 1905, Bosco),
Passed in the Assembly 66-4
Passed in the Senate 27-0

This bill provides that 30 percent of the income from federal geothermal leases in California be deposited in the Renewable Resources Investment Fund for reinvestment to enhance other natural resources.

The Energy and Resources Fund (AB 2973, Vasconcellos),
signed by Governor Brown on September 17, 1980.
Passed in the Assembly 67-5
Passed in the Senate 30-8

This bill assigns a portion of tidelands oil revenue income from a non-renewable resource to reinvestment for restoring and enhancing California's energy and renewable resources.

The Energy and Resources Fund, the culmination of this series of bills, establishes the most comprehensive renewable resource investment program in the nation. It provides for up to $120 million each year for enhancing California's fishery, soil, forest, water, parkland, and renewable energy resources. For the first time, it is possible to undertake long-term resource planning necessary to future prosperity in California.

The key concept of the Energy and Resources Fund is the use of today's income from the extraction of nonrenewable resources to reinvest in more productive renewable resources which can sustain prosperity for centuries to come.
Investing for Prosperity presents a strategy for resource security in the next century and beyond through the wise use of our remaining nonrenewable resources and the restoration and maintenance of our renewable resources. The twenty-year plan is composed of three elements:

1. A brief description of the basic issues in the management of each resource and of the challenges in each problem area.

2. A set of long-range goals for each resource which can realistically be achieved in the next two decades.

3. A short-term implementation plan consistent with the long-range goals for each resource. These implementation activities include ongoing state programs as well as new programs, most of which are proposed for funding from the Energy and Resources Fund established in 1980.

To be effective, resource investment must be carried on cooperatively by government and the private sector, day by day and year by year. Long-range plans must be continually reevaluated and updated to incorporate changing public priorities and new technologies.

The theme of this twenty-year program to meet the needs of California's people is the concept of the public trust. This concept means careful stewardship of our resources, like that of a farmer who leaves his farm to his children in better condition than when he started it. Maintaining the public trust means not cheating those who succeed us by weakening the security of their resource base. Poisoned water, fields bare of topsoil, streams with few fish, and ruined forests would be a poor legacy indeed.

Our legacy to future citizens of California should be prosperity provided to them by the inheritance of a land rich in natural resources, which will contribute in turn to the security and stability of California and the nation.
The responsibility of government to provide for the common good of present and future generations is called the public trust. The unifying concept of this natural resources investment program for California is to protect the public trust by carefully investing in our future. The dividends of such a stewardship program will be paid from a healthy resource base in perpetuity to the generations which follow.

Four guiding principles constitute the philosophy of this program for California's prosperity:

- The recognition that biological, water, and earth resources are the real wealth of our State and thus the basis from which our common good is derived.

- The assertion that government has a duty to maintain the productivity of these natural assets — a duty to posterity, of which the highest purpose is to provide for the common good of not only the present generation, but future generations as well.

- The gift of hope for the future made possible by assuring that our citizens will always have adequate resources available for the pursuit of a just, decent living in a prosperous economy.

- The assurance that the treasures of our natural and cultural heritage will be protected. These treasures, be they rare life habitat, majestic vistas, productive forests and croplands, parks or wilderness, healthy fisheries, works of art, or examples of outstanding architecture, must be carefully managed so that they can be passed on to enhance the quality of life and the economic security of future generations in our civilization.
FORESTRY and WILDLAND

Since its earliest days California has been known for its timber resources and the attractive tree plantings in its cities. Today both these resources are in decline.

California still ranks second in the Nation in lumber production. The Los Angeles Basin is the third largest furniture manufacturing area in the Nation. Yet timber production in the State has declined steadily for the last 22 years. California's 16 million acres of commercial timberland today are producing wood at less than 50 percent of their capacity. Without corrective action, production will decline by another 10 percent between 1980 and 2000.

Tragically, California leads the nation in its unique wildland fire problems. The historic approach of adding more expensive and sophisticated fire suppression forces can no longer be maintained; new initiatives must be launched to reduce the potential for wildland fires to become devastating conflagrations. By initiating new measures to reduce the fuel loading on old growth chaparral lands, we can not only reduce fire hazards, but bring the chaparral lands into a proper balance, with substantial benefits in water quality and water yield, reduced air pollution, and improved wildlife habitat.

The productive integrity of watersheds must be maintained to protect timber and water supply, sustain the genetic diversity of plant and animal populations, and maintain ecological balance.

Ninety-four percent of California's citizens live in cities and suburbs on two and one-half percent of the State's land. City trees increase property values, reduce air pollution, reduce noise, alleviate temperature extremes, reduce energy consumption, provide soil and watershed protection, improve urban wildlife habitat, and beautify our neighborhoods. Yet many of California's cities are losing trees faster than they are replaced.

By expanding programs in urban forestry we will make our cities more liveable and help our citizens to understand better the importance of trees in both urban and forest settings.
Goals for Prosperity in 2000

- Reverse the serious decline in productivity of California's forests by achieving the following goals by the year 2000:
  - reforest 1.1 million acres with 360 million trees
  - salvage 11 billion board feet of dead timber killed by insects and disease
  - develop 200 inner-city community nurseries employing 3,000 nursery trainees and undertake urban forestry programs in 40 inner-city areas

- Increase annual timber supply by 3 billion board feet over 1980 levels.
  - 2 billion board feet through improved wood products utilization
  - 0.6 billion board feet through integrated pest control
  - 0.4 billion board feet through forest and tree improvement efforts

- Achieve $850 million (1980 dollars) in annual timber value produced.

