



# A Vision for Integrated Waterfowl Management

- A unified system of waterfowl conservation that features explicit and coherent objectives to guide habitat and harvest programs, and the means for coordinated actions to realize those objectives. Such a fully coherent management system would feature:
  - a set of widely supported fundamental goals for waterfowl conservation that reflect stakeholder values;
  - a decision framework that allows managers to understand and balance tradeoffs among these multiple fundamental goals; and
  - managers using that decision framework to efficiently allocate resources to achieve those goals.



# A Vision for Integrated Waterfowl Management

Underpinning such a system would be:

- Population objectives that are attainable and will satisfy hunters and other stakeholders.
- Habitat objectives that achieve the population sizes and stakeholder experiences we desire, along with other ecological values from conserved habitat.
- Stakeholder participation and satisfaction sufficient to sustain habitats, populations and conservation activities at mutually desired levels.



So to review, what's the problem?



# What do these have in common?

- Resources dedicated to conservation are not optimally allocated among landscapes.
- Too much time is spent setting annual recovery goals.
- Monitoring and evaluation needs to be improved.
- Federal activities to conserve waterfowl and their habitats have declined.
- State and provincial agencies to conserve waterfowl and their habitats have declined.
- Too few resources are directed towards understanding waterfowl hunters.
- Universities are less attentive to waterfowl science and monitoring/evaluating.
- Federal agencies are less attentive to waterfowl science and monitoring/evaluating.

**Resource allocation?**



# Efficiently allocating resources is going to require...

- Agreement on fundamental objectives.
- A more thoughtful and comprehensive plan for how we will go about achieving those objectives.
- Perhaps, updating our system of waterfowl management so we are all coordinated and working towards a common goal.

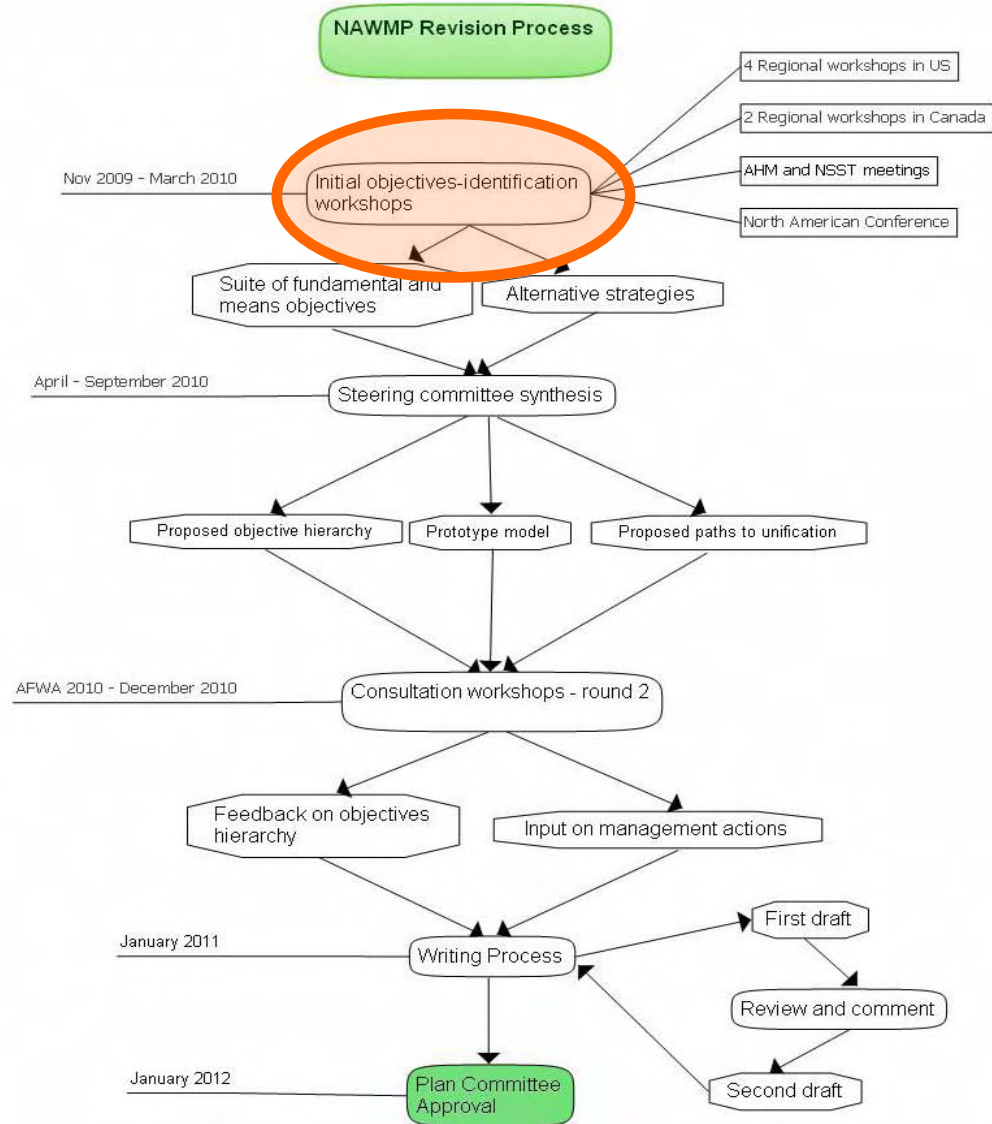


# Working Problem Statement

The waterfowl management community lacks consensus on the fundamental objectives of waterfowl management, the means to achieve those objectives, and the framework necessary for integrating multiple decisions in ways that efficiently allocate resources and coordinate actions.



# Workshop Mechanics







# Workshop-One Goals

- 1) To begin engaging waterfowl managers concerning the practical aspects of fulfilling "A Vision for Integrated Waterfowl Management".
  - 2) To provide stakeholders an opportunity to express their beliefs about appropriate objectives for waterfowl management, and how these might best be pursued from a large-scale, strategic perspective.
  - 3) To provide feedback that will be useful to the Plan Committee as they develop the Plan Revision.
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- 4) To seek input from Canadian waterfowl managers, partners and stakeholders so that interests related to habitat and harvest objectives are included in the NAWMP revision process.
  - 5) To encourage Canadian waterfowl managers, partners and stakeholders to contribute to the revised tri-national vision for waterfowl conservation on the North America continent.



