Meeting Notes

Marina Interagency Coordinating Committee (MIACC) & Anti-Fouling Strategies Workgroup (AFSWG) Meeting

Tuesday, October 16th, 2018
1:00 PM - 4:00 PM

Hosted by the State Water Resources Control Board

CAL/EPA Building – 14th Floor, Room 1410
1001 "I" Street, Sacramento

<table>
<tr><th colspan="2">1. Introductions and Announcements</th><th>1:00 - 1:30 pm (30 mins)</th></tr>
<tr><td>Speaker:</td><td colspan="2">Michael Hanks – Nonpoint Source Program, State Water Resources Control Board (Michael.Hanks@waterboards.ca.gov)</td></tr>
<tr><td>Purpose:</td><td colspan="2">• Participants introduce themselves and their affiliation
• Opportunity for participants to give updates and announcements</td></tr>
<tr><td>Attendance:
(listed in alphabetical order by first name)</td><td><u>In Person</u>:
• Aniela Burant – Dept. of Pesticide Regulation (DPR)
• Jeanie Mascia – State Water Resources Control Board (SWRCB)
• John Berge – Pacific Merchant Shipping Assoc.
• Kathy Obrien – Clean Marine Program
• Michael Hanks – SWRCB</td><td><u>On the Phone</u>:
• Barry Snyder – Amec Foster Wheeler
• Chris Miller – City of Newport Beach
• Chris Scianni – State Lands Commission (SLC)
• Colin Anderson – American Chemet
• David Elias – San Francisco Bay Regional Water Quality Control Board (RWQCB)
• Greg Schem – The Boat Yard
• Jeremy Haas – San Diego RWQCB
• Johntommy Rosas – Certified Marine Coatings Applicator
• Karen Holman – Port of San Diego
• Kelly Tait – Port of San Diego
• Lina Ceballos – SLC
• Maral Tashjian – L.A. County Beaches & Harbors
• Maren Farnum – SLC
• Matt Peterson – CA Professional Divers Association
• Michael Tripp – L.A. County Beaches & Harbors
• Neal Blossom – Chemet
• Peter von Langen – Central Coast RWQCB
• Ray Hiemstra – Orange Co. Coastkeeper
• Rolf Schottle – Amec Foster Wheeler
• Shana Rapoport – Los Angeles RWQCB
• Shelly Anghera – Latitude Environmental
• Sue Keydel – U.S. EPA
• Susan Brodeur – Orange County Parks
• Vanessa Metz – CA Coastal Commission (CCC)
• Vivian Matuk – CA State Parks Division of Boating & Waterways, & CCC</td></tr>
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Attachments:	Meeting notes from last meeting (March 2018)
Participant Updates & Announcements:	None.
Action Items:	*Vanessa Metz:* Will post finalized meeting notes, presentations, materials, and the video of the meeting on the Coastal Commission's webpage for the *Marinas and Recreational Boating Workgroup*, in the *Archive of Meeting Notes & Presentations*.

2. Update on In-Water Vessel Hull Cleaning Studies	**1:30 - 1:45 pm (15 mins)**
Speaker:	***David Elias*** *– Senior Engineering Geologist, San Francisco Bay Regional Water Board (David.Elias@waterboards.ca.gov)*
Purpose:	To give an update on In-water Vessel Hull Cleaning (IWVHC) studies being conducted by the University of Maryland.
Background:	About 10 years ago, the U.S. Maritime Administration funded studies on discharges from in-water vessel hull cleaning (IWVHC) technologies designed to remove invasive species and biocides from effluent. That study was the basis for S.F. Bay Regional Water Quality Control Board's (RWQCB) required IWVHC Best Management Practice (BMP). The University of Maryland is furthering this work with additional vendors. The results of the study will be useful for further permitting of such technologies.
Attachments:	• *In-Water Vessel Hull Cleaning Best Management Practice Fact Sheet* (S.F. Bay RWQCB, 2015)
Presentation Notes:	**Summary:** • S.F. Bay RWQCB's work on the IWVHC BMP was kicked off by pollution issues due to Suisun Bay Reserve Fleet's WW II-era vessels doing IWVHC without filtration. • The BMP limits discharges from IWVHC to 100 µg/L copper & 700 µg/L zinc; but they have able to achieve much lower discharge levels of metals using this BMP. • The BMP is easily implemented using a simple off-the-shelf filtration system. • This is an interim BMP while waiting for the State Water Board (SWRCB) to determine IWVHC Best Achievable Technology (BAT); there hasn't been much progress. The BMP Fact Sheet is posted on the SWRCB's website as guidance. • The Maritime Administration is now funding other studies with Univ. of Maryland & vendors, including ships in Alameda. More data will help determine BAT for metals discharge from IWVHC. The studies are also looking at invasive species mitigation. • The hope is that at some point there will be enough info to write an NPDES permit. **Discussion:** ➢ **Q:** *Jeanie Mascia*: About waiting for SWRCB to work on BAT; can you elaborate? o *David Elias:* Dominic Gregorio had the project, & then gave it to someone who worked for him; we haven't heard anything from them about it in a long time. o *Jeanie Mascia:* Dominic retired 5 years ago. Were we going to adopt it into a statewide NPDES permit, or add it to the Enclosed Bays and Estuaries Plan? o *David Elias:* It would be appropriate to write an NPDES permit. SWRCB planned to do studies on a variety of discharges to determine BAT, but I don't think it moved forward. The Maritime Admin. & Univ. of MD studies are comparable. ➢ **Q:** Is the filtration system in an enclosed area that the ship is contained in? Or just running in the general vicinity of the ship? o *David Elias*: No, the scrubber has a vacuum applied to it that sucks up effluent from scrubbing; that is brought to the surface and run through a filtration system. ➢ **Q:** How did you get connected with the Univ. of Maryland? o *David Elias*: Chris Scianni recommended that I be part of the Technical Advisory Committee (TAC).

