



WASHINGTON STATE DEPARTMENT OF
Natural Resources

Peter Goldmark - Commissioner of Public Lands



2014 PROFESSIONAL DIVE SAFETY CONFERENCE

April 7-8

Washington State Convention and Trade Center
Seattle, WA

The Washington State Department of Natural Resources (DNR) is hosting a two-day conference in April 2014 focused on professional diver safety.

The **2014 Professional Dive Safety Conference** will bring together local, state, and national dive experts to present the latest scientific research, technology, and best management practices related to commercial dive programs.

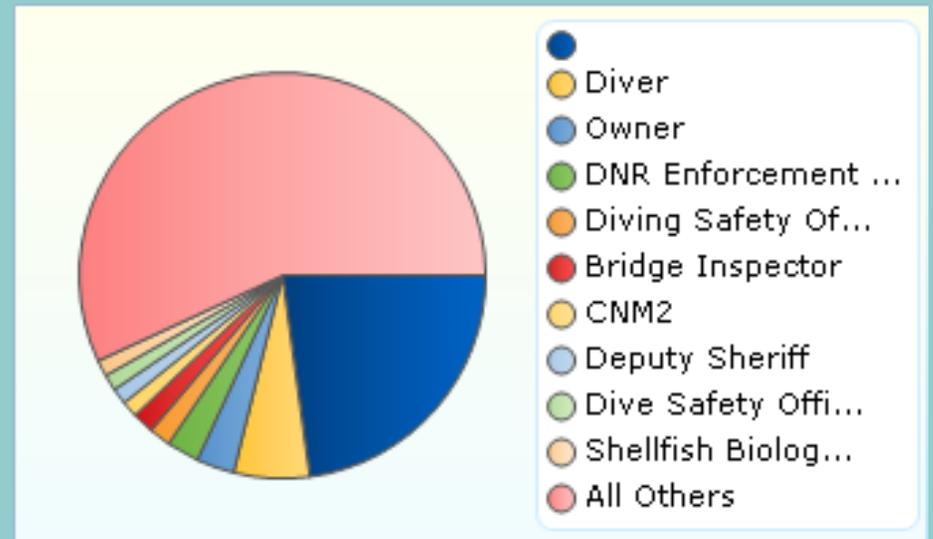
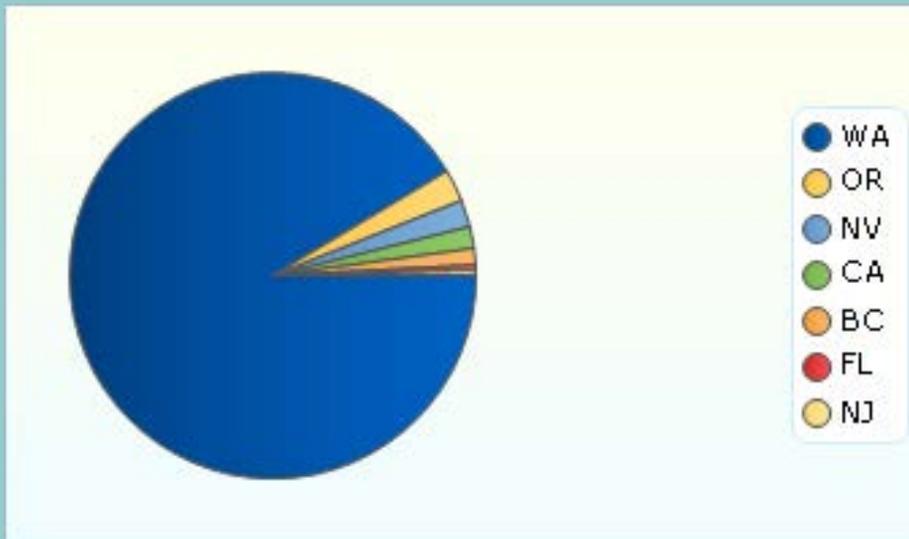


WASHINGTON STATE DEPARTMENT OF
Natural Resources

www.dnr.wa.gov

2014 DNR Professional Dive Safety Conference Participants

241 registered!





