## GARDNER M. BROWN, JR. Department of Economics University of Washington Seattle, Washington 98195 (206) 543-5744 (office) (206) 523-7915 (home)

Born: Boston, Mass., December 15, 1935

# **Education:**

University of California-Berkeley - M.A., Ph.D. 1964 Antioch College - A.B. 1959

# **Positions Held at University of Washington:**

Chairman, Department of Economics	1985-1990
Acting Chairman	1984-1985,
	2000-2001
Director, Institute for Economic Research	1979-1984
Professor of Economics, Emeritus	2001-
Professor of Economics	1978-2001
Adjunct Prof., Inst. for	1973-1995
Environmental Studies	
Program on the Environment	1998-
Associate Professor of Economics	1973-1978
Assistant Professor of Economics	1965-1973

# **Other Positions Held:**

Visiting Professor University of Cambridge	Spring, 1999
Visiting Professor, University of Gothenburg, Sweden	1998-1999, 2001
Visiting Research Fellow Marine Policy Center,	1992 - 1993
Woods Hall Oceanographic Institute	1991 - 1992
Visiting Research Fellow, Beijer Institute, Stockholm	May - 1992
Visiting Professor, Stanford University	1991 - 1992
Université de Genève, Invited Professor	May - 1989
University of Washington Visiting	
Exchange Professor, Université de Droit, d'Economie	
et des Sciences, Aix-Marseilles	March 1987
Visiting Professor, University of Aix-Marseilles II	1983-1984
Centre National de la Recherche Scientifique,	
France, Res. Fellow	1983-1984

Visiting Scholar, University of Cambridge

1977-1978

#### **Honors**

Rockefeller Foundation Environmental Fellow Honorary doctorate from University of Gothenburg, 2001 Resources for the Future University Fellow, 20001977-1978

## **BOOKS PUBLISHED:**

The Preservation and Valuation of Biological Resources, edited with Orians, Kunin and Swierzbinski, 1991

Economics of Ocean Resources, edited with J. Crutchfield, Washington Sea Grant, 1982

Waterfowl and Wetlands: Toward Bio-Economic Analysis, with Judd Hammack. Johns Hopkins University Press, 1974

Cleaning Up Europe's Waters: Economics, Management, Policies, with Ralph Johnson. Praeger Publishers, 1976

## **ARTICLES PUBLISHED:**

"A Market Solution for Preserving Biodiversity: The Black Rhino," in Shogren and Tschirardt eds, Protecting Endangered Species in the United States: Biological Needs, Political Realities, and Economic Choices, Cambridge University Press, 2001.

"Using Antibiotics when Resistance is Renewable," with R. Rowthorn, in R. Laxminarayan, ed., *Battling Resistance to Antibiotics and Pesticides: An Economic Approach*, Resources for the Future, 2002.

"Bacterial Resistance and the Optimal Use of Antibiotics," with R. Laxminarayan, *Journal of Environmental Economics and Management*, 42, 183-206, 2001

"Heterogeneous Preferences Regarding Global Climate Change," with D. Layton, *Rev. of Econ. and Statistics*, 82, 616-624, 2000

"Renewable Natural Resource management and Use Without Markets," *Journal of Economic Literature*, December 2000.

"Why Economics Matters for Endangered Species Protection and the ESA," with Jason Shogren, John Tschirhart, et al., *Conservation Biology*, 13(6), December 1999, 1257-1261.

"When a High Discount Rate Encourages Biodiversity," with R. Rowthorn, *International Economic Review*, 40(2), May 1999

"Economics of the Endangered Species Act," with J. Shogren, J. of Economic Perspectives, 12, 1998.

"A Metapopulation Model with Private Property and a Common Pool," with Jonathan Roughgarden, *Ecological Economics*, 1997

"Resistance Economics: Social Cost and the Evolution of Antibiotic Resistance," with D. Layton, Environment and Development Economics 1, July 1996

"Biodiversity, Economic Growth and the Discount Rate," with Bob Rowthorn, in T. Swanson, ed., *The Economics and Ecology of Biodiversity Decline*, Cambridge University Press, 1995.

