

**CONSIDERATION OF
PAST AND FUTURE
RIVER CONDITIONS WITHIN A
MODERNIZED COLUMBIA RIVER TREATY**

**PRESENTED BY MIKE MILES
MAY 10, 2019 AT UC BERKELEY**

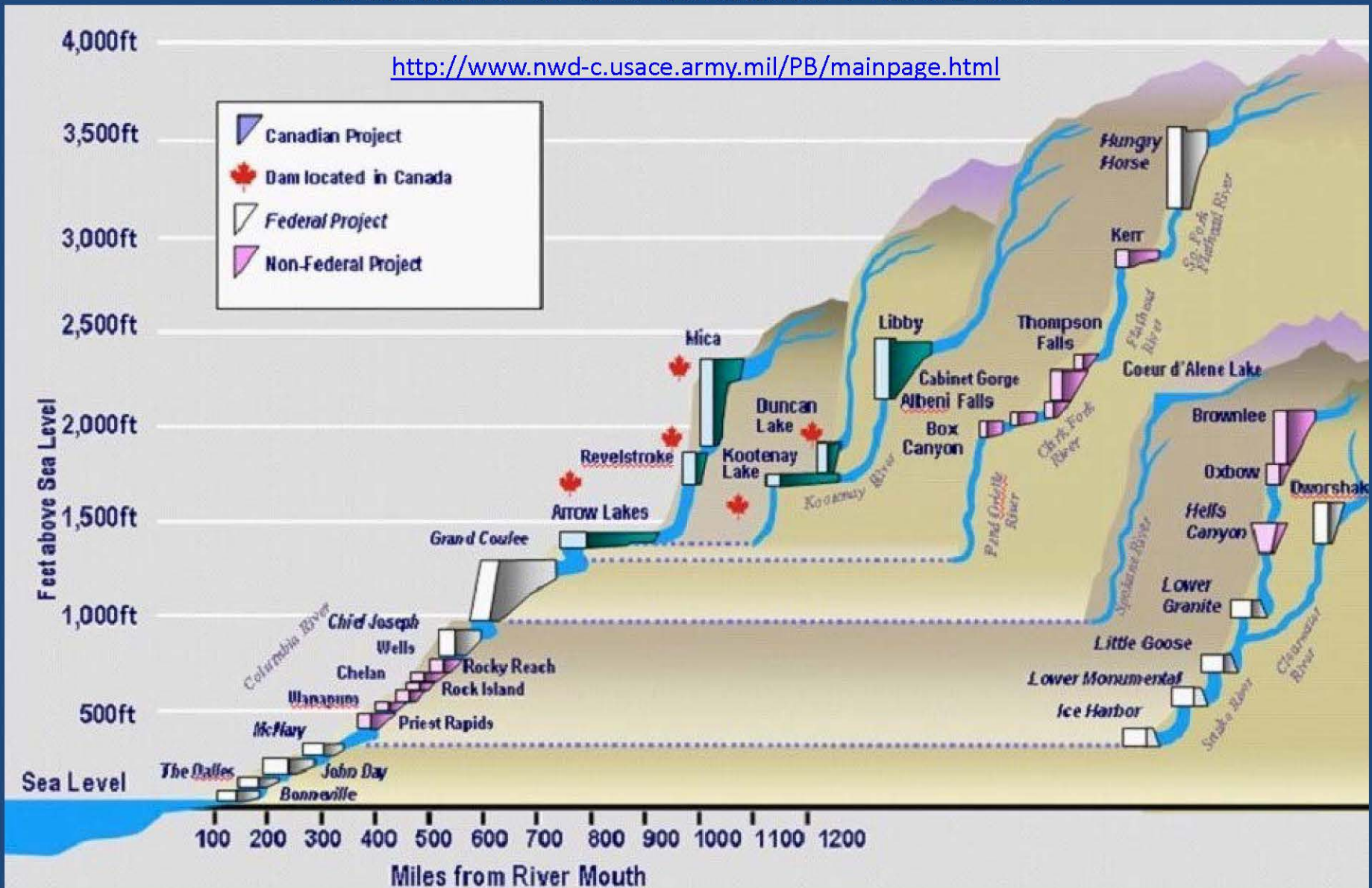
CELIO FALLS NOW THE DALLES DAM





Calculation of the Canadian Entitlement

