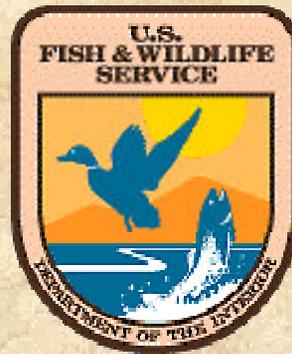
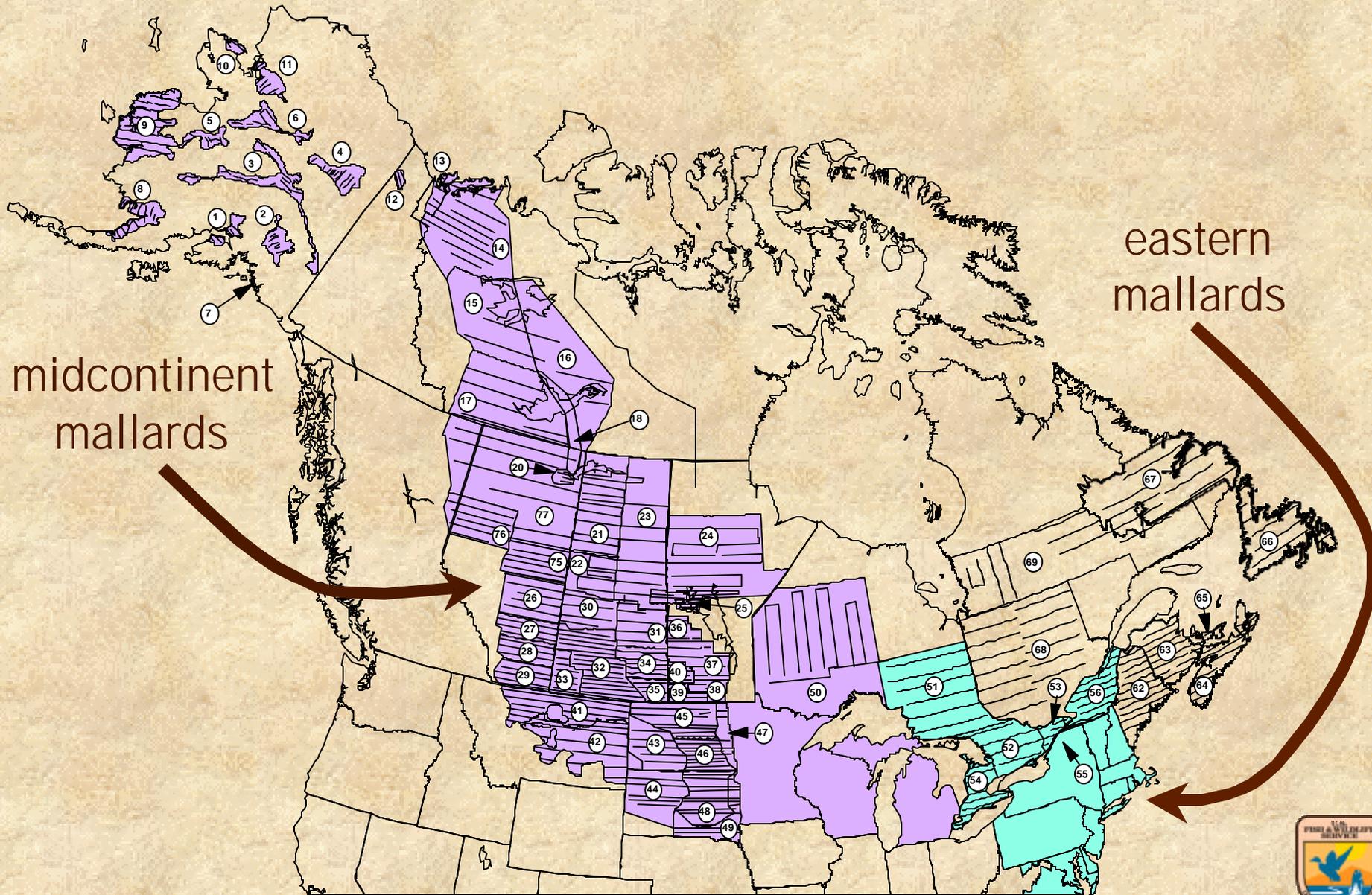


