Great Lakes Commission Annual Meeting

Erie Pa

Sept 30 /09

Chris Wiley
DFO/TC

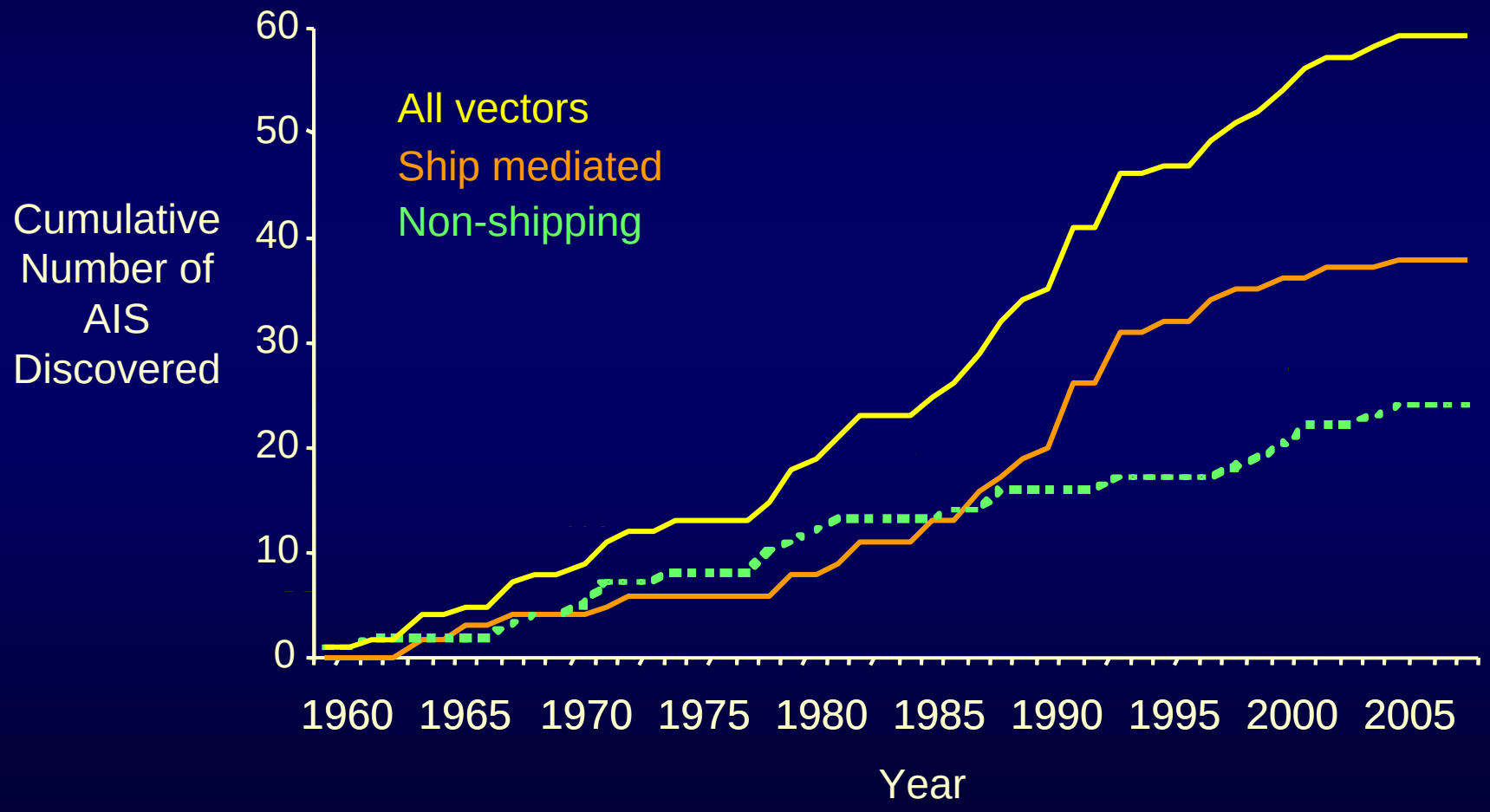
Canada

Canadian Ballast Water Program on the Great Lakes

Enforceable Regulations based on International BW Convention, Binational Treaties and Binational Science

