CURRICULUM VITAE

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Present Position:

Professor, Department of Fisheries, College of Natural Resources, Humboldt State University, Arcata, California 95521

Education:

B.A., Biology, Reed College, Portland, Oregon. 1971.
Ph.D., Fishery Science (Minors in Biometrics, Public Policy),
Cornell University, Ithaca, New York. 1978.

Experience:

2001-present Charirman, Department of Fisheries, Humboldt State University.

1998-1999 Difference-in-Pay Leave from Humboldt State University

1994-1998 Charirman, Department of Fisheries, Humboldt State University.

1994 Visiting Scientist, National Institute of Water and Atmospheric Research, Christchurch, New Zealand (sabbatic leave).

1985-1987 Visiting Associate Professor, Department of Fisheries and Wildlife, Oregon State University, Corvallis, Oregon (25%: 85-86); Co-leader, Oregon Department of Fisheries and Wildlife's Chinook Salmon Planning Team (75%: 85-86; 100%: 86-87).

1984-1985 Visiting Sea Grant Professor, Department of Fisheries and Wildife, Oregon State University, Corvallis, Oregon. (non-teaching sabbatic leave for academic year)

1976-present Assistant/Associate/Full Professor, Department of Fisheries, Humboldt State University. Full-time position in Fisheries program with primary responsibilities in areas of population dynamics, fishery management, and sampling theory. Direction of graduate student (MS) research.

1980-1983 Director of Graduate Studies, College of Natural Resources, Humboldt State University (half-time release for a three year term). Coordination and administration of graduate program, and review and approval of all theses submitted for the M.S. degree in Natural Resources.

Professional Organizations, Technical Committees:

Member, American Fisheries Society; Fellow, American Institute of Fishery Research Biologists;
At-Large Appointed Member, Scientific and Statistical Committee, Pacific Fishery Management Council (1987-1992; Vice-Chair 1988-1990); member, Klamath River Technical Advisory Team (1987-1989); member, California Sea Grant Committee (1989-present); Board member, Westhaven Community Services District (1988-1995); member, Mainstem and Systemwide Peer Review Group, Bonneville Power Authority (1999); Chair, Northern pikeminnow review panel, NWPPC (1999); Member, Technical Recovery Team, Central California Coast (salmonid listings) (2001-present); US Member, Committee for Scientific Cooperation, Pacific Salmon Commission (2001-present); member, Humboldt-Del Norte Regional Workgroup (CA Marine Reserve planning).

Grants, Contracts, Awards:

2002-2003 Development of a staged implementation plan for marking of chinook salmon at Central Valley Hatcheries. $74,000. With Ken Newman, U. Idaho. CALFED

2002-2004 Survey designs for estimating abundance of juvenile stellhead in the presence of cutthroat trout and hybrids. $105,000. National Marine fisheries Service.

2002-2004. Presence-Absence surveys of juvenile coho salmon. $133,000. with Ken Pollock, North Carolina State U. California Fish and Game.

2002 Genetic effects of size-selective fisheries (literature review). $12,000. Northwest Indian Fisheries Commission.

2001-2004 California's Dungeness Crab: Conserving the Resource and Increasing the Net Economic Value of the Fishery. ($203,000 + 2 MS level Sea Grant Trainees at $16,000/yr each; with S. Hackett, HSU, and C. Dewees, UCDavis). California Sea Grant.

2000-2001 Travel Grant to Attend Alaska Crab Symposium. ($3,500). California Sea Grant.

2000-2002 Hatchery Mating Practices for Chinook Salmon. ($76,000). Yurok Tribal Fisheries.

1999 Scholar of the Year, Humboldt State University. (a single faculty member is recognized annually for scholarly accomplishments)

1999-2001 Use of Scale Analysis to Identify Race and Release Type of Hatchery Chinook Salmon in the Trinity River system. ($78,000). Hoopa Valley Tribal Council.

