

OHRC Advisory Committee

“Research Report”

11 March 2013

David L. G. Noakes
Research Report
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Professor & Senior Scientist
OSU - OHRC

Education and Outreach

- **FW 473 Fish Ecology – Spring 2013 term, OSU**
- **FW 599 Fish Ecology & Conservation – Spring term OSU**
- **FW 473 Fish Ecology – Distance Education (online version)**
- **FW 573 Fish Ecology & Conservation – Distance Education (online)**
- **FW 471/571 – Environmental Physiology of Fishes (guest lectures) – Winter 2013**
- **Sierra Lewis – MSc thesis defense (revisions) – 25 February 2013**
- **Dr. Kurt Fausch, Colorado State University – OHRC (NSF) – streams (Jeremy Monroe) (5 – 9 January 2013)**
- **Monday @ 4 – Jason Dunham – salmon imprinting (22 April 2013)**

Education and Outreach

- **OSU – FW – Promotion and Tenure – annual reviews**
- **Oregon Coast STEM, Lincoln City (12 January 2013); Newport (19 March 2013)**
- **“The Future of Scientific Publishing” – Burapha University, January 2013**
- **PAC 180 - Steelhead Fishing Class, OSU – 7 March 2013**
- **Fish in Research – Veterinary Student Class – 13 March 2013**
- **OSU- FW Department – Vertebrate Ecologist Search Committee (Winter – Spring 2013)**
- **Gladys Ismail, David Sampson, David Noakes – endemic fish conservation (Winter 2013)**
- **Donna Williams, David Noakes – 2014 Research Conferences**

Scientific Conference Presentations

NorthWest Fish Culture Conference, Portland (11 -13 December 2012) – Dittman et al., Olfactory imprinting

Oregon Chapter, AFS – Bend (19 – 22 February 2013)
Noakes et al., Olfactory Imprinting

Willamette Fisheries Research Conference – Corvallis
(5 – 7 January 2013) Noakes et al., Chinook surrogates

Research Conferences

- Migration and Survival Mechanisms of Juvenile Salmon and Steelhead in Ocean Ecosystems, April 2013, Honolulu, Hawaii
- International Ethological Congress, Newcastle, August 2013 –imprinting in salmonid fishes
- International Conference on Salmon Smolts, Iceland, August 2013 – magnetic imprinting
- Indo-Pacific Fish Conference, Japan, July 2013 – ocean migration in salmon
- Gilbert Ichthyological Society, Washington, September 2013 – olfactory and magnetic imprinting

Research Funding

- Lincoln County & Tillamook County – Oregon Coast STEM – Ruth McDonald and others (\$210,000 per year; 2 years) – awarded (\$1.3 million total, 5 years; OCAMP, STEM)
- Noakes, Schreck, Banks – COE – Chinook & Steelhead (\$800,000 year 1 of 3 years) - 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)
- Kimmel & Noakes – NSF – salmonid development (pre-proposal) (\$150,000 per year; 3 years)
- Noakes & Putman – North Pacific Fisheries Commission (pre-proposal) (\$75,000 per year; 2 years)

Research Discussions

- David Noakes, Marc Johnson, Ryan Couture – Alsea angling
- 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, Marc Johnson, Bob Buckman, Derek Wilson, ODFW, David Noakes – “hatchery steelhead selection”
- Ben Clemens, David Noakes – “lamprey biology and conservation”
- David Noakes, Nathan Putman, Eric Charnov – geomagnetism and population trends

Research Discussions

- ODFW Umatilla Hatchery – Lance Clarke, Ryan Couture, Andy Dittman, David Noakes, Dave Leonhardt
- Michael Banks et al. – CIMRS (5 year plan) (\$33,000,000)
- Marc Johnson, Tom Friesen, Ryan Couture, David Noakes – “triploid salmon and steelhead”
- Yongwen Gao, Ryan Couture, David Noakes – “otolith marking, feed, water”
- David Noakes, Ryan Couture, Jessica Miller – MAI, otolith microstructure
- Alsea Sportman’s Association, ODFW, OHRC, David Noakes – steelhead angler harvest vulnerability
- Ashton Bunce, Shaun Clements, David Noakes – bull trout conservation

Research Discussions

- 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”
- David Noakes, Sierra Lewis – fish passage, habitat restoration
- David Noakes, Steve Brandt – Oregon Sea Grant – geomagnetic imprinting, coastal energy development
- David Noakes, Martha Coleman (OSU Foundation) – external funding (foundations)
- David Noakes, Alix Gitelman – smolt survival, climate change

Publications

Noakes, D. L. G. 2013. Early development in fishes. Laboratory Animal Science (in review).

Noakes, D. L. G., S. Crawford & J. Holmes. 2013. Reproductive biology and ecology of coregonid fishes. Biology of North American Freshwater Fishes (in revision).

Ismail, G., D. L. G. Noakes & D. Sampson 2013. Current status and conservation of Lake Lanao endemic fishes. Environmental Biology of Fishes (in revision).

Putman, N. et al. 2013. Evidence for geomagnetic imprinting in Pacific salmon. Current Biology 23: 1 – 5. (DropBox) (more than 100 citations and postings about this paper already)

“Electronic Tagging Studies of Salmonid Migration”

P. Klimley & co-editors (February 2013) Environmental Biology of Fishes 96: 131 – 428.

Special Journal Issues 2013

- Threatened Fishes of the World
- Diversity & Conservation of Elasmobranchs
- Drift foraging in salmonid fishes

“Threatened Fishes: Fish Conservation”

D. Noakes

Special Issue of Environmental Biology of Fishes

OnLine First

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

Research Projects and Proposals

(see also separate presentation)

Homing and Straying

Stable Isotopes – passive marking

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

- Fish reared under controlled conditions, preserved – Gao analyses (OSU, UA, UM)

Collaboration: Dr. Yongwen Gao, Makah Tribal Fisheries; OHRC; Dr. Jessica Miller, OSU; Dr. Jennifer McKay, OSU

Homing & Straying

Olfactory Imprinting

- Olfactory Imprinting during incubation
- Andy Dittman, David Noakes, Ryan Couture, Joseph O'Neil
- Chinook salmon, steelhead
- Ongoing – ODFW hatchery rearing and testing
- Lance Clarke – ODFW – Umatilla Hatchery

Homing and Straying Hatchery Survey

- Dr. Nathan Putman
 - Hatchery questionnaire
 - Survey of existing data
 - Research proposal development
 - Coded wire tags; local geomagnetic anomalies; secular geomagnetic shifts
 - Long term salmon population trends and secular geomagnetic history (with Eric Charnov)

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

Steelhead Angler Harvest Vulnerability

Alsea Sportman's Association

OHRC, OSU, ODFW, “stakeholders”

(details in separate presentation)