# Break-out Table Groups (Today)

- Review the handout of potential objectives; clarify as needed.
- Add missing objectives; re-write if you wish
- Clarify/Discuss definitions of fundamental and means objective
- Suggest one or more measurable attributes for objectives of your choice



## After the break-outs: *Individual input on classification of objectives*

- You will be given the opportunity to express *your* opinion (via Turning Point) about the list of potential objectives (fundamental, means, or not relevant)
- Purpose is NOT to conduct a “vote,” but a means to:
  - ensure everyone has a “voice” in a short period of time
  - determine the degree of variation in opinion
  - understand the sources of variation
  - have a record of (anonymous) responses



# Evaluating Objectives...

1. Promote a conservation ethic in the general public
2. Maximize waterfowl harvest
3. Maximize hunter satisfaction
4. Promote non-consumptive uses of waterfowl
5. Maintain landscapes capable of sustaining waterfowl populations in perpetuity
6. Increase the understanding of ecological mechanisms driving changes in waterfowl abundance and waterfowl landscapes
7. Expand the sources and amount of funding for waterfowl conservation activities
8. Perpetuate the tradition of waterfowling
9. Minimize harvest of under-abundant waterfowl species
10. Minimize loss and degradation of wetlands and associated uplands
11. Provide more public hunting opportunities
12. Minimize the detrimental effects of over-abundant populations (e.g. depredation, habitat destruction)
13. Maintain/establish regulations that are simple and will lead to high compliance rates among hunters
14. Maintain healthy waterfowl populations as part of the North American fauna
15. Maximize ecological goods and services derived from wetlands and associated uplands managed for waterfowl
16. Increase public support for waterfowl conservation
17. Increase waterfowl hunter participation
18. Ensure that no species of waterfowl falls below population levels necessary for long-term viability.
19. Increase and improve duck breeding habitat
20. Ensure cooperation among jurisdictions (state, flyway, partners, etc.).
21. Increase and improve duck wintering habitat
22. Maximize the efficiency and effectiveness of the infrastructure and funding for waterfowl conservation
23. Provide maximum hunting opportunity.
24. Maintain the social license to hunt
25. Increase duck recruitment
26. Increase and improve duck migration habitat
27. Reduce mortality from disease and contaminants
28. Maintain a broad fall and winter distribution of waterfowl
29. Establish the infrastructure needed to ensure coherence in waterfowl management
30. Formalize the institutions needed to incorporate human dimensions into waterfowl management decisions
31. Increase hunter education and communications efforts



# Fundamental vs. Means Objectives

- Fundamental objectives
  - An essential reason for my interest in the problem or decision
  - Constitute the broadest objectives influenced by your (conservation) actions
  - Important because *it just is!*
- Means objectives
  - Represent a way station in the progress toward a more fundamental objective (e.g., decrease natural mortality)
  - Serve to help generate potential actions and can deepen understanding of the decision problem



# Fundamental vs. Means Objectives

- Is this where I want to go? (FUNDAMENTAL) or is it a way to get there? (MEANS)
- Fundamental objectives answer "why?"  
Means objectives answer "how?"
- The distinction usually is dependent on the decision problem; a means objective in one problem may be a fundamental objective in another (and vice-versa)
- The distinctions should help us define the scope of "integrated waterfowl management"



# Measurable attributes

Potential Objective	Measurable attribute
Maintain duck hunting tradition	Number of people who identify themselves as duck hunters
Ecosystem goods and services	Wetland acres (not counting farmed wetland)
Hunt quality	Proportion of hunters who say they were satisfied or very satisfied with their season
Promote conservation behavior in the public	Annual total of public and private dollars for habitat conservation (\$billion)



# Evaluating Objectives (Tomorrow)

- Objective relationships & linkages:
  - Group objectives along a gradient from fundamental to means
  - Graphically display the conceptual linkages between means objectives and fundamental objectives
  - Provide a context to develop measurable attributes
  - Provide a context to develop management actions or alternatives
- Identify measurable attributes linked to objectives
- As time allows, identify and discuss key potential actions to achieve fundamental or means objectives