Canada

Cumulative Number of AIS Discovered in the Great Lakes, by Vector



Bailey et al. *in prep*

Recommendations from the National Academy of Science Study

- Establish a uniform set of effective and enforceable standards for the Great Lakes basin – IMO standards;
- Conduct strict inspection and enforcement of standards;
- Continually evaluate, update and improve management programs over time.

- TC / DFO implementing – Compatible regulations required under the GLWQA Article VI (f), Annex 6

Canada

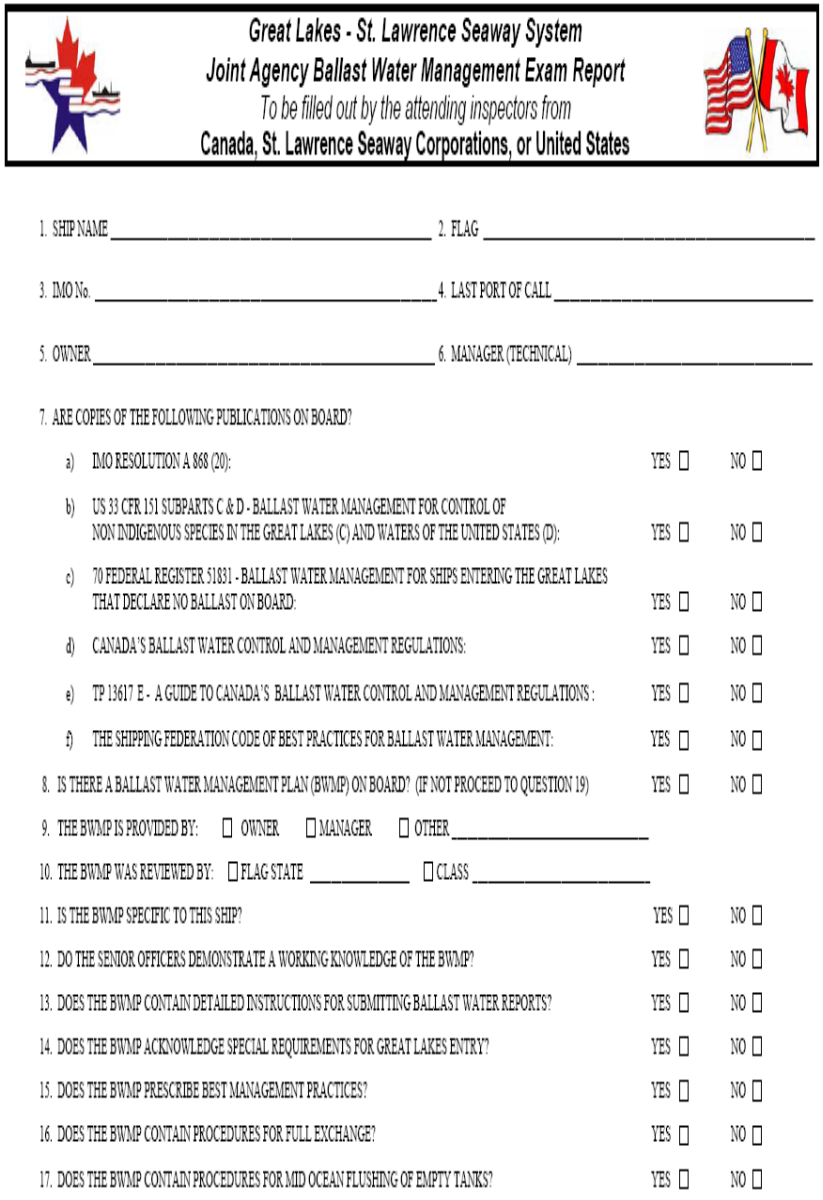
Science to Establish appropriateness of Treatment Standards for Great Lakes - IMO