- Implement an aggressive vegetation management program to increase forage production, water yields, wildlife habitat, survival of seedlings, and growth rate in young timber stands. This will achieve savings in reduced direct damages from fires of $19 to $38 million, and savings in averted soil erosion and flood damage of $19 to $95 million over a twenty-year period.

- Reduce imports of forest products into California from 4.8 to 1.8 billion board feet.

- Achieve 1140 megawatts of cogenerated electrical capacity from wood residue.

- Create 46,000 new jobs in the forestry, wood products, and furniture industries.
Implementation: The Next Two Years

- **Reforestation:** By 1983, plant 22.6 million trees through cooperative cost-sharing agreements to reforest 69,000 acres of nonindustrial private forest land.

- **Urban Forestry:** Complete 81 urban forestry projects which will plant 112,500 trees throughout the urban areas of the State and involve the active participation of local citizens.
  
  Create 30 inner-city community nurseries to provide long-term support for urban forestry projects.
  
  Involve 56,250 volunteers in urban forestry projects through a wide range of outreach programs.

- **Wood Energy:** Assist utilities and private firms in developing 425 additional megawatts of electrical generating capacity from wood energy.

- **Chaparral Management:** Under controlled conditions, burn 360,000 acres of brush and other watershed lands that now support heavy stands of old growth chaparral, in order to reduce fire hazards, increase water yields, improve wildlife habitat, increase recreational opportunities, increase rangeland productivity, and improve air quality.

- **Jobs:** Create 400 new jobs by 1983 in the planting and tree management sectors.
California's fish and wildlife resources support a multi-billion dollar commercial industry and recreational base. The annual value of the commercial fishing industry is about $1.25 billion, and the value of the recreational fisheries is $0.4 billion. Many associated industries depend upon our fish and wildlife resources. These include tourism and the manufacture and sale of hunting, photographic, and fishing equipment.

In 1979, 2.3 million Californians bought fishing licenses, 0.7 million bought hunting licenses, and 2.8 million watched birds, visited fish hatcheries, watched whale migrations, observed seals, toured wildlife refuges, and went to State and Federal parks and beaches to observe, paint, or photograph wildlife.

Beyond the commercial values of fish and wildlife are the benefits which are hard to quantify in precise economic terms. Salmon, for example, are early warning indicators, like the miner's canary, of the deterioration of our rivers and streams. The remarkable diversity of species in our State, including rare and endangered life forms, is a reminder of the complex web of life and our own place as part of the ecosystem in which we live.

The diversity of native fish and wildlife populations needs to be maintained. In addition, biological diversity in native plant and animal species needs to be reintroduced into urban areas to promote water conservation and enhance the environment of urban residents.

Growth in population and its related development activities have led to a decline in wildlife habitat and fishery stocks in California and throughout the world. California, for example, has lost almost all of its original wetlands. Guaranteed instream flows to maintain fish populations are needed. Action must be taken now to halt these trends and assign high priority to habitat improvement.
Goals for Prosperity in 2000

- Increase salmon and steelhead spawning populations by 300,000 annually, and add 600,000 adult salmon and steelhead annually to recreational and commercial fishery landings.

- Reopen 500 miles of spawning and nursery areas for salmon and steelhead.

- Increase remaining wetland habitat in California from 500,000 acres to 750,000 acres through a variety of measures including incentives to private property owners for habitat maintenance and improvement.

- Protect and maintain through acquisition 60,000 acres of key habitats for many of the more than 900 species of California's fish and wildlife. These habitats are essential to the continued survival of 212 presently identified species of rare, endangered, or threatened plants and animals.

- Restore and maintain fish and wildlife resources of the Sacramento–San Joaquin Delta, Suisun Marsh, and San Francisco Bay system.

- Triple annual California oyster production to $30 million annual value (1980 dollars); increase annual abalone production by 1 million pounds; and achieve 100,000 pounds increase in the combined production of scallops, clams, and mussels.

- Provide 100 million additional recreation days of urban fishing by increased stocking and improvement of urban lakes and reservoirs, construction of new fishery piers, and new urban fishing access programs.

- Improve capability for habitat protection through improved quality and availability of fish and wildlife resource data.
Implementation: The Next Two Years

- **Salmon and Steelhead:** Develop construction plans for hatcheries at Nimbus and Big Springs and rearing ponds in the Sacramento River. Begin construction at Nimbus within two years. California Conservation Corps and other personnel will continue to clear blocked salmon and steelhead streams at the rate of 100 miles per year.

- **Wetlands:** By 1983, complete a plan to increase the state's wetlands by 50%. The plan will identify actions needed to protect the approximately 410,000 acres of natural and modified natural wetlands and to increase wetland habitat by 200,000 acres by the year 2000. Additionally, by 1983 acquire approximately 25,000 acres of wetlands, such as Miess Lake and Lake Earl.

- **Key Habitats:** Acquire 40 key habitat areas totaling more than 10,000 acres by 1983, including habitats of game, nongame, and endangered species.

The Sikes Act (Public Law 93–452, Oct. 1974) provides guidance for fish and wildlife activities on federal public lands. For these habitat protection and improvement projects, $2.5 million has been budgeted by the 17 national forests in California for 1981. The State of California will supplement these programs by at least $2 million annually.

- **San Francisco Bay and Delta:** Seek measures to protect Delta wildlife habitat through legislative and administrative initiatives. Continue studies of striped bass and San Francisco Bay fisheries.

- **Urban Fishing:** Construct fishing piers at Oakland and Brisbane and restore the Berkeley pier. Renovate and restock five urban lakes. These efforts will add 500,000 recreation days annually for California urban residents.

