

**OHRC**  
**Advisory Committee**

**“Research Report”**

**10 December 2012**

**David L. G. Noakes**

**Professor & Senior Scientist**  
**OSU - OHRC**

# Dr. Marc Johnson



# Education and Outreach

- Oregon Coast STEM Web Meeting – 11 September 2012
- Joseph O'Neil, David Noakes, local artists – OHRC outreach
- Oregon Coast STEM seminar – Lincoln City – 29 September 2012
- Otolith Research Workshop – 25 – 26 October 2012 (Dr. Ben Clemens)
- FW 473 Fish Ecology – Distance Education (online version)
- FW 573 Fish Ecology & Conservation – Distance Education (online)
- Jose Marrin – PhD thesis defense (Chinook salmon) – 5 October 2012
- Oregon Coast STEM Workshop – Tillamook, Oregon – 20 October 2012
- Otolith Research Workshop, OHRC – 25 – 26 October 2012
- OHRC Fall Festival – 3 November 2012
- FW 599 – Graduate Student Orientation – “Editing and Publishing” (guest lecture)
- Steelhead Fishing Class, OSU – 15 November 2012
- Oregon Coast StEM Seminar, McMinnville, Oregon – 16 November 2012

# Recent Presentations

ODFW Hatchery Managers, Big K Ranch, 16 August 2012 (Noakes, Putman)

“Apps for Salmon” - Corvallis Science Pub – 10 September 2012

Oregon Sea Grant Scholars Day, Nathan Putman & David Noakes – 8 October 2012

Umpqua River Partnership, Roseburg, Oregon – 16 October 2012

# Research Funding

- Lincoln County & Tillamook County – Coast STEM – Ruth McDonald (\$210,000 per year; 2 years) – awarded
- Noakes, Schreck, Banks – COE – Chinook & Steelhead (\$800,000 year 1 of 3) - awarded
- Noakes – Campbell Family Foundation – fish screens (\$19,000 per year) – proposal
- Noakes & Cole – NSF – reproductive development and life history (pre-proposal) (\$300,000 per year; 3 years)

# Research Discussions

- David Noakes, Kathleen Cole, Bruce Morrison – “temperature, growth and sex of individual hatchery and wild steelhead smolts”
- David Noakes, Carl Schreck, Cam Sharpe, David Griffiths, Eric Billman, Ryan Couture – “Steelhead surrogates”
- David Noakes, Andy Dittman, Ryan Couture, Joseph O’Neil, Nathan Putman – “olfactory imprinting – steelhead embryos”
- Alsea Anglers, Kathleen O’Malley, Bob Buckman, ODFW, David Noakes – “hatchery steelhead selection”
- Ben Clemens, David Noakes – “lamprey biology and conservation”
- Desiree Tullos, Jason Dunham, David Noakes – “woody debris, log jams and fish behavior”
- Jeff Baylis, David Noakes – “life history of salmon and steelhead”
- Ed Bowles, Bruce McIntosh, Charlie Corrarino, Ryan Couture, David Noakes – “OHRC research priorities”

# Research Discussions

- ODFW Marion Forks Hatchery – Greg Germon, Rob Chitwood, Carl Schreck, Eric Billman, David Noakes
- Arnie Roblan and others – Newport – 3 October 2012
- Marc Johnson, Tom Friesen, Ryan Couture, David Noakes – “triploid salmon and steelhead”
- Yongwen Gao, Ryan Couture, David Noakes – “otolith marking, feed, water”
- Ryan Couture, David Noakes and others – “salmon hatchery – imprinting, homing & straying”
- Alsea Sportman’s Association, ODFW, OHRC, David Noakes – steelhead angler vulnerability
- Ashton Bunce, David Noakes – bull trout conservation & restoration
- Skuli Skulason, Sigurdur Snorrason, Bjarni Kristjansson, David Noakes – “development and behavior”
- ODFW Fish Screen & Passage Project, David Noakes – “fish screens”

# Publications

Nithirojpakdee, P. & Beamish, F. W. H. & Noakes, D. L. G. 2012. Maintaining fish diversity in Thailand: variations in foraging behavior. *Environmental Biology of Fishes* 95:227–236.

Schemmel, E., S. Clements, C. Schreck, and D. Noakes. 2012. Using radio-telemetry to evaluate the success of a hatchery steelhead recycling program. In: *Advances in Fish Tagging and Marking Technology*. American Fisheries Society.