**Revisions to the AHM Protocols  
for Mallards  
&  
Implications for Regulatory Proposals**



*Service Regulations Committee  
June 19-20, 2002  
Arlington, Virginia*

# Revisions to AHM Protocols



midcontinent  
mallards

eastern  
mallards



# Revisions to AHM Protocols

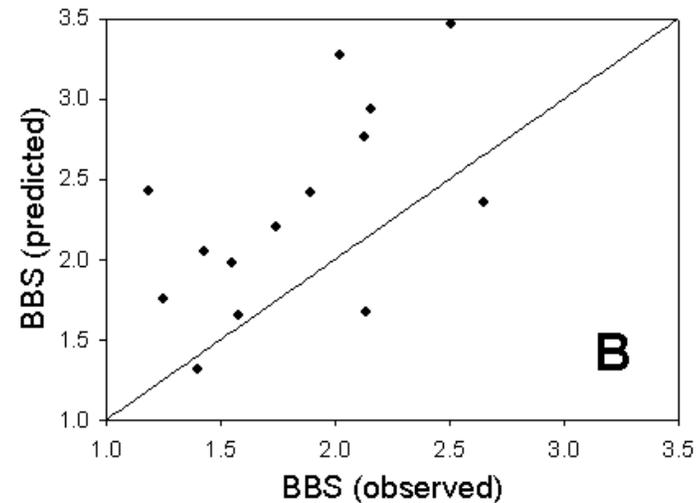
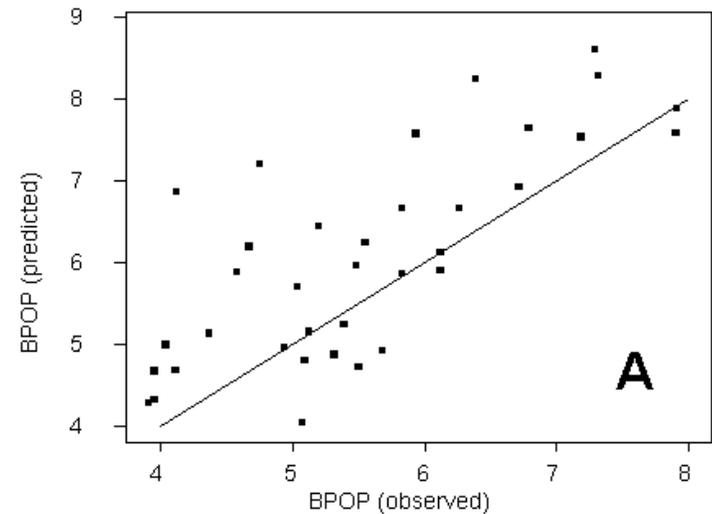
*“balance equation”*