- **Habitat Information:** Undertake baseline studies on plants, animals, and ecosystems. Develop automated resource information systems to handle existing and new data to be fully operational in three years. By 1983, document over 100,000 sites of sensitive natural resources in the California Natural Diversity Data Base.
Water is California's lifeblood. Each Californian has a stake in assuring that individual actions as well as efforts by agriculture, industry, and government are directed toward the wise use and conservation of our water resources in order to meet the needs of our State. As the user of 85 percent of the State's applied water, California agriculture has an especially critical role in the more efficient use of water.

Since California's water resources are limited and our economic ability to develop them is also limited, it is the State's policy that water resources already developed shall be used to the maximum extent before new sources are developed. To maximize beneficial use, optimum application techniques and processes for water conservation shall be implemented and waste shall be avoided. Water shall be reused to the maximum extent feasible.

The State water resources program through the year 2000 has as its cornerstone this statement of a conservation ethic. It will vigorously implement the existing constitutional prohibitions against waste and unreasonable use of water.

Management of California's water resources in the next two decades is made more difficult by the present lack of legal tools to manage groundwater resources. Unless such controls are provided and implemented, we will continue to steal from future generations by overdrafting our groundwater resources.
Goals for Prosperity in 2000

- Eliminate or substantially reduce the projected annual 3.6 million acre-feet overdraft of groundwater otherwise projected by the year 2000.
- Prevent productivity decline on one-half million acres of San Joaquin Valley soils due to salt accumulation and lack of drainage; reclaim by the desalting process 400,000 acre-feet annually of salty agricultural drainage and groundwater.
- Develop renewable energy sources (hydroelectric, wind, geothermal energy) to supply 7 billion kilowatt-hours of electricity annually to the State Water Project.
- Achieve conservation goal of 2.5 million acre-feet annually in urban and agricultural water use thereby reducing the need to develop new surface water supplies.
- Complete additional facilities of the State Water Project.
- Recycle 600,000 acre-feet of waste water annually to reduce demands on surface water supplies.
- Reduce seawater intrusion into susceptible groundwater basins by reducing groundwater overdrafts.
- Approach zero discharge of toxic pollutants into ground and surface waters of California so that public health and beneficial water uses are protected.
- Implement water quality programs, including soil erosion control, to preserve the environmental quality of the Lake Tahoe Basin.
Implementation: The Next Two Years

- **Groundwater:** increase public understanding of the ground water overdraft problem; increase state and local cooperation to press for local ground water management plans; continue to press for water law reform.

- **Drainage:** design and construct a demonstration desalting plant to desalt one million gallons per day by reverse osmosis; construct reuse facilities, such as marshes and wildlife refuges, to provide for drainage in the San Joaquin Valley.

- **Energy:** undertake construction of 15 small hydro facilities (60 megawatts) in the State Water Project; construct 4 geothermal powerplants (220 megawatts); develop cogeneration plants at state facilities; and continue with wind energy projects.

- **Water Conservation:** by 1983, make water-saving devices available to all households in California; conduct agricultural water conservation loan program to aid water saving in irrigation.

  Proceed with full investigations and enforcement actions concerning waste and unreasonable use of water in the State.

- **Water Recycling:** conduct six local water recycling projects as part of the State Water Project.

- **Seawater Intrusion:** implement an $8 million program for local construction of a project to halt seawater intrusion.

- **Water Quality:** undertake control measures in the Lake Tahoe Basin Water Quality Plan, including construction prohibition on environmentally sensitive lands, erosion control, and implementation of best management practices for runoff.
The management of soils in California has generally not been recognized as an essential component of comprehensive resource management. However, the lessons of history should teach us the importance of implementing soil resource conservation policies and programs, since the decline of some of the greatest historic civilizations resulted from inadequate soil management practices. Loss of soil productivity in the San Joaquin Valley has already been documented on 400,000 acres of irrigated lands which are not properly drained.

If we continue to permit our soils to decline, and yet wish to maintain the high levels of agricultural production to which we are accustomed, we will need to use increasing amounts of petroleum products and mineral resources for the manufacture and application of fertilizers, herbicides, and artificial soil additives. Thus, valuable, nonrenewable energy and mineral resources will be needed to compensate for the loss of good natural soils through poor management.

Major causes of accelerated soil erosion on forest lands are improper timber harvesting activities and associated road construction. While great strides have been made under the Forest Practices Act to reduce this soil loss, the problem is far from solved. Fragile lands which are eroding at accelerated rates need to be restored and maintained to prevent further unnecessary soil loss and water pollution.

The growing interest in producing biofuels (alcohol, gasohol, methane, methanol) from crops and organic wastes raises the prospect of competition between energy needs and soil management needs. Traditionally, beneficial soil conditions and fertility are maintained by restoring organic matter continuously to the soil in the form of crop residues and organic wastes. Biofuels programs propose to divert sizeable amounts of these organic soil amendments into production of liquid fuels. With inadequate conservation measures, energy benefits could be negated by worsening soil erosion and deterioration. Management strategies need to be designed to assure long-term soil fertility during biofuels production.
Goals for Prosperity in 2000

- Provide financial incentives to maintain and restore soil productivity on private forest lands, agricultural lands, and wildlands.

- Monitor the State's soil resources in order to complete the identification of areas where erosion is accelerating and productivity is declining due to inadequate management.

- Expand soil-vegetation mapping to complete surveys of 3.4 million acres of uplands by 2000. Provide reliable information on the nature and changing conditions of the soil resources, and identify areas with erosion hazards.

- Improve techniques for soil erosion control, soil productivity maintenance, and revegetation on forest, range, wildlands, and croplands.

- Implement a financial incentive system to encourage alternative agricultural practices to reduce consumption of petroleum products and improve environmental quality (e.g., integrated pest management, range improvement, non-energy intensive fertilizers, minimum tillage, windbreaks).

