# Total Dissolved Gas Adaptive Management Team

## Columbia and Snake Rivers


**February 12, 2008**
**Portland, Oregon**


**www.ecy.wa.gov/programs/wq/tmdl/columbia_rvr/columbia_tdg.html**

# Today's Agenda

- State standards and waivers (DEQ/Ecology)
- *Resident fish impacts (NOAA)*
- Status of Final FPC report on spill volumes (FPC)
- If the 115% requirement was removed, how would fish passage / survival be affected?
- Set due date for comments on ACOE spill volume report and TDG literature review

# Role of AMT Members

- Provide technical information
- Advise Washington and Oregon on the TDG TMDL
- Comment on proposals

# Roles of Washington and Oregon

- Make decision using technical input
- Follow state & federal laws & regulations

# State Standards and Waivers

# Washington Regulations

Washington Water Quality Standards

- WAC 173-201A 200(1)(f)

www.ecy.wa.gov/programs/wq/swqs/index.html

# WA Regs con't

Washington Water Quality Standards

- WAC 173-201A 200(1)(f)
- 110% applies everywhere
- Special condition for Columbia and Snake Rivers to aid fish passage

# WA Regs con't

Special condition for Columbia and Snake Rivers to aid fish passage:

- TDG <115% in forebays
- TDG <120% in tailraces

(measured as average of twelve highest consecutive hourly readings)

- Requires gas abatement plan

WAC 173-201(A) 200(1)(f)(ii)

# Oregon TDG Standards

Oregon Administrative Rules (OAR) 340, Division 41:

http://www.deq.state.or.us/regulations/rules.htm

**OAR 340-041-0031**

- **110%** applies everywhere at all times, *except* when stream flow exceeds the 10-year, 7-day average flood flows

- **105%** applies in hatchery-receiving waters and other waters of less than two feet in depth

- **340-041-0104**
- Water Quality Standards and Policies Specific to the Main Stem Columbia River

- (3) Total Dissolved Gas. The **Commission may modify the total dissolved gas criteria in the Columbia River for the purpose of allowing increased spill for salmonid migration**. The Commission must find that:

- (a) Failure to act would result in greater harm to salmonid stock survival through in-river migration than would occur by increased spill;
- (b) The modified total dissolved gas criteria associated with the increased spill provides a reasonable balance of the risk of impairment due to elevated total dissolved gas to both resident biological communities and other migrating fish and to migrating adult and juvenile salmonids when compared to other options for in-river migration of salmon;
- (c) Adequate data will exist to determine compliance with the standards; and
- (d) Biological monitoring is occurring to document that the migratory salmonid and resident biological communities are being protected.
- (e) The Commission will give public notice and notify all known interested parties and will make provision for opportunity to be heard and comment on the evidence presented by others, except that the Director may modify the total dissolved gas criteria for emergencies for a period not exceeding 48 hours;
- (f) The Commission may, at its discretion, consider alternative modes of migration.

# Oregon TDG Waiver

- 10 day period in March for Spring Creek
- April 1 to August 31 for purpose of fish passage
- 115% forebay
- 120% tailrace
- Measured as 12 highest hourly measurements per calendar day
- AMT component
- Biological and Physical monitoring
- End of year reporting required
- ACOE must provide written notice w/in 24 hrs of any violation of conditions during voluntary spill
- Expires August 31, 2009

http://www.deq.state.or.us/wq/TMDLs/docs/columbiariver/tdg/acoetdgwaiver.pdf

# Sequence of Events

1. Review literature regarding biological effects of higher TDG.
2. Review literature or other studies regarding increase survival of fish due to higher spill allowed by removing 115% requirement.
3. Summarize (and compare) #1 and #2, share with AMT.
4. Gather input from AMT.
5. Staff recommendations.
6. ODEQ 30 day public comment period.
7. ODEQ and Ecology make decision.

# Issue #1

- The need for the 115% forebay TDG monitoring requirement.

If the 115% requirement was removed, how would it affect fish passage / survival?

# Need for 115%

What are the biological impacts (GBT) of eliminating the 115%?

Vs.

How many more fish will pass/survive the system if we eliminated the 115%?