- Mesocosm Studies in Hamilton Harbour with high risk zooplankton indicate IMO standards will decrease invasions to the Great Lakes (Bailey et al. 2009. CJFAS)

- Dye Studies to measure spatial transport of discharged taxa
  – in enclosed port: Goderich 2008
  – in open port: Sarnia 2009 in partnership with GLOS & CIASN

Canada

Strict Enforcement of Current Standards – Exchange / Flushing



Great Lakes - St. Lawrence Seaway System
Joint Agency Ballast Water Management Exam Report
To be filled out by the attending inspectors from
Canada, St. Lawrence Seaway Corporations, or United States

1. SHIP NAME _____ 2. FLAG _____

3. IMO No. _____ 4. LAST PORT OF CALL _____

5. OWNER _____ 6. MANAGER (TECHNICAL) _____

7. ARE COPIES OF THE FOLLOWING PUBLICATIONS ON BOARD?

a) IMO RESOLUTION A 868 (20): YES ☐ NO ☐

b) US 33 CFR 151 SUBPARTS C & D - BALLAST WATER MANAGEMENT FOR CONTROL OF NON INDIGENOUS SPECIES IN THE GREAT LAKES (C) AND WATERS OF THE UNITED STATES (D): YES ☐ NO ☐

c) 70 FEDERAL REGISTER 51831 - BALLAST WATER MANAGEMENT FOR SHIPS ENTERING THE GREAT LAKES THAT DECLARE NO BALLAST ON BOARD: YES ☐ NO ☐

d) CANADA'S BALLAST WATER CONTROL AND MANAGEMENT REGULATIONS: YES ☐ NO ☐

e) TP 13617 E - A GUIDE TO CANADA'S BALLAST WATER CONTROL AND MANAGEMENT REGULATIONS : YES ☐ NO ☐

f) THE SHIPPING FEDERATION CODE OF BEST PRACTICES FOR BALLAST WATER MANAGEMENT: YES ☐ NO ☐

8. IS THERE A BALLAST WATER MANAGEMENT PLAN (BWMP) ON BOARD? (IF NOT PROCEED TO QUESTION 19) YES ☐ NO ☐

9. THE BWMP IS PROVIDED BY: ☐ OWNER ☐ MANAGER ☐ OTHER _____

10. THE BWMP WAS REVIEWED BY: ☐ FLAG STATE _____ ☐ CLASS _____

11. IS THE BWMP SPECIFIC TO THIS SHIP? YES ☐ NO ☐

12. DO THE SENIOR OFFICERS DEMONSTRATE A WORKING KNOWLEDGE OF THE BWMP? YES ☐ NO ☐

13. DOES THE BWMP CONTAIN DETAILED INSTRUCTIONS FOR SUBMITTING BALLAST WATER REPORTS? YES ☐ NO ☐

14. DOES THE BWMP ACKNOWLEDGE SPECIAL REQUIREMENTS FOR GREAT LAKES ENTRY? YES ☐ NO ☐

15. DOES THE BWMP PRESCRIBE BEST MANAGEMENT PRACTICES? YES ☐ NO ☐

16. DOES THE BWMP CONTAIN PROCEDURES FOR FULL EXCHANGE? YES ☐ NO ☐

17. DOES THE BWMP CONTAIN PROCEDURES FOR MID OCEAN FLUSHING OF EMPTY TANKS? YES ☐ NO ☐

Transport Canada / USCG Compatible program since 1989, Latest regulatory update June 2006 for TC, 2008 for Seaway.