- Promote maintenance and restoration of healthy stream courses by encouraging such measures as proper road location and adequate drainage structures, landslide stabilization, and streambed clearance.

- Develop guidelines for future biofuels programs which will ensure that desired energy goals are met with minimal harm to the sustained long-term fertility of California soils.
Implementation: The Next Two Years

- **Soil Conservation:** Develop a cooperative State program to augment declining federal assistance to farmers voluntarily wishing to install and undertake soil conservation practices; give priority attention to problems of soil erosion, salt accumulation, and inadequate drainage.

- **Soils Mapping:** Develop computerized mapping capability to integrate all types of soils resource data, including prediction of areas of high susceptibility to erosion and slope instability.

  Publish new generalized Soils Map of California to replace the present State map which is thirty years old.

  Complete publication of maps depicting characteristics and location of important farmlands and their soils in California.

  Increase the rate of soil-vegetation mapping on wildlands by 75,000 acres per year, giving priority to new mapping in the central and northern Sierra Nevada and updating of the Jackson State Forest Soil Vegetation Maps.

- **Windbreaks:** Sponsor projects to construct and measure the effectiveness of windbreaks in three demonstration areas, including critical dust storm areas where chronic blowing dust presents severe traffic safety hazards.

- **Soils and Biofuels:** Complete assessment of the interrelationships between biofuels development and long-term soil productivity, to provide guidelines for future biofuels programs.

- **Soil Stabilization:** Conduct pilot projects in soil stabilization techniques for sensitive and damaged watersheds, using conservation crews from the Department of Forestry, the California Conservation Corps, and the private sector.
Controversy over the future of California's coast is a good illustration of the conflicts which often characterize natural resource management. Urban populations desire additional recreational opportunities; commercial fishing fleets seek harbor improvements; private landowners wish to undertake real estate developments. Coastal ecosystems offer additional protein sources for our future food supply. Many citizens merely wish to enjoy the wilderness and solitude of the undeveloped parts of the coast.

With proper planning and leadership, these and other resource goals can be realized. The citizens of California and representatives of State government have repeatedly expressed their support for the preservation of coastal resources and for a balanced approach to development. The challenge in the next twenty years is to uphold this public trust in careful stewardship for future generations.
Goals for Prosperity in 2000

- Provide 1000 additional access sites along the California Coast, especially near urban areas.
- Restore 82 miles of coastal beaches for recreational use.
- Continue an aggressive program to protect wetland, scenic, and other natural areas of the coastal environment.
- Preserve the quality of our coastal ecosystems so that expanded shellfish production projects involving oysters and abalone will be permanently successful.
- Complete projects at various marinas which will provide access and improve recreational facilities throughout California.
Implementation: The Next Two Years

- **Coastal Access:** Provide 50 new coastal access sites each year. Improve development and access on the San Mateo Coast; enter into an expanded agreement with the American Youth Hostel Association to open additional youth hostels along the California Coast at Pt. Arena, Pt. Sur, Wilder Ranch, and Mt. Tamalpais.

- **Shoreline Restoration:** By 1983, restore 6 miles of coastal shoreline by conducting the following erosion control and beach augmentation projects: control of erosion at Sunset Cliffs (San Diego); augment beaches at Santa Barbara and Oceanside; restore public beach along the south shore of Alameda; construct offshore breakwater and add sand along the waterfront at Imperial Beach; construct seawall and place additional sand along Rio Del Mar in Santa Cruz County.

- **Marinas:** Improve marina facilities at Spud Point, Bodega Bay; Richmond Marina, Oakland Diesel Street Marina, Ventura Harbor, Cabrillo Marina, and Long Beach Downtown Marina.

- **Marine Resources:** Enhance marine resources in coastal areas through the Marine Resources Enhancement Center and Pilot Hatchery. By 1983, complete a study on the methods of seeding abalone, and follow up by initial placement of 10 million abalone seeds; set aside tidelands in local coastal plans to ensure expanded oyster production; promote oyster seed raising capabilities by private aquaculture.
Parklands enhance our lives by adding to the quality of our experiences and our environment. They provide many services that are vital to the community as well as the individual. They provide areas for California's citizens to experience and learn about our natural environment and our cultural heritage. Parklands also encourage and enable people to keep fit and healthy by furnishing space and facilities essential for recreation.

Recreation and leisure time are an invaluable resource to the total development of an individual's mental and physical well being. Through recreation programs, skills such as leadership, communication, self-confidence, socialization, and cooperation are fostered. These are the basic building blocks of a healthy society.

Parks also provide extended classroom experiences for children, youth, nature clubs, teachers, and researchers from a variety of disciplines in natural sciences, arts, history, and social services. And finally, through parks we meet societal needs to maintain the natural diversity of our environment, and to preserve our cultural heritage.

An increased demand for recreation close to urban centers is resulting from greater uncertainties in the availability and cost of transportation fuels. Parks need to be designed to minimize dependence on energy consumption through proper location, appropriate building materials, and use of alternative energy sources. Public transportation from urban areas to parks must be encouraged, and more parks must be designed for urban users.

Recreational services must be developed with an understanding of these changing needs. Also, the quality of an individual visitor's experiences must be maintained. At the same time our natural and cultural treasures must be preserved so they can be passed on to the generations which follow.
Goals for Prosperity in 2000

- Meet increasing demands near urban areas, with special emphasis on development of facilities for the elderly, the urban poor, and ethnic minorities.

- Develop trails and hostels near urban and coastal areas, and develop new State off-highway vehicle recreation areas to meet projected level of six million annual visitor days in 2000.