"Economic Values of Biodiversity" with E. Barbier, et al. in V.H. Heywood, ed. *Global Biodiversity Assessment*, United Nations Environment Programme, Cambridge University Press, 1995.

"An Ecological Economy: Notes on Harvest and Growth" with Jonathan Roughgarden, in Charles Perrings, Karl-Göran Mäler, Carl Folke, C.S. Holling, and Bengt-Jansson, eds., *Biodiversity Loss, Economic and Ecological Issues*, Cambridge University Press, 1995.

"Estimating Non-use Values Requires Interdisciplinary Research," in B. Burgenmeier (ed.), *Economy, Environment and Technology: A Socioeconomic Approach*, M.E. Sharpe, 1994.

"The Marginal Cost of Species Preservation: The Northern Spotted Owl," *JEEM*, with Montgomery and Adams, 26, 1994. Reprinted in K. Willis, K. Button and P. Nijkemp, eds. *Environmental Valuation*, Vol. 1. Edward Elgar,1999. The International Library of Environmental Economics and Policy, *Economics of Forestry*, Ashgate Pub. Ltd., 2002.

"The Inefficiency of Decentralized Non-Renewable Resource Extraction: The Case of Soviet Timber," with Kar-Yiu Wong, *JEEM*, 1993.

"Economics of Natural Resource Damage Assessment: A Critique," in R. Kopp and V.K. Smith (eds.), *Valuing Natural Assets: The Economics of Natural Resource Damage Assessment*, Resources for the Future, 1993.

"The Viewing Value of Elephants," in E.B. Barbier, ed., *Economics and Ecology: New Frontiers and Sustainable Development*, Chapter 9, Chapman and Hall, 1993.

"Economics of Species Preservation," with C. Montgomery, Contemporary Policy Issues, X, April, 1992

"Optimal Recovery Paths for Perturbations, Trophic Level Bioeconomic Systems," with J. Wilen, *Journal of Environmental Economics and Management*, 13, September, 1986

"Estimating the Cost of Oil Spills: Lessons from the AMOCO-CADIZ Incident," with T. Grigalunas, et al., Marine Resource Economics, 1986

"Preserving Endangered Species and Other Biological Resources," in *Richerche Economiche* XXXIX, 4 (Oct.-Dec. 1985). reprinted in *The Science of the Total Environment* 56 1986

"Harvest Policies and Non-Market Valuation in a Predator-Prey System," with D. Ragozin, *Journal of Environmental Economics and Management*, 12, 1985

"The Hedonic Travel Cost Method," with R. Mendelsohn, in *Review of Economics and Statistics*, LXVI, 3, August, 1984

"A Model for Valuing Endangered Species," Journal of Environmental Economics and Management, 1984

"Pollution Control by Effluent Charges: It Works in the Federal Republic of Germany, Why Not in the U. S.?" (with Ralph W. Johnson), *The Natural Resources Journal*, October 1984

"Revealed Preference Approaches to Valuing Outdoor Recreation," with R. Mendelsohn, *Natural Resources Journal*, July 1983

"Steel and Energy Substitution in U. S. Manufacturing 1947-1971" with V. Gamponia, *Southern Economic Journal*, 1981

"Characterizing a Production or a Cost Function by Elasticities of Substitution," with Heejoon Kang, *Review of Economic Studies*, October, 1980

"An Assessment of Water Quality Management Policies in Selected Industrialized Countries," with J. Ph. Barde and P-F. Teniere-Buchot, *Ambio*, 1979

"Implications of Alternative Measures of Natural Resource Scarcity: with Barry Field, *Journal of Political Economy*, April 1978

"Economic Valuation of Shoreline: A Reply," with H. Pollakowski, *Review of Economics and Statistics*, 1979

"Economic Valuation of Shoreline," with H. Pollakowski, *Review of Economics and Statistics*, August 1977

"Mallard Population Dynamics and Management Models," with Hammack and Tillman, *Journal of Wildlife Management* 40 (3), 1976 Reprinted in Resources for the Future reprint series.