Today's agenda

# How many more salmon?

*2000 FCRPS Biological Opinion – Appendix E Risk Assessment for Spill Program Described in 2000 Draft Biological Opinion*

# How many more salmon?

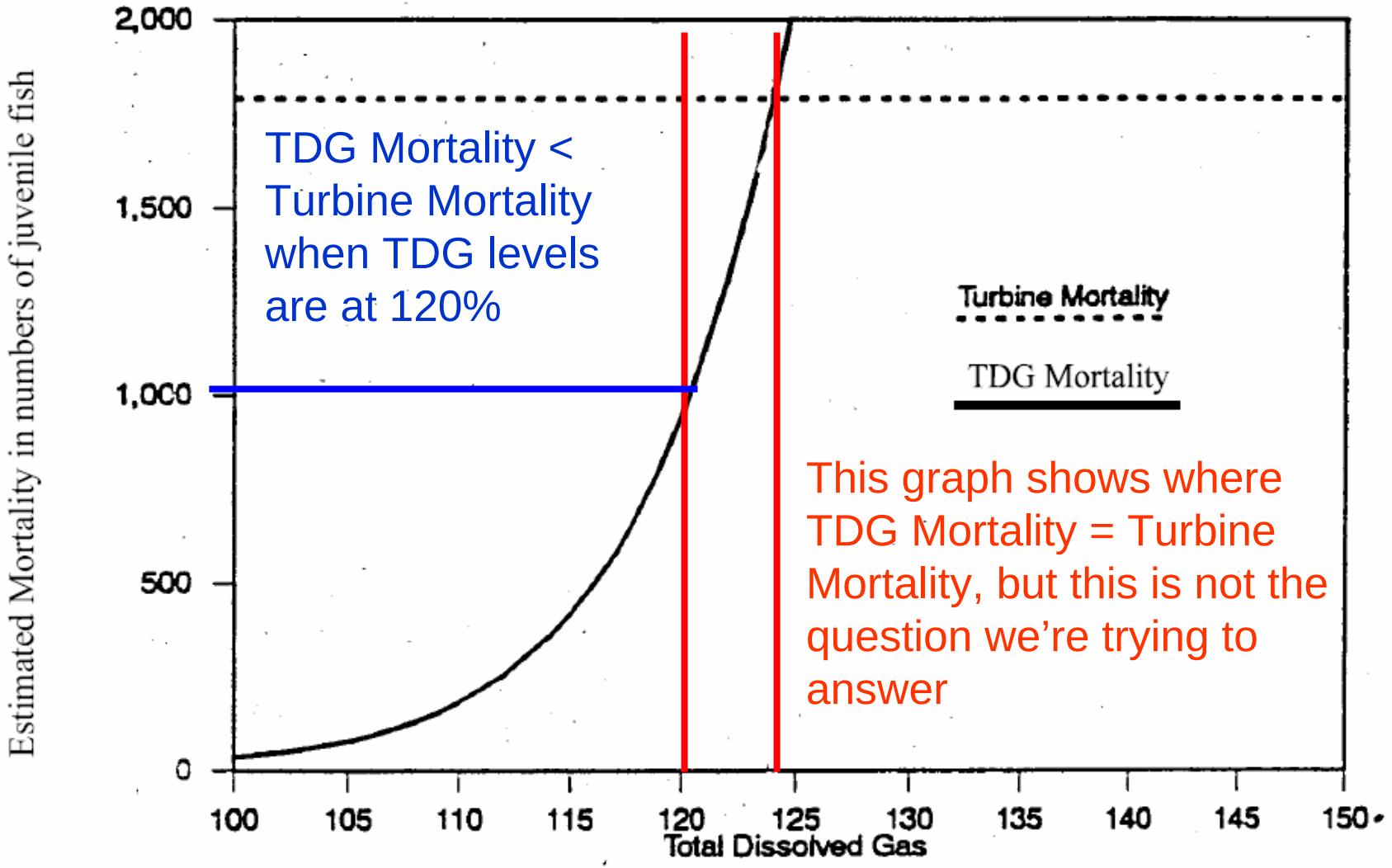
from *Appendix E* (page E-8)*:*

Going from 110% to 115%/120% (what is currently used):

- 5.7% survival improvement for spring chinook
- 4.9% for yearling chinook
- 3.9% for juvenile steelhead

***What survival improvements would there be if we go from 115%/120% (current) to just 120%?***

# Graph from Appendix E

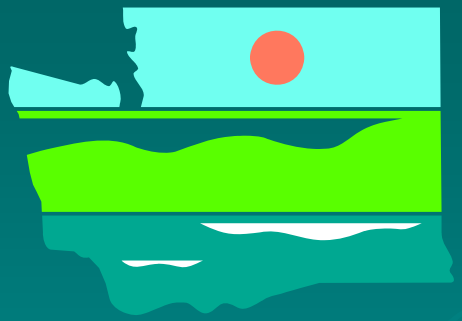


# Due Dates for Review

March 4  TDG Literature Review
March 4  FPC and USACE Spill Volume Reports

# Contact Information

Andrew Kolosseus
Washington Department of Ecology
Water Quality Program
P.O. Box 47600
Olympia, WA 98504-7600
akol461@ecy.wa.gov
360-407-7543



WASHINGTON STATE DEPARTMENT OF ECOLOGY

Agnes Lut
Columbia River Coordinator
Oregon Department of Environmental Quality
811 SW 6th Ave
Portland, OR 97204
lut.agnes@deq.state.or.us
503-229-5247

DEQ
State of Oregon Department of Environmental Quality