- Expand natural resource preservation in the State Park System by acquiring key park unit inholdings and developing resource management programs.

- Expand interpretive facilities to better illustrate the contributions that ethnic minorities have made to California's cultural heritage.

- Increase energy efficiency and use of alternative energy sources in the operation of the State parks; install solar retrofit in 250 park units.

- Demonstrate the environmental ethic (caring for natural systems) and the efficient use of natural resources in State parks through interpretive demonstrations, displays of conservation techniques (e.g., soil conservation) and by practicing recycling of inorganic wastes in the State Park System.

- Acquire additional access to the State's rivers to prevent environmental damage to riparian environment through uncontrolled use and prevent abuse to private lands.

- Develop and implement economic strategies that ensure the most effective and efficient management of the State Park System, thereby reducing the General Fund subsidy per visitor.
Implementation: The Next Two Years

- **Urban Parks:** Expand development at Candlestick in San Francisco Bay Area and at Huntington in Orange County; select a park site on the East San Francisco Bay shoreline; acquire additional lands at Baldwin Hills and Chino Hills in Los Angeles; acquire and develop lands near Lake Matthews in Riverside County; study and select a site for an agricultural demonstration project (e.g., illustrating the history of the citrus industry); coordinate, publicize and expand public transportation opportunities to State Park System units; study the recreational needs of urban citizens including the elderly, poor, and ethnic minorities; expand development at Angel Island in San Francisco Bay and begin development of Crystal Cove in Orange County.

- **Acquisition:** Complete the American River Bikeway connection at Folsom Lake; begin acquisition of a major off-highway vehicle area in Southern California; acquire additional lands at Lakes Earl and Talawa, Chino Hills, Crystal Cove, Julia Pfeiffer Burns, Anza-Borrego Desert, San Luis Island and Torrey Pines State Parks.

- **Cultural Heritage:** Develop a multi-cultural center to illustrate the contribution of all ethnic populations to California; expand interpretive facilities at Angel Island and China Camp; continue development at Allensworth; begin acquisition to preserve Native American cultural sites.

- **Environmental Ethics:** Develop three interpretive demonstration projects illustrating the restoration and management of natural systems; provide grants to local government for environmental ethic demonstration projects; develop 500 environmental campsites.

- **Boating:** Expand boating opportunities on the Colorado and Sacramento Rivers and at Bidwell River Park; expand access to and use of river systems, and develop river rafting facilities on the South Fork of the American River at Folsom Lake; develop and implement a waterway-maintenance and hazard removal program on the State's waterways, with provisions for public to obtain free firewood cleared from waterways.

- **Volunteers:** Recruit and effectively use 30,000 volunteers in the State Park by 1987, to assist State staff in park operations, maintenance, and protection.
KEY ISSUES IN TRANSITION

In the coming decades, California must develop new approaches to meeting the special challenges of key issues that so far have defied easy solution. A single agency cannot resolve these issues; solutions must come from cooperative effort at all levels of government, with active participation and support by the private sector.

We need a materials policy stressing greater incentives for conservation and reuse of non-renewable metallic and industrial minerals. Continued action is required to promote energy conservation and development of alternative energy technologies. We need improved incentives to prevent suburban sprawl from irreversibly diminishing California's prime agricultural land, a treasure of significance to the food supply of the nation and the world. We must work for preservation of genetic diversity in the biological resources of the State, and maintenance of the natural ecosystems at Lake Tahoe and similar unique areas.

Additional key needs are:

- Control of toxic substances based on the principle of non-degradation of the environment; including protection of ground and surface waters from contamination and reduction of exposure of the population and the environment to low-level radiation.

- Development of early warning systems for alerting Californians to the impacts of technology (for example, potential hazards of emerging genetic technologies; vulnerability of monocultures in agriculture and forestry; impacts of increased atmospheric carbon dioxide and acid rain).

- Enhancement of the urban environment in which the majority of Californians live:
  - development of increased resource preparedness for self-sufficiency and rapid effective government aid in the event of earthquakes or other natural disasters
  - promotion of community urban gardens; housing rehabilitation with retrofit installations to conserve energy and water; programs for abatement of lead poisoning hazards and rats; neighborhood beautification
  - encouragement of urban resource conservation and reclamation, such as through creation of urban resource conservation districts or urban resource information centers to help urban residents use and reuse their resources more efficiently and economically
MINERAL RESOURCES

California has been richly endowed with mineral resources, including oil, gas, and nonfuel minerals such as gold, tungsten, and construction minerals. California has already passed the peak of its oil production, which reached 373 million barrels in 1968. Production in 1979 was 341.4 million barrels. Presently, Californians import 54 percent of their oil and over 80 percent of their natural gas from other states and foreign countries. If present trends continue, California will need to import 420 million barrels of crude oil in the year 2000 from out-of-state sources. This projected figure must be reduced by conservation and development of alternative energy sources, or by increased imports, synfuels, and extensive development of unconventional petroleum resources, such as tar sands.

Approximately $1.7 billion of nonfuel minerals are produced annually in California. Many of these commodities such as tungsten, borates, and rare earths, and industrial minerals are of critical importance to the Nation's economy, as well as to the State's construction industry. In addition, California has potential for production of the several strategic metals: nickel, chromite, and cobalt.

In general, the problems of future mineral supply from sources in California will be those of costs, both economic and environmental, that we must pay to extract these minerals. The goals of an orderly flow of mineral resources to support our industrial and agricultural economies must be harmonized with the need to protect California's valuable natural resources, including our remarkable environment.