- *Chris Scianni*: I was part of the organizing team, and we were looking for folks for a TAC to provide input on the protocols we were developing for these tests.

➢ **Q:** *John Berge*: Is this BMP acceptable in Southern Calif., for cleaning behind the breakwater in San Pedro Bay?

- *David Elias*: If waterbodies are impaired by copper, they may have stricter limits. Where we're doing the testing, the waterbodies are not impaired by copper.
- *Chris Scianni*: L.A./Long Beach is impaired by copper, and the L.A. RWQCB says the BMP for S.F. Bay will not apply there. Discharge limits in Southern Calif. are consistent with the Calif. Toxics Rule.
- *Shana Rapoport:* The L.A. RWQCB has not approved this BMP for use in impaired waters.
- *David Elias*: I have seen the system achieve non-detect for copper.
- *Chris Scianni:* One goal for the project in Alameda is to see how well the system can remove copper, and potentially be eligible for permits in Long Beach.

➢ **Q:** How large of a vessel are you referring to?

- *David Elias:* This BMP can be used on any size ship, but most of these studies have been done on very large vessels.

➢ **Q:** Has there been research on IWVHC with the ship in containment within the water (like a big swimming pool)? It wouldn't work for a Navy vessel or container ship, but would work for smaller vessels. The Port of San Diego did studies on this.

- *David Elias:* Would the water then be pumped out for filtration?
- *Matt Peterson:* Yes, they are pumping the water out.
- *David Elias:* The BMP is for discharging to waters of the state. If you're containing the water and sending it to the sewer, that would be great.

➢ **Q:** *Matt Peterson:* I'd like to clarify that we're talking about vessels covered under the Vessel General Permit, not pleasure craft.

- *David Elias*: Not necessarily; the discharge of copper when you clean a boat is not permitted, for any size boat.
- *Matt Peterson:* The systems you're talking about are not applicable to small pleasure craft; how do we address that?
- *David Elias:* If you can run a pump to pull the effluent from what you're scrubbing and put it through the filter, it's applicable.
- *Matt Peterson:* The brush cart with filter system costs 10 or 20 thousand dollars; it's not reasonable for the average hull cleaner cleaning 30 foot sailboats.
- *David Elias:* The BMP is a filtration system, not a brush cart. Whatever scrubber unit you have, you put a pipe next to it to collect the copper. When you scrub an ablative coating, you discharge biocide, and there is no permit to do that. We need to figure out better ways to avoid that; this BMP is a start. There hasn't been a lot of enforcement action, because we haven't caught up with it yet.

➢ **Q:** *Johntommy Rosas:* Whose jurisdiction is to enforce discharges when divers scrub vessels, discharging paint, copper, and biocides? Who is liable or in charge?

