

The Final Programmatic Environmental Impact Statement on the Mechanical/Artificial Creation of Emergent Sandbar Habitat (ESH) on the Riverine Reaches of the Upper Missouri River

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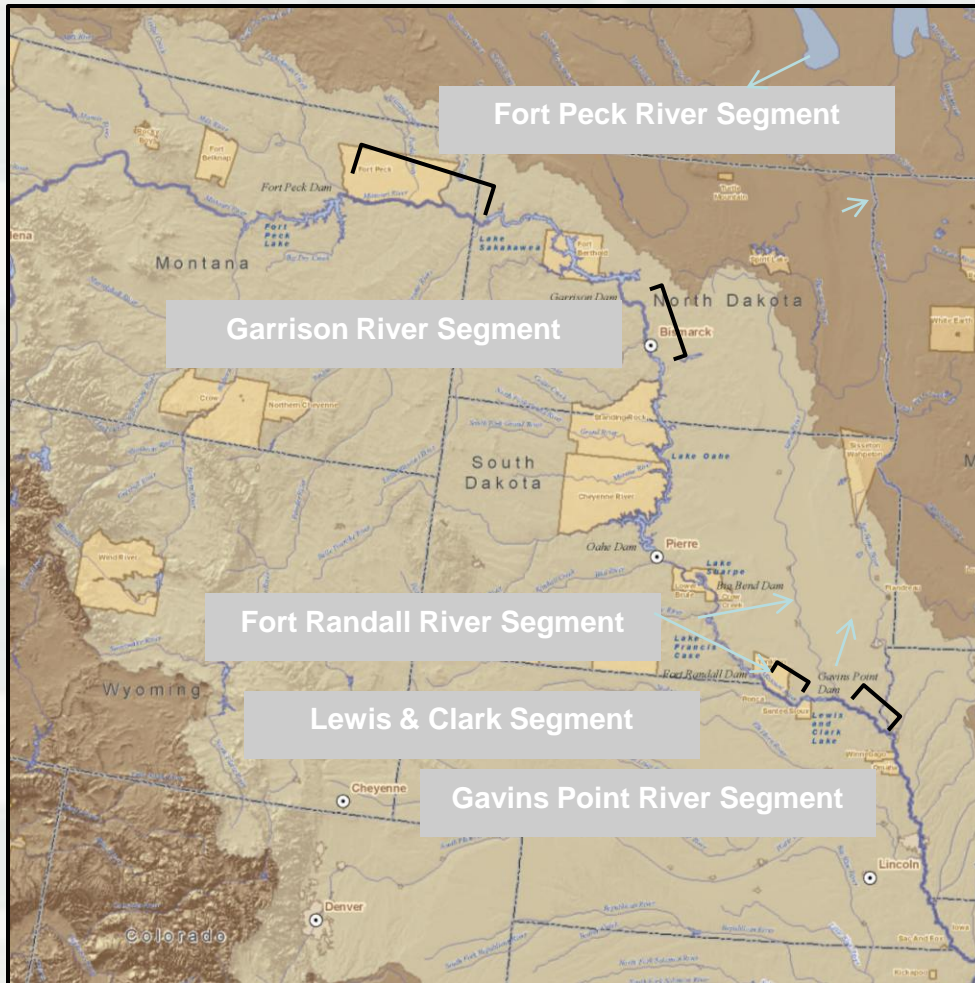
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PEIS Background



- Implement BiOp RPA IV(b)3
- River Segments
- Initiated in 2004
- NEPA disclosure
- Ongoing actions with PIR/EAs
- Existing program (approx. 150 ac/yr)
- No significant effects from current program



Public Involvement

November 30	Bismarck, ND
December 2	Fort Peck, MT
December 7	Pierre, SD
December 8	Yankton, SD
December 9	Sioux City, IA
January 5	Omaha, NE
January 6	Kansas City, MO

Comment period on the Draft PEIS ended 22 Feb 2011.
All comments received addressed in the Final document.
Appendix highlighting full comment and a response;
discussion in Final document cross referenced.



Public & Agency Comment Categories

- Scale
- Erosion/Landowners
- Aggradation/Flooding
- Use of Flows
- Recreation
- Water Quality
- Aquatic Habitat
- Other Spp
- Historic Bird Use
- Clarify Purpose/Need
- Site Selection
- Cultural/Historic Sites
- Monitoring
- Bringing in Sand
- Review of Ind. Actions
- Permitting
- Costs
- Implementation Timeline
- Budget
- Use of Alt. Methods
- Clarify Restrictive Areas
- Clarify Tiering
- Clarify Importance of Sediment Analysis



Purpose and Need of ESH PEIS

ESH Program:

- Supplement natural habitat to support tern and plover populations

PEIS:

- Implement RPA IVb3
- Analyze range of potential environmental consequences of alts (inform preferred alternative)
- Disclose scope and scale of overall ESH habitat creation consistent with NEPA



