UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
SOUTHEAST FISHERIES SCIENCE CENTER
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April 21, 2008

Dr. Jennifer Nielsen
Alaska Science Center
U.S. Geological Survey
1011 East Tudor Rd
Anchorage, AK 99503-6119

Dear Dr. Nielsen,

This letter is to support—with great enthusiasm—the nomination of Dr. David A. Fournier for the William E. Ricker Resource Conservation Award. My understanding is that AFS awards this honor "for accomplishment or activity that advances aquatic resource conservation that is significant at a national or international level." Clearly, Dave Fournier meets that description. His theoretical, practical, and technical contributions have helped reshape modern stock assessment science, not just in North America, but throughout the world.

Although Dave has not published in great volume, his papers have been fundamental and highly influential. Let me mention three highlights, each published with collaborators. The 1982 paper, "A general theory for analyzing catch at age data," is the foundation of modern stock assessment methods. The work is still widely read and has been cited in over 100 journal articles.[1] His 1984 paper, "Estimating stock composition in mixed stock fisheries using morphometric, meristic, and electrophoretic characteristics" provided a firm statistical foundation for much stock-identification work. The work has been in constant use and is cited in about 90 peer-reviewed papers. Finally, "MULTIFAN: A likelihood-based method for estimating growth parameters and age composition from multiple length frequency data sets …" demonstrated statistically sound methods for decomposition of length-frequency distributions, an advance that made it possible to apply age-structured models to fish stocks lacking age determinations. That work has been used widely in stock assessments and biological studies and has been cited in the refereed literature over 110 times. Each of these papers

[1]Citation statistics are from Scopus or the ISI Web of Science, which tend to be conservative. Such statistics markedly underestimate the influence of Dave's work, like other work used mainly in stock assessments. Stock assessments, although they are exhaustively reviewed and of great importance to conservation policy, do not usually end up in peer-reviewed journals.

added statistical rigor to an area that had been developing ad hoc. Dave's contribution formalized the theory of the subject area and thus allowed work to be conducted more objectively and further solid progress to be made.

Dave is an unusual scientist in that his theoretical contributions have been equaled by an enormous practical contribution to our field: his software. I have been a member of and then leader of several stock assessment teams at NMFS, and thus I have been responsible for stock assessment work expected to reflect the state of the art. Increasingly, models used in such work are developed in the Dave's AD Model Builder (ADMB) software. That software is used throughout NMFS and other leading fisheries agencies worldwide—not because it is specific to fisheries work, but because the strength and generality of its modeling framework and estimation power are unequaled. At this point in my career, I am a frequent reviewer of stock assessments. It is striking how often the most innovative models, the ones solidly grounded in theory yet breaking new ground, are programmed with ADMB software. I am so convinced of the importance of ADMB that I devoted man-months to writing software that displays ADMB results graphically. A more objective confirmation of the importance of ADMB is its increasing use in the wider modeling world.

In summary, I am delighted that Dr. David A. Fournier has been nominated for the William E. Ricker Resource Conservation Award. Dave is without a doubt an unsung hero of fishery science (and management). His contributions have been invaluable and highly influential. They have supported critical conservation decisions worldwide. I support his nomination emphatically.

Sincerely,

Michael H. Prager, Ph.D.
Senior Scientist
NMFS Southeast Fisheries Science Center