<http://www.nwd-c.usace.army.mil/PB/mainpage.html>



<http://www.nwd-c.usace.army.mil/PB/mainpage.html>

DUNCAN DAM AND RESERVOIR



01/5/17 08:50

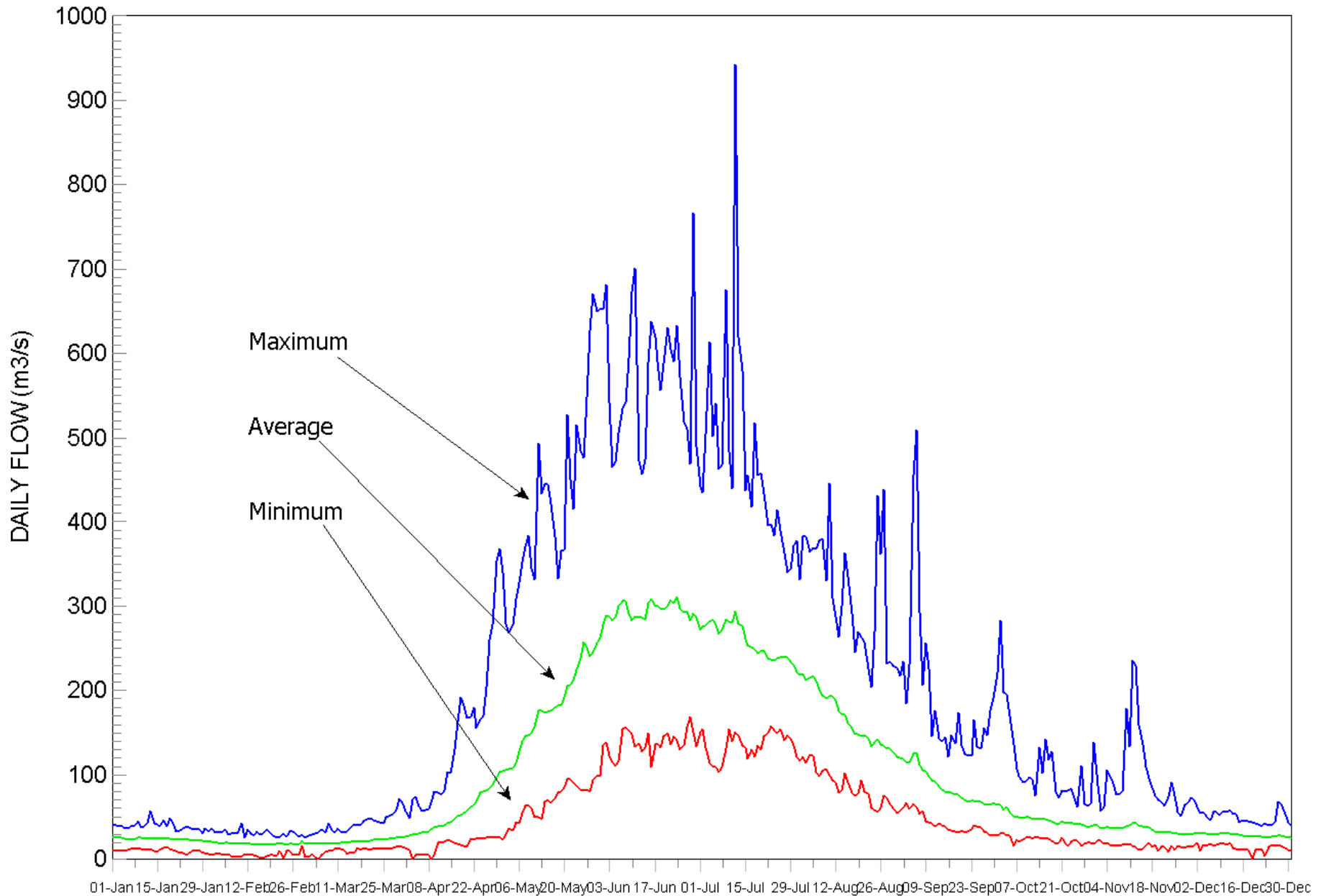
DUNCAN RESERVOIR



01/5/17 09:00

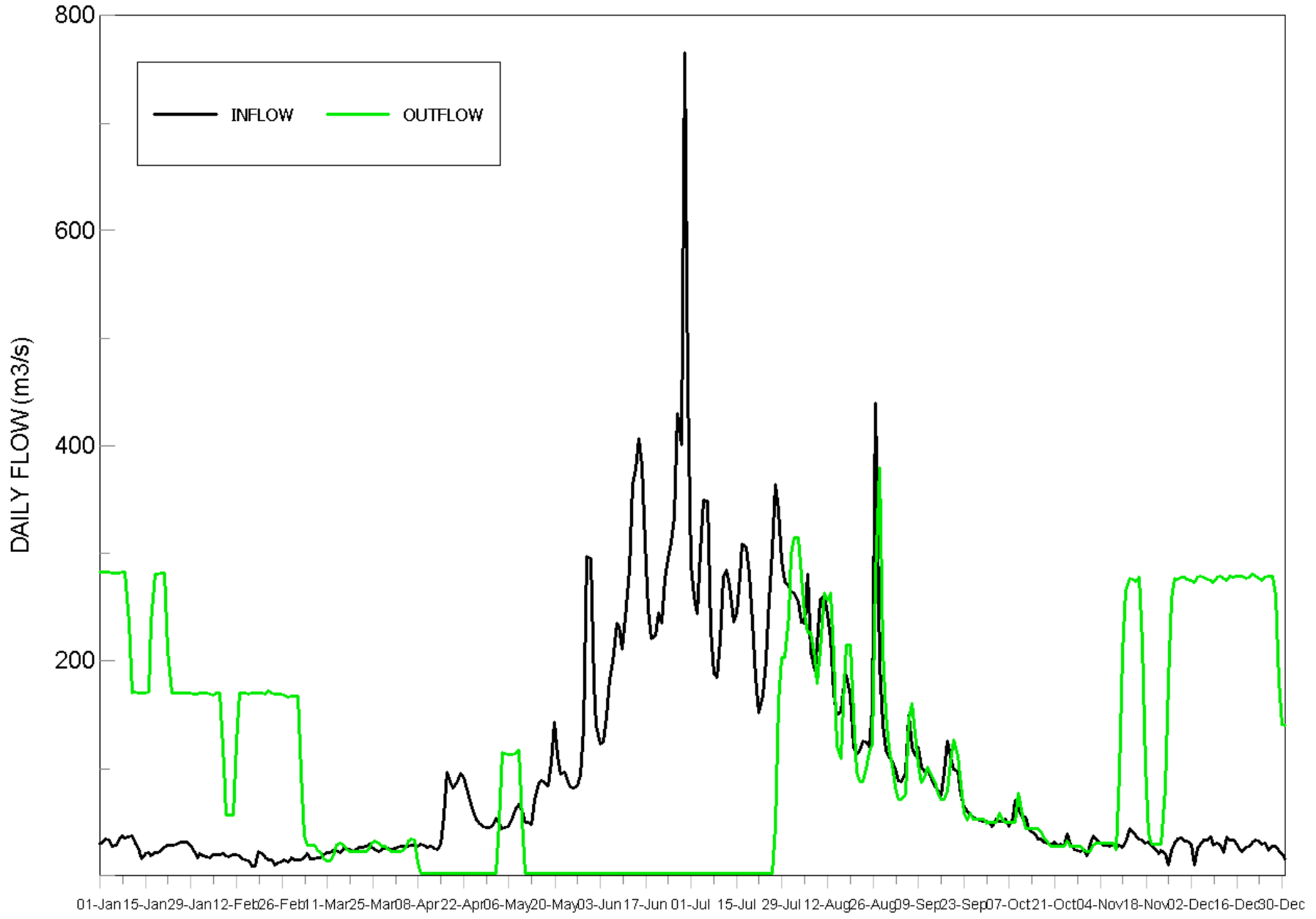
DUNCAN DAM SYNTHESIZED INFLOW