All ballast tanks must be exchanged or flushed with minimum salinity of 30ppt

Supported by Joint rigorous enforcement & binational science

No unmanaged ballast water from outside EEZ entering the Great Lakes

Current examination of role of Coastal voyages outside St Lawrence Seaway system

Canada

Current Risk of Foreign Ballast Water

Note: all published research on foreign ballast water of ships on the Great Lakes was conducted prior to revised management regulations

DFO and TC have a (limited) monitoring program in place:
Evidence suggests a significant decrease in risk
On average present regulatory / enforcement program provides protection to the Great Lakes equivalent to the IMO standard for high risk organisms if 100% enforcement

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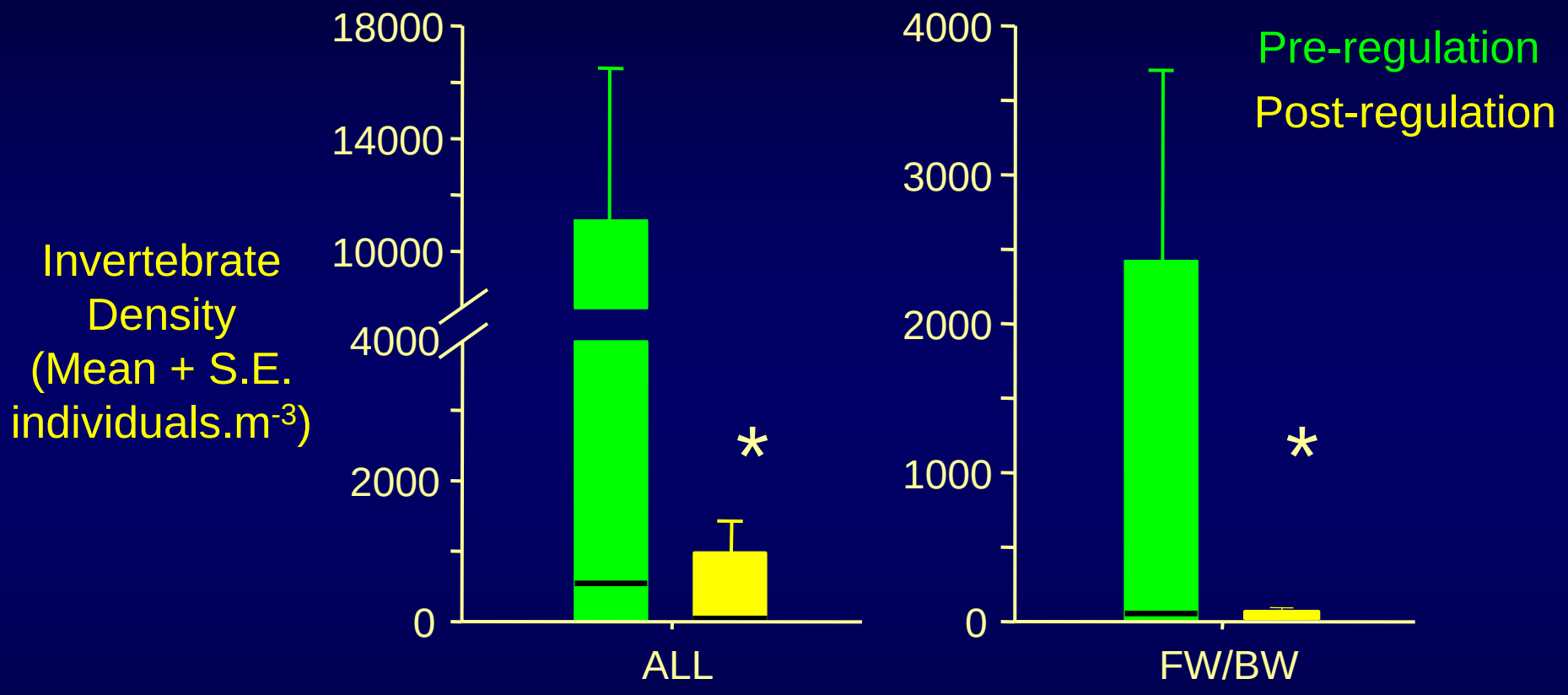
Current Risk of NOBOB water

