

*Wood Preservative Solutions for Creative  
And  
Sustainable Bridge Design and Construction*

*International Conference on Timber Bridges 2013  
Las Vegas, NV USA*

*Ted LaDoux – Executive Director  
Western Wood Preservers Institute  
([WWPInstitute.org](http://WWPInstitute.org))*



# Wood – The Miracle Material

*“It has been said that if wood were discovered today it would be hailed as a miracle material - light, strong, workable, versatile, biodegradable, capable of being turned into a variety of products with minimal energy use and little air or water pollution. And perhaps best of all, it’s endlessly renewable, using solar energy in a process that absorbs carbon dioxide and releases oxygen.”*

# Why Use Preservative Wood?

Pressure Treated Wood from the Western USA  
*for Marine, Commercial, Industrial & Residential Construction*

**Wood that Works, Wood that Lasts**



Western Wood  
Preservers Institute



# Why Use Preservative Wood?

- Wood degrades via non-living or living agents or both when left unprotected;
- Preservative treatments play a key role in protecting wood from degradation;
- Significantly extends service life; and
- Provides an environmental and cost effective solution for protecting wood.

# Why Use Preservative Wood?

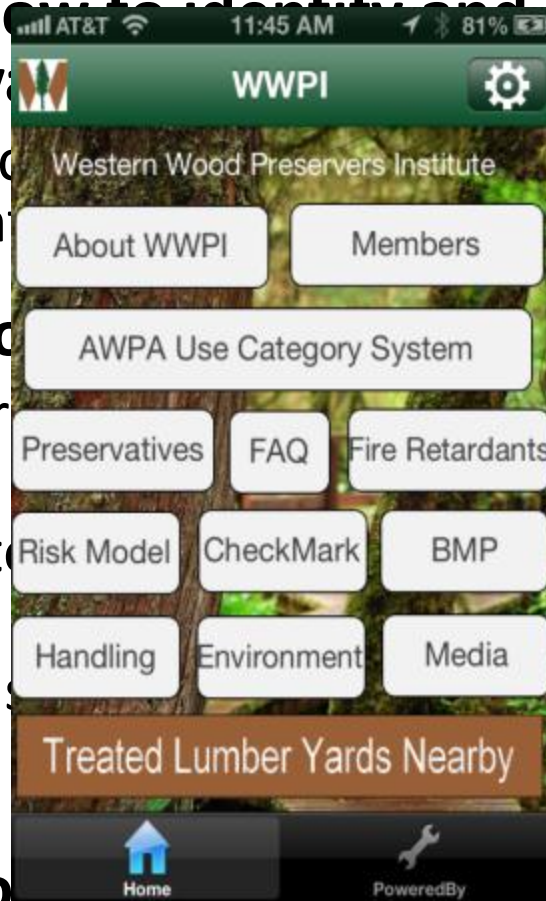
- Fully regulated under FIFRA by the U.S. Environmental Protection Agency .
  - Rigorous registration and re-registration process every 5 years.
  - EPA views preservatives as antimicrobial pesticides requiring thorough scientific review and analysis to support use.
  - Must demonstrate use will not cause undue adverse effects to human health or the environment.
- \*NOTE: Preserved wood products are not considered to be a pesticide and therefore not regulated by FIFRA.

# Five Steps to Appropriate Use of Preservative Wood

1. Selecting the Proper Preservative
2. Environmental Considerations and Evaluations
3. Specifying Best Management Practices
4. Requiring Quality Assurance and Certification
5. Following Basic Handling, Installation and Maintenance Guidelines

# 1. Selecting the Proper Preservative

- **Understand how to identify and specify the appropriate wood preservative**
  - Desired species, project type and environment
- **Available Resources**
  - US Forest Product Handbook (FPL-GTR-190 – 2010)
  - WWPI Treatment Manual for Aquatic and Wetland Environments (2012)
  - AWPB Book U1, Section 1.1.1
  - WWPI APP
- **Seven commonly used preservatives in aquatic and wetland environments:**