- *David Elias:* Start at the City and County level, state level (Water Boards are concerned about it), and the U.S. (EPA).
- *Johntommy:* So at Marina Del Rey, the Co. Beaches & Harbors could inspect to see if they're compliant, and report it to other agencies (EPA, RWQCB, DPR)?
- We don't have the staff to follow hull cleaners around in the marina.
- *David Elias:* The BMP fact sheet says to use this BMP if you're discharging to waters of the state. If we get more info, the State Board could do this statewide, more formally, then maybe we could get funding, and it would be clearer.
- *Johntommy Rosas:* The primary responsibility is the divers and dive company who are performing the work; it's basically a 404 violation.

	o *David Elias:* It's tricky because the product is still legal to put on your boat, and it's designed to discharge copper. o *Johntommy Rosas:* But it's not compliant to discharge the biocide, copper, zinc. o *David Elias:* When I first started working on this we had a better way to do it: pull your boat out, collect the effluent, and send it to the sanitary sewer. And that's what we required. At a lot of boatyards you do have that option rather than cleaning in the water. But if someone is careful and barely taking off a little algae from their sailboat with a piece of carpet, is that really a problem? o *Johntommy Rosas:* Test results recently done from the marinas show there's all kinds of stuff in there, some of it due to paint failures, some has to be from the divers. The responsibility is first on the vessel owners and also the divers to make sure they're not illegally discharging material. It goes back to the County; they need a protocol, especially since they'll have to pay for the clean-up. There will have to be some adjustment to how it's being done in the future. o *David Elias:* I'll look for a photo by Michael Zlotkin, showing what he collected in his hull cleaning containment system. o *Matt Peterson:* That photo shows cleaning a commercial fishing boat; he's claiming that picture is typical of in-water hull cleaning of a pleasure craft. What he's actually done is cleaned a boat with sloughing paint, a paint which should never be cleaned in the water because of its uncontrolled release. That is not what happens when you clean a hybrid, ablative, or a hard paint. So don't share that picture and infer that this is what happens every time a diver cleans a boat. I believe that Michael Vlotkin's system is what was referred to earlier about cleaning a vessel in containment. He's based in Santa Cruz. o Michael Zlotkin is currently testing his hull cleaning system in Newport Bay through a contract with the Santa Ana Water Board.
Action Items:	• *Jeanie Mascia & David Elias:* Will talk about getting the SWRCB's work on determining BAT resurrected. • *David Elias:* Can help facilitate discussions about using the BMP in San Pedro Bay.

3. OSHA/Cal OSHA Safety Pollution Regulations for Compliant Vessel Anti-Fouling Coating Replacement Process	**1:45 - 2:15 pm (30 mins)**
Speaker:	***Johntommy Rosas*** *– Certified Marine Coatings Applicator* (tattnlaw@gmail.com) USCG-Certified Builder of documented vessels/master shipwright (37 years) and certified coatings applicator by all major marine coatings manufacturers (31 years).
Purpose:	To provide information on the application and process for eco-compliant removal of vessel anti-fouling coatings containing copper, and information on galvanic corrosion by stray electrical current from faulty vessel bonding and grounding.
Background:	Improper grounding resulting in stray electrical current in the water underneath and surrounding the vessel can actually neutralize anti-fouling paint, causing biofouling to occur. The causes of stray electrical current are either because the electrical system on the vessel is grounded improperly (including cross-grounding with different voltage systems on the vessel), or there is stray electrical current coming from a vessel that is moored nearby, or there is an improper/defective marina shore power system. The results are both anti-fouling failures and coating metal compounds corrosion. The process of vessel anti-fouling coating removal with a tent covering the vessel and a vacuum attachment to a sander also requires hull prep and epoxy barrier coatings to minimize dust discharge into the outside air.
Attachments:	• *Galvanic Corrosion, Anti-Fouling Coating Failure, & OSHA Safety Regulations for Coating Replacement Process* (Video of PPT) • *Citations for Galvanic Corrosion, Anti-Fouling Coating Failure, & OSHA Safety*