$\text{POP}(t)$   
 $- \text{deaths}(t)$   
 $+ \text{births}(t)$  } observed

$\text{POP}(t+1)$  } predicted

(A) midcontinent: +11%

(B) eastern: +16%



# **Revisions to AHM Protocols**

*Go to “Adaptive Harvest Management” at*

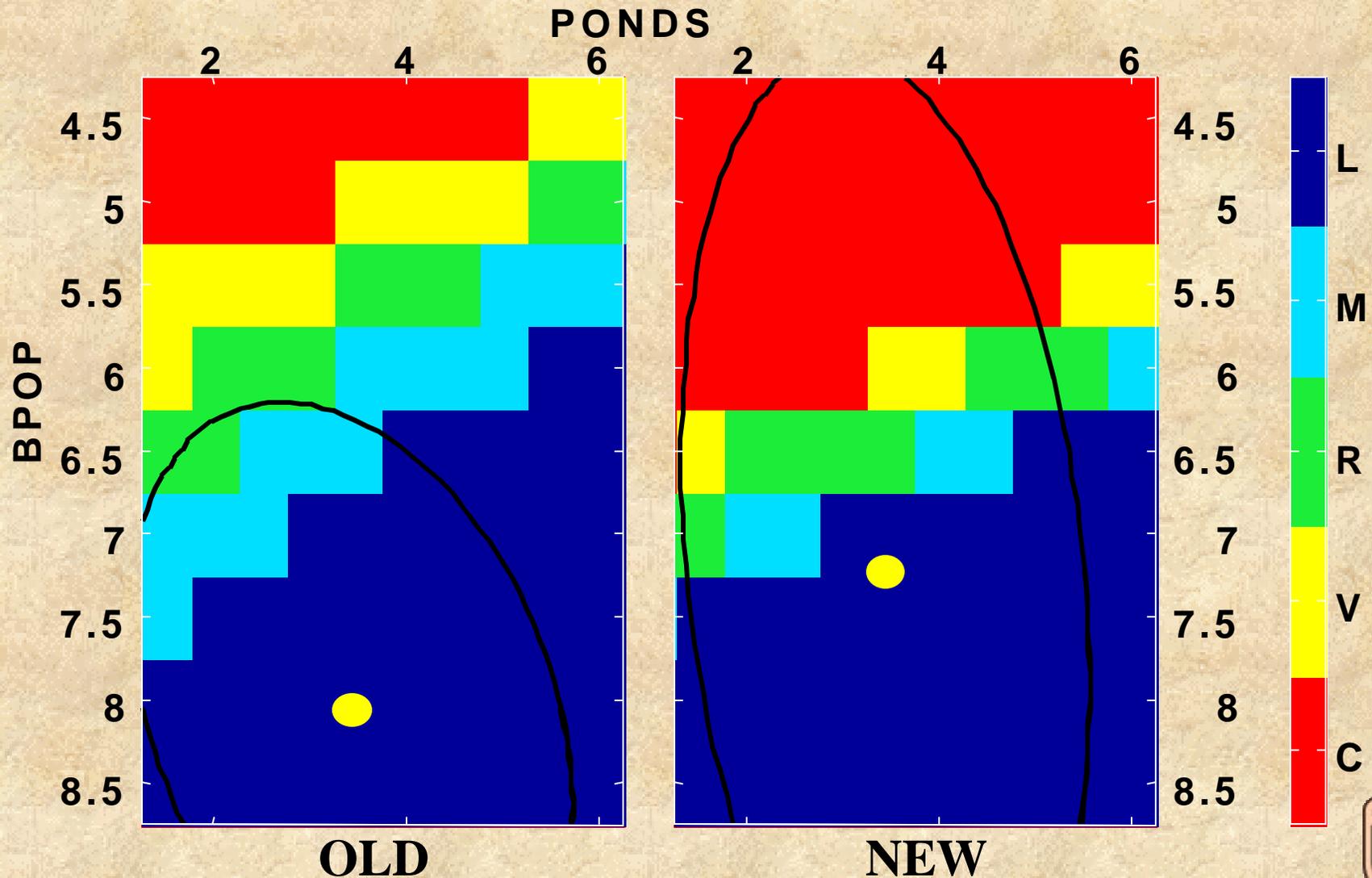
**<http://migratorybirds.fws.gov>**

*for details about the bias problem  
and corrective measures...*



# Revisions to AHM Protocols

## *Midcontinent mallards: optimal policies*



# Revisions to AHM Protocols

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*Eastern mallards – optimal policies:*