Schemmel, E., S. Clements, C. Torgersen, C. Schreck, and D. Noakes. 2012. The effect of gonadectomy on summer steelhead, *Oncorhynchus mykiss*: Implications for hatchery and wild interactions. *North American Journal of Fisheries Management*. In Review.

Putman, N. et al. 2012. Evidence for geomagnetic imprinting in Pacific salmon. *Current Biology* (In Review)

# Special Journal Issues

- Ecological Interactions Between Wild and Hatchery Salmonids – May 2012
- Feeding Ecology of Elasmobranchs – September 2012
- Micro- and Macroevolution of Fishes – July 2012

# **“Otoliths: microstructure and microchemistry”**

- Yongwen Gao & David Noakes (Co-Editors)
  - Environmental Biology of Fishes – December 2012

<http://www.springerlink.com/content/102877/?Content+Status=Accepted>

# **“Salmon Migration”**

D. Noakes & P. Klimley (co-editors)

Special Issue of Environmental  
Biology of Fishes

OnLine First (February 2013)

[http://science.calwater.ca.gov/stage/  
sci\\_news\\_0610\\_tags.html](http://science.calwater.ca.gov/stage/sci_news_0610_tags.html)

# **“Threatened Fishes: Fish Conservation”**

D. Noakes

Special Issue of Environmental Biology of Fishes

OnLine First (April 2013)

<http://www.springerlink.com/content/102877/?Content+Status=Accepted>

# **Research Conferences**

Gilbert Ichthyological Society

H. J. Andrews Forest

14 – 16 September 2012

# **Research Conferences**

- The Future of Our Salmon –  
CRITFC – Portland, Oregon – 17 –  
18 October 2012

# **Research Conferences**

NWFCC

11 – 13 October 2012

Portland, Oregon

# Research Conferences

- Oregon AFS, February 2013
- Migration and Survival Mechanisms of Juvenile Salmon and Steelhead in Ocean Ecosystems, April 2013, Honolulu, Hawaii
- International Ethological Congress, Newcastle, August 2013
- International Conference on Salmon Smolts, Iceland, August 2013
- Indo-Pacific Fish Conference, Japan, July 2013
- Gilbert Ichthyological Society, September 2013

**Research Conferences**

**Presentations**

# Research Conferences Presentations

- Northwest Fish Culture Conference – Dittman et al  
December 2012 (oral paper, olfactory imprinting)
- North Pacific Salmon – Hawaii, April 2013 – Putman  
& Noakes – geomagnetic navigation in salmon

# **Research Projects and Proposals**

# **Stable Isotopes – passive marking**

Otolith marking – operations research (oxygen isotopes) – water, food, fish samples

- Fish reared under controlled conditions, preserved – Gao analyses (October 2012)

Collaboration: Dr. Yongwen Gao, Makah Tribal Fisheries; OHRC, OSU

# Olfactory Imprinting – Homing & Straying

- Olfactory Imprinting during incubation
- Andy Dittman, David Noakes, Ryan Couture, Joseph O'Neil
- Chinook salmon, steelhead
- Ongoing – ODFW hatchery rearing and testing (autumn – winter 2012)

# Hatchery Survey: homing and straying

- Dr. Nathan Putman
  - Hatchery questionnaire
  - Survey of existing data
  - Research proposal development
  - Preliminary laboratory experiments
  - Manuscripts in preparation

# Otolith Workshop

OHRC, ODFW

25 – 26 October 2012

David Noakes, Ben Clemens

coordination with ODFW, OR AFS, BPA, Oregon Sea Grant, GLFC,  
Tribal groups

Invited speakers, research proposal development

Development of Distance Education course – Fisheries & Wildlife  
Department, Oregon State University

Workshop Report and Group Photo posted in DropBox

# Lamprey Workshop

OHRC “Spring 2013”

David Noakes, Ben Clemens

OHRC, OSU, ODFW

- invited speakers
- conservation, restoration, enhanced production (“hatcheries ?”), field techniques
- native species, Tribal values and interests

# Fish Screen Workshop

OHRC “July/ September 2013”

David Noakes

OHRC, OSU, ODFW, NOAA NMFS

- invited speakers
- design, installation and operation
- practical considerations
- alternatives

# Engineered Log Jams

Drs. Desiree Tullos, Jason Dunham  
Ecological Engineering, Forest Service

Experimental streams - pool liners, logs, channels

Wild juveniles (coho, steelhead)

Hatchery juveniles – next replicate

Detailed 4-D measurements of water and fish

# **Steelhead Angler Vulnerability**

## **Alsea Sportman's Association**

OHRC, OSU, ODFW, “stakeholders”

Tom Davis – overview of project