3. OSHA/Cal OSHA Safety Pollution Regulations for Compliant Vessel Anti-Fouling Coating Replacement Process	1:45 - 2:15 pm (30 mins)
	Regulations for Coating Replacement Process (Links to online information)
Presentation Notes:	**Summary:** • Galvanic corrosion of anti-fouling hull paint containing metal is due to stray electrical current resulting from defects in marina shore power or vessels' electrical systems. • Suggestions to avoid galvanic corrosion: o Inspect vessel electrical bonding and grounding on all system voltages when the boat is in the water. Improper bonding and grounding are separate issues. o Inspect and test the vessel at its dock and the surrounding waters for stray current voltages from various sources (shore power included). o Correct/repair all defective electrical issues, which will cease any galvanic corrosion from stray electrical current. Most boatyards aren't compliant. • Typical reasons for anti-fouling coating failures in boatyards include: o Improper grounding or stray electrical current. Vessels are creating stray current flows to their boat and to other boats. o Improper hull surface preparations/contaminants, such as oil in high-pressure air compressors or in diesel heaters used to clean the hull, and oil on hands. o Insufficient coating thickness; should be measured mechanically, but most boatyards don't. o Missing the overcoat windows for both the epoxy barrier coatings and antifouling coating (either too early or exceeding the recommended launch windows). • Another issue in shipyards and boatyards is undocumented removal of hull coatings and disposal of the debris, and noncompliant containment of the coatings during removal and application. This affects boat yard workers' exposures and safety. o For example, not covering the vessel properly during spraying of coatings, including top-side coatings. o A variety of safety and pollution regulations apply, including OSHA. See *Citations* list for links to reference materials on shipyard and boatyard safety hazards. • Links to additional information about galvanic corrosion of anti-fouling paints, vessel and marina electrical issues, and copper pollution in marinas are also provided in the *Citations* list. Examples include: o A galvanic isolator from shore power is a very important solution to galvanic corrosion, but most boats don't have one. It should not be optional. o 3M scotch-brite abrasive pad used by many divers to sand boat hulls is illegal; it is a section 404 discharge. **Discussion:** ➢ **Q:** *Matt Peterson:* It's not realistic to expect anti-fouling paints to stop fouling growth; they retard fouling growth. Hull cleaning is a necessary maintenance task because the paints as they are formulated now don't have the horsepower to completely stop fouling growth. Also, a common tool that divers use to clean boat bottoms, a scotch-brite pad, comes in a variety of levels of abrasiveness. Any cleaning implement can damage anti-fouling paint if used improperly. A medium-grade scotch-brite pad does not cause plumes of paint in the water when used properly. Divers use the proper implement to gently clean the anti-fouling paint, cleaning relatively frequently and gently. Hull cleaners are not damaging anti-fouling paint and polluting the waters. o *Johntommy Rosas:* Improper cleaning is still happening. It's an enforcement thing that has to be checked out by the county, regional, and U.S. EPA, because there is no documentation, but there is witness proof and there are plumes in the water. ➢ **Q:** *Jeanie Mascia:* How frequently does galvanic corrosion happen?

3. OSHA/Cal OSHA Safety Pollution Regulations for Compliant Vessel Anti-Fouling Coating Replacement Process	1:45 - 2:15 pm (30 mins)
	o *Johntommy Rosas:* it occurs 24/7, for all boats, Boats either discharge current or are in the path of current from other boats.
Action Items:	None.

1. Clean Marinas Program Update	2:15 - 2:45 pm (30 mins)
Speaker:	***Kathy Obrien*** *– Clean Marine Program (kathy@sun-harbor.com)* General Manager of Sun Harbor Marina in San Diego, Kathy has held multiple positions on the board of the Clean Marinas Program since 2005.
Purpose:	Present update on the Clean Marinas Program merger with boatyards: status, name change, and activities.
Background:	In 2004, the California Clean Marinas Program was established as an ongoing endeavor by a marine industry alliance determined to provide environmentally-clean facilities, and protect coastal and inland waters from pollution through compliance with Best Management Practices (BMPs).
Attachments:	• *Clean Marine Program Update* (PPT)
Presentation Notes:	**Summary:** • The Clean Marinas Program was started to get facilities to follow BMPs in all aspects of marina management. This is a voluntary group of private and government marina operators and yacht clubs. • Have kept in touch with industry associations. Marine Recreation Assoc. was instrumental at the start, & Calif. Assoc. of Harbor Masters & Port Captains joined. • Work with agencies to ensure BMPs cover what's most pertinent to each agency. • The program was rebranded in 2018 as "Clean Marine," to cover boatyards as well as marinas. Paul Kaplin (KKMI) was instrumental in incorporating boatyards. • The marinas scoresheet was updated in 2018. Added educational pieces to help marinas with certification process. Also added point areas for a trash skimmer for solid waste, and for hosting clean-up events. • The program has a board of directors, and an admin. position was added this year. It is financed through certification fees and an industry sponsor. • Staff train review teams, update the program manuals and scoresheets, maintain a website, and communicate with stakeholders, government entities, and the public. • Initial certification fee is $750 for a marina, $1200 for a boatyard. Re-certification is required every 5 years; the fee is $500 for a marina, $800 for a boatyard. • Benefits for a certified facility include a certificate and ability to use program materials for marketing; & listing on Clean Marine website (www.cleanmarine.org/). • Each facility does a lot of boater education on the BMPs. • There is a program manual for marinas and yacht clubs, and one for boatyards. The marinas scoresheet (13 sections) and the boatyards scoresheet (21 sections) give detailed info on what is expected in each section. A lot of effort by the facility is put into documenting compliance with all the BMPs. • 139 marinas and yacht clubs are now certified, and one boatyard is almost certified. Over 35 re-certifications were done this year. • The program covers five states and two countries (U.S. and Mexico). **Discussion:** ➢ **Q:** *Greg Schem:* How many applicants do you usually get each year? o *Kathy Obrien:* The growth rate has been fairly slow over the last couple years.