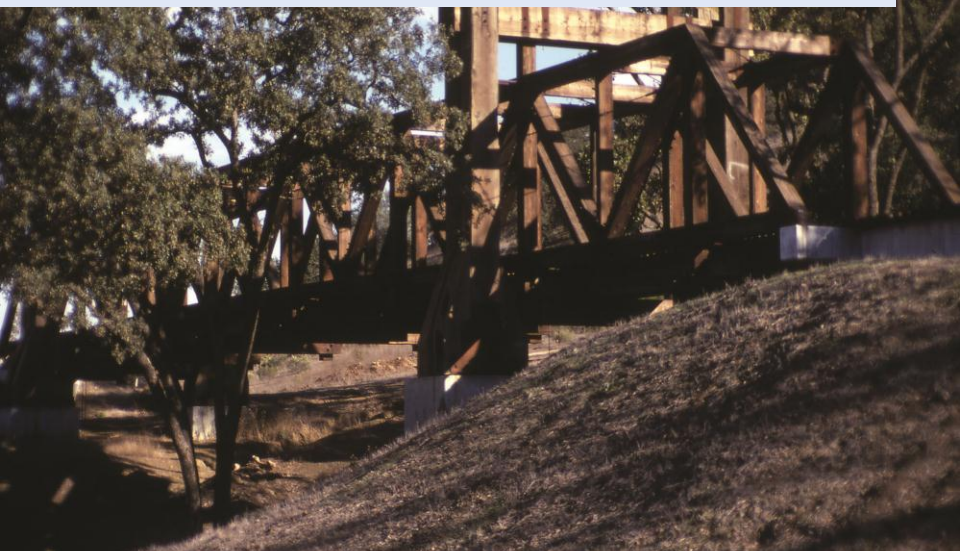


# **Waterborne Preservative Systems**





# AMMONIACAL COPPER ZINC ARSENATE (ACZA)





**CHROMATED COPPER ARSENATE (CCA)**



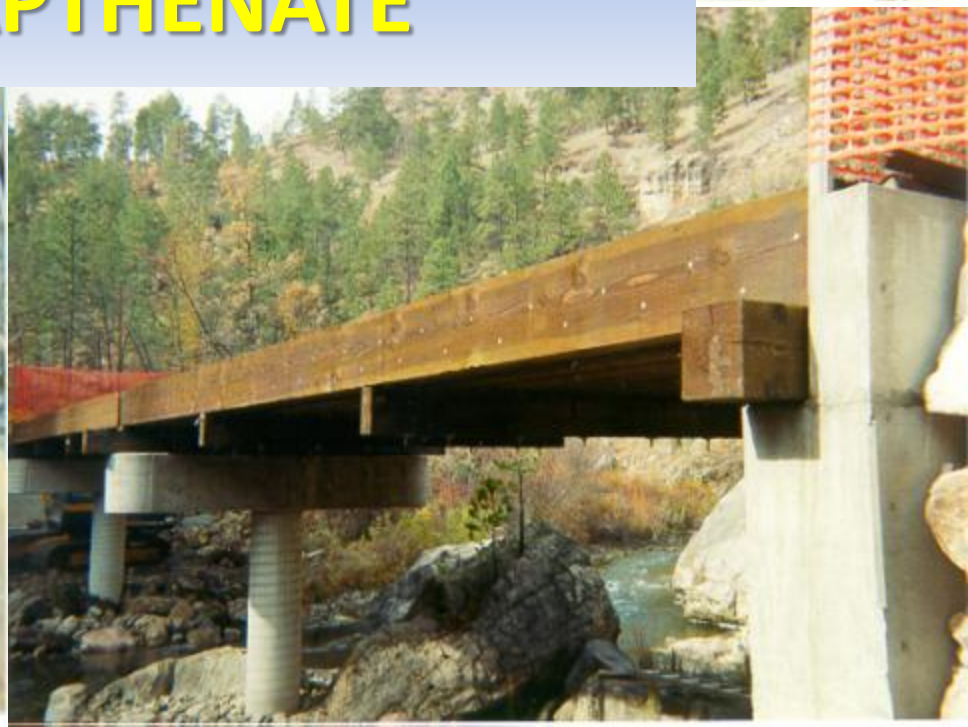
**ALKALINE COPPER QUAT (ACQ)  
COPPER AZOLE (CA-C)**