2014 Professional Dive Safety Conference

Washington State Convention and Trade Center Seattle

APRIL 7 - 8, 2014

Monday April 7, 2014

0800 – 0900 **Check in / Reception**
0900 – 0915 *Welcome*
 Megan Duffy, Deputy Supervisor, Washington State Department of Natural Resources (DNR)
Opening Remarks
 Peter Goldmark, Commissioner of Public Lands

Reinvigorating Safe Diving Culture at DNR

0915 – 0945 *Conference Overview and Introduction to DNR Dive Program*
 Blain Reeves, Assistant Division Manager, DNR
0945 - 1045 *External DNR Dive Program Review*
 Dennis Lucia, Manager, Nisqually Marine Services
 Frank LaQue, Dive Institute of Technology
 Raymond “Boy” Kayona, Retired Navy Master Diver
1045 – 1100 **Break**
1100 – 1130 *Turning Recommendations into Actions*
 Dan Horvath, DNR
1130 – 1200 *Audience / Panel Q&A*
1200 - 1300 **Catered Lunch / Networking**

Professional Diving Requirements

1300 – 1330 *Standards Governing Professional Diving*
 Dan Marelli, President, Scientific Diving International

Requirements for AAUS Divers and Dive Safety Officers

1330 – 1350 *Introduction and history of the American Academy of Underwater Sciences* **Nathan T. Schwarck**, Dive Safety Officer, Shannon Point, Western Washington University
1350 – 1410 *American Academy of Underwater Sciences: The new standard and other recent changes*
 Pema Kitaeff, Dive Safety Officer, Friday Harbor Labs, University of Washington
1410 – 1430 *Regular Duties and Responsibilities of an American Academy of Underwater Sciences Dive Safety Officer*
 Kevin Buch, Dive Safety Officer, Oregon State University
1430 – 1445 *Audience / Panel Q&A*
1445 – 1500 **Break**



Monday April 7, 2014, *continued*

Implementing Dive Safety in Canada and Lummi Nation

- 1500 – 1520 *Overview of Scientific Diving Regulations in Canada*
Jeremy Heywood, Diving Safety Officer at the Vancouver Aquarium and President of the Canadian Association for Underwater Science
- 1520 – 1540 *Development of a diving safety program for Lummi commercial harvest divers*
Karl W. Mueller, Shellfish Biologist/Diving Safety Officer, Lummi Natural Resources Department
- 1540 - 1600 *Audience / Panel Q&A*

Lessons Learned from decades of investigating Dive Accidents

- 1600 - 1700 **Steven M. Barsky**, Owner, Marine Marketing and Consulting

Tuesday April 8, 2014

- 0800 - 0845 **Check in / Reception**
- 0845 - 0900 *Opening Remarks, Recap Day 1, Preview Day 2*
Kristin Swenddal, Aquatic Resources Division Manager, DNR

The Bubble Briefing (aka Decompression Sickness)

- 0900 - 0930 **Edmond Kay**, MD, Directory Hyperbaric Medicine, HealthForce Partners

Using Advances in Equipment to Dive Safe

- 0930 – 1000 **John Hott**, Director of Training, Ocean Technology Systems

EPA Task Hazard Analysis for Contaminated Water Diving

- 1000 - 1030 **Sean Sheldrake**, Diving Officer, Environmental Protection Agency (EPA) Region 10
- 1030 – 1045 **Break**