"An Optimal Program for Managing Common Property Resources with Congestion Externalities," *JPE*, May/June, 1974

"Welfare-Maximizing Price and Output with Stochastic Demand: Reply" with M. B. Johnson, *American Economic Review*, March 1973

"Dynamic Economic Management of Migratory Waterfowl," with Judd Hammack, *Review of Economics and Statistics*, February 1973

"Economic Optimization of a Single Cell Aquifier," with Robert Deacon, *Water Resources Research*, June 1972

"Pricing Seasonal Recreational Services," Western Economic Journal, June 1971

"The Price and Output of Public Services Under Uncertainty: Reply," with M. B. Johnson, *American Economic Review*, June 1970

"Dynamic Efficiency of Quality Standards or Charges," with Brian Mar. Water Resources Research, 4 December 1968

"The Price and Output of Public Services Under Uncertainty," with M. B. Johnson. *American Economic Review*, March 1969

"The California Water Project: Is Public Decision-Making Becoming More Efficient?" Water Resources Research, 4 June 1968

"A Socially Optimum Pricing Policy for a Public Water Agency," with C. B. McGuire, Working Paper No. 148, Center for Research in Management Science, University of California, Berkeley, Calif. (mimeographed) Published in *Water Resources Research* 3, First Quarter, 1967. Reprinted in V. Smith (ed.), *Economics of Natural and Environmental Resources* (Gordon and Breach, 1977), and in P. Dasgupta and K-G Maler (ed.), *Environmental Decision-Making* (UNEP, 1983)

## PAPERS IN EDITED VOLUMES, REPORTS, PROCEEDINGS:

"Benefits of Biodiversity Evaluation: Why Biodiversity Valuation is Imperative," in Investing in Biological Diversity: The Cairns Conference, OECD, 1997.

"Management of Wildlife and Habitat in Developing Economies," in P. Dasgupta and K-G Maler (eds.), Environment and Emerging Development Issues, Oxford University Press, 1997, paperback in 2000.

"Biodiversity, Economic Growth and the Discount Rate," in Timothy Swanson (ed.), *The Economics and Ecology of Biodiversity Decline, Cambridge University Press*, 1995.

"Rural Amenities and the Beneficiaries-Pay-Principle," Rural Development Program, OECD, 1993.

"Methods for Valuing Acidic Deposition and Air Pollution Effects, Part A," with Mark Plummer, National Acid Precipitation Assessment Program, SOS/T Report No. 27, December 1989.

"The Economic Value of Elephants," with W. Henry. International Institute for Environment and Development, LEEC Paper 89-12, London Environmental Economics Centre, 1989.

"Optimal Genetic Resources in the Context of Asymmetric Public Goods," Paper presented at Sixth Pacific Coast Resource Modeling Conference, 1987. Published in *Essays in Honor of John Krutilla*, Johns Hopkins Press, 1988.

"Valuing Oregon Salmon by Using a Multimarket, Hedonic Travel-Cost Method," in D. Hueth et al., eds., Sport Fishing: A Comparison of Three Indirect Methods for Estimating Benefits, U. S. Department of Agriculture, Pacific Northwest Research Sta. Res. Paper PNW-RP-395, 1988.

"Net Economic Recreation Values for Deer and Waterfowl Hunting and Trout Fishing, 1980," with Michael Hay, U. S. Fish and Wildlife Service, Div. of Policy and Directives Management, Working Paper No. 23, 1987.

