NCASI at 75: A Retrospective
What we learn from NCASI’s history

• Born of need
• Nurtured by members
• Trusted by stakeholders
• Tested by crisis
• Responsive to change

• ...Now the details
It all started with the Sulfite Process…

• “With the perfection in the mid-1880s of the sulfite process for breaking down wood fibers, this large plant was built on the east side of the Androscoggin River.”

*From: A River’s Journey: The Story of the Androscoggin - https://www.bethelhistorical.org/legacy-site/A_River%27s_Journey.html
“By the spring of 1907, 20-foot drifts of yellow-brown foam [were] coming from the canals in Lewiston.”

As discharges increased, dissolved oxygen levels dropped. In 1930s “residents began noticing the Androscoggin’s stench.”

“The Great Falls in Lewiston and Auburn dispersed the hydrogen sulfide gases; as the water misted into the air, a rotten egg odor wafted across the two cities. Some store owners had to shutter their doors, and freshly painted homes were blackened as the hydrogen sulfide reacted with lead compounds in the paint.”

• “It can definitely be concluded that waste sulphite liquor is the major source of pollutional troubles in Green Bay in winter months.”¹

• "The entire lower Detroit River is posted by the State Department of Health as being unsafe for bathing…. Oils and scums, accompanied by floating debris, make bathing an ordeal “²

¹ From: Investigation of the pollution of the Fox and East Rivers and of Green Bay in the vicinity of the city of Green Bay, https://books.google.com/books/about/Investigation_of_the_Pollution_of_the_Fo.html?id=L4tEAAAAMAAJ
² From: Detroit Water and Sewerage Department The First 300 Years, http://dwsd.org/downloads_n/about_dwsd/history/complete_history.pdf
Work had begun but more was needed…

• “Despite the expenditures of … vast sums of money, the industry’s problem is still far from a solution. This unsatisfactory condition results from the fact that the attempts to solve the problem have been largely on an individual mill basis,… and in most cases the experience of the individual mill has not been available to the industry at large.”

From:

Organization and Activities of the National Council for Stream Improvement (Of the Pulp, Paper and Paperboard Industries), Inc.

Sewage Works Journal
Vol. 16, No. 5 (Sep., 1944), pp. 962-965

Published by: Water Environment Federation
Stable URL: http://www.jstor.org/stable/25029874
Page Count: 4
The industry’s response

• In 1942 and early 1943, the industry’s leaders convened a series of meetings, under the auspices of what is now the American Forest & Paper Association (AF&PA)

• April 22, 1943, the industry decides that the industry needs a “separate and autonomous corporation” to conduct research into means for controlling water pollution.

• National Council for Stream Improvement (of the Pulp, Paper and Paperboard Industries), or NCSI is created.

NATIONAL COUNCIL FOR STREAM IMPROVEMENT
(OF THE PULP, PAPER AND PAPERBOARD INDUSTRIES)
271 MADISON AVENUE
NEW YORK 16, NEW YORK
Context: This is in the middle of WW II

- December 1941 – Pearl Harbor
- 1942
  - Battles of Coral Sea and Midway
  - Guadalcanal campaign
  - Japan invades Philippines
  - In 1942 alone, over 20,000 U.S. casualties and captured
- 1942 – early 1943
  - Industry discussions leading to formation of NCSI (later, NCASI)
  - Had the industry been looking for an excuse to avoid addressing environmental issues, it would not have had to look far.

https://commons.wikimedia.org/wiki/Guadalcanal_Campaign
NCSI’s early years

• In less than one year, NCSI’s members represented 30% of U.S. production.
• NCSI’s first employees:
  • Russell Winget, Executive Secretary
  • Dr. Harry Gehm, Technical Advisor
• Headquarters in New York City
• Research conducted at leading universities, managed by NCSI

Russell Winget
NCSI Executive Secretary
1943-1966

Dr. Harry Gehm
NCSI Technical Director
1944 –1968
Early emphasis on supporting and disseminating mill experience with treating wastes
By the early 1960s, the competition for university resources to examine pollution problems had become intense.

NCSI hires researchers and places them in research centers near the industry.

