

HABITAT OBJECTIVES A PAIN OR A BENEFIT

LEIGH FREDRICKSON

MEXICO WETLAND/WATERBIRD
ECOLOGY/MANAGEMENT II

LAGUNA MEXICANOS CHIHUAHUA

Club Raramuri

4-7 March 2014

SOME HISTORY

- RARELY USED HISTORICALLY
- STATEMENTS WERE USUALLY GOALS BUT SOMETIMES VISIONS
- FOCUS WAS ON POPULATIONS NOT HABITATS
- POORLY TIED TO LIFE CYCLE EVENTS

WHY HABITAT OBJECTIVES WERE RARE

- LITTLE EXPOSURE TO THE IDEA OF HABITAT – BASED OBJECTIVES IN ACADEMIC SETTINGS OR WITHIN AGENCIES
- LITTLE EXPOSURE TO MONITORING FOR MANAGEMENT BECAUSE OF THE DOMINANCE OF DATA COLLECTION FOR RESEARCH
- COMPLEX AND CONSTANTLY CHANGING ENVIRONMENTAL AND OPERATIONAL CONDITIONS MADE FOLLOWING OBJECTIVES PROBLEMATIC FOR MANAGERS
- SOME SUPERVISORS TOOK OBJECTIVES AT FACE VALUE

HISTORIC OBJECTIVES

- PROVIDE HABITAT FOR WATERFOWL AND WETLAND DEPENDENT WILDLIFE
- PROVIDE FOR 3 MILLION WATERFOWL USE DAYS ANNUALLY
- PRODUCE 1600 LESSER SCAUP ANNUALLY

FACTORS ASSOCIATED WITH HISTORIC APPROACH

- DEGREE OF DISRUPTION NOT IDENTIFIED
- CHANGES IN LAND USE AND LAND USE PRACTICES ACROSS DIFFERENT SCALES NOT APPRECIATED
- WETLAND DYNAMICS NOT APPRECIATED
- FOCUS ON TECHNIQUES
- LITTLE APPRECIATION FOR TIME AND SPACE
- THE DOGMA ESTABLISHED EARLY IN WETLAND MANGEMENT DEVELOPMENT

DEFICIENCIES OF HISTORIC MANAGEMENT

- SUBSTRATE CONDITION POORLY LINKED TO STRATEGY
- CLIMATIC CONDITIONS AND WEATHER POORLY LINKED TO STRATEGY
- RESOURCES AND CONDITIONS AMONG AREAS NOT CONSISTENTLY RECOGNIZED IN RELATION TO SCALE GREATER THAN A SINGLE SITE
- WETLAND DYNAMICS ACROSS LARGE AND SMALL SCALES IGNORED

THE MISSOURI EXAMPLE

- COLLABORATION
- POLITICAL NEUTRALITY
- KNOWLEDGE BASED DECISION MAKING
- EMPLOYEE DEVELOPMENT
- BOTTOM-UP STRATEGY

THE DECLINE IN WETLAND MANAGEMENT IN MISSOURI

- ORIGIN OF WETLAND REVIEW
- EFFORT TO FILL DEFICIENCIES
- CLEAR CHANGE IN THINKING
- ENHANCED EXPERTISE AND PERFORMANCE
- ONCE AGAIN MOVING TOWARD A LEADERSHIP POSITION
- BUT MUST BE HUMBLE

WETLAND OBJECTIVES

- HABITAT- BASED
- FOUNDATION FOR OBJECTIVE
 - HABITAT TYPES
 - TIED TO SCALE
 - CONTINENTAL
 - REGIONAL
 - LOCAL
 - PLANT AND ANIMAL LIFE HISTORIES
 - BASED ON APPROPRIATE TERMINOLOGY
- GROUP EXERCISE BECAUSE OF NEED TO LEARN

CONSIDERATIONS FOR EFFECTIVE MANAGEMENT IN MODIFIED LANDSCAPES

THE BASIS FOR ESTABLISHING
EFFECTIVE HABITAT-BASED
MANAGEMENT STRATEGIES IS ROOTED
IN MY EXPERIENCE PRIMARILY BUT NOT
SOLELY WITH WETLANDS

WHAT IS A GOOD OBJECTIVE?