BPOP	OLD	NEW
<300k	C	C
300-500k	C	L
500	R	L
≥550	L	L



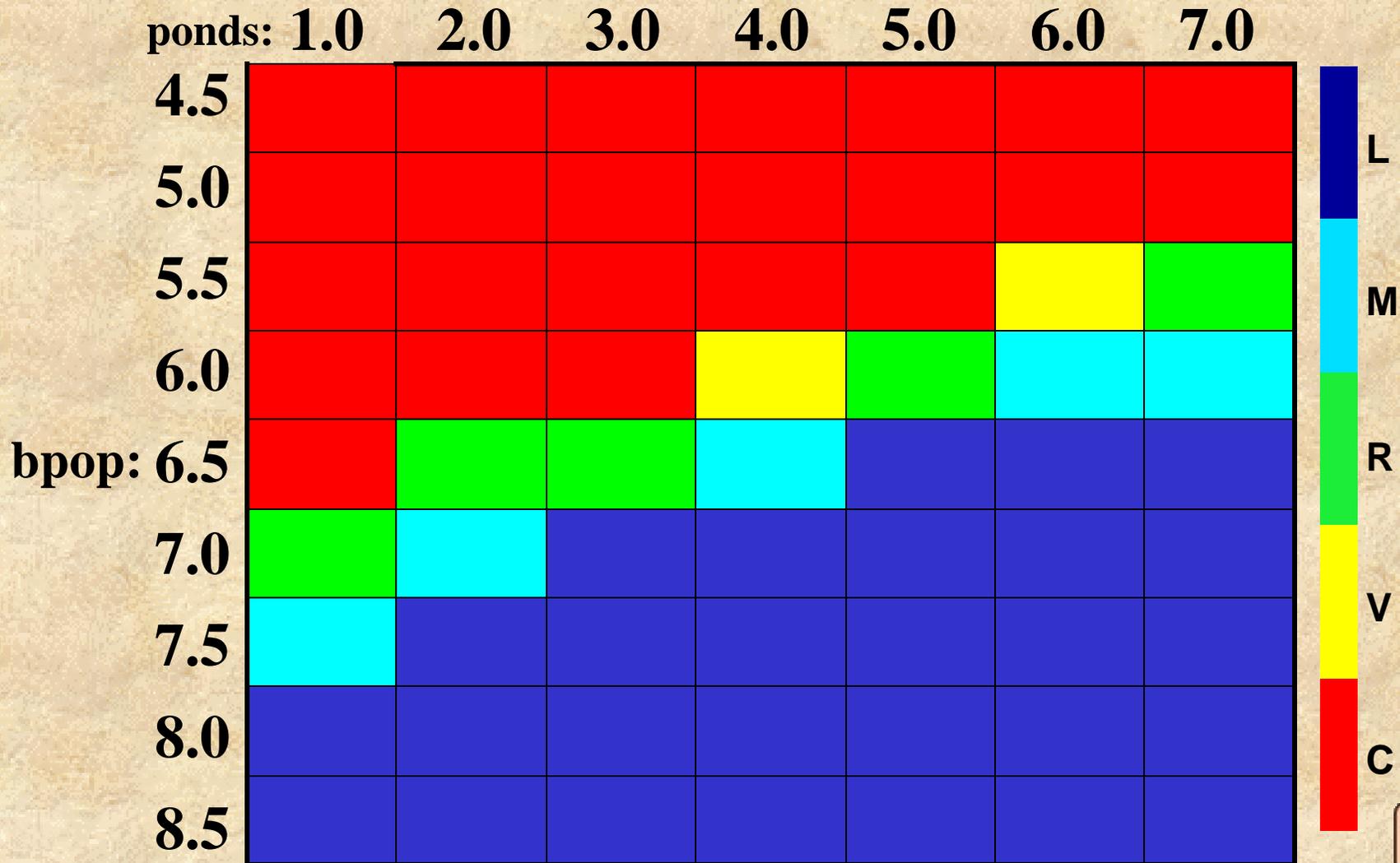
# Regulatory Proposals

- **Framework-date extensions**
- **No very restrictive alternative**
- **No closed seasons >5.5m midcontinent mallards** (traditional survey area + Lake States)
- **No annual regulatory change >1 step**