NCSI research laboratories subsequently sited at:
- Tufts University
- Western Michigan University
- Johns Hopkins University
- University of Florida
- Oregon State University
Mid-1960s: NCSI gets new leadership

Dr. Isaiah (Sy) Gellman takes the helm in 1968 as Technical Director and later, President.
With NCASI 1956-1995

Russell Blosser named Asst. Technical Director and later, Senior Vice President.
With NCASI 1957-1987

Ernest Boldoc, Executive Director
With NCASI 1966 - 1977
NCSI outgrows its name

• 1957: First Atmospheric Quality Technical Bulletin
• Early focus on kraft mill emissions
• In 1968, NCSI becomes the National Council for Air and Stream Improvement - NCASI
Early 1970s Regional Staff

NCASI Northeast Regional Center (Boston) Staff: Early 1970s

NCASI Northwest Regional Center (Corvallis) Staff: Early 1970s

NCASI Southern Regional Center (Gainesville) Staff: Early 1970s

NCASI Central-Lake States Regional Center (Kalamazoo) Staff
Early 1970s

James McKeown Regional Engineer

Andy Garon Regional Engineer

Herb Berger Regional Engineer

William Gillespie Regional Engineer
The environmental movement comes to life

- 1962: Rachel Carson’s “Silent Spring”
- 1967: Bald Eagle declared endangered
- 1969: Cuyahoga River Catches Fire (again)
- 1970: First Earth Day
1970s sees a torrent of legislation

- 1970: Nixon Administration creates EPA
- And the legislation flows
  - Clean Air Act of 1970
  - Federal Water Pollution Control Act Amendments of 1972
  - Endangered Species Act in 1973
  - Safe Drinking Water Act in 1974
  - Resources Conservation and Recovery Act (RCRA) of 1976
  - Toxic Substances Control Act (TSCA) of 1976
  - Clean Air Act Amendments of 1977
  - Clean Water Act of 1977

William Ruckelshaus sworn in as first EPA Administrator. He would later serve as Senior Vice President for Law and Corporate Affairs for Weyerhaeuser from 1976 to 1983.
Where there is legislation, rules will follow

- EPA more than quadruples in size between 1970 and 1990
- These initiatives produce a steady stream of technical and scientific questions
- The industry asks NCASI to be involved with the objectives of:
  - Seeking regulations that were science-based
  - Allowing cost-effective compliance
- To allow an effective response, NCASI doubles in size between 1970 and 1990

Pages in 40 CFR

Forestry practices come under scrutiny

- 1972 Clean Water Act drew attention to non-point sources
- By 1977, it was clear that additional science was needed
- The National Forest Products Association decides to fund a position at NCASI
- Dr. George Ice hired 1977

Dr. George Ice
1970s and 1980s: Water Success Stories

- NCASI data influence EPA’s first limits on BOD and TSS from the industry
- The “Flannery Settlement” results in NCASI’s working with EPA to develop data on 129 “priority pollutants”
  - Result: EPA decides that universal limits on these chemicals are not needed
- 1977 Clean Water Act amendments call for tightened BOD and TSS limits based on “cost reasonableness”
  - NCASI’s analysis of EPA’s proposed cost test reveals significant shortcomings
  - EPA revised the cost test, ultimately showing that tighter limits on the industry were not cost reasonable


NCASI Technical Bulletin
National Council of the Paper Industry for Air and Stream Improvement, Inc., 361 Madison Avenue, New York, N.Y. 10017
• 1970s: EPA and NCASI conduct a cooperative study to define the control capabilities of technologies for New Source Performance Standards (NSPS) for Kraft Mills

• 1970s and 1980s: NCASI assembles performance data to assist states with responsibility for regulating emissions from existing kraft mills

• Early-Mid 1980s: EPA-proposed revisions to kraft mill NSPS influenced by detailed data and comments prepared by NCASI
1970s and 1980s: Forestry Success Stories

1970s: With passage of the Clean Water Act, states initiated programs to control nonpoint source pollution. NCASI and NFPA cooperated to assemble existing information and research about the impacts of forest management practices on receiving water quality and utility.

1980s: In response to concerns that acidic deposition was adversely affecting forest health and productivity, NCASI reviewed the state of knowledge and initiated studies to fill important information gaps.
1970s: NCASI adds Aquatic Biology Expertise

• Experimental streams constructed in New Bern NC, and Lewiston ID

Dr. Dennis Borton

Mr. Tim Hall and Staff

New Bern streams

Lewiston streams
Forest-related challenges multiply

• The 1980s and 90s: A proliferation of new research needs related to
  • Water Quality, Wetlands Protection, BMPs
  • Threatened and Endangered Species
    • Dr. Larry Irwin hired 1986
  • Acid Rain and Forest Productivity
  • Sustainable Forest Management Certification
  • Forest Chemicals
  • Carbon and Climate
  • And more

• NCASI’s forestry research grows to 25% of NCASI’s program

• Directed by Dr. Alan Lucier
  • Hired as Program Manager, 1983
  • Senior Vice President, NCASI 1995 - 2014
Dioxin becomes a national issue