- MUST BE MEASURABLE
- IDENTIFIES ACTION TO BE TAKEN
- WHEN WILL THE ACTION TAKE PLACE
- WHERE WILL THE ACTION OCCUR
- HOW LONG WILL THE ACTION BE IMPLEMENTED
- WHO BENEFITS FROM THE ACTION

EXAMPLE OF USE OBJECTIVE

- INITIATE SHALLOW FALL FLOODING (4 INCHES) ON 10% OF SEED PRODUCING AREA DURING THE LAST WEEK OF AUGUST TO MAKE SEED RESOURCES AVAILABLE FOR EARLY FALL MIGRANT DABBING DUCKS AND MIGRANT RAILS

EXAMPLE OF FOOD PRODUCTION OBJECTIVE

- INITIATE SLOW DRAWDOWN (< 1 INCH/DAY) ON 75% OF ABANDONED CHANNEL HABITATS TO STIMULATE GERMINATION OF WALTERS MILLET BEGINNING 1 JULY

EXAMPLE OF FOOD PRODUCTION AND USE

INITIATE SLOW DRAWDOWN ON 50% OF
SEASONALLY FLOODED SEED
PRODUCING AREA ON 15 APRIL TO
STIMULATE GERMINATION OF
SMARTWEEDS AND MAKE
INVERTEBRATES AVAILABLE FOR
LATE MIGRANT DABBING DUCKS AND
EARLY MIGRANT SHOREBIRDS

INFORMATION DYNAMICS IN DECISION-MAKING

- IDENTIFY AND GATHER INFORMATION
- SYNTHESIZE INFORMATION
- APPLY INFORMATION
 - INFRASTRUCTURE TO BE PLACED ON WHAT GEOMORPHIC SURFACES?
 - HOW WILL GEOMORPHIC SURFACES OPTIMIZE MANAGEMENT INVESTMENTS?
 - TO WHAT EXTENT, WHERE, AND WITH WHAT INTENSITY
 - WHAT ARE THE TYPES, TIMING, FREQUENCY, AND EXTENT OF MANIPULATIONS TO OPTIMIZE RESULTS IN THE SETTING
 - WHAT EQUIPMENT AND PERSONNEL ARE APPROPRIATE FOR IMPLEMENTATION

THE CHALLENGE

- **IMPLEMENTATION IN A MODIFIED SETTING**
- **RESPONDING TO CLIMATIC/WEATHER VARIABILITY**
- **GETTING RESULTS WITH OLD EQUIPMENT TOO LITTLE HELP AND A PUBLIC WITH A DIFFERENT OR UNINFORMED PERSPECTIVE**
- **HAVING RECORDS/HISTORY TO GUIDE PRESENT DAY AND FUTURE STAFF**
- **CONSISTENT MENTORING TO IMPROVE PERFORMANCE**
- **CHANGING THE PLAN TO FIT THE SEASON**
- **DECIDE WHAT, HOW MUCH, AND WHERE TO MONITOR**
- **EVALUATE**
- **READJUST OBJECTIVES**

MANAGEMENT IS AN ART FORM

- CONDITIONS CHANGE DAILY AND ONLY ON-SITE INSPECTIONS CAN DETECT THE RESULTS OF THESE SUBTLE CHANGES
- EXPERIENCE RESULTING FROM GOOD OBSERVATIONS THAT ARE EMBEDDED IN ONES BRAIN IS FAR SUPERIOR TO ANY COMPUTER OR ANY SOFTWARE

MOIST-SOIL/WETLAND MANAGEMENT CHALLENGE - PLANNING

- SET APPROPRIATE HABITAT-BASED GOALS AND OBJECTIVES**
- DEVELOP AN INFRASTRUCTURE TO ACHIEVE GOALS AND OBJECTIVES**
- DEVELOP A MONITORING PROGRAM TO DETERMINE IF GOALS AND OBJECTIVES ARE MET**