1. Clean Marinas Program Update	2:15 - 2:45 pm (30 mins)

Depends on the region; there are 2 marinas left to certify in San Diego. We're working closely with the Lake Tahoe area, where 4 are certified; we expect next year all 11 will be certified. In some areas we have additional support to help with encouragement of certification. For example, in Lake Tahoe, they have to be a Clean Marina in order to get permits for any redevelopment of their facility.

- **Q:** Is that one of the biggest carrots to get certified?
  - *Kathy Obrien:* No, in most cases they just jump up to the plate and do it. Five years ago there were suggestions of the same type of "aggressive nudge" in the L.A. area, but they didn't go through with it; but we had big success there anyway. There are over 400 potential marinas, and we're at 139, so there's a long way to go. Part of the challenge is that many marinas are very small, extremely seasonal facilities, so its complex for them to go through the process. This year some marinas were lost due to fire, so they haven't been re-certified.
- **Q:** Have you had any interest from the East Coast?
  - *Kathy Obrien:* There are lots of other programs in the U.S., in some states they're run by the state.
  - *Vivian Matuk:* This is the only voluntary program.
  - *Kathy Obrien:* A few states have no program at all; that's why even though we're California-based, we go out of California to help.
- **Q:** *Jeanie Mascia:* How long does it take to do an inspection?
  - *Kathy Obrien:* Fastest is 3 hours, up to 5 or 6 hours, depending on how organized they are. We read the details in their rules and regs. to confirm they're doing the BMPs.
- **Q:** *Matt Peterson:* Many marinas are certified, and as a professional hull cleaner, I wish marinas would require hull cleaners to read the BMPs on in-water hull cleaning. It almost never happens; most marinas in the Bay Area never display the BMPs to any of the service providers coming on their property**.**
  - *Kathy Obrien:* I will check with the Northern California area facilities. In San Diego, the port has very stringent rules, and many facilities require that BMPs are followed, and a contractor can't go on the facility without a signed contract acknowledging they are following these rules.
  - *Matt Peterson:* I have been doing this for over 20 years in the S.F. Bay area, and have only been asked to sign that contract by one marina, this summer (by Marina Village in Alameda). In plenty of other Clean Marinas I work in I've never been questioned about BMP use, much less shown the program manual.
- **Q:** How do you think the technology in the presentation by David Elias can be used by marinas, or incorporated into the certification?
  - *Kathy Obrien:* The cost of that system is over-the-top for recreational vessels. It is not my understanding that they are siphoning the water out before the boat leaves. You would need a system that would do the filtering. Having all the water going to the stormwater system does not necessarily solve the problem, but filtering it would be a huge improvement. In Lake Tahoe, you do not clean a boat in the water, you have to have the boat hauled out, and they have to trap everything. But this is not practical for larger boats. The boatyards in San Diego are so busy they don't have enough time to haul boats out for cleaning.
  - *Matt Peterson:* About requiring hauling a boat out for hull cleaning: in San Diego Bay there are about 8,000 boats, being cleaned an average15 times per year, over 120,000 haul-outs just for hull cleaning each year, which is 328 per day. Facilities don't exist for that to happen, and it's the same everywhere. So it's not practical to require that, and other solutions need to be found.
- **Q:** *Vivian Matuk:* Have you heard whether marinas or boats have treatment for

1. Clean Marinas Program Update	2:15 - 2:45 pm (30 mins)
	greywater? o *Kathy Obrien:* Greywater recycling is a point area in the program, but I haven't seen a facility that has it. Sun Harbor Marina has rules that don't allow pumping overboard bilge water that isn't clean. We reinforce this with newsletters to remind boaters to check their bilge, make sure their oil absorbent bilge pads are ready, & microbes are active. A few companies in San Diego will pump-out contaminated bilge water and haul it off, but there are no stations you could drive to. For greywater, I only saw one boat that contained their greywater; they had to pump it out like regular sewage. It's different on lakes, where everyone has to contain and pump out all greywater.
Action Items:	None.