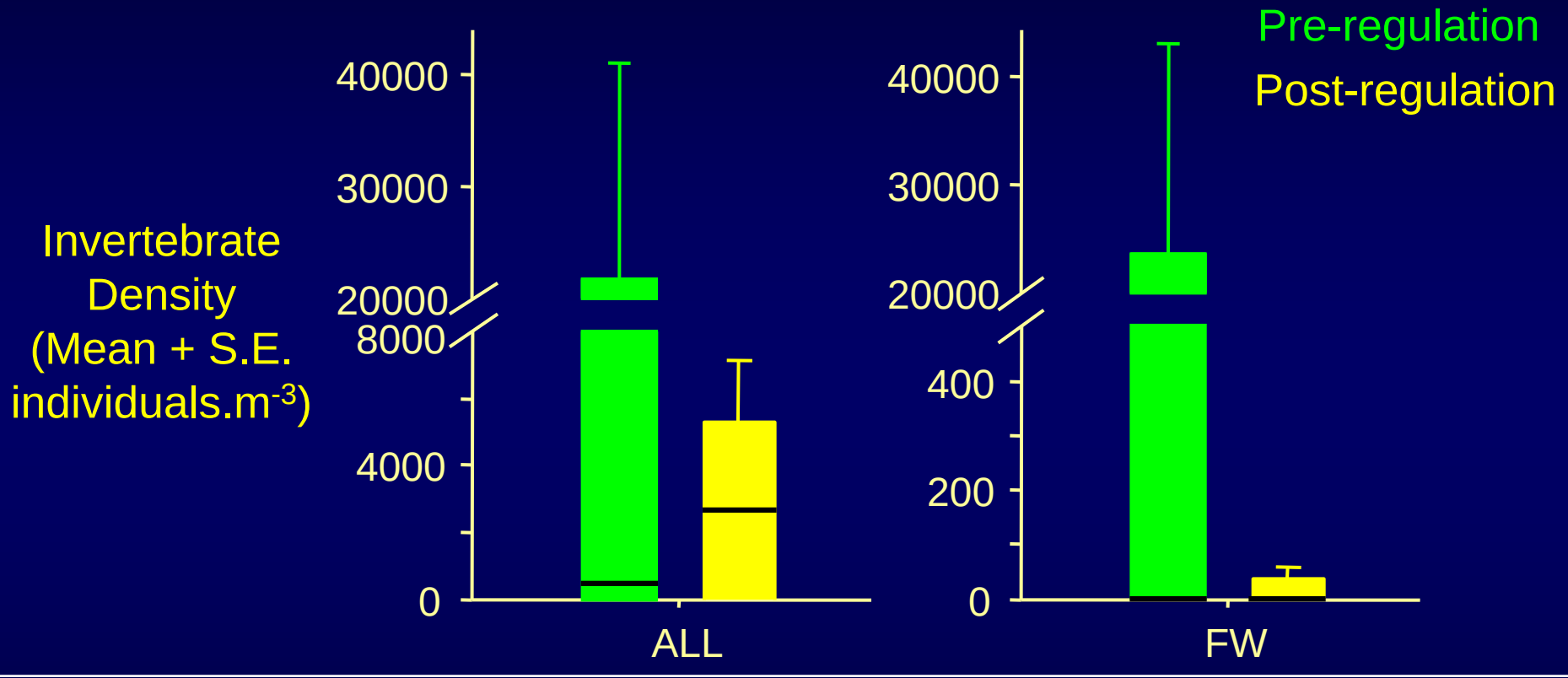


Total density and number of high risk invertebrates in NOBOB water are significantly lower than 2001/02.

Duggan *et al.* 2005; Deneau et al. (in prep).

