



6th International Symposium on Fish Endocrinology  
June 22-27, 2008 Calgary, Canada

## The 6<sup>th</sup> International Symposium on Fish Endocrinology is honored to recognize the Life-time Achievement of

**Dr. EDWARD M. DONALDSON**  
West Vancouver Laboratory  
Fisheries and Oceans Canada



### Major Areas of Scientific Contribution

#### Stress Response

- Studied corticosteroid secretion in response to stress in wild and cultured fish
- Applications to fisheries (e.g., survival of migratory adult salmon) and aquaculture (e.g., adaptation to artificial environment)

#### Spawning

- First person to achieve hypophysectomy of a live salmonid, providing a tool for studying the role of pituitary hormones
- First to partially purify a salmon gonadotrophin ("SG-G100") used extensively for induced spawning
- Development of techniques for induced ovulation and spermiation

#### Sexual Differentiation

- Conducted extensive research aimed at understanding the effects of sex steroids on the gonads during sexual differentiation
- Pioneered the application of sex control in fish farming to obtain monosex and sterile populations

#### Growth Enhancement

- Growth enhancement via exogenous treatment with steroids, peptides and proteins
- Contributed to the establishment of the first growth hormone transgenic salmon

### Recognition by Peers & Service to the Scientific Community

- **American Fisheries Society.** Award for Most Significant Paper published in Transactions of the American Fisheries Society (1977)
- **Fisheries and Oceans Canada.** Ministerial Merit Award for Exceptional and Distinguished Contributions to the Effectiveness and Efficiency of the Public Service (1989) and Deputy Minister's Commendation (1997)
- **Science Council of British Columbia.** Gold Medal in Natural Sciences (1992)
- **Royal Society of Canada.** Academy of Science's Thomas W. Eadie Medal (1995)
- **Aquaculture Association of Canada.** Research Award of Excellence (2004)
- **Vancouver Aquarium.** Murray Newman Lifetime Achievement Award in Aquatic Research and Conservation (2006)

### Major Significant Publications

- Author of more than 300 publications, including more than 150 peer-reviewed papers in international journals that have been cited over 5200 times, with an *h*-index of 42 (Institute for Scientific Information)
- Author of several book chapters and editor of several volumes of the prestigious "Fish Physiology" series

#### Ten most cited papers:

Mazeaud, Mazeaud & Donaldson (1977). Primary and secondary effects of stress in fish – some new data with a general review. *Trans. Amer. Fish. Soc.* 106: 201-212. Cited 447 times.

Hunter & Donaldson (1983). Hormonal sex control and its application to fish culture. *Fish Physiology*, Vol. 9B: 223-303. Cited 264 times.

Donaldson, Dye, Yamazaki & Philleo (1972). Preparation of gonadotropin from salmon (*Oncorhynchus tshawytscha*) pituitary glands. *Gen. Comp. Endocrinol.* 18: 469-481. Cited 151 times.

Donaldson & McBride (1967). Effects of hypophysectomy in rainbow trout *Salmo gairdnerii* (Rich.) with special reference to pituitary-interrenal axis. *Gen. Comp. Endocrinol.* 9: 93-101. Cited 127 times.

Donaldson & Hunter (1983). Induced final maturation, ovulation, and spermiation in cultured fish. *Fish Physiology*, Vol. 9B: 351-403. Cited 123 times.

Piferer, Zanuy, Carrillo, Solar, Devlin & Donaldson (1994). Brief treatment with an aromatase inhibitor during sex differentiation causes chromosomally female salmon to develop as normal, functional males. *J. Exp. Zool.* 270: 255-262. Cited 109 times.

Donaldson & Hunter (1982). Sex control in fish with particular reference to salmonids. *Can. J. Fish. Aquat. Sci.* 39: 99-110. Cited 109 times.

Higgs, Donaldson, Dye & McBride (1976). Influence of bovine growth hormone and L-thyroxine on growth, muscle composition, and histological structure of gonads, thyroid, pancreas, and pituitary of coho salmon (*Oncorhynchus kisutch*). *J. Fish. Res. Bd. Can.* 33: 1585-1603. Cited 106 times.

Devlin, McNeil, Groves & Donaldson (1991). Isolation of a Y-chromosomal DNA probe capable of determining genetic sex in chinook salmon (*Oncorhynchus tshawytscha*). *Can. J. Fish. Aquat. Sci.* 48: 1606-1612. Cited 100 times.

Higgs, Fagerlund, McBride, Dye & Donaldson (1977). Influence of combinations of bovine growth hormone, 17 $\alpha$ -methyltestosterone, and L-thyroxine on growth of yearling coho salmon (*Oncorhynchus kisutch*). *Can. J. Zool.* 55: 1048-1056. Cited 100 times.