We have barely scratched the surface of the Nation's and California's potential for materials conservation and recycling. In many respects, our materials situation has parallels with the oil situation before the 1973 Arab oil embargo; extensive reliance on imports and projected reliance on new supplies is emphasized, rather than conservation to meet future shortages. The challenges of the coming decades are for California to develop and implement an aggressive program of materials conservation through incentives and education.
Goals for Prosperity in 2000

- Reduce consumption of petroleum products through conservation and development of alternate energy sources.

- Reduce consumption of nonfuel materials through conservation, recycling of materials, end-use matching, and substitution.

- Undertake economic research to determine current and future supply-consumption patterns and enable projection of future trends, especially for critical minerals in short supply. Disseminate this information to local, State, and Federal agencies involved in land-use and regulatory activities affecting mineral resources.

- Anticipate national and state demands for strategic minerals that will require increased mining of such minerals in California, particularly in environmentally sensitive areas. Complete California Minerals Appraisal Program maps for the entire State to provide information to planners and resource managers on the location and significance of mineral deposits.

- Undertake research on reclamation methods to reduce the costs of effective environmental protection for mining operations without reducing the required degree of protection needed for natural systems; assure the continued beneficial use of mined lands following mineral extraction.

- Increase the level of public awareness of the need for conservation of strategic and industrial metals.
Implementation: The Next Two Years

- Augment programs to educate the public in the need for conservation of materials and energy.

- Develop capability in mineral economics at the State level to provide information and recommendations on resource management strategies to meet future needs for critical mineral commodities.

- Proceed with completion of mineral deposit classification in urbanizing areas of state under provisions of the Surface Mining and Reclamation Act.

- Complete mineral resource classification projects in Orange County, San Gabriel Valley, San Francisco Bay Counties, San Bernardino, Sacramento area, Bakersfield, and Fresno County by 1982.

- Initiate mineral deposit classification activities in nonurban areas in the California Desert (strategic minerals, salines, industrial minerals, base and precious metals); Sierra Nevada Foothills (clay, asbestos, industrial sands, gold, limestone); Klamath Mountains (chromite, cobalt, gold, mercury, nickel); Coast Ranges (diatomite, phosphates, chromite, mercury, asbestos, limestone).

- Complete Weed, Sacramento, and San Bernardino sheets of the California Minerals Appraisal Program (regional mapping); begin map revisions for the San Francisco-San Jose, Trona-Kingman, Chico, and Los Angeles-Long Beach sheets.

- Undertake regional strategic minerals studies of tungsten, chromite, cobalt, and nickel resources in California.

- Conduct case studies of mined land reclamation suitable for California in the following types of mining operations: large open pit; rock quarries; and instream mining.
For the past five years, California has been in the forefront of attempts to deal constructively with the shocks, uncertainty, and higher costs of the world's energy future. California's innovations include the implementation of the Nation's first comprehensive energy planning and management framework in 1975, strict nuclear safety standards in 1976, the Nation's first and largest solar tax credit in 1977, pioneering building and appliance efficiency standards in 1978, and no-interest, deferred-payment utility loan programs in 1980.

While California continues to lead the Nation, much work remains to be done on a number of energy problems. The approximate doubling of foreign oil prices in 1979 dramatically increased the range of cost-effective energy conservation and production technologies, and underscored the need to implement these changes by investments as quickly as possible, both for consumer relief and for independence from foreign energy sources. Furthermore, the transportation sector -- consuming about 50 percent of California's total energy use and most of its liquid fuels -- remains a policy frontier.
Goals for Prosperity in 2000

- By the year 2000, reduce by 40 percent of 1980 levels the amount of gasoline used annually by passenger vehicles in California.

- Continue to expand and encourage investment in energy efficiency for residential, commercial, and industrial applications.

- Update and expand building and appliance efficiency standards to ensure that conservation technologies are utilized to the maximum extent feasible.

- Reduce by 40 percent the amount of energy used in State government operations; invest the savings resulting from these programs in additional, cost-effective energy measures in State facilities.

- Expand coordinated educational programs to ensure that Californians understand the nature of our energy problems and that they have access to the tools such as tax credits and technical assistance that can lower energy consumption.
Resource management in California has been hampered in the past by an absence of readily available, accurate, up-to-date information on our natural systems. Difficult decisions must be made daily regarding the use, enjoyment, or extraction of our natural resources. Lack of information exacerbates conflict and impedes logical long-term management. While conflicts over alternative uses of resources will undoubtedly intensify in the next two decades, decisions to resolve these conflicts will be better made if they are conducted in the light of the best available information.

A large number of local, state, and federal agencies are involved in keeping track of the physical and biological characteristics of California's natural resources. As our understanding of physical and biological environments expands, and the need to compare ecosystem components and data from many sources increases, information collection, storage, and data manipulation systems will be vital tools in future resource and environmental management programs. Currently, information availability is uneven at best -- different degrees of accuracy, different scales and methods of mapping, and different requirements for interpretation affect the utility of information from various sources. The sheer volume of raw data which a resources manager must contend with often leads to an information overload.

The coming decades will bring the rapid and widespread acceptance of computer-based systems for storage, integration, and graphical display of data relating to modern societal needs. Computers reduce the time needed to identify and interpret natural resources data by sifting rapidly through massive amounts of data to find the meaningful information for decision-makers. Computerized maps offer the unique advantage of very rapid revision and updating capability, and computer graphics can be used to communicate complex tabulations of statistics in a readily understood visual format.