**Fundamental  
Objective**

**Fundamental  
Objective**

**Fundamental  
Objective**



**Fundamental Objective**

**Fundamental Objective**

**Fundamental Objective**

**Means Objective**

**Means Objective**

**Means Objective**

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**Fundamental Objective**

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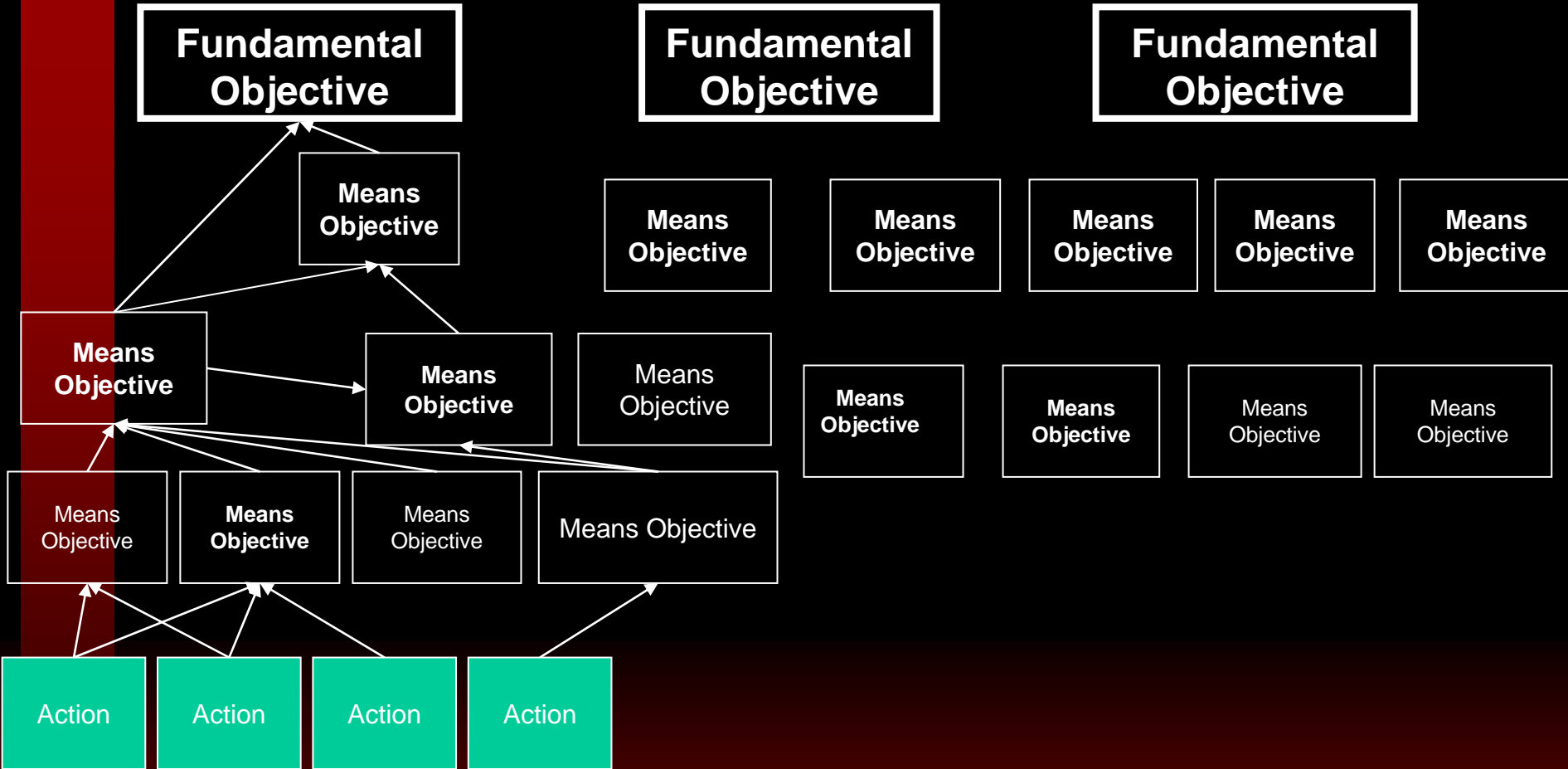
**Means Objective**