"When Do Bells and Whistles Make Finer Music? Static Versus Dynamic Models in Fishery Management," *Essays in Honor of James Crutchfield*, Ed Miles *et al.* ed., University of Washington Press, 1986.

"Endangered Species, Genetic Capital and Cost Reducing R & D," with J. Swierzbinski, International Symposium on Economics of Ecosystem Management, September 1983, Halkadiki, Greece. *Economics of Ecosystem Management*, D. O. Hall, N. Myers and N. S. Margaris, Eds., Ch. 15, pp. 111-127 (1985)

"The Effluent Charge System in The Federal Republic of Germany," with Ralph Johnson, Office of Policy Analysis, EPA, July 1985

"Economic Instruments: Alternatives or Supplements to Regulations?" in OECD, *Environment and Economics Issue Papers*, International Conference, June 1984

"Economic Instruments: Review and Outlook," in OECD, *Environment and Economics*, Background Papers, Vol. 11, International Conference, June 1984

"Tourists and Residents," Chapter 4 in NOAA, Assessing the Economic Damage of Oil Spills: The AMOCO CADIZ Case Study, Feb./March 1983

"Optimal Harvest Policies in a Predator-Prey System, with David Ragozin in R. Lamberson, *Mathematical Models of Renewable Resources*, Humboldt State University Mathematical Modeling Group, 1982

"Estimating Non-Market Economic Losses from Oil Spills: AMOCO CADIZ, Steuart Transportation, and Zoe Colocotroni," in *The Cost of Oil Spills*, OECD, Paris, 1982

"Recreation" in G. Brown and J. Crutchfield, ed., *Economics of Ocean Resources*, Washington Sea Grant, 1982 "Partial and Full Elasticities of Substitution and the Energy Capital Complementarity Controversy," with Heejoon Kang in E. Berndt and Barry Field, eds., in *Modelling and Measuring Natural Resource Substitution*, M.I.T. Press, Cambridge (1981)

"Recreation Valuation," in J. Powell and G. Loh, *An Economic Analysis of Non-Timber Use of Forest Land in the Pacific Northwest* in the Forest Policy Project, Pacific Northwest Regional Commission, Vancouver, Washington (May 1981)

"The Adequacy of Measures for Signaling the Scarcity of Natural Resources," with Barry Field, in V. Kerry Smith, ed.), *Scarcity and Growth Reconsidered* (Johns Hopkins University Press 1979), pp. 218-248

"Criteria for an Appropriate Institutional Structure," in *Regional Environmental Policy: The Economic Issues*, ed. by H. Siebert *et al.*, N. Y. University Press, 1979

"The Value of Wildlife Estimated by the Hedonic Approach," U. S. Fish and Wildlife Service, Division of Program Plans, Working Paper No. 6, Washington, D. C. (with J. Charbonneau and M. Hay), 1978a

"Estimating Values of Wildlife: Analysis of the 1975 Hunting and Fishing Survey," U. S. Fish and Wildlife Service, Division of Program Plans, Working Paper No. 7, Washington, D. C. (with J. Charbonneau and M. Hay), 1978b

"The Viewing Value of Elephants," prepared for the Ivory Trade Review Group, Oxford, England (1989)

"Promising Research Topics Regarding Non-Consumptive Use of Forest Related Lands," in *Research in Forest and Forest Policy* (Johns Hopkins Press, 1977)

"Comprehensive Management and Effluent Change Systems in European Water Management," with Ralph Johnson, International Association for Administration, Caracas, 1976

"Charge and Subsidy Programs of Several European Countries," in *The Practical Application of Economic Incentives to the Control of Pollution*, 1977

"Effluent Charges," with A. Kneese, S. Rose-Ackerman, and O. Davis, *National Technical Information Service*, 1976

"Choice of Tools in Environmental Problems: Discussion," in Edwin Mills (ed.) *Economic Analysis of Environmental Problems*, NBER, 1975

"A Preliminary Investigation of the Economics of Migratory Waterfowl," (with Judd Hammack) in *Natural Environments: Studies Theoretical and Applied Analysis* (Johns Hopkins University Press, 1974), pp. 171-204

"Some Economic Aspects of Groundwater Use," in C. Corker, *Ground Water Law Management and Administration*. 120 pp. Legal Study 6, report prepared for the National Water Commission, 1971. (Chapter in monograph.)