- 1970s: Agent Orange defoliant used in Viet Nam – Dioxin (2,3,7,8-TCDD) is a contaminant
- 1978: Love Canal described as "a public health time bomb"
- 1980s Dioxin headlines ("the most toxic chemical known to man")
- 1983 Times Beach Missouri evacuated and abandoned
- By-product of chemical production
- No connection to our industry until…
The surprise link to chlorine in pulp bleaching

- Late 1980s, EPA conducts National Dioxin Study
- Surprise finding of elevated TCDD levels in fish from several rivers selected to establish background levels and in several mill sludges
- Some of the rivers received effluents from bleached chemical pulp mills
- Subsequent studies found TCDD in some products containing bleached chemical pulp
An “All Hands on Deck” Moment

• AF&PA leads policy and market response
• Technical studies by NCASI, IPST at Georgia Tech & others
• At least 100 NCASI reports on dioxin issued between 1985 and 1995
  • Sampling and measurement methods
  • Collaborative studies with EPA: 5-mill screening study and a subsequent study of effluent, sludge and pulp at all bleached chemical pulp mills (the 104-mill study)
  • 22 bleach line “intensive study”, to gain an understanding of mechanisms of TCDD/TCDF formation
  • Studies of pulps, products and potential migration into foodstuffs
  • Studies of workplace exposure
  • Several projects examining other aspects the dioxin issue

Larry LaFleur  Bill Gillespie
A path forward is found

• Laboratory and field studies confirmed that TCDD and TCDF formation could be virtually eliminated by using elemental chlorine free (ECF) bleaching sequences
  • The formation of a number of other potentially problematic chlorinated compounds was also dramatically reduced
• Industry agreed to voluntarily convert to ECF bleaching, at a cost of over 2 billion dollars.
• In mid-1990s, EPA promulgated effluent limits consistent with ECF mill performance
• While it was expensive, the “dioxin issue” was put to rest
1994: The first change at the helm in 27 years

- Dr. Ron Yeske named President of NCASI
- Dr. Alan Lucier named Senior Vice President
- Vice Presidents are named
  - William Gillespie – Water
  - Dr. Alan Lucier – Forestry
  - Reid Miner – Pollution Prevention
  - Dr. John Pinkerton – Air
- Headquarters relocated to North Carolina
- Business Operations Professionalized
- Staff Resources Realigned to Increase NCASI’s effectiveness
- Encouragement to pursue new ideas and abandon those that are not working
Air issues move to center stage

- Clean Air Act Amendments of 1990 direct EPA to establish Maximum Achievable Control Technology (MACT) Standards
- EPA lacks the resources to develop mill data needed to establish valid standards so industry authorizes multi-million dollar sampling program managed by NCASI
- Late 1990s: The wood products industry encounters the same situation and authorizes an extensive sampling program at 29 mills
2002: NCASI Becomes International

- Canadian Office opened in Montreal
- Kirsten Vice Named Vice President – Canadian Operations
- Canadian membership quickly grows to represent over half of the pulp and paper production in Canada
- Staff added to address range of forestry, water, air and sustainability issues
  - And to leverage the large amount of NCASI work performed in the U.S.
When the MACT dust had settled…

- Data-driven control-technology standards for HAPs and options to reuse clean condensates
- Emission control standards for paper machines not required
- Work practice standards for Dioxins/Furans and achievable standards for mercury
- Pulp and paper MACT standards effective at lowering residual risk
- Industry-wide cost-savings due to NCASI technical input = $12+ billion
Today, other activities too numerous to cover

- Climate Change
- Carbon Neutrality
- Sustainability
- Life Cycle Assessment
- Chemical Management
- Solid wastes and beneficial use
- Treatment plant optimization
- Water quality and ambient air quality standards
- Bioassay responses
- And more …

Thank you to the many past and present NCASI staff who have not been mentioned but who contributed so much to NCASI’s success through the years.
2015: Dirk Krouskop named NCASI President

- Appoints Current Senior Staff
  - Tammerah Garren – VP Business Affairs
  - Vipin Varma – VP Air Quality & Director, Southern Region
  - Kirsten Vice – VP Sustainable Manufacturing & Canadian Operations
  - Paul Wiegand – VP Water Resources & Director, Northern and Western Regions
  - Darren Miller – VP Forestry
  - Ben Wigley – Senior Research Fellow
  - Reid Miner – Senior Research Fellow

- Brings a team-based approach to NCASI
- Focused on enhancing and better communicating NCASI’s value proposition
- Preparing NCASI for the next 75 years
Why NCASI?

• Born of need
• Nurtured by members
• Trusted by stakeholders
• Tested by crisis
• Responsive to change

READY FOR THE NEXT 75 YEARS
Acknowledgments

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  • Gillespie, W.J., 2005, NCASI History
  • NCASI, 2018, Information from NCASI website, www.ncasi.org

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