

OREHP Advisory Panel Meeting  
Los Alamitos, CA  
April 18, 2016

Attendees:

Tom Barnes	Mike Kucura	Jim Salazar	Connie Silbernagel
Gary Burke	Randy Lovell	Brice Semmens	Valerie Taylor
Mark Drawbridge	Jim Moore	Bill Shedd	Tony Vaught
Kathryn Johnson	Mark Okihira	Mike Shane	Dallas Weaver
Wayne Kotow			

**Introductions**

**Hatchery Update (Mark Drawbridge):**

*2016 production summary*

- Overwintered several thousand fish
- 12,300 fish have been released so far in 2016
- 60,000 fish have been tagged for delivery
- 15,000 fish at the hatchery
- Spring distribution of fish – will mitigate for warm water conditions
- Prioritize producing fish for enhancement

*Broodstock*

- Total of 142 broodstock fish on hand
- 134 of those are currently in spawning pools

*Broodstock loss in the Quarantine (Q1) tank*

- Higher than average temperature
- Some of these fish were euthanized
- Break in sterilization
- *Vibrio* was cultured in water samples
- Histopathology revealed contaminant exposure
  - Ulcerations of the eye, secondary bacterial infection
  - Flagellate identified and treated with Romet and Peroxide
- Decreased mortality seen with cooling water temperatures
- Ciliates found in February/March
  - *Miamiensis* affects the olfactory nerve and the meninges
  - External ulceration is sometimes observed
  - Makes way to the brain and causes abnormal behavior
  - Higher infection rates come with hypersaline conditions
  - Recommendation by CDFW was to euthanize
  - Total of 37 fish lost
  - Planned on moving these to the new broodstock tank within the next month

Question:

How old were these fish? - Dallas Weaver

Answer: Sub adult (3-7 years)

Temperature stress with old fish is trouble. – Dallas Weaver

*Voice of San Diego (VOSD) article in January*

- Small environmental group that is anti-HSWRI/anti-aquaculture made a public request for information
- Article contained many links to reports and e-mails
- Damage control - internal talking points distributed
- Bob Fletcher wrote an op-ed response
- KPBS article/video
- Bill Shedd – Volunteers are unhappy. This is a huge deal. The sportfishing community contributes \$20 Million in Sportfish Restoration Funds.

*White seabass QA/QC Committee*

- Established in 2011
- Joint HSWRI-CDFW membership
- Reconvened on 4/5/16
  - Review of procedures for QA/QC Manual
  - Need for consensus on a uniform program
  - Understand rationale for CDFW's QA program
  - CDFW has previously indicated that QA/QC is the hatchery's responsibility
  - Want to reduce misconceptions – both internal and external

*Quality Control/Quality Assessment (Connie Silbernagel)*

- Goal is to release fish of the highest quality
- 125 fish are examined at each checkpoint (50 dph, 80 dph, and prior to transfer)
- Cull out deformities not seen in wild fish
- Deformities are classified into mild, moderate, and severe malformation
- Release fish that have no deformities or mild deformities at worst
- Train staff as well as [hatchery] can – senior member is always present
- Target is to have 95% of fish meeting high quality standards
  - 87% of malformations in 2015 were bony malformations
  - 13% were soft tissue malformations
- Fish are in growout facilities for 4-5 months – opportunity for change to occur (gas bubble disease)
  - Water heats up in summer and leads to GBD
  - Working with pen operators to get these numbers down
- Inefficiency in the program leads to increased mortality

*(Discussion)*

Mike McCorkle - How does this hatchery compare to other hatcheries?

Mark Drawbridge – Can be difficult to compare. It's a numbers game – this program is the most comprehensive in the nation. Texas and South Carolina are releasing 30 day old fish expecting significant losses. There is a different threshold depending on the purpose of culture (put and take, enhancement, consumption). With high fecundity fish, deformities are a minor issue. Malnutrition leads to bone malformation. Feeding too fast - nutrients leach out. Too high protein leads to deformities from fish growing too fast.

Gary Burke - What are the regulations?

Mark Drawbridge/Valerie Taylor – There are none.

Mark Drawbridge - Purpose of the article was to smear HSWRI because of Rose Canyons.

Tony Vaught – There are malformations in nature, it is seen with electrofishing in the Sacramento River. Swim bladder malformations are seen in fish where no hatchery exists. It happens everywhere. Looking at the data for salmon/trout, is there a level that's acceptable? I'd be surprised if someone else is doing a better job [than HSWRI].

Dallas Weaver – The fish sent to Mexico net pens – they were the culls.

Bill Shedd – It is no surprise that VOSD wrote this article. They share office space with San Diego Coastkeeper. The problem is not the article. The sportfish community is the biggest customer in numbers. Where is the formal rebuttal from the Department? It is a slap in the face to the program, the Department, the growout facilities. Misinformation in the article can only be corrected by the Department.