1998 Size-Specific Molting Probabilities of Female Dungeness Crabs Following the 1997/98 El Nino. ($5,500). California Sea Grant

1998-2000 The Effects of Habitat Quality on Coho Salmon Survival Rates in Northern California Streams. ($180,000-220,000/yr; with W. Duffy and T. Roelofs, HSU). National Marine Fisheries Service.

1998-2001 Ecosystem and Restoration Analysis of the Smith River Estuary, California, with Emphasis on Anadromous Salmonids. ($195,000 + 2 MS Trainees; with T. Mulligan and T Roelofs, HSU). California Sea Grant.

1996-98 Improved Methods for Assessment of the Contribution of Hatcheries to Production of Chinook Salmon and Steelhead in the Klamath-Trinity River System ($78,000; with K. Newman, Univ. of Idaho). Hoopa Valley Tribal Council.

1997 Validation of a Method Used to Determine Mating Success of Female Dungeness Crabs. $9,800. California Sea Grant.

1996-97 Impacts of the European Green Crab (*Carcinus maenas*) on benthic fauna and fishery resources of Humboldt Bay. ($14,000). California Sea Grant; HSU Research, Scholarship and Creative Activity Award.

1994-95 Survey Designs for Assessment of Abundance and Trends of Juvenile Anadromous Fishes on Private Lands in Northern California. ($50,000; w/W.S. Overton, Oregon State Univ.). Fish, Farms and Forests.

1994-97 Size-Dependence of Molting in Crustaceans: Physiology and Field Tests ($163,000 + 1 MS Trainee ($12k/yr); w/ E.S. Chang, UC Davis). California Sea Grant.

1994-96 Variation in Reproductive Attributes Contributing to Fitness in New Zealand Chinook Salmon Populations ($23,500). National Science Foundation International Program (US-New Zealand Cooperative Research).

1994-98 Survey Designs for Assessment of Fishery and Habitat Resources in rivers and streams on federal lands ($60,000). U.S. Forest Service.

1994 Six months support for research activities as Visiting Scientist ($40,000 NZ). National Institute of Water and Atmospheric Research (New Zealand).

1991-93 Interannual variation in growth and reproduction of female Dungeness crabs. ($14,000 + 1 MS Trainee @ $12k/yr). California Sea Grant

1988-92 New methods for analysis of coded wire tag recovery data ($105,000; with M. Mohr). U.S. Fish & Wildlife Service, Klamath River Restoration Program

1990-91 Misspecification of Spawning Stock - Effects on Apparent Stock-Recruit Relations. ($4,500). HSU Research Award.

1989-90 Temporal and Spatial Variation in the Species Composition of the Deep Water Eureka Bottom Trawl Fisheries, with Emphasis on Sablefish. ($20,000 + 1 MS Trainee @ $10k/yr). California Sea Grant.

1989-90 Assessment of Wild and Hatchery Chinook Salmon Interaction in Battle Creek, a Sacramento River Tributary. ($20,000). California Department of Fish & Game.

1989 Species composition in the Eureka deep water bottom trawl fisheries. National Marine Fisheries Service ($10,000); Fishermen's Marketing Association ($4,000)

1988 1988 Award for outstanding contributions to Fishery Science, Humboldt Chapter, American Fisheries Society.

1985-87 Implications of Variation in Life History Patterns for Management of Chinook Salmon Fisheries ($50,000). Oregon Sea Grant.

1985-88 Assistance in Development of Oregon's Chinook Salmon Management Plan ($110,000 total). Oregon Department of Fish and Wildlife.

1985, 1989 Meritorious Performance and Professional Promise Awards, Humboldt State University ($2,500 each).

1985 Analysis of Release and Recovery Data for Marked Chinook Salmon Released from Klamath River, California, Hatcheries ($15,000). Bureau of Indian Affairs, Northern California Agency.