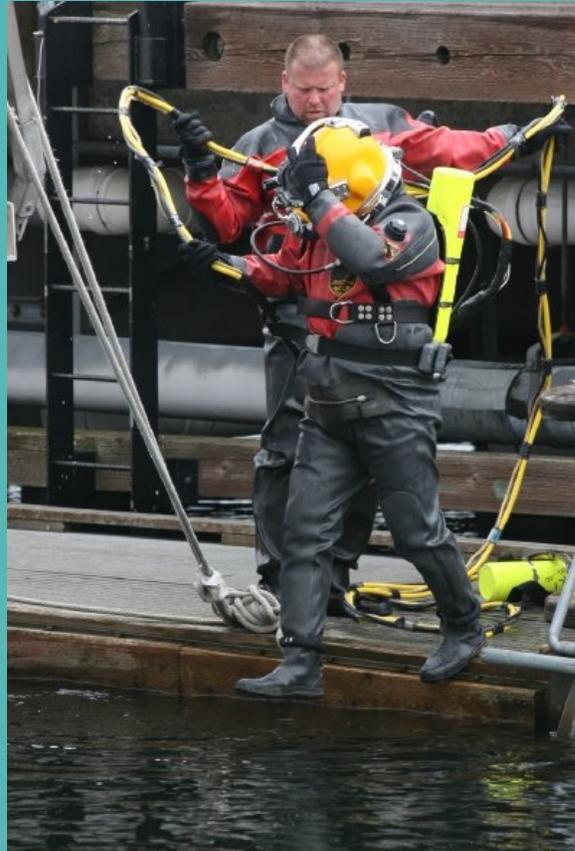
Diving Risk Management Course

- 1045- 1130 **Dan Horvath**, Master Diver, DNR

Developing a Dive Safety Network

- 1130 – 1145 **Jessica Payne**, Communications Consultant, DNR
- 1145 – 1200 *Closing Remarks*
Kristin Swenddal, Division Manager, DNR

Reinvigorating Safe Dive Culture



History of DNR Dive Program Tied to the Evolution of Geoduck Wildstock Fishery

- **1950's – 60's** – US Navy Divers identify large bi-valve clams in large quantities/
- **1967** – WDFW begins population surveys.
- **1970** – Fishery begins as DNR lease program. Low value.
- **1987**– Fishery becomes more valuable (>\$1 per pound) – DNR staff at three with one vessel.
- **1988** – Large scale poaching. WDFW-DNR re-assess fishery management strategies.
- **1989** – DNR forms compliance dive team. Scientific Dive Manual created – Scientific Diving Standard in place. Appoints first Master Diver. DNR begins auction system. Dive team at five with master diver and four divers.

History of DNR Dive Program...

- **1992** – Rafeedie Decision granting Puget Sound Treaty Tribes right to shellfish/geoduck.
- **1994** – DNR fishing single tracts at a time. Dive team at five (Master Diver and four Divers).
- **2004** – Transition to Commercial Standard – Commercial Dive Manual produced.
- **2006** – Sub regional fishing strategy is implemented in select management regions. Dive team expanded to seven (one Master Diver and six divers). Fleet expanded to four vessels.
- **2011** – Sub regional fishing strategy resulting in multiple tracts open at same time. High value (>\$10 per pound). Dive Team expanded to nine total (Master Diver and eight divers).
- **2012 – 2013** – Geoduck market value increases substantially reaching > \$17 per pound. Smaller tracts open in multiple regions. Divers stretched and DNR implements external review of dive program.
- **2014** – DNR dive team of thirteen into includes one Master Diver, two Dive Supervisors and ten Divers.

The Wildstock Geoduck Fishery



Statutes...

RCW 79.135.220 directs DNR to designate the areas of state-owned aquatic lands that are available for harvesting by licensed geoduck harvesters

RCW 79.140.050 directs the method of sales for geoducks.

RCW 79.125.650 defines the Responsible Bidder.

Geoduck Fishery Co-Managers

Washington State Department of Natural Resources

- ▶ Responsible for Proprietary Management
- ▶ Conducts resource sales
- ▶ Manages harvest agreements
- ▶ Conducts Compliance Monitoring
- ▶ Ensures long term sustainability

Co-Managers...

Washington State Department of Fish and Wildlife

- ▶ Responsible for the Biological Health
- ▶ Sets Total Allowable Catch (TAC)
- ▶ Conducts resource surveys and environmental assessments (pre-fishing and post-fishing)
 - ▶ Ensures protection of eelgrass beds and herring and smelt spawning areas
- ▶ Conducts biological studies and research
- ▶ Conducts Enforcement

Co-Managers...