A motion was put forth requesting the Department respond, in writing, to the VOSD article to correct the record.

Mike McCorkle seconds the motion.

Mark Okihiro – What specific misinformation are you referring to?

Bill Shedd – The article infers that the Department is releasing huge numbers of deformed fish.

Tom Barnes – The journalist chose to ignore most of what I said in the interview – supportive of the OREHP. The Department can't control what the press states. The Department rarely rebuts misinformation in the news or dissenting opinions. Unrelated dots connecting OREHP to Rose Canyons.

Tom Barnes tried to explain to the reporter, in detail, the formal review process, which is designed to address the questions that are being raised.

- 1) Data – what has been observed in hatchery fish?
- 2) What does it mean? What are the implications for survival? Research and development needs.

What are the mortality rates at different ages for fish with deformities from hatchery?

- Qualified experts can have different opinions. Mark can have one opinion and another expert may have a dissenting opinion. This happens in science.
- The quotes were misinterpreted and not direct quotes. The links were largely internal documents not intended for public consumption. We use 99% of them to make sure a project is running correctly. Once it's out there, it's out there.

Bill Shedd - I understand that the Department can't respond to every Tom, Dick and Harry. I push for the motion to pass.

Mark Okihiro – My detailed reports describe what I observe at the last inspection before release. Why aren't hatchery fish surviving? Only 4-6 hatchery fish per year are returned. The fish aren't surviving. It's not an unreasonable conclusion to make that the deformities are the cause.

Mark Drawbridge – The decreasing trend of survivorship is not accurate. We are releasing a small number of fish.

Tom Barnes – There is much room for scientific debate in this program. There may come out of this review that there are research and data needs that could answer some of these questions.

Mark Okihiro – Have you [Bill Shedd] read my reports?

Bill Shedd – You [Tom Barnes] need to manage your staff.

Tony Vaught – How many hatchery fish are surviving? Volume of science from the hatchery is tremendous. There are benefits that can't be determined by a number.

Gary Burke – CDFW is a neutral party. They never respond to news articles. Either the population is massive or they aren't surviving. I support Mark O. - he's just doing his job.

Tom Barnes – The white seabass stock assessment is ready for peer review this week.

Motion from Bill Shedd (see attached)

Mike McCorkle seconds the motion

Vote: Yays- Mike McCorkle, Bill Shedd, Jim Salazar, Tony Vaught

Nays – None

Abstentions – Tom Barnes, Brice Semmens

(There was a question that came up after the meeting regarding the vote and if the four votes counted as a majority so the motion was sent out via e-mail on April 21, 2016, by Valerie Taylor to all AP members for a revote. Results of the revote: Yays – John Riordan, Bill Shedd, Tony Vaught, Rafael Cuevas Uribe, Jim Salazar; Nays – Brice Semmens; Abstentions – Tom Barnes, Ken Franke). Motion passed.

*Quality Assessment/Quality Control (Continued)*

- Changes happening throughout growout process regardless of how well they do
- The use of rotifers has decreased malformations
- Most common malformation is in the jaw
- BAD hearts in CIH fish
  - USDA accredited lab has shown that in sturgeon, changes in the heart is a normal part of the development process.
  - Context is important
- Pyloric caecae
  - Number of pyloric caecae is not associated with clinical disease

Mark Drawbridge

- The take home is that HSWRI is an open book – look at the fish
- The QA/QC Committee is designed so that more CDFW eyes are on the fish.
- The QA is supposed to be done by HSWRI
  - This is being undermined by CDFW's "QA/QC program"
  - Are the fish Mark O. is identifying as "deformed" cullable?

*(Discussion)*

Gary Burke – How long has CDFW been studying fish in the wild for abnormalities? How can you compare?

Mark Okihiro - Compare to WSB broodstock fish [Mark] has access to; also, gillnetting observations.

Mark Okihiro put together 500 page report as to what is normal. Video doesn't show internal malformations/deformities

Wayne Kotow- How can you know if these are good or bad? What's naturally occurring?

Mark Okihiro – We don't know what a defect does to survivability. There is natural variability. Differing professional opinions.

Gary Burke – Have you gotten a tagged fish back with these deformities?

Mike Shane – We can go back and look.

Connie Silbernagel – I'm sure

Gary Burke – So you haven't looked?

Tom Barnes – HSWRI is responsible for the QA/QC committee. We do a lot of things internally. This doesn't belong at the AP meeting.

Mark Drawbridge – There is a chink in the armor, that's the reason why we're talking about this.

Dallas Weaver – Details of sampling methods. How were the fish collected? 25 fish random sample?