1984 Data Compilation of Releases and Recoveries of Marked Chinook Salmon Released from Klamath River, California, Hatcheries ($10,000). Bureau of Indian Affairs, Northern California Agency.

1984-85 Partial sabbatic leave support provided by Oregon Sea Grant ($9,500 salary) as Visiting Sea Grant Professor.

1984-90 Preparation of Technical Report on Sampling Designs for Small Streams, and for Assistance with Sampling Programs ($25,000 total). US Forest Service.

1983-86 Chinook Salmon Spawning Behavior ($22,000 + 1 MS level Trainee @$9k /yr). California Sea Grant.

1980-83 Vital Statistics of the Female Stock of Dungeness Crabs in Northern California. ($45,000 + 2 MS level Trainees @ $12k/yr/Trainee). California Sea Grant.

1980 Assessment of Fall Chinook Salmon Stocks in the Klamath River System.($15,000). Bureau of Indian Affairs, Northern California Agency:

Publications:

Peer-reviewed journals:

Oh, S., and D.G. Hankin. In press. The sperm plug is a reliable indicator of mating success in female Dungeness crabs, *Cancer magister*. J. Crustacean Biology

Hankind, D. 2002. A new method to estimate duration of molt stages in crustaceans. pp. 351-366 IN Crabs in cold water regions: biology, management and economics. Alaska Sea Grant College Program. AK-SG-02-01.

Hankin, D.G. , and D. McCanne. 2000. Estimating the number of fish killed in the Cantara Spill and the proportions of wild and hatchery trout. Calif. Fish Game 86(1): 4-20

Hankin, D.G., T.H. Butler, Wild, P.W., and Q-L. Xue. 1997. Does intense fishing on males impair mating success of female Dungeness crabs? Can. J. Fish. Aquat. Sci. 54:655-669.

Allendorf, F.W., D. Bayles, D.L. Bottom, K.P. Currens, C.A. Frissell, D. Hankin, J.A. Lichatowich, W. Nehlsen, P.C. Trotter, and T.H. Williams. 1997. Prioritizing Pacific salmon stocks for conservation. Conservation Biology 11: 140-152.

Welsh, H.H., L.M. Ollivier, and D.G. Hankin. 1997. A habitat-based design for sampling and monitoring stream amphibians with an illustration from Redwood National Park. Northwestern Naturalist 78: 1-16.

Castleberry, D.T., J.J. Cech, D.C. Erman, D. Hankin, M. Healey, G.M. Kondolf, M. Mangel, M. Mohr, P.B. Moyle, J. Nielsen, T.P. Speed, and J.G. Williams. 1996. Uncertainty and instream flow standards. Fisheries 21: 20-21.

Hankin, D.G., J.W. Nicholas, and T.W. Downey. 1993. Evidence for inheritance of age of maturity in chinook salmon, *Oncorhynchus tshawytscha*. Can. J. Fish. Aquat. Sci. 50: 347-358

Butler, T.H., and D.G. Hankin. 1992. Comment on mortality rates of Dungeness crabs (*Cancer magister*). Can. J. Fish. Aquat. Sci. 49: 1518-1521.

Hankin, D. G., N. Diamond, M. S. Mohr, and J. Ianelli. 1989. Growth and reproductive dynamics of adult female Dungeness crabs, *Cancer magister*, in northern California. J. Cons. int. Explor. Mer. 46: 94-108.

Mohr, M. S., and D.G. Hankin. 1989. Estimation of size-specific molting probabilities in adult decapod crustaceans based on postmolt indicator data. Can. J. Fish. Aquat. Sci. 46: 1819-1830.

Hankin, D. G. 1988. Book Review: C. Walters, "Adaptive Management of Renewable Resources". Trans. Am. Fish. Soc. 117(2): 219-220.

Hankin, D. G., and G. H. Reeves. 1988. Estimating total fish abundance and total habitat area in small streams based on visual estimation methods. Can. J. Fish. Aquat. Sci. 45: 834-844.