SEASONAL VARIATION IN FLOW - 1967-1999



DUNCAN DAM - 1984

SYNTHESIZED INFLOW AND OUTFLOW



DUNCAN RIVER – BELOW DUNCAN DAM



1963



2000

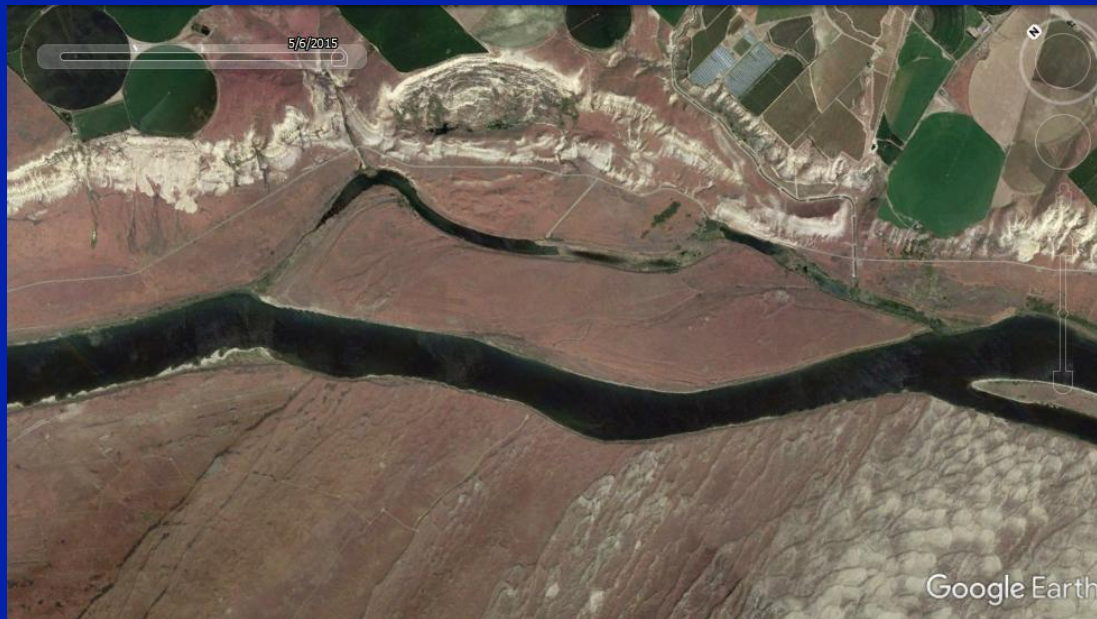
LIBBY DAM



SAVAGE ISLAND – HANFORD REACH



1996



2015



RIVERINE QUESTIONS:

1. **WHAT ARE THE PRESENT AND LONG TERM POST-REGULATION PHYSICAL IMPACTS?**
2. **WHAT ARE THE ASSOCIATED BIOLOGICAL, CULTURAL, ECONOMIC OR OTHER IMPACTS?**
3. **CAN OR SHOULD THESE IMPACTS BE MITIGATED IN A MODERNIZED TREATY?**
4. **IF YES, IS RIGOROUS ADAPTIVE MANAGEMENT POSSIBLE?**