Mark Okihiro – Netted the fish. Never said it was random.

Mark Drawbridge - Post-release survival – program goal is to optimize the return rates. Public perception is important. Evidence for post-release survival in last 5-10 years? None. No evidence that diversity of malformations has increased? CDFW not placed in context, publically available. Distracting from HSWRI operations. Salmon/trout – no linkage to QA/QC – have a self-culling process for fish. OREHP has a higher level of scrutiny.

Randy Lovell- will we address the problem of the two different “programs”?

Valerie Taylor – This will be addressed internally. Can’t speak for salmon and trout, but the Department does not have a QA/QC program.

### **Field Studies (Mike Shane):**

#### *Gill net survey (Aug. and Oct. 2015)*

- 200 WSB caught at coastal sites, 12 tagged
- 212 WSB caught at embayment sites, 0 tagged
- Recapture percentages from OREHP gill net sampling in October/June have generally increased
- Sampling has been interrupted – budget cuts, data gaps
- Not enough data to assess whether or not the changes we’ve made have affected survivorship

#### *2015 Fishery Surveys*

- 1,895 total WSB scanned from both commercial and recreational fisheries

#### *Seabass in the Classroom*

- CDFW looking to see if this program needs a permit

#### *(Discussion)*

Mike McCorkle –Where are the nets set in San Diego Bay?

Mike Shane – Not great for wild or hatchery fish. More nets are needed in San Diego Bay to make CPUE more comparative to Mission Bay samples.

Mike Drawbridge – We are not seeing deformities in the release data.

Mike McCorkle – Does it include hook and line?

Mike Shane – Yes, but the majority are from gill nets.

Jim Salazar – What about recreational numbers?

Mike Shane – We are seeing a decreased number of heads coming from the recreational fishery.

Bill Shedd – What about tag retention? How do we know?

Mike Shane – Retention dropped a little due to new taggers. Fish held up to 6 months.

What about up to 6 years?

Mike Shane – Compared several tagging techniques; genetic marking – able to track their progeny; will likely be a recommendation from the SAC.

### **Pathology (Mark Okihiro):**

#### *Broodstock loss Q1*

- Wild fish collected in Mission Bay and off Oceanside in Fall 2014
  - 37 fish collected
  - 21 died
- 4 fish necropsied by Mark Okihiro
- CNS findings for 2 fish
  - Olfactory neuritis
  - Meningitis
  - Ciliated protozoa found in brain
- Protozoa
  - Easy to see these organisms
  - Comes through nose
  - Spreads to brain
- Recommendation – euthanize remaining fish (done) and double UV sterilization for Q1 and Q2
- Protozoa threat to hatchery
  - Present in AHL waters
  - Untreatable
  - Many outbreaks at hatchery (losses in thousands)
    - 2010 epizootic – traced back to Mission Bay
    - Extended outbreak, massive losses
    - Infected fish transported to 4 growout facilities

#### *Eye Lesions*

- 2015 – high prevalence of eye lesions
- Big spike in August-October
- High correlations with El Nino – unusually warm water
- Minimize occurrence
  - Avoid raceways
  - Reduce number of fish in J2 tanks
  - Use deeper pens

### *Ichthyobodo Epizootic*

- One outbreak in 2015
- Fish transferred from Mission Bay
- Lost 23,000 fish
- Easier parasite to treat – R<sub>x</sub> Peroxide

### *Hatchery Biosecurity Issues*

- Raceways and Q1, Q2 tanks use AHL water
- Transport of larval and experimental fish from Mission Bay
- Contaminated transport equipment

### *Fish Transport to CIH*

- Transport problems
  - Water temp, distance, transport stress, damage due to trauma
- Transport losses in June 2015 totaled 7,700 fish
- Recommendations
  - Avoid summer transports
  - Transport smaller fish
  - Reduce transport densities
  - Transport at night
  - Improve fish handling

### **DFW Update (Valerie Taylor):**

#### *OREHP Budget and Contracts (FY 2016/17)*

- Stamp funds expected to stay the same
- One more year on hatchery contract
- Currently renewing gill net contract for one year - \$85,000
- Pathology contracts - \$10,000
- Evaluation contract - \$98,856
- Wand repair - \$4,000

Tom Barnes – SFRA – huge demands for this funding elsewhere in Department. We will likely not be able to maintain current levels of SFRA funding [for OREHP]

#### *Evaluation Update*

- Scientific Advisory Committee meeting next week (2<sup>nd</sup> in person meeting)
- CDFW and HSWRI have sent California Sea Grant all OREHP reports, data, and information for Scientific Advisory Committee to review

#### *Coastal Development Permit (CDP) Update*

- CDP applications will move forward in June for Coastal Commission review and approval

*Closing*

- Next meeting – October 2016