Fujiwara, S., and D. G. Hankin. 1988. Sex ratio, spawning period, and size and age at maturity of sablefish off northern California. Nippon Suisan Gakkaishi 54: 1333-1338.

Fujiwara, S., and D. G. Hankin. 1988. Aging discrepancy related to asymmetrical otolith growth for sablefish *Anoplopoma fimbria* in Northern California. Nippon Suisan Gakkaishi 54: 27-31.

Hankin, D. G., and M. C. Healey. 1986. Dependence of exploitation rates for maximum yield and stock collapse on age and sex structure of chinook salmon stocks. Can. J. Fish. Aquat. Sci. 43: 1746-1759.

Diamond, N., and D. G. Hankin. 1985. Movements of adult female Dungeness crabs (*Cancer magister*) in northern California based on tag recoveries. Can. J. Fish. Aquat. Sci. 42: 916-926.

Hankin, D. G., and R. McKelvey. 1985. Comment on fecundity of chinook salmon and its relevance to life history theory. Can. J. Fish. Aquat. Sci. 42: 393-394.

Hankin, D. G. 1984. Multistage sampling designs in fisheries research: applications in small streams. Can. J. Fish. Aquat. Sci. 41: 1575-1591.

Hankin, D. G. 1982. Estimating escapement of Pacific salmon: marking practices to discriminate wild and hatchery fish. Trans. Am. Fish. Soc. 111: 286-298.

Hankin, D. G. 1980. A multistage recruitment process in laboratory fish populations: implications for models of fish population dynamics. Fishery Bulletin 78: 555-578.

McKelvey, R., D. Hankin, K. Yanosko, and C. Snygg. 1980. Stable cycles in multistage recruitment models: an application to the northern California Dungeness crab (*Cancer magister*) fishery. Can. J. Fish. Aquat. Sci. 37: 2323-2345.

Hankin, D. G. 1978. New fluorescent fish scale marker. Prog. Fish-Cult. 40: 163-164.

Symposia Proceedings:

Hankin, D.G., and Q-L. Xue. 1996. Preliminary report on interannual variation in size-specific molting probabilities of adult female Dungeness crabs, *Cancer magister*, in northern California. *In* Proc. Internat. Symp. Biol, Manage., and Economics of Crabs from High Lat. Habitats. Alaska Sea Grant Report AK-SG-96-02: 425 - 441

Hankin, D. G. 1985. Proposed explanations for fluctuations in abundance of Dungeness crabs: a review and critique. pp. 305-326 In Proc. Symp. on Dungeness Crab Biol. and Manag., Alaska Sea Grant Report No. 85-3.

Hankin, D., N. Diamond, M. Mohr, and J. Ianelli. 1985. Molt increments, annual molting probabilities, fecundity and survival rates of adult female Dungeness crabs in northern California. pp. 189-206 In Proc. Symp. on Dungeness Crab Biol. and Manage., Alaska Sea Grant Report No. 85-3.

Diamond, N., and D. Hankin. 1985. Biases in crab tag recovery data. pp. 341-356 In Proc. Symp. on Dungeness Crab Biol. and Manage., Alaska Sea Grant Report No. 85-3.

Maeda, R., and D. Hankin. 1983. Age and growth of sablefish landed in Eureka, California: a comparison of conventional surface ages with otolith section ages. pp 81-93 In Proc. Internat. Sablefish Symp., Alaska Sea Grant Rep. 83-8.

Hankin, D. G. 1983. California policy and management for natural Pacific salmon production. pp. 226-252 In Proc. Ocean Studies Symp., Asilomar, CA.

Hankin, D. G. 1982. Indian fishing rights and mathematical models: alternative interpretations of court-mandated allocation of salmon harvests. pp 74-81 In Proc. First Pac. Coast Conf. on Math. Models of Renew. Resources, Humboldt State University, Arcata, CA.