2:45 - 2:55 pm BREAK (10 mins)

2. Implementation Update on the Shelter Island TMDL	2:55 - 3:15 pm (20 mins)
Speakers:	***Kelly Tait & Karen Holman*** *– Port of San Diego* (*ktait@portofsandiego.org; Kholman@portofsandiego.org*)
Purpose:	To provide information on progress made to implement the Shelter Island Yacht Basin SIYB) Dissolved Copper Total Maximum Daily Load (TMDL).
Background:	Port officials were expected to reduce copper loads at the SIYB by 40 percent by 2017; the Port District reportedly achieved a 45.4 percent reduction of copper in the basin.
Attachments:	• *Implementation Update on the Shelter Island Yacht Basin TMDL Monitoring Program* (PPT) • *Port of San Diego continues to tout copper reduction program* (Online article from The Log, California's Boating & Fishing News: June 29, 2018)
Presentation Notes:	**Summary:** • Copper TMDL for SIYB assigned in 2005, requires a 76% load reduction over 17 years (by 2022). SIYB has 2,363 vessel slips. Copper loading is dissolved copper going into the water. • In 2011 the Port was issued an investigative order to monitor how the TMDL implementation is working; must report annually to the San Diego RWQCB. • Four stages of TMDL: stage 1 is baseline (2007); stage 2 required 10% load reduction (2012); Stage 3 required 40% load reduction (2017); stage 4 (final) requires 76% load reduction (2022). • TMDL milestones were met for stage 2 & 3 interim compliance. Stage 3 (2017) required 40% load reduction, and actual reduction was 45.4%. • Baseline assessment (2005) show that passive leaching from vessels contributed 93% of dissolved copper to SIYB; hull cleaning 5%; urban runoff 1%; background 1%; direst atmospheric deposition <1%. • Continuing efforts to ID load reductions from paint, hull cleaning, & BMPs. • Continuing tracking of conversion of vessels from copper-based hull paints to non-copper paints, and from high-copper paints to lower-copper paints (Category 1 paints). Non-copper paints and vessel vacancies also tracked. Category 1 paints assigned a half-load of copper vs. a full load for high-copper paints. • Greater use of Category 1 paints is expected in the future, as the DPR's new "Category 1 Paint Rule" for recreational boats went into effect July 1, 2018. • Load reduction has been continuing annually (since recording started in 2012); seeing vessels voluntarily shifting away from high-copper paints to Category 1 low-copper paints. But Category 1 paints still contribute 50% of copper load to the basin.

2. Implementation Update on the Shelter Island TMDL	2:55 - 3:15 pm (20 mins)

- Water quality and toxicity data from 2017 monitoring for dissolved copper show results mostly above both the acute and chronic water quality objective. No acute toxicity to fish larvae; chronic toxicity found at 1-2 stations per year. But copper level hasn't shown the same reduction pattern that loading reduction has.
- Five components to copper reduction program:
  - Continued testing and research on hull cleaning and hull paints alternatives.
  - Hull paint transition from high-copper paints to low-copper or no-copper paints
  - Monitoring & data assessment; identifying data gaps.
  - Education & outreach; during last 5 years included several outreach events, press releases, and brochures.
  - Policy development & legislation.
- Key initiatives in 2017:
  - Study of SIYB tidal influence. Found that dissolved copper differences weren't that great throughout the basin.
  - Copper remediation pilot projects.
  - Culvert feasibility assessment.
  - DPR's Category 1 Paint Rule (July 1, 2018).
- As the average life cycle of paints is 3 years, this regulation has the potential to reduce copper load by 61% total load by 2021. But the Port still needs about 15% more copper load reduction to reach the TMDL goal.
- Starting in Sept. 2018, the Port is collaborating with DPR, DBW, and L.A. Harbor to update the Boater's Guide to Using Hull Paint in California brochure; expected completion late winter/ early spring.

Discussion:

- *Jeanie Mascia:* The monitoring and tracking is great information.
- *Michael Hanks:* The curve for copper reduction seemed to be bottoming out. Is the TMDL goal of 76% load reduction still a reasonable goal?
  - *Kelly Tait:* The Shelter Island master leaseholder group is actively working on issues. Need to develop further strategies for BMPs.
- Can the backlog of high-copper paints be used?
  - *Kelly Tait:* Can no longer buy the high leach-rate paints in Calif., but boatyards have 2 years to apply any existing stock of paints.
- *Ray Hiemstra:* What types of alternative paints are being used, and how often are they applied?
  - *Kelly Tait: A* small fraction of boats use non-copper paints (see graph on slide 10), which has stayed constant throughout the years of the TMDL.
  - *Karen Holman:* We haven't seen more use of non-biocide paints, as they are more expensive.
- *Ray Hiemstra:* If a boater wants a non-copper paint, could they get it applied?
  - *Karen Holman:* Staff at the boatyard can easily get them. How to decide if non-copper paint is a viable option depends on the cost of the paint, the application, and the more frequent cleaning. Non-biocide paints if treated properly tend to last longer.
  - Non-biocide paints aren't as effective.
  - *Greg Schem:* There are other non-copper paints that have other biocides. Non-biocide paint is a different thing, they are more expensive to buy and apply; they need cleaning at least every 2 weeks, and are harder to clean. Econea (an alternative biocide) may have effects, too; needs to be studied.