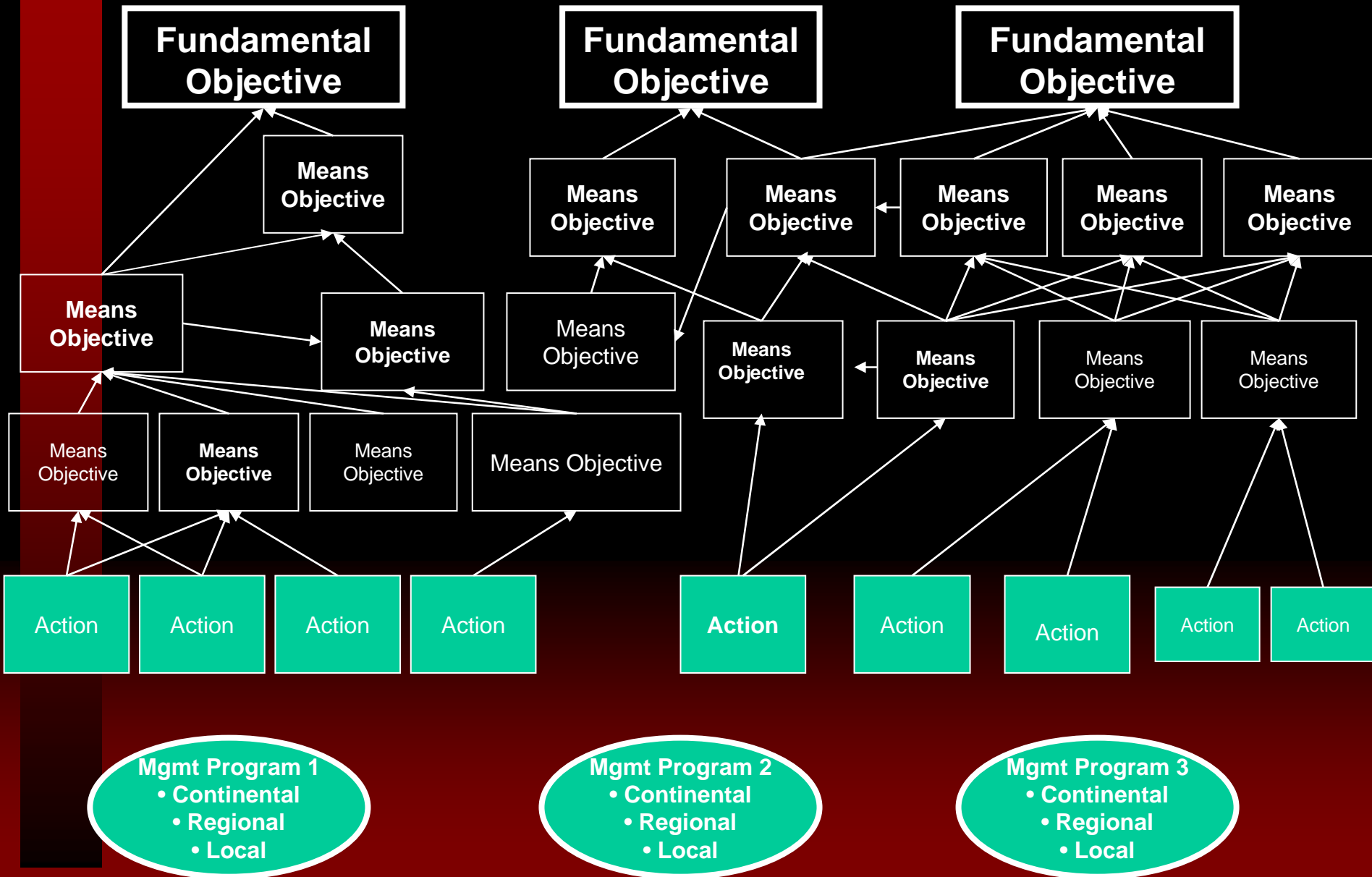
**Means Objective**

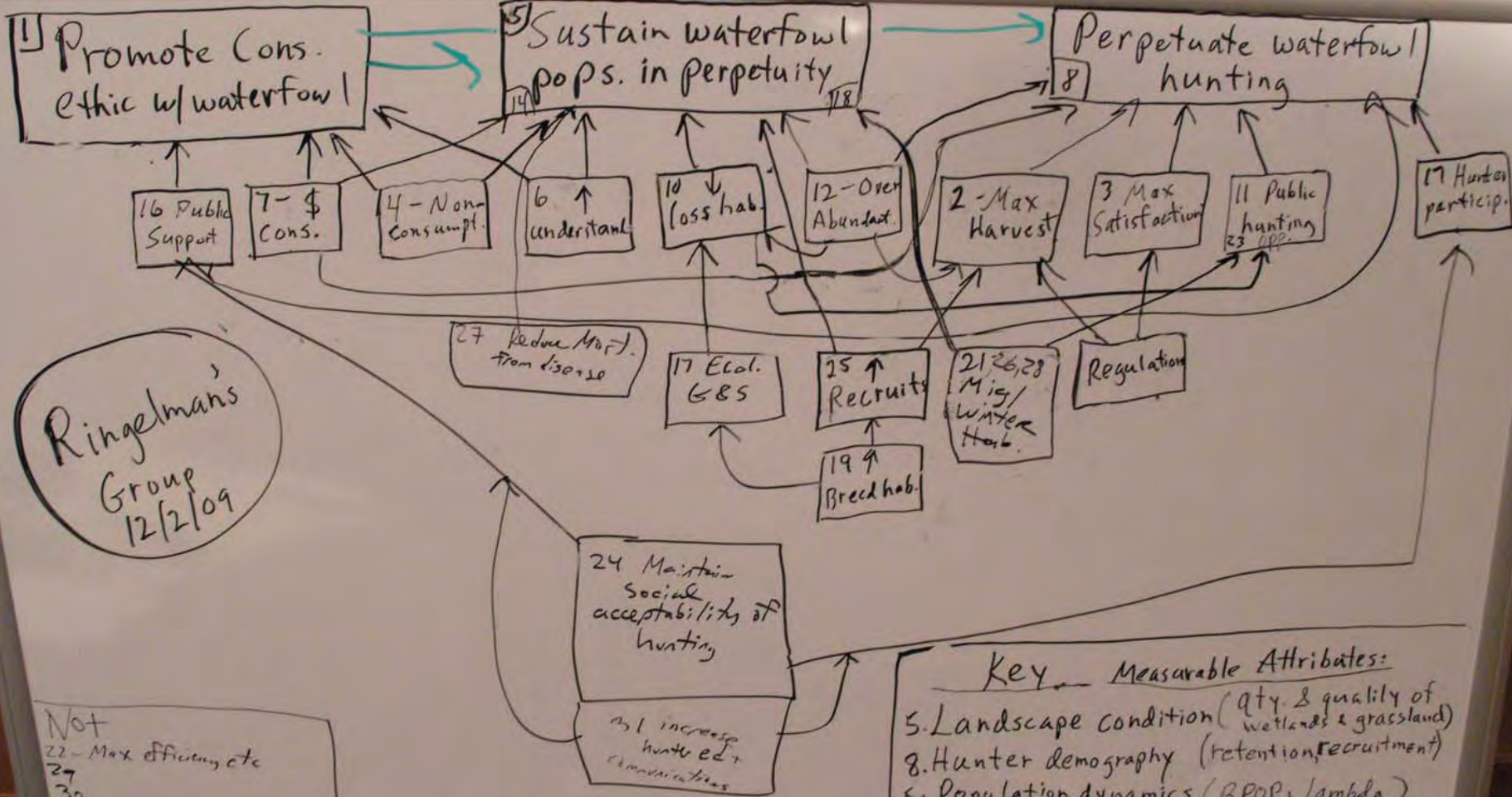
**Means Objective**

**Means Objective**

**Means Objective**







Ringelmann's Group  
12/2/09

Not  
22 - Max efficiency etc  
27  
30

- Key Measurable Attributes:
5. Landscape condition (qty. & quality of wetlands & grassland)
  8. Hunter demography (retention, recruitment)
  5. Population dynamics (BPDP, lambda)
  1. Supportive public policies and general funding for conservation





Measure  
 - find the condition  
 - get the data

LANDSCAPES <sup>5</sup>

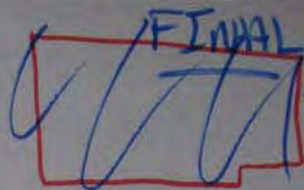


Table 3  
 Feb. 2, 2010

Fundamental

means

stopped @ 64%

Measure  
 - find the condition  
 - get the data

19 | 21      26 | 10 | 34

28 | 6 | 39  
 25

44 | 42 | 44  
 15 | 41

NEW  
 NAWMP

36 | 29 | 22 | 20  
 35 | 30

Populations <sup>14/18</sup>

12 | 27 | 38 | 9

37 | 17 | 31  
 11 | 3 | 8  
~~3~~

SUPPORT <sup>16</sup>

1 | 4 | 7 | 28 | 43  
 32 | ~~27~~ | ~~17~~ | ~~17~~  
 24 | ~~13~~ | 33

Measure  
 - Family level  
 - Interpersonal  
 - use concept of  
 level of analysis  
 (individual, family, community)  
 - Public health  
 approach to  
 research

