



# BioEngineering



## Newsletter

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### PRESIDENT'S REPORT

Doug Dixon

People generally join organizations because of some sense of need, some fulfillment of an expectation or some expected value that will be returned. Any of these are a likely reason fisheries scientists join the AFS Bioengineering Section (BES) – my goal as the new BES President is to continue to expand on meeting the need or delivering to fulfill expectations with high quality information on fish passage, fish screening, restoration, and other bioengineering-related topics. My predecessor, Marcin Whitman, demonstrated tremendous energy and started new initiatives toward this goal and, while it will be hard to match his energy, his initiatives will be maintained and new ones will begin.

Gradually, as I understand the Section's history and my responsibilities to our parent Society, I expect to focus on efforts that will deliver value to our members.

Initially, our Listserve and its use will be greatly improved and our newsletter will come more often, probably with fewer things but those that are covered will be of high quality. BES Symposia frequency (now 5 years) will be increased (3 years or less) with more focus topics. Most importantly, I hope to start new initiatives that will engage students and entering professionals to ensure the Section's future and prepare our leaders for tomorrow. I hope to get my feet under me fairly soon and I look forward to an exciting and challenging term. My "door" is always open – if you have ideas or even complaints, I am available by voice (804-642-1025; Virginia Office) or email (ddixon@epri.com).

Doug Dixon  
BES President  
Senior Project Officer

### BES OFFICERS

**President: Doug Dixon**  
7905 Berkeley Drive, Gloucester Point, VA 23062; 804-642-1025; ddixon@epri.com

**President-Elect: Ted Castro-Santos**  
S.O. Conte Anadromous Fish Research Center; P.O. Box 796, One Migratory Way, Turners Falls, MA 01376; 413-863-3838; tcastrosantos@usgs.gov

**Secretary Treasurer: Michael Love**  
1315 6th Street, Eureka CA 95501; 707-476-8938; mlove@h2odesigns.com

**Newsletter Editor: Alex Haro**  
S.O. Conte Anadromous Fish Research Center, USGS-BRD, 1 Migratory Way, Turners Falls, MA 01376; 413 863-3806; Alex\_Haro@usgs.gov

**Past President; Marcin Whitman**  
101 Ross #11 Cotati, CA 94931 916-445-3832; mwhitman@dfg.ca.gov

## BES Forms Ad-Hoc Committee to Investigate Feasibility of Radio Telemetry "Unified Codeset"

Bioengineering has established an ad hoc committee to develop a "Unified Codeset" to support aquatic telemetry monitoring. Radio and acoustic telemetry have become essential tools in the development and improvement of fish passage solutions. With the development of pulsed codes, it has become possible to monitor multiple, even hundreds of unique codes simultaneously on a single frequency. To date, manufacturers have each developed their own codes, which can only be decoded by their own receivers. This has prevented end-users from selecting transmitters or receivers that best suit their needs: having invested in a given receiver users become obligated to purchase tags from that same manufacturer and also suppresses competition among

providers. The Section is attempting to develop a 'Unified Codeset' that will provide a solution to this problem. In an ad hoc committee effort that involves both developers and end users, the Bioengineering Section hopes to arrive at consensus over Codeset specifications, including the number and width of pulses, as well as the intervals between them. If successful, this Codeset may serve as a standard for all manufacturers to design receivers around, encouraging competition among providers, collaboration among users, and improving flexibility in study designs. The ad hoc committee is being chaired by **Ted Castro-Santos**; USGS Conte Anadromous Fish Laboratory, tcastrosantos@usgs.gov; (413) 863-3838

# BES V a Rousing Success!

The Bioengineering Section held its 5th Symposium at the 2007 AFS Annual Meeting in San Francisco. This major symposium has been held on a 5-year basis although a more frequent 3-year basis is under consideration. A total of 42 papers covering subjects such as fish passage, intake screening, restoration, and modeling were presented. Attendance was high, with frequently over 100 folks in the room! Many of the presentations will be published in a printed proceedings to be available as an AFS publication in 2009. The Section also continues to work on publishing the proceedings from its 4th Bioengineering Symposium held in 2002 in Baltimore. This proceeding will be published through AFS in 2009 (although alternative publication formats such as a dedicated issue of NAJFM or TAFS is also under consideration by the Section's EXCOM and editor).

The Section has not planned a special symposium for the upcoming AFS Annual Meeting in Ottawa 2008, but the traditional general Bioengineering session will be held. However, suggestions for special symposia for the 2009 139th Annual Meeting in Nashville, Tennessee are always welcome. Some ideas that have been "kicked around" include stream restoration, ocean energy, culvert passage, and tide gates. If you have a topic suggestion, please pass it on to Doug Dixon (ddixon@epri.com).