# **Oil Type Preservative Systems**

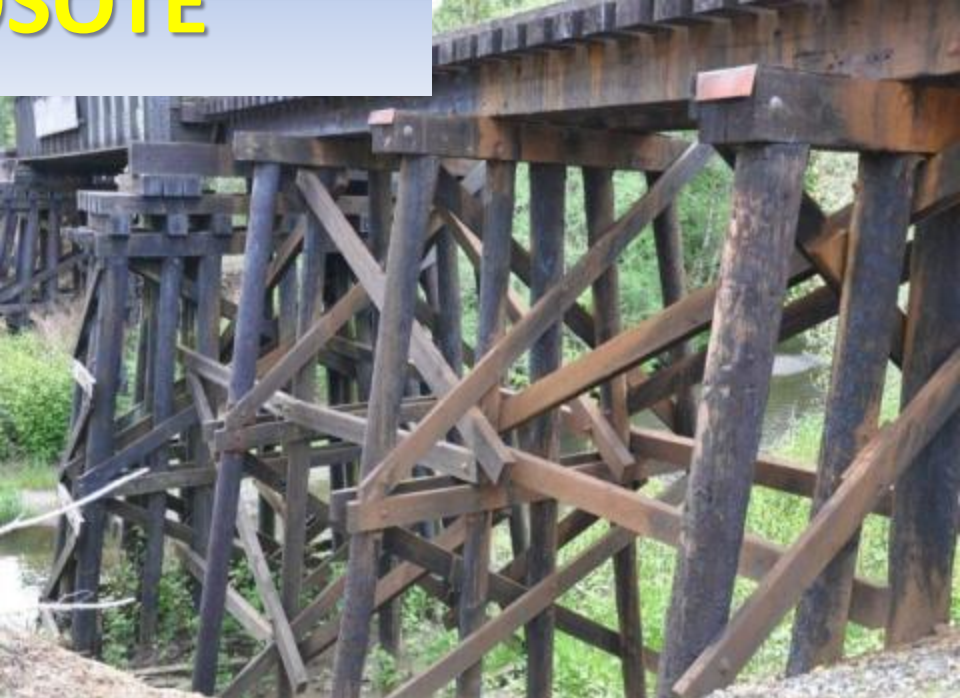


# COPPER NAPHTHENATE



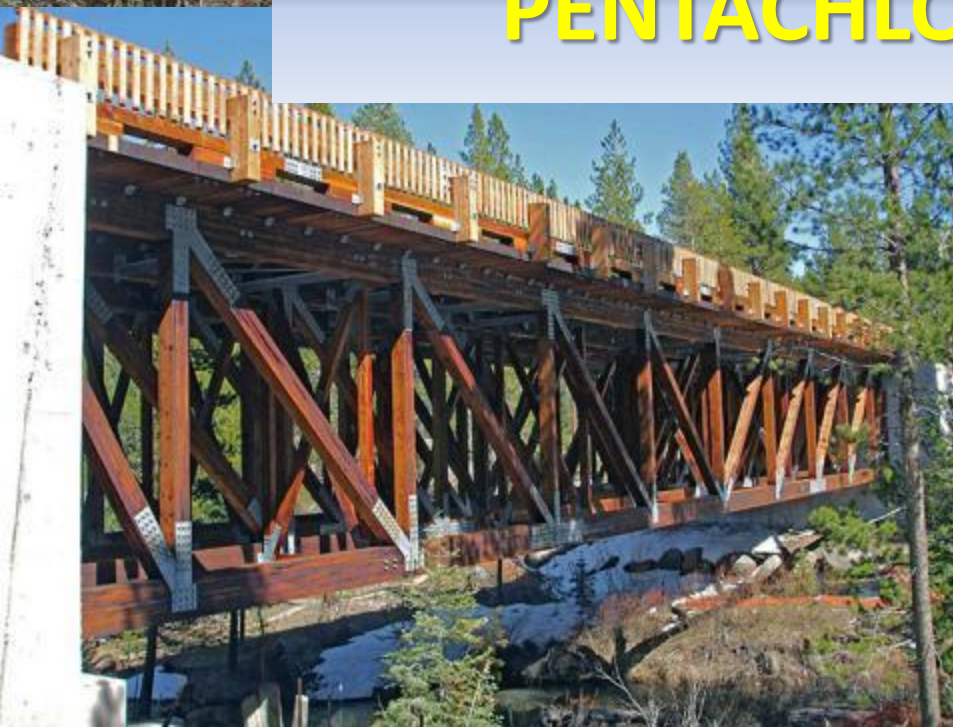