"Economic Valuation of the 1967 Sport Salmon Fishery of Washington," with Steven Matthews. Washington Department of Fisheries Research Bulletin. Technical Report 2. 1970

"A Money Flows Approach to Investment in Game Management," (with James A. Crutchfield) *Proceedings of the Conference on Management of African Wildlife*, Nairobi, Kenya. July 1967

"The Economics of Irrigated Agriculture," in *Water Resources Management and Public Policy*. Seattle: University of Washington Press, 1968

"Forecasting Industrial Water Demand: Critique," in *Forecasting the Demands for Water* (Derrick Sewell and Blair Bower, eds.) Ottawa: Department of Energy, Mines and Resources, 1968

"The Projection of Washington State Economic and Population Growth, 1980 - 2020" Sec. III, "Industry Growth Projection," Appendix F; "Industrial Demand for Water, 1980 and 2020," Appendix C, in\_An Initial Study of the Water Resources of the State of Washington. Pullman: State of Water Research Center, 1967. Technical Report.

"Competition for Water in an Expanding Economy: The Case of Irrigated Agriculture: Discussion," in Water Resources and Economic Development of the West 16, 1967

#### RESEARCH RECENTLY COMPLETED AND IN PROGRESS:

- "Different Property Rights Regimes in the Lake Victoria Multiple Species Fishery," under review.
- "Lake Victoria Fisheries: Policy Conflicts Created by Predator-Prey Relations with Bret Berger and Moses Ikiara, under review.
- "Capturing the Value of National Parks in Zimbabwe," with Michael Ward and Doris J. Jansen.
- "Optimally Pricing Game Parks in Kenya," with Tim Swanson, Michael Ward and Dominic Moran.
- "Crowding and Endogenous Population Growth During Economic Development."
- "Antibiotic use in a Renewable Setting"

# **RESEARCH GRANTS AND FELLOWSHIPS:**

Fulbright Fellowship, India (declined) University of California Water Research Center Ford Foundation Grant, University of California,	1963-64 1963-64
Center for Research in Management Science	1965
State of Washington Water Research Center	1966-69
Resources for the Future	1967-69;
	1972
University of Washington, Summer Salary Award	1971
University of Washington, Sea Grant	1971-72
National Science Foundation	1973-75
American Council of Learned Societies, Travel Grant	1974
National Science Foundation	1975-76
State of Washington Water Research Center	1975
Rockefeller Foundation Fellowship	1977-78
National Science Foundation	1977-78;
	1979
NOAA, Bioeconomic Analysis	1980-82
Sloan Foundation	1980-85
NOAA, Ocean Resources Conference	1980-82
BARD-U.SIsrael Agric. Research & Development Fund	1982-85
NSF-International Cooperative Research Grant	1983-85
University of Aix-Marseilles II	
Visiting Faculty Fellowship	1987
University of Washington, Provost's University Competition	1990-1991
USFS	1990-1991
National Marine Fisheries Service	1991-1992
National Science Foundation (\$234,000)	1992-1994
United Nations	1994-1996
Washington Department of Ecology	1994-
Electric Policy Research Institute	1996-1998
SIDA, Sweden	2000-
EDITORIAL BOARD:	
Journal of Environmental Economics and Management	1980-1989,
Associate Editor	1998-2001
Journal of Marine Resource Economics	1982-1993
Environment and Development Economics	1996-
International Journal of Agricultural Resources, Governance and Ecology	2000

# **REVIEWER:** Recent

Quarterly Journal of Economics Journal of Political Economy Review of Economics and Statistics

<sup>&</sup>quot;Valuing Multiple Programs to Improve fish Populations," with D. Layton and M. Plummer.