2. Implementation Update on the Shelter Island TMDL	2:55 - 3:15 pm (20 mins)
Action Items:	None.

3. Marine Invasive Species Management	3:15 - 3:45 pm (30 mins)
Speakers:	***Maren Farnum & Lina Ceballos –*** *Executive Office & Marine Invasive Species Program, State Lands Commission* *(maren.farnum@slc.ca.gov; lina.ceballos@slc.ca.gov)* Maren Farnum is an environmental scientist with the Executive Office of the State Lands Commission (SLC). Lina Ceballos is a senior environmental scientist with the Marine Invasive Species Program, SLC Marine Environmental Protection Division.
Purpose:	To discuss the implementation of the SLC's biofouling regulatory program, and an ocean planning partnership pilot between the Port of San Diego and the SLC that could help support management of marine invasive species and water quality.
Background:	The SLC's biofouling regulations went into effect Oct. 2017. This presentation will provide an overview of the implementation process, lessons learned, and next steps. The second part of the presentation will focus on a pilot ocean planning project between the SLC and the Port of San Diego. As part of the pilot, the Partners have developed an interactive Web Mapping Application for State waters offshore San Diego County. The Web Mapping Application contains over 80 spatially-referenced, publicly-available datasets that can be viewed to understand and address marine resources management challenges, including those related to water quality and invasive species.
Attachments:	• *Biofouling Management Regulations & Ocean Planning* (PPT) • *Draft Preliminary Assessment Report for the San Diego Ocean Planning Partnership* (Oct. 2018) • More information about the SLC's *Marine Invasive Species Program* (Website) • More information about the *San Diego Ocean Planning Partnership* (Website)
Presentation Notes:	• Maren will be talking about the new pilot project with the Port of San Diego to better understand ocean uses offshore of San Diego County, and collect info to help make science-guided decisions within the ocean. As part of this project they developed an interactive web mapping application. **Summary: SLC's Biofouling Management Regulation (Lina Ceballos)** • Why regulate biofouling? There's a lot of info about ballast water; about 76,000 invertebrates are in an avg. discharge of ballast water. Each niche area can hold 100,000 biofouling invertebrates; avg. niche area of vessels arriving in Calif. is 1,160 m^2. So this is a really big risk that has not been taken into account before. • Studies have shown that biofouling organisms arriving attached to vessels are alive and ready to reproduce: 95% of organisms attached to hulls were alive, and 91% of mussels and 25% of barnacles were ready to reproduce when they arrive in Calif. • California's Biofouling Management regulation became effective Oct. 1, 2017. Is applicable to all vessels that have their last dry dock on or after Jan. 1, 2018, or to new vessels after that date. Applicable only to big vessels, 300 gross tons or larger. • California is the first state (in the first country) to implement these regulations; other states and countries want to learn from this program. • The regulation is phasing-in implementation because most effective biofouling management happens during dry dock. • The main components of the regulation are: o Vessels are required to have a biofouling management plan and biofouling record book. o Vessels are required to submit to the SLC an annual Vessel Reporting Form

(covers anti-fouling coatings, management actions, vessel profile, residency periods, etc.).
    - The plan must specify biofouling management for wetted surfaces (hull & niche areas), and specify effective lifespan of coatings applied during last dry dock.
- Inspection and enforcement prioritization: Highest priority is vessels first arriving in Calif. Will also do outreach about the new regulation.
- Soon will start using a weighted risk assessment (based on the annual Vessel Reporting Form) to assign prioritization scores to determine if high/medium/low risk.
- Inspections focus on reviewing the biofouling plan and records book. Staff are being trained to do outreach to vessel crew, and assess industry knowledge. The regulation included a 60-day grace period if vessels don't have their plan complete.
- In first year of the regulation, ~45 vessels were inspected (since Aug. 2018), and ~30 grace periods were issued. Most common deficiencies are not including niche area management in the plan, or not knowing the effective coating lifespan. Less common are not having a plan or a record book.
- Knowledge gaps include that expected coating lifespan is not known by the crew. Also, the crew is not aware of the risk that out-of-water support strips (dry dock support blocks) have for biofouling; the area doesn't get any coating. They need to manage these as one of their niche areas. Will follow-up with targeted outreach.
- This is a different approach than for ballast water, where the crew is responsible for management. With biofouling, ownership/management is responsible for the plan.