An example of the need for better resource information is the issue of what is really happening to California's agricultural lands. Controversy has continued over how much prime agricultural land actually exists in the State and at what rate certain types of lands are being lost statewide through conversion to urban and suburban development. Computerized mapping techniques will permit rapid statewide compilation of information on conversions available now at the local level. By comparing the conversion maps with the new Important Farmland maps based on scientific soils data, computer techniques can produce statistical information on the amount and type of land which is being converted in California each year.
Goals for Prosperity in 2000

- Compile an accurate and readily available data base which will provide an efficient means for formulation and implementation of sound strategies for natural resource decision making, thus alleviating costly conflict and delays.

- Use data inventory systems to produce an annual Audit and Assessment of California's Resources. Computer assisted data management will provide the capability for timely revisions of statistics such as the rate of conversion of agricultural lands to urban uses.

- Develop a California Automated Resources Inventory to serve as a data base and a computer graphic system for general natural resource and environmental data integration. This information should be made readily available to the public.

- Establish networks to exchange information on natural resources from stored data banks of state, federal, and local agencies.

- Improve environmental and resource education through computerized graphics and mapping.

- Develop computerized capability to search data files and aggregate resources data to speed up environmental review and permitting of new projects; improve capability to predict and resolve resource conflicts.
Every citizen in the United States, rich or poor, owns the equivalent of 2.7 acres of public land. These lands are richly endowed with renewable and nonrenewable resources and have the potential of providing enough income to cure many of the fiscal problems now being faced by our cities. But because of unacceptable management practices and out-of-date fee structures, our citizens are losing benefits that they could enjoy from these public lands.

The Federal Government administers 44 percent of California's lands. Therefore, effective management of California's natural resources requires a strong federal-state partnership. In the past, some federal resource management policies have reflected a philosophy which has encouraged short-term exploitation rather than promoted long-term sustainability of our renewable resources. That exploitive era must be put behind us. These heritage lands must be managed for many public uses, balancing needs for income, recreation, wilderness values, and resource productivity.

We are in need of a national commitment to intense management and careful stewardship of our public lands. We need new programs to invest in upgrading their productivity. We simply can no longer allow this vast source of renewable income to lay wasting in the midst of our resource crisis. By making such a commitment, the Federal Government will create jobs, provide income for investment, and contribute greatly to the social stability and future economic health of all citizens.

It will be essential during the next twenty years to encourage the coordination of federal management practices with California's resource investment strategy. Long-term productivity in the public trust must become the key principle by which our federal lands and their natural resources are administered.
Goals for Prosperity in 2000

- **Environmental Health:** Improved enforcement of federal water and air quality standards is needed to build on the progress made so far in controlling pollution in California.

- **Forests:** More investment is required to promote the productivity of forests as diverse natural systems. Improved pricing policy for public timber sales is needed. Federal timber management and harvest methods continue to lag behind the practices of progressive members of private industry.

- **Mining:** Current federal practices for exploration, extraction, and reclamation should be re-examined and revised in the context of meeting the public trust for equitable revenues and environmental resource stewardship.

- **Water:** An era has ended in which unlimited water supply development proceeded under subsidies from the taxpayers. Federal agencies must now be assisted in making the transition to fair water pricing in which recipients bear the true costs, and in converting to nonstructural alternatives such as new approaches to flood control and water conservation.

- **Rangelands:** Grazing management must be improved to ensure that the long-term productivity of the rangelands is protected and enhanced, especially through soil conservation.

- **Fisheries:** Resource restoration plans for offshore biological resources are needed to maintain the production of fish (e.g., salmon) and shellfish as foodstocks and recreational resources. Increased federal investment is needed to restore coastal and inland fisheries damaged by federal activities, especially timber harvesting on federal lands.

- **Soils:** Existing federal programs need to be refocused and funding increased to promote the long-term productivity of soils for sustained timber and agricultural yields.

- **Recreation use:** Improve recreational access and opportunities on federal lands near the urban centers, especially Los Angeles.
"The challenge is immense, and I am glad that it is, for only the greatest of challenges are able to capture the imagination of men and women everywhere...only a challenge of many parts is able to stimulate simultaneously the response of theologians, philosophers, scientists, and politicians. The challenge is not a gloomy one of avoiding doomsday; it is a joyous one of introducing into the world a dynamic equilibrium between man and nature, between man and man."

Prime Minister Pierre E. Trudeau, 1974

California is regarded by many as the land of the future, even in this era in which some people find it hard to be sure whether indeed we have a future. The unprecedented and strongly bipartisan steps taken since 1977 by the California Legislature to enhance California's natural resources are a clear signal of California's abiding faith in a future of prosperity. And, in the private sector, an increasing number of groups and individuals, including labor, business, agriculture, citizen's committees, religious and ethnic groups, consumer and environmental organizations, are committed to reversing declines in our natural resources. For our people are well aware that these declines hit urban citizens, especially the poor, with higher food and home prices, less job security, and higher energy costs. No longer is resources management the concern of the elite few. No longer can decisions about natural resources be left solely to the technicians. Resource management is everybody's business. We all benefit from clean air, safe energy sources indigenous to our state, paper, furniture and houses from the trees in our forests, the abundant water from our forested mountains, the fish in our clean streams and coastal waters, and spiritual renewal from the wilderness.

Investing for Prosperity does not attempt to prophesy the future. Instead, it presents our best estimates of realistic, achievable goals for natural resource enhancement in California. Using these best estimates, we can chart a course of action, as a prudent investor would, to channel scarce public funds into productive enhancement of these fundamental elements of our natural wealth.

It is essential that the public participate in their government's formulation of a resources plan for our future that is understandable, acceptable, and cost-effective. This document is a beginning.