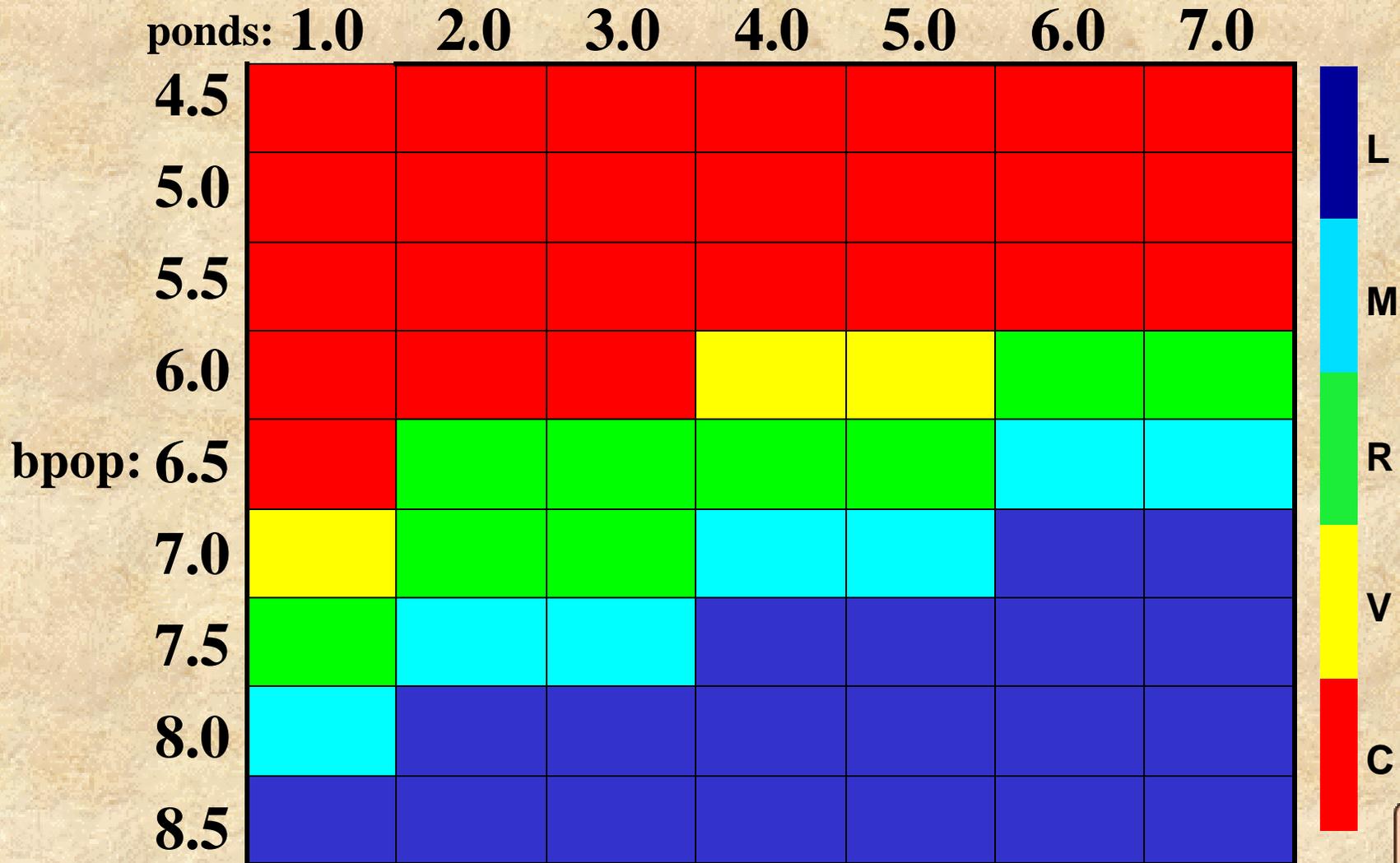
# Regulatory Proposals

## *Midcontinent mallards: baseline*



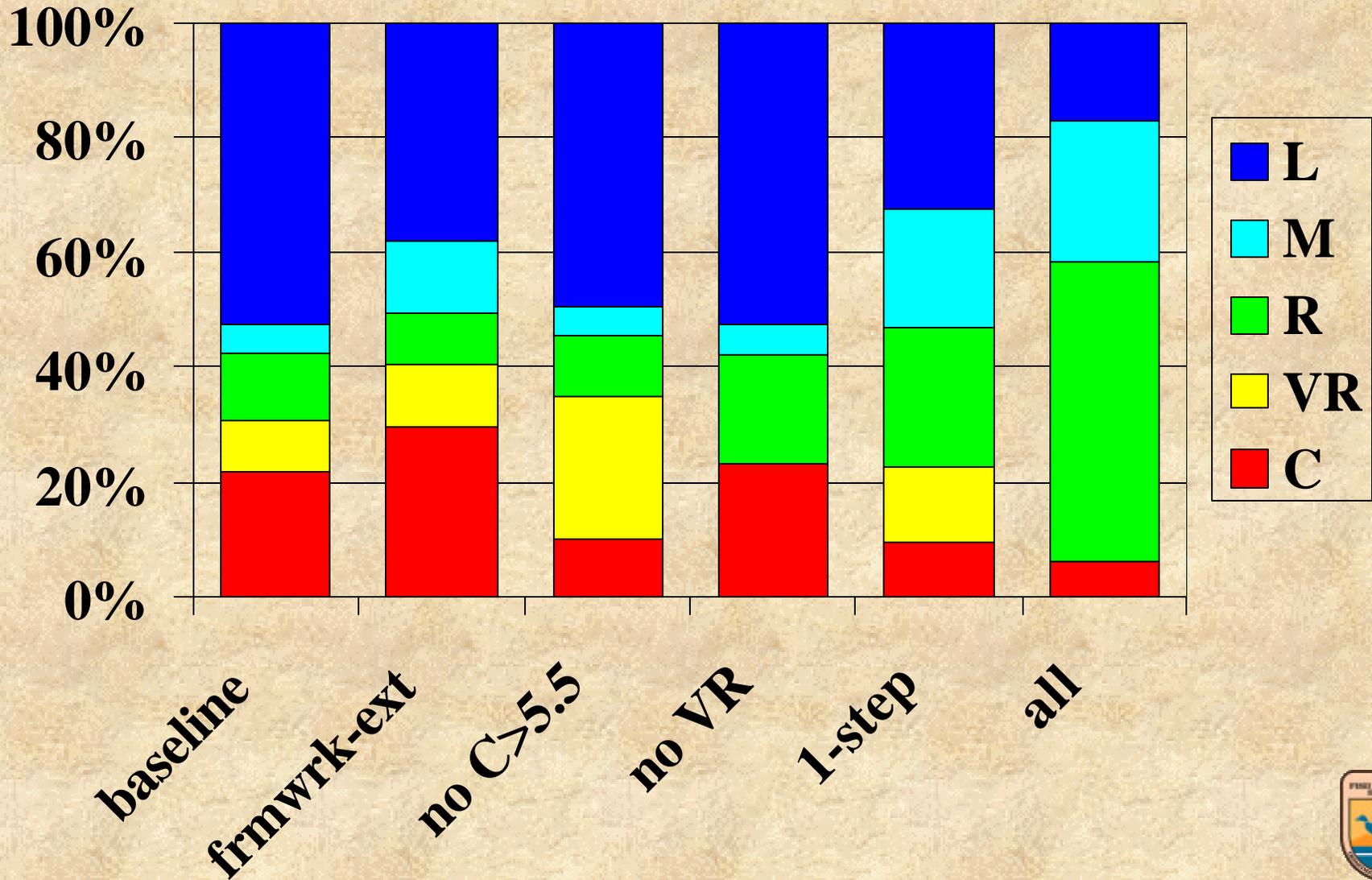
# Regulatory Proposals

*Midcontinent mallards: w/ framework-ext.*



# Regulatory Proposals

*Midcontinent mallards: expected reg. frequency*



# Take-home Messages

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- positive bias in mallard growth rates corrected
- continuing to incorporate technical improvements
- this year's regulations still close to call
- changes to regulatory alternatives principally involve social tradeoffs, since resource protection (*for mallards!*) is built in
- AHM Working Group needs policy-level guidance (*harvest-mgmt objectives, regulatory alternatives*)