Summary: San Diego Ocean Planning Partnership (Maren Farnum)

- SLC manages public trust lands including tidelands and submerged lands of the state. Ambulatory boundary on land (usually Mean High Tide Line), extends 3 nautical miles into the ocean. Some tidelands & submerged lands are granted by the state legislature to local jurisdictions (ports, harbors, districts) to manage.
- This pilot project is collaborative partnership with the Port of San Diego, who signed an MOA with SLC in 2016. The Port is one of the granted land partners.
- The point of this project is to gain a better understanding of ocean uses in areas offshore San Diego County, inside and outside the bay. No additional zoning or regulations are involved. The project will explore tools and processes to reduce potential conflicts among Public Trust uses, and ways to inform decision-making.
- Public engagement involves 130 stakeholders – local, regional, state, and federal agencies; community members; and ocean sector uses. The U.S. Navy has a large footprint in the offshore area.
- The draft interactive web-mapping application for the San Diego Bay area will be released in 2019 for public use. Data layers are organized by 5 Public Trust use categories: navigation, commerce, fisheries, recreation, & environmental stewardship. All the data sets are from public agencies. Example datasets include:
    - Navigation: wreaks and obstructions
    - Commerce: alternative and renewable energy; oil and gas
    - Fisheries: fishing piers and jetties; fishing vessel density
    - Recreation: SCUBA dive sites; boat launch sites; public access sites
    - Environmental Stewardship: canopy-forming kelp; National Wetland Inventory
- There is also a reporting feature: select an area, turn on datasets, and produce a report showing the datasets within that area, including metadata.
- SLC is exploring the possibility of doing similar projects in other areas of the state.

Discussion:

- **Q:** *John Berge:* About biofouling regulations, it's concerning that a lot of the vessels don't have any idea about the lifespan of their coatings. When they get coating

	applied at dry dock they typically receive a certificate outlining info about the coatings; can the lifespan be derived from that? Or do they need additional info such as thickness of coating to develop that lifespan? o *Lina Ceballos:* We've been finding that either the certificate is not included in the biofouling management plan, or it lacks the specific info needed. Two things to know are the coating maximum lifespan, and the applied thickness (gives a specific lifespan for that application). That info is not easily accessible by the crew; they need to contact the vessel owner and coating manufacturer. o *Kathy Obrien*: Other factors include the way the hull has been cared for, what waterbodies it's been in, and how active the vessel is; all influence the lifespan. o *Lina Ceballos:* The vessel owner when meeting with the coating manufacturer needs to discuss the vessel profile (speed, where they go, residence time, etc.), which influences the decision of how thick they have to apply the coating o *Aniela Burant:* A lot of copper anti-fouling paints have (either on the label or on the technical data sheet) a dry-film thickness and corresponding number of coats needed. So this is a start. But different vessels may decide to go under the specified number of coats or dry-film thickness. o *Lina Ceballos:* Some vessels decide to apply less, because it's cheaper, so they need to specify in their management plan how they will deal with that. ➢ **Q:** *Vivian Matuk:* Check in with the Dept. of Boating & Waterways (DBW) for their boat launch data layer, for the web mapping application o *Maren Farnum:* I will get in touch in case their data has been updated.
Action Items:	• If anyone knows of other datasets that would be useful, let Maren Farnum know. • *Maren Farnum*: Will get in touch with the DBW about boat launch data.

4. MEETING WRAP-UP	**3:45 - 4:00 pm (15 mins)**
Speaker:	***Michael Hanks –*** *Nonpoint Source Program, State Water Resources Control Board*
Purpose:	**Open discussion:** In addition to recapping the meeting, we would like to follow up on the March meeting discussion regarding alternating the meeting locations to different parts of the state for future meetings. Following the success of the March meeting in Marina Del Rey, what are our potential options for a fall 2019 meeting?
Background:	Review follow-up actions from this meeting and solicit ideas for future meeting topics.
Wrap-Up Notes:	• Mike Hanks would appreciate presentation topics for the next meeting. • Also, are people open to another on-site meeting? There was talk before about the S.F. Bay area or Santa Cruz area. Could we get better attendance and different stakeholders if the meeting is in a location other than Sacramento?
Action Items:	• Please provide your ideas and suggestions for topics & speakers for the Spring 2019 and Fall 2019 MIACC-AFWG meetings. • Contact Mike if you have meeting location suggestions. • Please let us know if there's any information on upcoming events or notices, as we'd be happy to broadcast this info. to the group.

The opinions expressed by Committee members, presenters, or any other participant who speaks or otherwise expresses an opinion at a meeting do not necessarily reflect the official policy or position of the State Water Resources Control Board, California Coastal Commission, or Marina Interagency Coordinating Committee and Antifouling Strategies Workgroup. Meetings of this Committee and Workgroup provide an open forum where all participants are invited to share their input and opinions with mutual respect for other participants.

Meeting notes by Vanessa Metz, California Coastal Commission.

~ End ~