## 2008 BES ANNUAL BUSINESS MEETING DATE SET

The Annual Bioengineering Section Business Meeting will be held during the AFS 2008 Annual Meeting in Ottawa, Canada on **Tuesday, August 19, from 12:00 to 2:00 p.m., location TBA.**

**Lunch is free first to Section members, any extra lunches (there are always a few!) to go to student and AFS members**

Please mark your calendars now, and don't forget to register and make reservations early!

**For more information and the appropriate links, go to the AFS Annual Meeting website:**

[www.fisheries.org](http://www.fisheries.org)

**and click on "2008 Annual Meeting"**

## BIOENG Listserv and FishPass Forum: TWO ways to network!

### BES BIOENG Listserv

The BES listserv continues to serve as a forum and mechanism for dissemination of information on bioengineering topics, such as fish passage, aquaculture, stream restoration, and related topics. Although discussions can overlap with the current FISHPASS Forum, the BIOENG listserv addresses issues of a more technical (even non-fish related) nature.

Members can subscribe/unsubscribe to the BioEng listserv as well as request a digest version (one daily message with all messages sent) for your convenience. To change your subscription, send an email to:

[mdaemon@fisheries.org](mailto:mdaemon@fisheries.org)

- enter SUBSCRIBE BioEng in the body of the e-mail; do NOT put anything in the subject line of your message
- to receive a digested version, enter DIGEST BioEng in the body of the e-mail. A digest version is when the listserv sends you a "digest" or compilation of all messages sent to the list each day in a single message.
- to un-subscribe, enter UNSUBSCRIBE BioEng in the body of the e-mail

**It's really important that all members subscribe because the Section conducts official business and disseminating important information through the listserv.** Please contact Doug Dixon (ddixon@epri.com) for help with the listserv.

### FishPass Forum

The FishPass forum remains a medium for professional discussion of the biological and engineering sciences of upstream and downstream fish passage on a variety of topics. Discussions include passage technologies, projects, swimming capabilities and behavior and biological and engineering studies and events.

New topic areas can be added by request; presently new additions under consideration include downstream passage, telemetry techniques, and data analysis.

If you want to subscribe, go to:

[www.FishPass.org](http://www.FishPass.org)

If you have any problems getting registered, contact Kozmo Bates at [Kozmo@aquakoz.com](mailto:Kozmo@aquakoz.com)

If you're already a member, we encourage you to check and use the Forum frequently! There are currently 335 Forum members, and the page is checked 2000-3000 times every month, so your posting is likely to be viewed by many folks in the fish passage community.

You can also modify your profile to have the Forum notify you via email whenever a new post to the forum is made—this is a handy feature to keep up-to-date on Forum activity. You can also post messages to Forum members individually. And of course upload your own artistic avatar!

# New NMFS Document on Anadromous Salmonid Passage Facility Design

From Bryan Nordlund of NOAA; [Bryan.Nordlund@noaa.gov](mailto:Bryan.Nordlund@noaa.gov)

subject document is now available at:

Revisions to the draft 2004 document, *Anadromous Salmonid Passage Facility Design*, are finally complete and the report has been approved by the Regional Administrator of NMFS as fishway design policy for the Northwest Region. This is the first official revision to the draft 2004 document that many BES members have used and/or provided comments to NMFS. The

<http://www.nwr.noaa.gov/Publications/Reference-Documents/Passage-Refs.cfm>

The primary purpose of this document is to provide consistent fishway design guidance from NMFS engineers from project to