**CREOSOTE**





# PENTACHLOROPHENOL



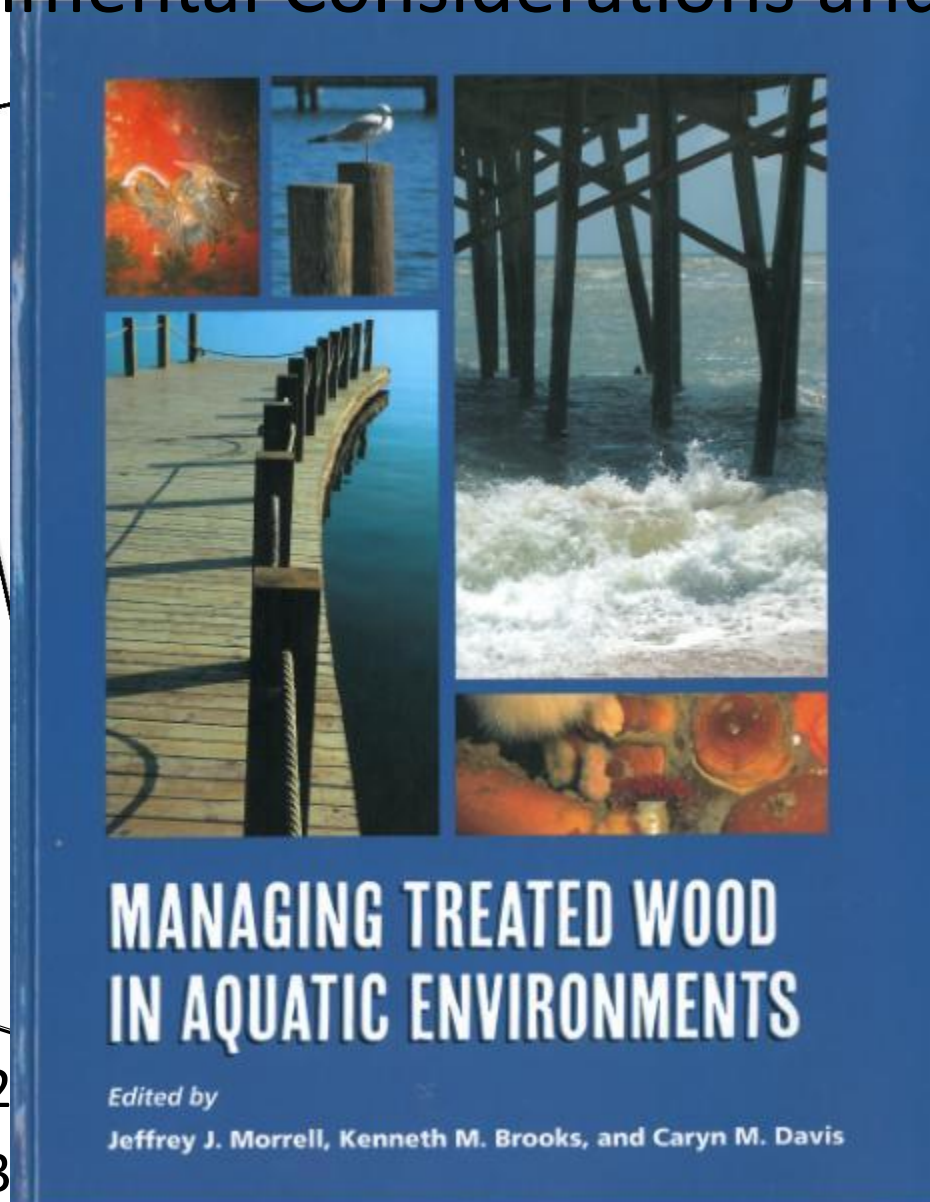
## 2. Environmental Considerations and Evaluation