DECISION-MAKING AT DIFFERENCE SCALES

- AT WHAT LEVEL OF INTENSITY WILL THIS TECHNIQUE BE USED
- WHAT SPECIFIC ACTIONS WILL BE TAKEN TO STIMULATE GERMINATION
- WHAT SPECIFIC ACTIONS WILL BE TAKEN TO ASSURE FOOD PRODUCTION
- WHAT SPECIFIC ACTIONS WILL BE TAKEN TO MAKE FOOD AVAILABLE
- WHAT SPECIFIC ACTIONS ARE APPROPRIATE IN AN ECOLOGICALLY BASED HUNTING PROGRAM

REALITY

- MANAGEMENT IS NOT RESEARCH
- MANAGEMENT REQUIRES A DIFFERENT MINDSET THAT MUST ASSESS MULTIPLE VARIABLES REPEATEDLY
- CONDITIONS CHANGE MORE RAPIDLY THAN MONITORING IS POSSIBLE
- MULTIPLE DECISIONS MUST BE MADE DAILY
- CHANGE THE BASE PLAN BASED ON CONDITIONS
 - ENVIRONMENTAL
 - OPERATIONAL
 - PERSONNEL
 - FUNDING

IMPORTANCE OF DECISIONS

- EFFECT AT LOCAL AND CONTINENTAL LEVEL
- DETERMINES LONG AND SHORT TERM SUCCESS
- DETERMINES COST EFFECTIVENESS

INTENSIVE MANAGEMENT

- COSTLY
 - EQUIPMENT
 - MANPOWER
 - OPERATION
- REQUIRES SPECIAL EXPERTISE
- RESULTS IN MORE MODIFICATIONS
- CAN COMPROMISE OTHER OBJECTIVES

HOW MANY ACRES CAN ONE FTE WITH AVERAGE EXPERIENCE MANAGE

- MAINLAND
 - 300 ACRES
- HAWAII
 - 90 ACRES

WHAT IS APPROPRIATE?

- HOW SHOULD OBJECTIVES BE ARTICULATED FOR AN AREA?
- WHEN SHOULD OBJECTIVES BE SET?
- WHAT DETAIL IS APPROPRIATE?
- ARE THEY GUIDES TO SPECIFIC OR GENERAL ACTIONS?
- GIVEN TIME CONSTRAINTS ARE THEY WORTH THE INVESTMENT?

SOME THOUGHTS ON MONITORING

THE BIG QUESTION

WHY

OTHER CRITICAL QUESTIONS

WHERE

HOW

COMMON HISTORIC APPROACH

- FOCUS ON TAXA EITHER AS A GROUP OR A SPECIFIC SPECIES
- FOCUS ON A SINGLE LIFE-HISTORY EVENT
- FOCUS ON BREEDING
- OBJECTIVES POORLY ARTICULATED

HOW TO MONITOR FOR SITE SPECIFIC BENEFITS

- DEPENDS ON LOCATION AND CONDITIONS ON A SITE
- DEPENDS ON LIFE CYCLE EVENTS
- SHOULD BE DRIVEN BY ECOLOGICAL CONDITIONS RATHER THAN A SET PROTOCOL DEVELOPED AT SOME OTHER LOCATION

WHAT TO MONITOR

- MOST IMPORTANT IS TO ASSESS HABITAT CONDITIONS
- CHANGES IN WATER TABLE
- RATES OF SEDIMENTATION
- CHANGES IN PLANT COMMUNITIES
- PRESENCE AND DISTRIBUTION OF INVASIVES/EXOTICS
- CHRONOLOGY, TYPE, AND EXTENT OF USE BY VERTEBRATES

WHEN TO MONITOR

- IN RELATION TO DISTURBANCE/EVENT RATHER THAN ON A SET SCHEDULE
- FOLLOWING TREATMENTS

BEWARE OF SCIENTISTS BECAUSE THEY

- FOCUS ON SAMPLE SIZES
- FOCUS ON QUANTIFICATION
- HAVE AN INTEREST OR USE TECHNIQUES THAT RELATE TO A SMALL SUITE OF VARIABLES
- DRIVEN BY FETISH TO PUBLISH
- MAY HAVE A HIDDEN AGENDA
 - MORE RESEARCH MONEY
 - ACCESS TO CERTAIN SITES