Washington State Treaty Tribes

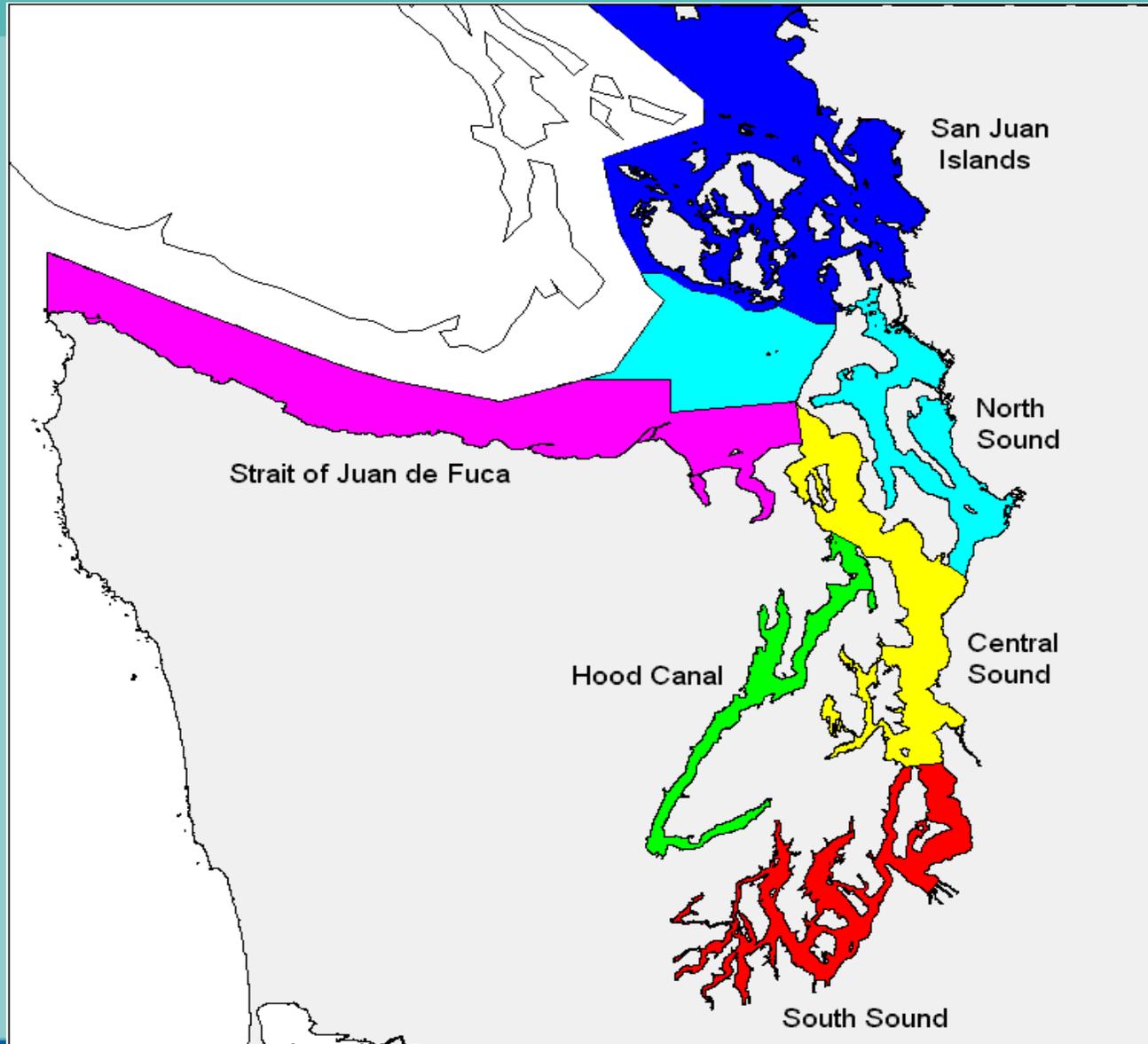
- ▶ 1995 “Rafeedie Decision” or U.S. v. Washington
- ▶ State/Tribal Regional Harvest Agreements
- ▶ Tribal enforcement of tribal harvest activities

Monitoring...

Washington State Department of Health

- ▶ Conducts water quality testing to determine suitability for harvest
 - ▶ Designates commercial geoduck tracts as approved, conditional, prohibited, restricted, or unclassified
- ▶ Conducts biotoxin testing on geoduck from commercial tracts

Washington State Geoduck Management Regions



Active Commercial Wildstock Geoduck Tracts



Every attempt was made to use the most accurate and current geographic data available. However, due to multiple sources, scales, and the currency of the data used to develop this map Washington Department of Natural Resources cannot accept responsibility for errors and omissions in the data. Furthermore, this data is not survey grade information and cannot be substituted for an official survey. Therefore, there are no warranties that accompany this material

Harvest Strategy

- ▶ The State and Tribes focus harvest on a small number of tracts to a pre-determined level – before moving to a new tract.
- ▶ The tract is then put into recovery status.
- ▶ A tract's “fished down” or “in recovery” status does not mean that the tract is “fished out” – with nothing remaining.

Harvest Strategy...