Hankin, D. G. 1982. Salmon enhancement strategies and wild stocks: evaluation of enhancement success and wild stock impacts. pp 52-61 In Propagation, enhancement and rehabilitation of anadromous salmonid populations in the Pacific Northwest, Humboldt State Univeristy, Arcata, CA.

Significant Contract/Technical Reports

Hankin, D.G., E.J. Loudenslager, and J. Baumsteiger. 2003. Reliability of visual identification of juvenile (0+ and 12+) coastal cutthroat trout (*Oncorhynchus clarki clarki*), steelhead (*Oncorhynchus mykiss*) and their hybrids. Final report for NOAA-Fisheries contract # 43-AB-NF-107125 and 40-AB-NF-215496. 10 pp executive summary.

Hankin, D.G., and J. Fitzgibbons. 2003. Review of the age-, size-, and sex-selective effects of selective fisheries on Chinook salmon: Executive summary. Northwest Indian Fisheries Commission. 11 pp.

Fitzgibbons, J., and D.G. Hankin. 2001. Tabular summary of mating practices at Chinook salmon hatcheries in Califonria, Oregon and Washington, with special focus on usage of jacks in matings. Contract report for Yurok Tribe. 30 pp.

Hankin, D. G., and J. Richards. 2000. The Northern Pikeminnow Management Program: An Independent Review of Program Justification, Performance, and Cost-Effectiveness. Prepared for the Northwest Power Planning Council, Portland, OR. 28 pp.

Hankin, D., and K. Newman. 1999. Improved methods for assessment of the contribution of hatcheries to production of chinook salmon and steelhead in the Klamath-Trinity system. Final Report prepared for Hoopa Tribal Council. 44 pp.

Zajanc, D., and D. Hankin. 1998. A detailed review of the annual production cycle at Trinity River Hatchery: with recommendations for changes in hatchery practices that would improve accuracy of estimation of numbers released. Contract Report prepared for Hoopa Tribal Council. 35 pp. + appendixes

Dolloff, C.A., D.G. Hankin, and G.H. Reeves. 1993. Basinwide estimation of habitat and fish populations in streams. U.S. Forest Service, General Technical Report SE-83. 25 pp.

Hankin, D.G., and M.S. Mohr. 1993. New methods for analysis of coded wire tag recovery data. CA Coop. Fish. Res. Unit Agreement No. 14-16-0009-1547. Final Report.

Hankin, D. G. 1990. Effects of month of release of hatchery- reared chinook salmon on size at age, maturation schedule and fishery contribution. Oregon Dept. of Fish and Wildlife, Information Report 90-4 37 pp.

Nicholas, J., and D. G. Hankin. 1988. Chinook salmon populations in Oregon's coastal river basins: Description of life histories and assessment of recent trends in run strength. Oregon Dept. of Fish and Wildlife, Information Report 88-1. 359 pp.

Hankin, D. G. 1986. Sampling designs for estimation of the total number of fish in small streams. Research Paper PNW-360, Pacific Northwest Research Station, U.S. Forest Service, Portland, OR. 33 pp.

Hankin, D. G. 1985. Analyses of recovery data for marked chinook salmon released from Iron Gate and Trinity River Hatcheries, and their implications for management of wild and hatchery chinook stocks in the Klamath River system. Bureau of Indian Affairs, Northern California Agency, Hoopa, CA. 117 p.

Hankin, D. G. 1980. Some alternative data analysis techniques and hatchery management practices for evaluation of Klamath River system fall chinook salmon stocks. Bureau of Indian Affairs, Hoopa Agency, Hoopa, CA. 60 pp.

Hankin, D., and G. Reeves. 1980. A review and critique of sampling programs and estimation procedures used to determine run size and escapement of fall chinook salmon in the Klamath River system, 1978 and 1979. Bureau of Indian Affairs, Hoopa Agency, Hoopa, CA. 72 pp.