Despite the despair around us today as we learn of resources in decline around the world, the actions of Californians in resource stewardship are an affirmation of confidence in the future. If we invest carefully, we can shape our future and not be its victims. We are in charge of our own destiny.
1981-82 Energy & Resources Fund

Many of the implementation elements of this twenty-year program are proposed in the Governor's Budget for funding in 1981-1982 from the Energy and Resources Fund established in 1980 by AB 2973 (Vasconcellos). A list of proposed elements for consideration by the Legislature is compiled on the following pages.

Department of Forestry

- Provide grants and technical assistance to local government and non-profit organizations for the purpose of establishing community and urban tree nurseries. $2,209,625
- Expand the Wildfire and Chaparral Management Program to reduce the potential of large conflagrations through prescribed and controlled burning, and to improve watershed wildlife habitat and recreation opportunities. $4,040,000

Department of Fish and Game

- Modernize and expand Nimbus Salmon Hatchery. $6,300,000
- Improve salmon and steelhead stream habitat to increase the level of natural spawning. $2,997,000
- Construct six salmon rearing ponds adjacent to the Tehama-Colusa spawning channel. $225,000
- Dredge and remove silt in the Buena Vista Lagoon Ecological Reserve in San Diego County. $500,000
- Develop marsh management plans for private lands in the Suisun Marsh. $98,300
- Match federal funds for wildlife habitat improvement projects in national forests and on other federal lands in California. $1,000,000
1981-82 Energy & Resources Fund

- Develop two fishing piers (Port of Oakland and City of Brisbane) and restore the Berkeley Pier. $1,948,000

- Acquire data to complete the California Wildlife Habitat Relationships System. This system will be used to assist land resource managers to select land use plans which are least detrimental to wildlife and their habitat. $150,000

Department of Water Resources

- Construct and begin operation of a reverse osmosis desalting plant. Plant to serve as model for future plants needed to recycle agricultural irrigation water and reduce salt accumulation in San Joaquin Valley. $4,680,000

- Continue a statewide program of public education and information to reduce the use of water in the home and urban landscaping. $341,000

- Continue the Urban Water Conservation Device Distribution program with statewide coverage by 1983. $1,678,000

- Agricultural Water Conservation Research and Demonstration projects including the establishment of the California Irrigation Management Information System. $1,039,800

Water Resources Control Board

- Dredge and remove silt in Upper Newport Bay. $2,000,000

Department of Conservation

- Continue development of the California Automated Resource Information System. $534,475
• Continue the Soils Resource Data Program. $109,102

• Continue the Regional Geologic Mapping Program. $109,101

**Department of Boating and Waterways**

• Assist local government in shore protection and beach restoration. $2,883,000

• Acquire and develop two boat-in and river access sites on the Sacramento River. $190,000

**State Coastal Conservancy**

• Provide financial and technical assistance to non-profit land trusts for preserving scenic coastal areas and providing and maintaining public coastal access areas. $1,000,000

• Dredge and remove silt at the San Diequio Lagoon as part of a comprehensive marsh restoration project in cooperation with local government. $500,000

**Department of Parks and Recreation**

• Provide grants to local government for the establishment of urban parks and recreation facilities under the Roberti-Z'berg Urban Park Grant Program. This is in addition to the General Fund Allocation of $10 million in 1981-82. $4,000,000

• Establish an Urban Fishing Element within the Roberti-Z'berg program to provide 100 percent construction grants for renovation of urban lakes to support urban fishing. $6,000,000

• Install various solar retrofit projects for facilities within the State Park System. $500,000

**Department of Food and Agriculture**

• Establish an Agricultural Resources Investment Fund to support research and demonstration projects to enhance the long-term productivity of our agricultural resources. $12,500,000
Department of Health Services

- Establish a two-year project to identify potential hazardous waste disposal sites. $443,972
- Establish a two-year project to identify abandoned sites and to test for hazardous conditions and take corrective action. $840,989
- Establish a two-year project to develop alternate technologies for recycling and recovering hazardous waste projects, as an alternative to land-fill disposal. $258,600

Energy Commission

- Fund under contract a commercial demonstration of a 5 MW electrical solar salt pond power project at the Salton Sea. Initial funding to be 25 percent share of the project cost in joint agreement with federal and private participants. $2,250,000

State Lands Commission

- Construct a 300 kilowatt demonstration Solar Pond Power Plant at Owens Lake in cooperation with the U.S. Department of Interior. $1,000,000

University of California

- Accelerate the UC System Utilities Conservation Program. $260,750
- Conduct research into development, production, distribution and use of energy, directed towards California needs and problems. $155,250
- Generate, assemble, and disseminate information on technologies that are environmentally sound, renewable and practical alternatives. $231,080

State Facilities

- Install various energy conservation and cogeneration projects at State facilities and institutions. $8,655,000
The following individuals were responsible for developing plans committing their departments to this investment program: Carla Bard, Chairperson of the State Water Resources Control Board; Pete Dangermond, Director of the Department of Parks and Recreation; Charles Fullerton, Director of the Department of Fish and Game; Priscilla C. Grew, Director of the Department of Conservation; Marty Mercado, Director of the Department of Boating and Waterways; David Posenen, Director of the Department of Forestry; and Ron Robie, Director of the Department of Water Resources.

Dr. Priscilla C. Grew edited Investments for Prosperity. Alex Eng designed the format and art work.

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“The way towards the future lies neither with a corrosive pessimism that we are in a ‘runaway world’ nor with the equally evasive optimism that we may continue to muddle through with ‘business as usual’.”

John McHale

“We are living through the closing chapters of an established and traditional way of life. We are in the early beginning of a struggle, which will probably last for generations, and that is to remake our civilization. It is not a good time for politicians, it is a time for prophets and leaders and explorers and inventors and pioneers and for those who are willing to plant trees for their children to sit under.”

Walter Lippman