DRAFT

28 Broad Fall  
 Winter D

25

Pop  
 sus  
 A

2 Missing  
 data



# Objective Mapping: Key Points

- Ensures that the views of stakeholders are considered and documented
- Helps organize the complexities of the waterfowl management enterprise
- Illustrates the linkages between means and fundamental objectives
- Explicitly recognizes how multiple management programs/institutions, through their actions, can affect the same means and fundamental objectives

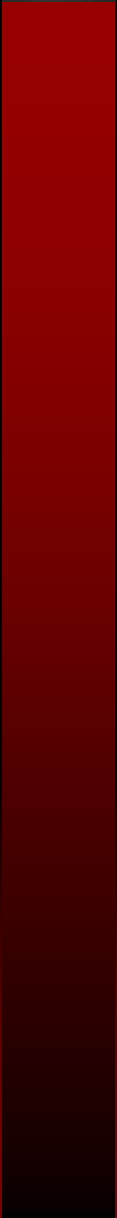




# In summary: expected outcomes from Round-One Workshops

We will have elicited ideas about:

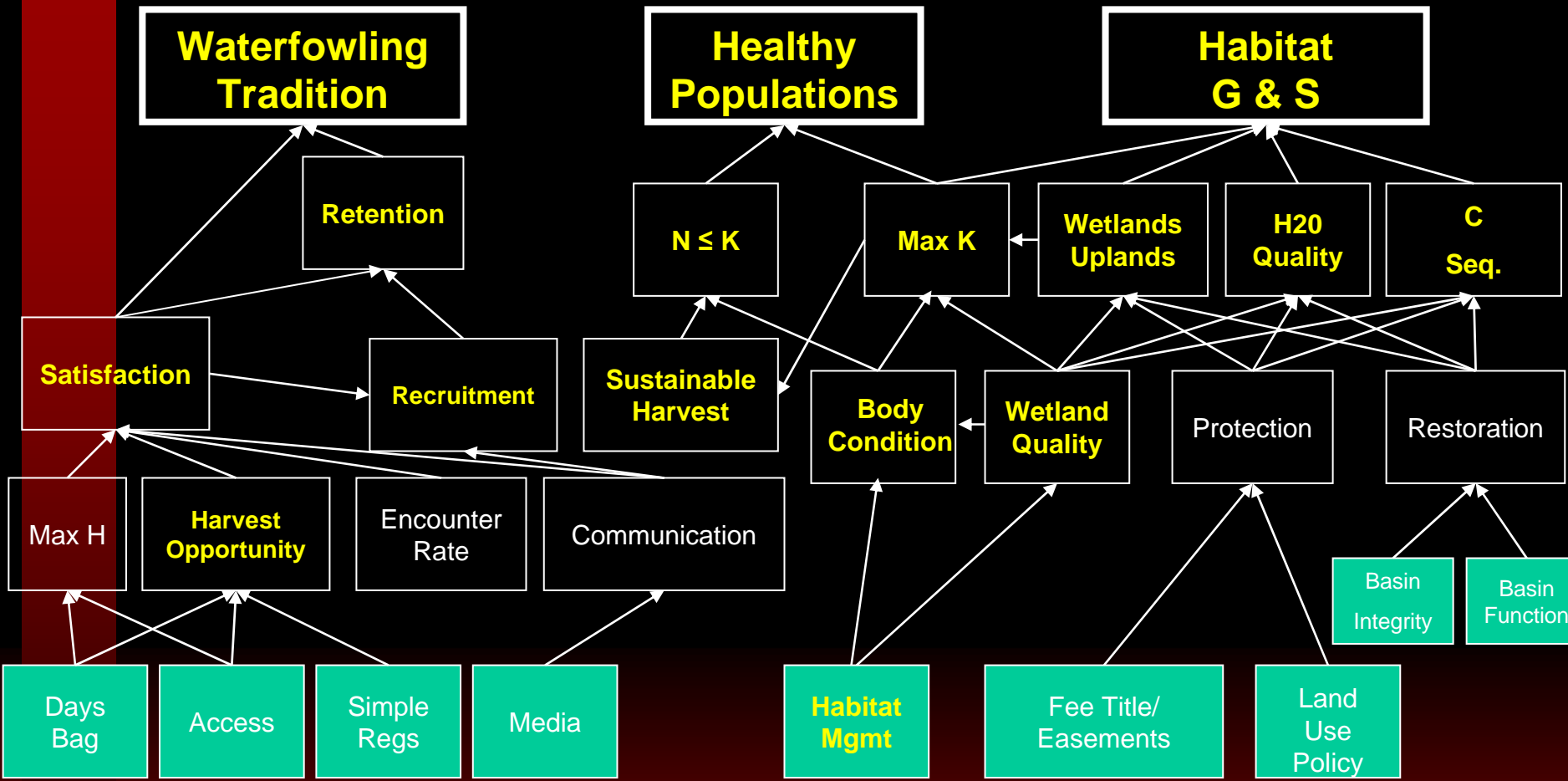
- Fundamental Objectives, high-level Means Objectives, and importantly how they interrelate
- Measurable attributes of those objectives
- A partial list of potential actions/alternatives at a broad scales for pursuing those objectives