- **Risks of various preserved wood material should be taken into consideration in relation to application.**
  - Risks likely different between projects.
  - Use of most preservatives will have some degree of environmental effect.
  - Important to assess environmental effects on a site specific basis to manage risks.
  - Some situations warrant not using preserved wood.

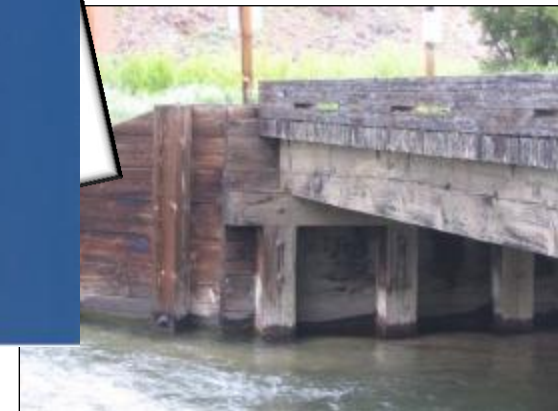


## 2. Environmental Considerations and Evaluation

- Available
  - NOAA
  - Recognition
    - ✓ Brochure
      - Basic
      - Complete
  - Forest Treatment
  - Screening
    - Level 1
    - Level 2
    - Level 3



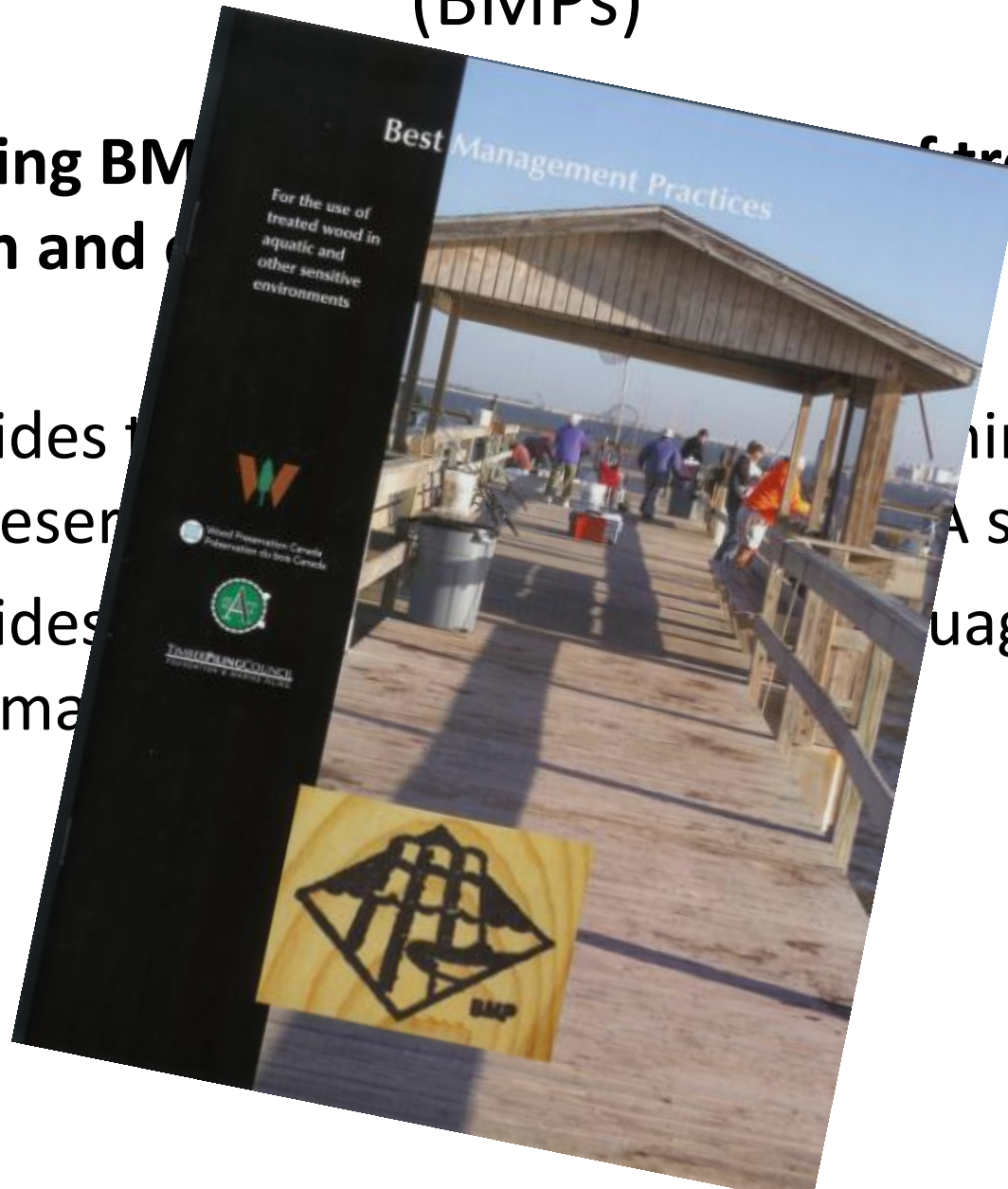
ates  
environmental response  
*Managing*