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## BES NEWS

- **BES Holds Annual Business Meeting at AFS.** Officers Doug Dixon, Marcin Whitman, Ted Castro-Santos, Michael Love conducted the BES business meeting on 4 September 2007 at the American Fisheries Society Annual Meeting in San Francisco. The gathering was attended by 19 Section members, including some new student members. If you plan on attending the 2008 AFS meeting in Ottawa, please try to attend the BES Business meeting then, which is open to all.
- **BES Listserv and Membership Housekeeping** Marcin Whitman has noted that there has been a problem with keeping the listserv up to date to ensure current members receive posted emails. As a result, the BES membership list and listserv addresses have been updated, but if you are not getting the listserv messages and are a current Section member, please contact the Sec-Tres, Michael Love ([mlove@h2odesigns.com](mailto:mlove@h2odesigns.com)).
- **Long-Awaited BES IV Symposium Proceedings in Final Phases** The proceedings from the BES IV Symposium in Baltimore in 2002 is anticipated to be published sometime within the next 6-8 months.
- **BES V Symposium Proceedings Under Construction** Tim Brush is currently assembling and editing the proceedings for the BES V Symposium, which will be completed and published within the next 8 to 12 months. The proceedings will contain a total of 20 to 25 papers collected from selected presenters.
- **BES Web Page To be Updated** The EXCOM will be making changes to our web page to improve its content and utility. Suggestions are welcomed including any volunteers who would like to be our webmaster. If you have ideas or would like to volunteer as webmaster, contact Doug Dixon at [ddixon@epri.com](mailto:ddixon@epri.com)
- **Telemetry Committee Moves Forward** An ad-hoc committee to investigate the feasibility of developing a radio telemetry "unified codeset" has been formed and is making progress – see article on Page 1.
- **Lynn Reese Heads Emerging Technology Committee** The ad hoc Emerging Technology (ET) committee provides technical support and guidance to innovators of new fish passage and protection technology. Lynn has produced a Committee Handbook, which contains the committee's goals and objectives, bylaws, contact information, list of members, and guidelines for evaluating fish passage technologies. The committee is also looking for 3 new members to begin serving in April 2008.
- **Transitions of BES Officers** Doug Dixon was installed as the new BES President. Ted Castro-Santos was installed as the new BES President Elect, and Michael Love was installed as the new BES Secretary and Treasurer. Marcin Whitman became the BES acting Past-President. These four individuals now make up the current Section Officers. BES also thanks and congratulates Matt Chan for his past service as the Section's treasurer and secretary, who has done a GREAT job during his two year term.
- **Marcin Whitman Honored for Past Presidential Service** Doug Dixon presented Marcin Whitman at the BES Annual Business Meeting with a plaque in recognition of his past service as President of the BES. We thank Marcin for his productive efforts and devoted service over the past few years, and his continued contributions to BES
- **Newsletter to get Smaller But More Frequent** Presently there is only one edition of the BES Newsletter produced each year, and the EXCOM has decided that the newsletter should be more frequent to better achieve the goals of the Section. Doug Dixon has therefore requested production of either a semi-annual or quarterly newsletter, which will not be as extensive as it is currently, but more up-to-date and requiring less effort to produce. Alex Haro has initially taken on this format revision, and the 4-page newsletter before you is a result of the effort. Look for another newsletter within the next few months.

# CONFERENCE CALENDAR

## 2008

- Apr 28-30 **Northeast Fish and Wildlife Annual Conference.** Galloway, NJ. See [www.neafwa.org](http://www.neafwa.org) for more information.
- May 4-8 **Western Division of the American Fisheries Society Annual Conference.** Portland, OR. See [www.wdafs.org](http://www.wdafs.org) for more information. Including symposium: Identifying, protecting and restoring thermal refuges for coldwater fishes
- Jun 23-24 **EPRI Water Area Summer Technical Advisory Meeting.** Jackson Hole, WY. Contact Bob Goldstein for more information.
- Jul 14-18 **HydroVision 2008.** Sacramento Convention Center, Sacramento, CA. [www.hcipub.com](http://www.hcipub.com)
- Aug 17-21 **American Fisheries Society Annual Conference.** Ottawa, CA. See [www.fisheries.org](http://www.fisheries.org) for more information.
- Oct 7-9 **Flow 2008: Interdisciplinary Solutions to Instream Flow Problems.** San Antonio, TX. See for more information - <http://www.instreamflowcouncil.org/flow2008/index.htm>
- Oct 12-15 **62nd Annual Southeastern Association of Fish and Wildlife Agencies Conference.** Corpus Christie, TX. See: <http://seafwa2008.org>
- Oct 20-24 **5th World Fisheries Congress.** Yokohama, Japan. Including a sub-session Eel Ecology and its Sustainable Stock Management. <http://www.5thwfc2008.com>

## 2009

- Jan 12-16 **Science and Information Technologies for Sustainable Management of Aquatic Ecosystems. A joint conference of The 8th International Conference on Hydroinformatics & The 7th International Symposium on Ecohydraulics.** Conception, Chile. <http://www.heic2009.org/>
- Aug 10-14 **Water Engineering for a Sustainable Environment. 33rd International Association of Hydraulic Engineering and Research Congress.** Vancouver, BC. Canada. [www.iahr2009.org](http://www.iahr2009.org)

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project. The basis of this document comes from an attempt to capture the essence of fishway design success and design failure in a single document, based on NMFS engineers involvement in fishway design for the past 50 or 60 years. All comments, either written or provided via the 2004 CBFWA workshops, have been considered in this 2008 revision. With a few hundred comments received from dozens of sources, it is obviously not possible to resolve all aspects of fishway design in every situation to everyone's satisfaction. The most consistent comment from many reviewers pointed out the difficulties posed by hard and fast criteria to cover every design aspect of every fish passage situation. To address this, the 2008 version does provide criteria and guidelines as a general design starting point, but is flexible enough to accommodate site specific conditions provided that they can be biologically justified. This document should be considered a working document and will be revised as technology progresses, to im-

prove the document's content or to correct errors. Revisions will be considered on an annual basis. Any fishway design initiated with current version of the document will not have changes required by subsequent revision.