- END TALK HERE;  
some ancillary “hip pocket” slides  
follow

# Integrated Waterfowl Management

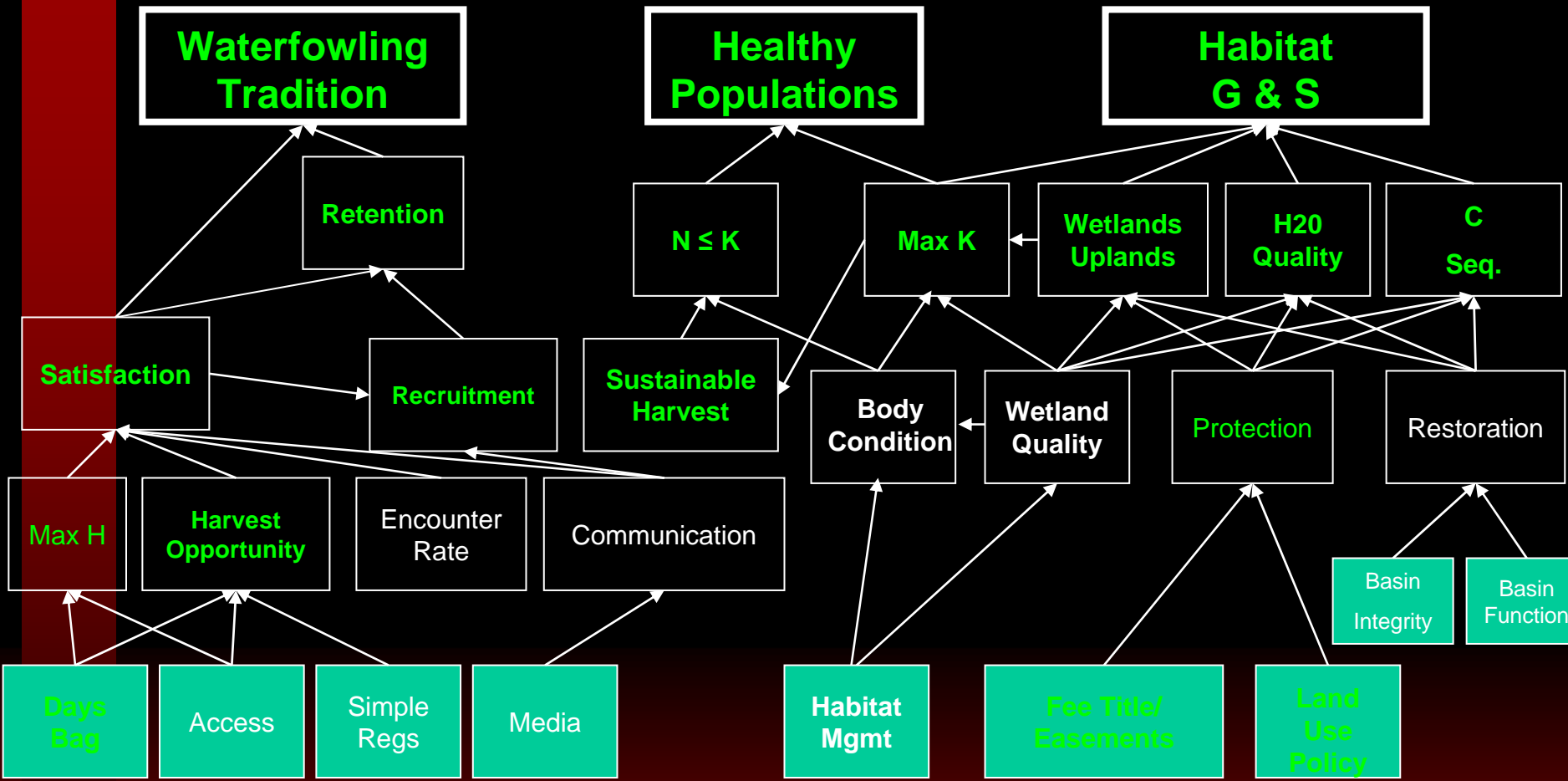


**Mgmt Program 1**  
• Continental  
• Regional  
• Local

**Mgmt Program 2**  
• Continental  
• Regional  
• Local

**Mgmt Program 3**  
• Continental  
• Regional  
• Local

# Integrated Waterfowl Management



**Mgmt Program 1**

- Continental
- Regional
- Local

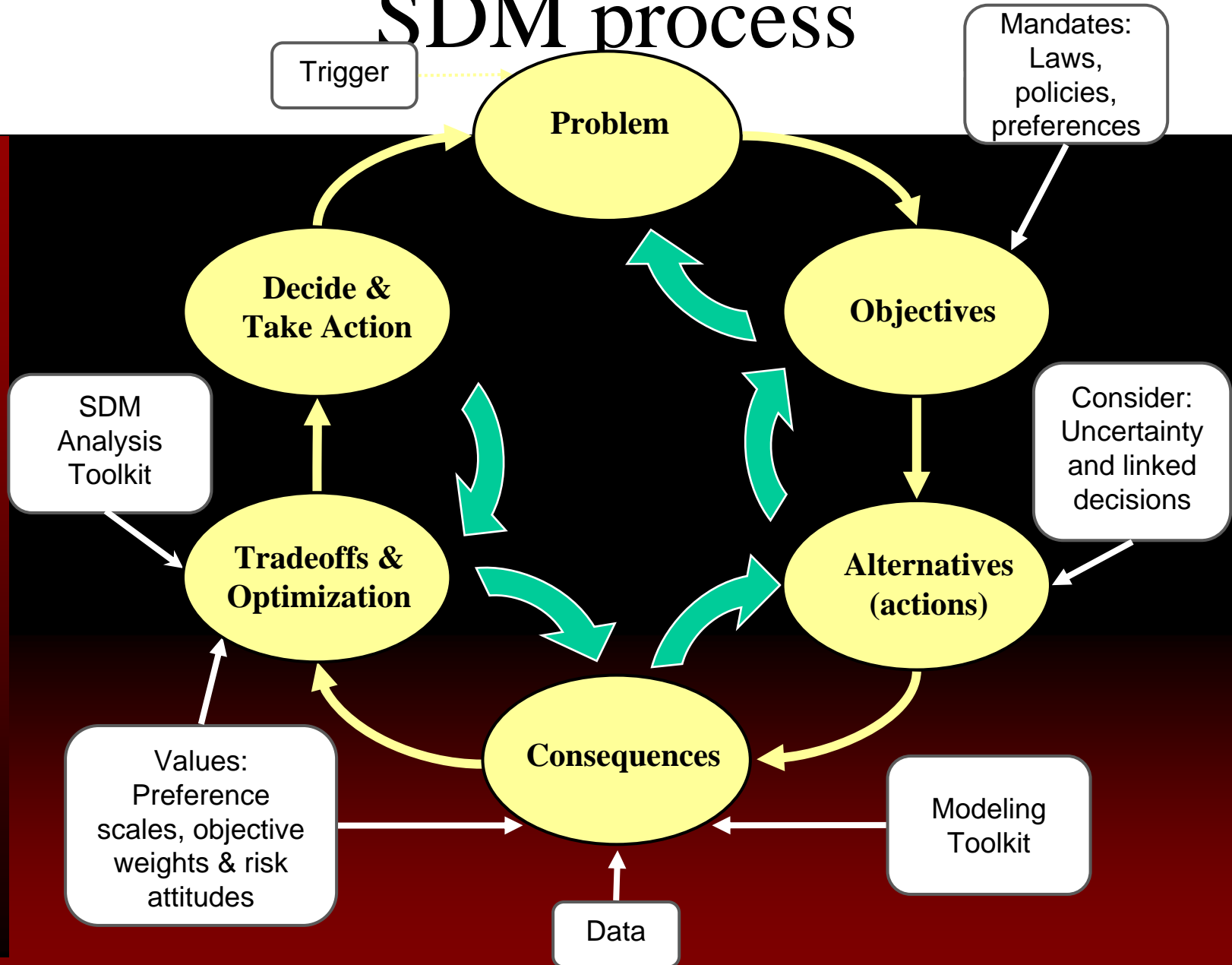
**Mgmt Program 2**

- Continental
- Regional
- Local

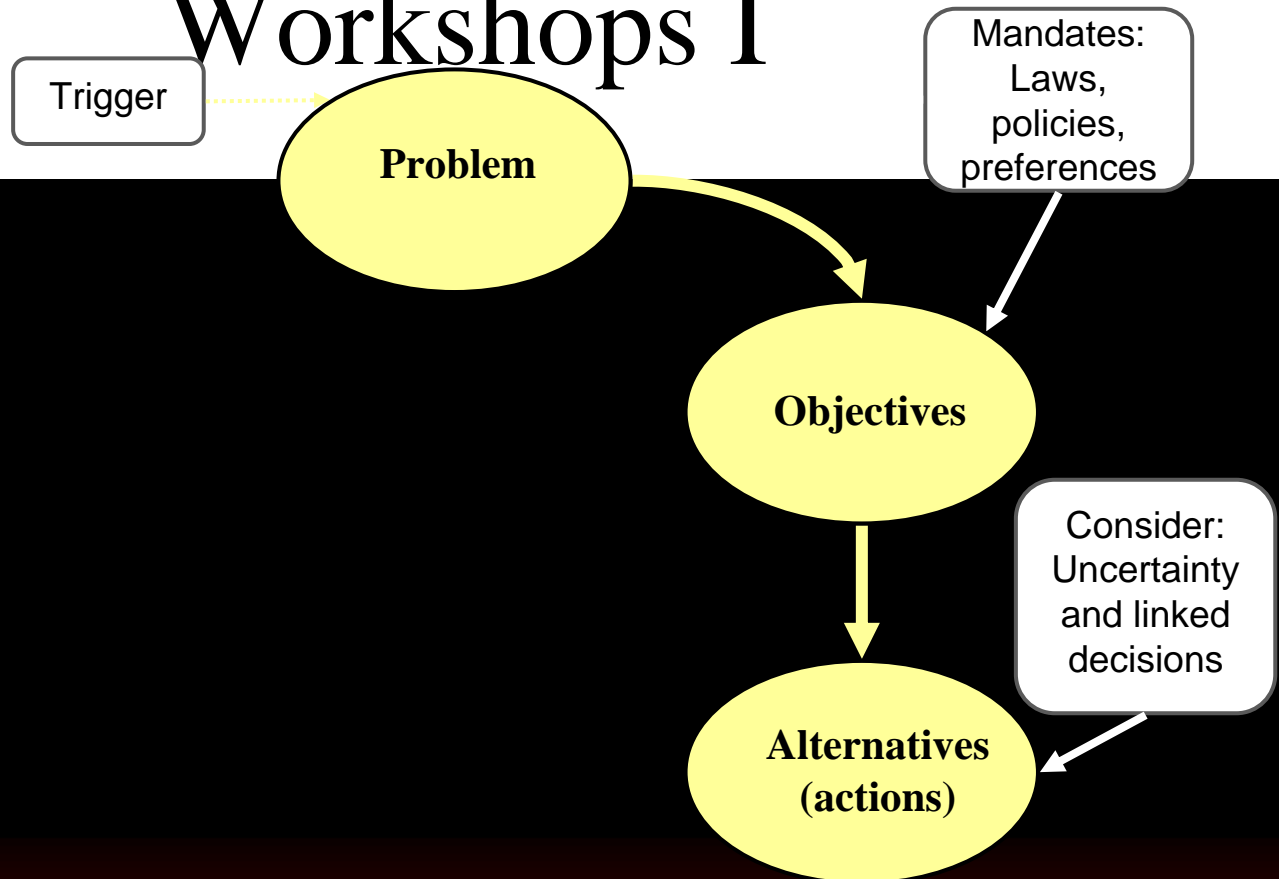
**Mgmt Program 3**

- Continental
- Regional
- Local

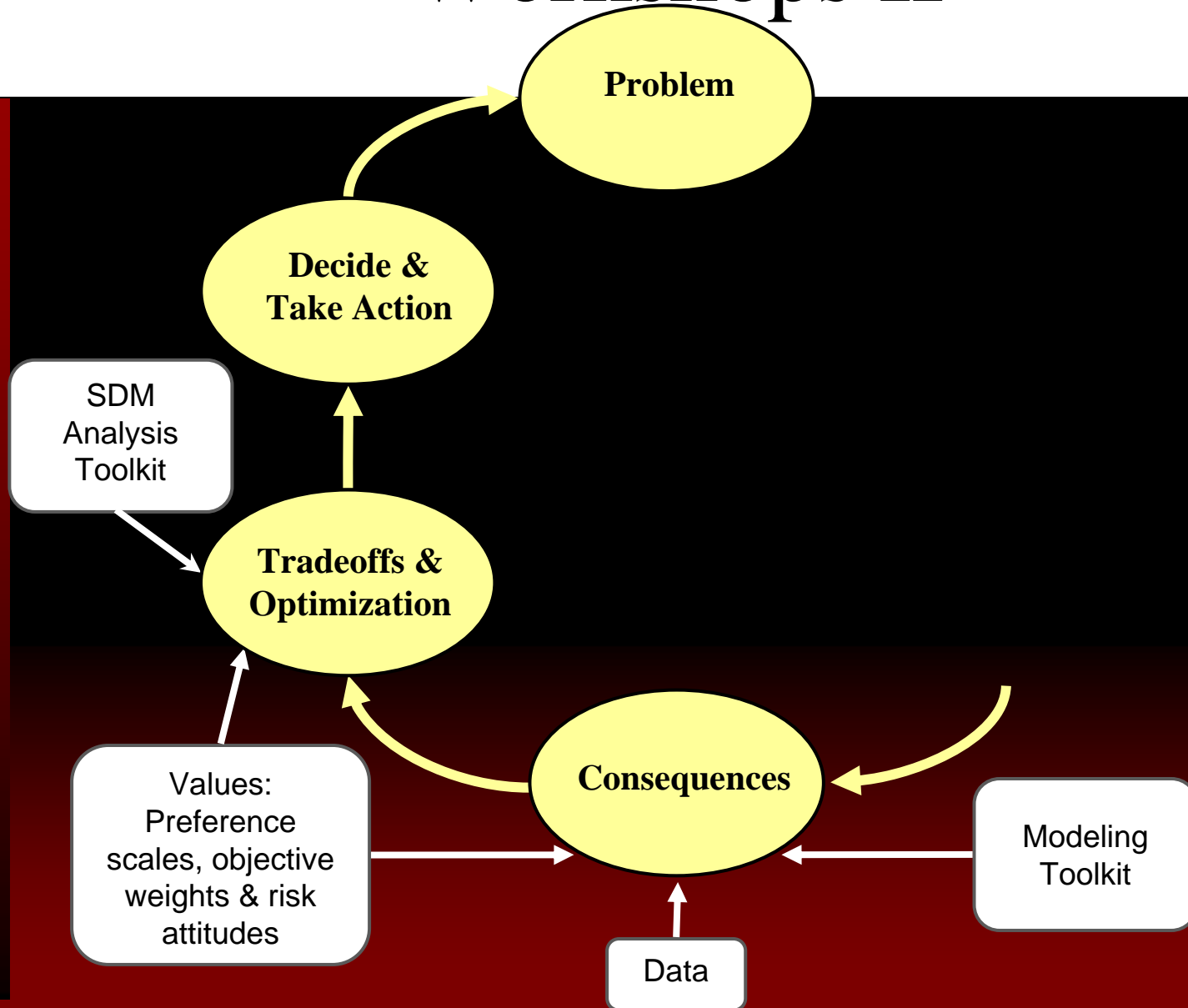
# SDM process



# Workshops I



# Workshops II







# Alternative Problem Statements

The Resources (i.e., time, talent and money) may not be adequate and/or are not being efficiently allocated to address waterfowl management needs

The waterfowl management community does not have the necessary framework for integrating multiple decisions across multiple programs and scales to achieve multiple objectives.

# Objectives vs. actions

- The two are often confused in wildlife management planning documents
- E.g., “protect 1000 additional acres of habitat” - Not an objective, but a management action chosen (either explicitly or implicitly) from a broader set of actions
- Means objectives help define a potential set of actions; e.g., increase recruitment (means objective) by restoring native prairie, or constructing predator-proof fences, or creating nesting islands (set of potential actions)