- ▶ The tract remains undisturbed until the natural repopulation and growth of wild geoducks brings the biomass back to or above pre-fishing levels.
- ▶ Post harvest studies show recovery averages 39 years
 - ▶ Range of 11 to 73 years
- ▶ WDFW conducts another scientific survey to verify recovery prior to fishing.

DNR Auction Overview

- ▶ Between 4 and 6 sealed-bid public auctions conducted per year
- ▶ SEPA and public notification conducted prior to every auction
- ▶ “***Minimum***” price per pound established prior to each auction
- ▶ Geoducks are auctioned as a set number of pounds available to harvest at a specific time and specific place

Geoduck Harvest Operations



- ▶ Fishery is a year-round, dive fishery
- ▶ State harvest is allowed M-F 8:00 a.m. to 4:30 p.m.
 - ▶ Harvest is not allowed on weekends or state holidays.
- ▶ One to two divers work from vessels ranging from 25 to 50 feet in length

Geoduck Harvest Operations...

- ▶ Divers use surface supplied air with commercial dive equipment
- ▶ A water nozzle is used to individually remove geoducks by hand
- ▶ A diver can typically remove 500 to 1,000 lbs of geoduck per day
- ▶ Divers work an average of 2 to 3 hours underwater each day with surface interval breaks



Role of DNR Diver



Compliance Monitoring vs. Enforcement...

► Different Roles

- DNR Compliance Monitoring staff are primarily responsible for harvest area compliance – on tract during harvest hours
- WDFW Enforcement staff protect a wide range of species and are primarily responsible for resource violations outside of the monitored State harvest

DNR Divers Perform Other Key Functions

Derelict vessel, gear and debris removal



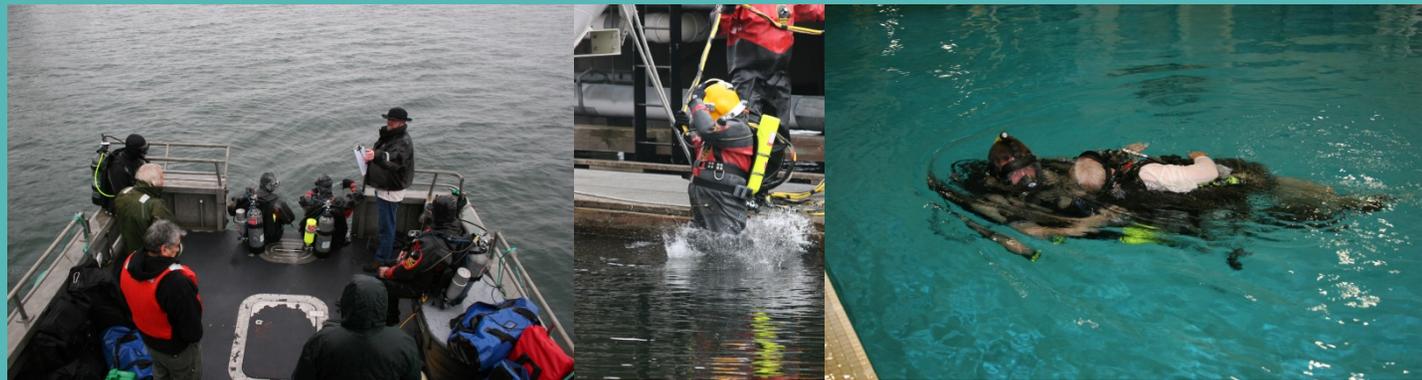
Research and Survey



Outreach and Education



Continue to expand capabilities and safety (Train)



DNR Dive Program Review

- Review the DNR organization (i.e. job classifications and/or requirements, reporting structure, training requirements, etc.) and dive safety framework (i.e. the WDNR Dive Safety Manual).
- Compare DNR dive operations to current industry and government diving standards and regulations.
- Evaluate DNR diving facilities, equipment and maintenance procedures
- Evaluate DNR dive operations in a pool and open water both on the surface and under water during scenarios, training and standard dive operations.

DNR Professional Diving Advisory Council



← **Dennis Lucia** –

Nisqually Marine Services – Manager and Diving Superintendent / Instructor

John Paul Johnston –

Executive Director – Diver's Institute of Technology

Frank La Que –

Director of Training - Diver's Institute of Technology

Boy Kayona –

Retired Navy Master Diver and Paramedic specializing in hyperbaric medicine

Steve Urick –

NOAA Diving Safety Officer / Diving and Hyperbaric Instructor



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