<sup>&</sup>quot;Maximum Sustained Yield and Maximum Economic Yield in a Zanzibar Fishery."

Journal of Marine Resource Economics

Review of Economic Studies

American Economic Review

Canadian Journal of Fisheries and Aquatic Sciences

Cambridge University Press

National Science Foundation

Journal of Environmental Economics and Management

American Journal of Agricultural Economics

Land Economics

Journal of Urban Economics

Ecological Economics

Social Science Research Council (Canada)

Journal of Business and Economic Statistics

Western Journal of Agricultural Economics

Marine Resources Economics

Coastal Zone Management Journal

Journal of Urban Economics

National Sea Grant

National Oceanic and Atmospheric Administration

M.I.T. Press

Sloan Foundation

National Research Council

Ambio

Wisconsin Sea Grant

Rhode Island Sea Grant

Pacific Northwest Halibut Commission

Northwest Environmental Journal

## **PAPERS DELIVERED SINCE 1980:**

Columbia	2000
University of Calgary	2000
University of Geneva	2000
University of Umea	1999
University of Oregon	1999
University of Trondheim	1998
University of Gothenberg	1998
European Association of Environmental and Resource Economists, Venice, Italy	1998
Beljer Institute, Stockholm, Sweden	1998
NBER Workshop, Environmental Economics	1998
American Agricultural Economics Association	1998
Economic Research Service, Rural Land use Conferences	1998
NOAA Workshop on the Application of Stated Preference Methods to Resource	
Compensation	1998
Conference, Social Order and Endangered Species Act, U. of Wyoming	1997
American Association of Environmental and Resource Economics, Annapolis, MD	1997
Western Economic Association, Seattle, WA	1997
American Association for the Advancement of Science	1997
American Economics Association (Discussant), New Orleans, LA	1997

OECD Workshop on Biodiversity, Cairns, Australia	1996
Conference, Ecological Economics Workshop, U. of California, Santa Barbara	1996
UNEP Workshop on Valuation Methodologies, Bali	1995
Beijer Institute of Ecological Econmics, Environment and Development Conference,	
Stockhlom	1995
Stanford University	1995
American Economics Association, AERE	1994
AAAS Annual Meeting, Boston 1993; UW School of Law, Water Resources	1993
Conference; Biological Diversity Conference, Cambridge England;	
OECD, Rural Amenities Workshop, Paris	
Conference, Environment and Development, Conflict and	1992
Convergence, Geneva	
Beijer International Institute of Ecological Economics	1991-1992
First & Second Conference on the Ecology and Economics of Biodiversity Loss,	
Stockholm	
Conference on the Complex Ecological Economic	1992
Systems Dynamics, Stockholm	
Gruter Institute Conference on Uses of Biology	1992
in the Study of Law, Squaw Valley	
AEA Meetings; U. of Michigan; Stanford; Univ. of Calif.	1992
Berkeley and Santa Barbara	
Western Economic Meetings	1991
Socioeconomic Approach to the Environment, Geneva	1991
AAAS Annual Meeting, Washington, D.C.	1991
Stanford University	1990
UN Wider Conference on the Environment	1990
and Emerging Development Issues, Helsinki	
International Conference on Acid Rain, Hilton Hotel, SC	1990
Library of Congress, Washington, D.C.	1990
Rockefeller Foundation, Bellagio, Italy	1990
Woods Hole Oceanographic Institute	1990
University of Geneva	1989
AERE Workshop on Fishery Economics Research, Seattle	1988
(discussant)	
University of Colorado, Natural Resource Law Center	1988
Arizona State University, Tucson	1988
Universite de Droit, d'Economie et des Sciences,	
Aix-Marseille, France	1987
Pacific Coast Resource Modeling, Vancouver, B.C.	1987
Pacific Coast Resource Modeling, Vancouver, B. C.	1987
Giannini Foundation Lecturer, Berkeley, Davis, CA	1986
International Conference on Man's Role in Changing	
the Global Environment, Venice	1985
University of Michigan	1985
Universities of Nice, Aix-Marseilles II, and Bordeaux;	1985
the Global Environment, Venice	1002
International Symposium on Economics of	1983
Ecosystem Management, Halkadiki, Greece	1001
OECD Workshop on Genetic Diversity, Paris	1984