# Two key elements of SDM

- Values-focused
  - The objectives (values) are discussed first, and drive the rest of the analysis
  - This is in contrast to our intuitive decision-making, which usually jumps straight to a debate of alternative actions or outcomes
- Problem decomposition
  - Break the problem into components, separating policy from science
  - Specify components, gather & analyze relevant information
  - Recompose the parts to make a decision

# Some technical details to consider

- Models link actions to outcomes that are relevant to the objectives (consequences); models are required to make predictions.
- The decision context determines the scope of the modeling and guides development.
- The initial modeling framework will have to accommodate a broad set of management alternatives to generate a prototypical consequences table.

# Integrated waterfowl management

Fundamental Objectives	Alternatives			
	Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4
Maintain Duck hunting tradition				
Maintain healthy duck populations				
Ecological goods and services				
Max harvest opportunity				
Max hunter satisfaction				



## *Desired Outcomes for the 2011/12 Revision*

- 1) Achieve broad consensus on the fundamental goals of waterfowl conservation.
- 2) Reach collective agreement on the desired future state of waterfowl management, comprising:
  - Clearly articulated objectives and a general integrated framework for making population, habitat, harvest and hunter management decisions. This decision framework should include example protocols for integrated monitoring and assessment.
  - Achieve sufficient progress in creating this decision framework to develop the momentum needed to conclude and fully implement such a framework.
- 3) Make measurable progress toward integrated models and decision frameworks for scaup, northern pintails and black ducks.
- 4) Provide an informed estimate of the timeline and resources needed to complete the coherent integration of waterfowl management.
- 5) Review progress with regard to the recommendations in the 2007 NAWMP Continental Assessment and define actions needed to advance those recommendations that remain of high priority.



# From the Plan Committee (Aug 2009)

## Draft Purpose Statement:

*The purpose of the Plan is to sustain abundant waterfowl populations while preserving the traditions of wildfowling and achieving broad benefits to biodiversity, ecosystem processes and the people of North America. Plan goals will be accomplished by partnerships that conserve habitats and sustain populations, guided by sound science.*



# Workshop-One Goals

- 1) To gather input on the overarching objectives of waterfowl management, and opinions on how such objectives might best be pursued from a large-scale, strategic perspective
- 2) To obtain information from stakeholders that will help inform the Plan Committee as they develop the scope and nature of the pending Plan Revision
- 3) To discuss with waterfowl managers the practical aspects of fulfilling "A Vision for Integrated Waterfowl Management"