Canada

Current Risk of BOB water



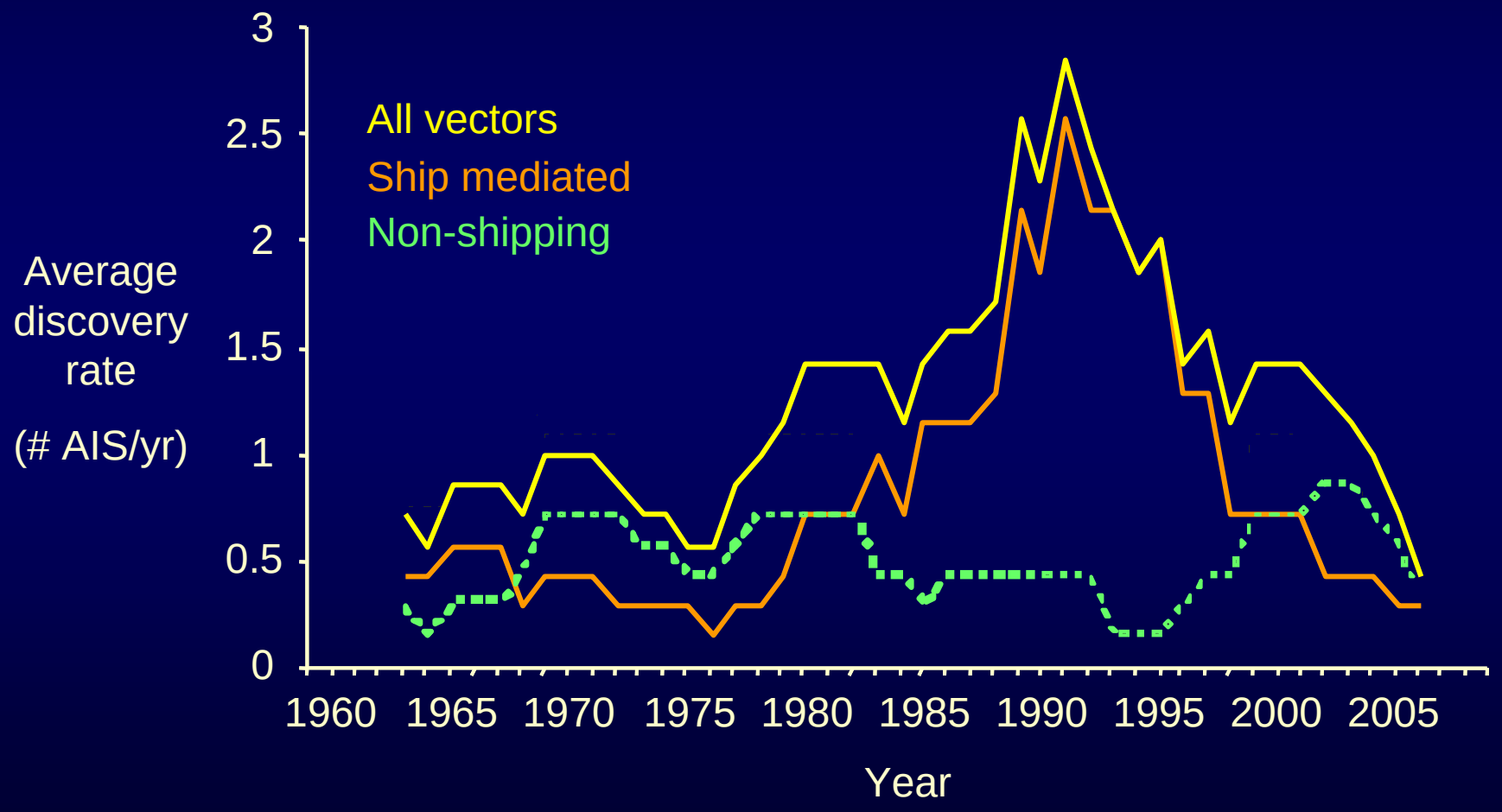
On average both exchange or flushing meets IMO standards for high risk organisms entering the G/L

Bioenvironmental Sciences 1981;