# 3. Specifying the Best Management Practices (BMPs)

- **Specifying BMPs for treated wood in and around aquatic environments**

- Provides the user with information on how to minimize use of preservatives in treated wood
- Provides information on the standards, language and information that should be used in the specification



## 4. Providing Quality Assurance and Certification

- **BMPs**

- Requires a BMP Mark on all lumber produced by the mill. The BMP Mark is a diamond-shaped logo featuring a stylized tree and a hand holding a pencil, with the letters "BMP" below it. This mark is stamped on a piece of wood.
- Provides a quality assurance program. This includes an independent third-party certification agency or BMP Mark on the lumber. The certification agency or BMP Mark is stamped on a piece of wood.
- Requires a BMP Mark on all lumber produced by the mill. The BMP Mark is a diamond-shaped logo featuring a stylized tree and a hand holding a pencil, with the letters "BMP" below it. This mark is stamped on a piece of wood.

**NOTE:** Strongly recommend specifying agency and/or contractor discuss specifications with Treater to assure proper material is produced to desired standard and specifications.

# 5. Appropriate Handling, Installation and Maintenance

- **Most critical point in life of project is during and immediately following installation.**
- To degree possible framing, sawing, cutting and drilling should be specified to be done prior to preserving the wood.
- Material should be inspected when it arrives on project site.
- Use containment measures when working over water to catch and collect cutting, shavings and sawdust.
- All field cuts and drill holes created on project site should be field treated. Available treatments include **Copper Napthenate**, **Outlast Q8**, and **Hollow Heart CB**.
- Recycle or reuse preserved wood taken out of services or dispose in approved landfills.
- Routine inspection and timely maintenance is critical to extending the service life of a preserved wood structure.
- **CRITICAL YOU PAY ATTENTION TO CONSTRUCTION DETAIL!**

# Closing Points

- Wood provides a natural durable service life and when chemically preserved can be extended even longer.
- Preserved wood continues to be a cost effective and environmentally safe material.
- EPA approved preservative systems.
- Inherited bias against preserved wood exists among some regulatory agencies and individual biologist.
- Majority of empirical science clearly supports the use of preserved wood in most situations.
- Recognized assessment tools, guidelines, and training is available to assist proponents of preserved wood projects.

**KEY POINT:** When projects are properly evaluated risks will be minimal and manageable for the environmentally safe use of preserved wood products in the majority of projects in and over water.

# Thank You Questions?



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