National Fisheries Research Institute, Nantes	1984
Western Economic Association Meetings	1983, 1982, 1981
EPA, FRG and German Marshall Fund Seminar, Bonn	1983
Woods Hole Oceanographic Institute	1982
American Economic Association	1982, 1980, 1979
Ben Gurion University of the Negev, Hebrew University,	1981
Tel Aviv, Israel	
University of Mannheim	1982
Western Association for the Valuation of Ecosystems	1981
U. S. Strategy Conference on Biological Diversity,	1981
Panel Member	
OECD Conference on Damages from Oil Spills, Paris	1981
Ocean Resources Economics Conference	1981
Workshop on Uncertainty in Fisheries Economics, discussant	1981
Atlantic Economic Society	1980

## **ASSOCIATIONS**:

American Economic Association

American Association of Environmental Economists

## **CONSULTANT**:

1970-78: National Water Commission

U. S. Forest Service

Quinault Indian Reservation

United Nations, FAO, Water Resources Branch

Sierra Club Audubon Society

National Commission on Water Quality OECD, State of Washington, Departments of

Revenue and Fisheries

1982-83: U. S. EPA; U. S. Forest Service; State of Washington Department of Commerce and

**Economic Development** 

1979-92: U. S. Department of the Interior

1979-: Various law firms

1985-86: U. S. Department of Commerce

1987-90: State of Washington, Department of Environment

1989-: State of Alaska

1987-: NOAA 1991-1993: U. S. AID 1993-1995 World Bank 1995-1997 Deloitte and Touche

1997-1999 Puget Sound Energy 1999- SIDA

## MAJOR UNIVERSITY COMMITTEES

Program on the Environment, Governing Board Royalty Research Fund	1999-2001 1996-1998
President's Task Force on Environmental Education	1995-1996
Conservation, Biodiversity Advisory Committee	1993-1995
Arts and Sciences College Council	1775-1775
Academic Senate	
Dean's Review Committee of Textiles and Nutritional Sciences Program	
Policy and Tenure Committee, Economics, and the Institute for Environmental St	ıdies
Personnel Committee, Department of Economics	adies
Academic Senate's Appeal Committee; Termination of	1983
the SMT Program	1705
Search Committee for Chairman, Political Science Department	1990
Urban and Economic Development Interdisciplinary	1,,,,
Research Group	
Search Committee for Chairman, American Ethnic Studies,	1987 - 1993
European Faculty Exchange Committee	190, 1990
RECENT NATIONAL COMMITTEES:	
Member, National Science Board,	1988 - 1990
Task Force on Global Biodiversity:	1700 1770
1990.	
1770.	
Member, National Research Council, Committee for	1988 - 1992
Review of Outer Continental Shelf,	1,00 1,,,2
Socio-Economics Panel,	
source Eventuality I was,	
Member of American Economic Association/AAAS	1987 - 1992
Liaison Committee,	
Member, National Research Council, National Academy of Sciences	1992 - 1994
Ocean Studies Board, Committee on Fisheries	
Member, National Research Council, National Academy of Sciences	1992 - 1994
Committee on Endangered Species	
Member, National Resource Council, Nation Academy of Sciences, Cumulative	2001 - 2002
Environmental Effects of Oil and Gas Activities on Alaska's North Slope	