Locke et al. 1991; Deneau et al. (in

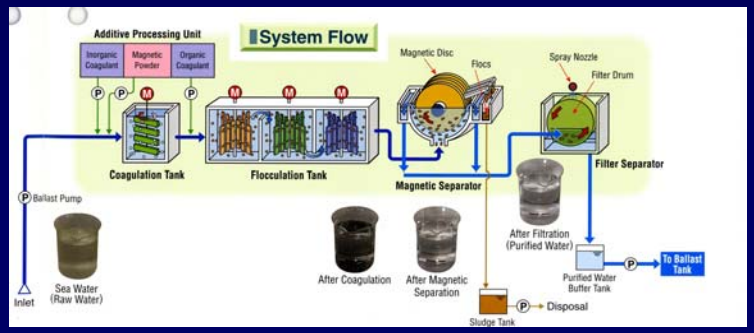
Canada

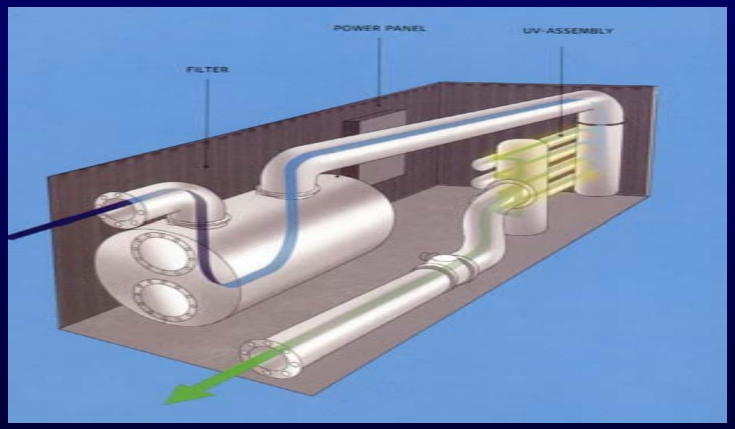
Average AIS Discovery Rate in the Great Lakes, by Vector



Bailey et al. *in prep*

IMO Current Situation





- Canada Chairs BWWG
- Type Approval for 6 systems – on the market
- Sufficient systems available for 2010 implementation date
- <5000 cu M
- Final Approval for 9 with 4 more approvals expected by March
- Announcement by Canada at MEPC

Canada

Canadian Freshwater Specific Proposal to use Exchange plus Treatment for Ships arriving from outside EEZ

- Currently only 2 of 9 vendors with final approval tested for fresh water
- Allows shipowner to use IMO approved treatment system
- Standardized Port State Control Regime
- Science suggests immediate 10 - 100 x decrease in risk over IMO standard
- TC, DFO and USCG to test
- Mitigates toxicological and safety threat estimated for stand alone proposed higher standards (GESAMP)

Canada

Lakers - the Story so Far….

Lakers move approximately 70 Mt ballast water between Great Lakes ports annually

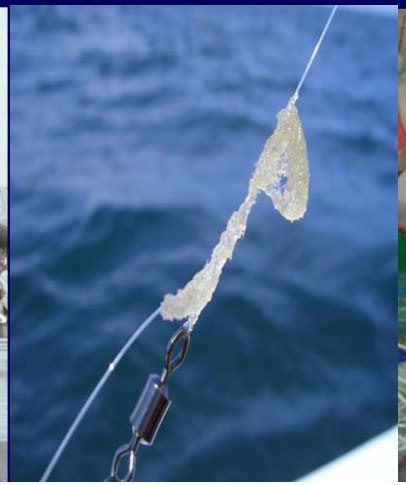
- Domestic ballast water is capable of transporting planktonic ANS
- Evidence exists of movement of (native) taxa beyond documented range
- IMO applies to ALL ships - regulations require science if any exempted after 2016

Rup et al. in prep.

Canada

Update: Management Steps

- For the Great Lakes, BiNational Science is the key to sensible management
- Risk assessments are needed to determine where limited resources would be most effectively applied. With current enforcement regime in place – science suggests Ballast Water is likely a low risk vector
- Non Shipping Vectors of introduction should be re-evaluated to determine relative risk and next course of action



Canada