Key PEIS Concepts

- Tiering
 - ▶ Master Manual EIS
 - ▶ Programmatic EIS for ESH in Riverine Segments
 - ▶ Individual EAs for ESH actions in Riverine Segments
- Minimizing the project's impact footprint
 - ▶ Reduced disturbance
 - ▶ Reduced costs
 - ▶ Increased sustainability
- Constructing minimum acres that meet birds needs
- Uncertainty on # of acres needed to meet biological needs and sustain populations
 - ▶ Monitoring and adaptive management



Key Concepts: Acreages

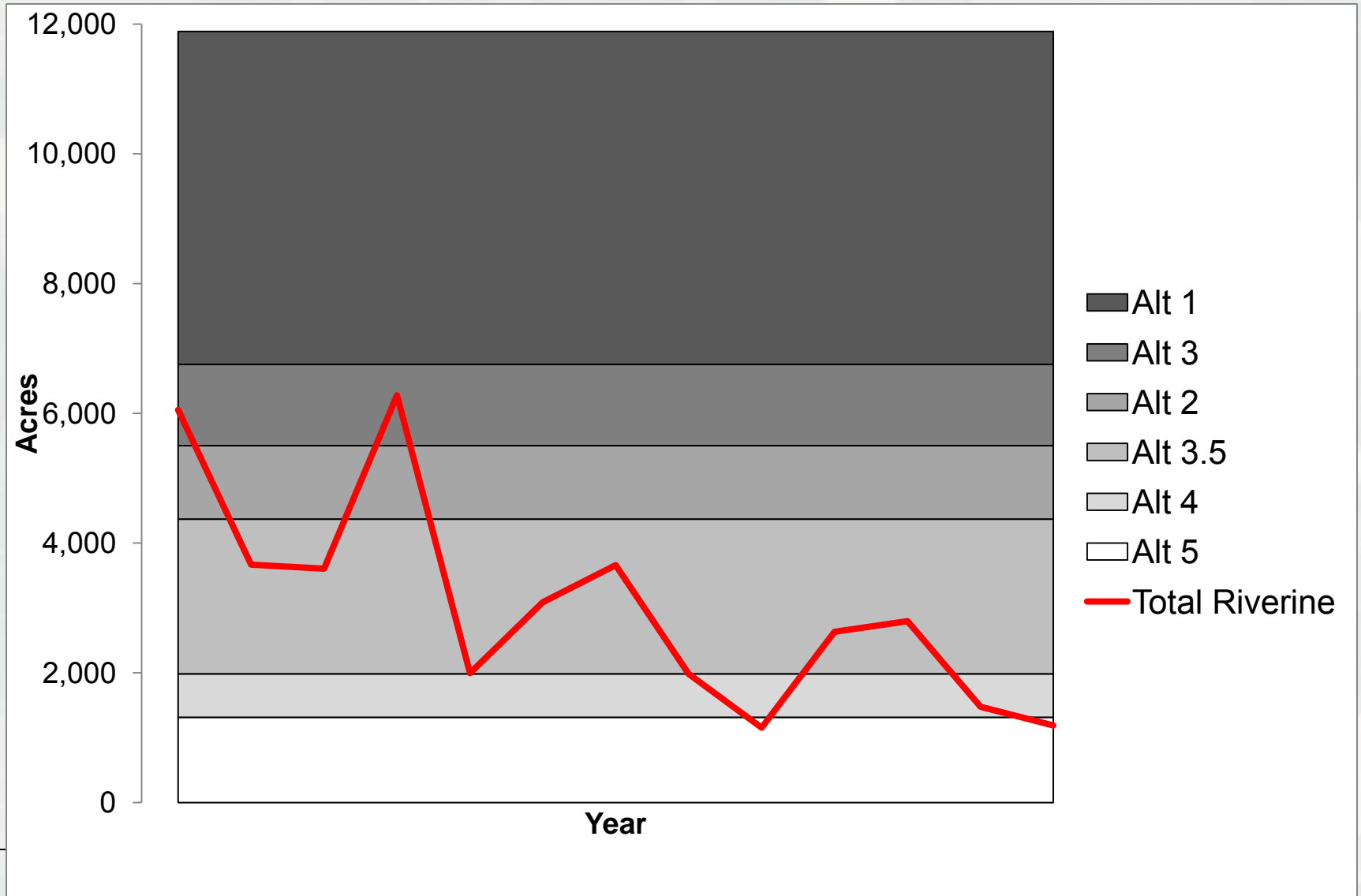
Acreage Targets = Naturally Occurring + Supplemented

Alt	Acres	Description
1	11,886	BiOp acreage estimate of acres in 1998; includes terrestrialized habitat
2	5,502	BiOp interim goal, approx. one-half of Alt 1
3	6,754	Actual acreage delineated from 1998/99
3.5	4,370	Average between acres present in 1998 and 2005
4	1,985	Acreage present in 2005
5	1,315	Approximates amount of habitat used by the species; analysis of nesting patterns from 1999-2006
Current	~150/yr	Construction in Gavins River & Lewis & Clark Lake Segments

- Subsequent (2006-2009) population numbers and fledge ratios have generally decreased



ESH Acres in Riverine Segments 1998-2010 Compared to Acres per Alternative

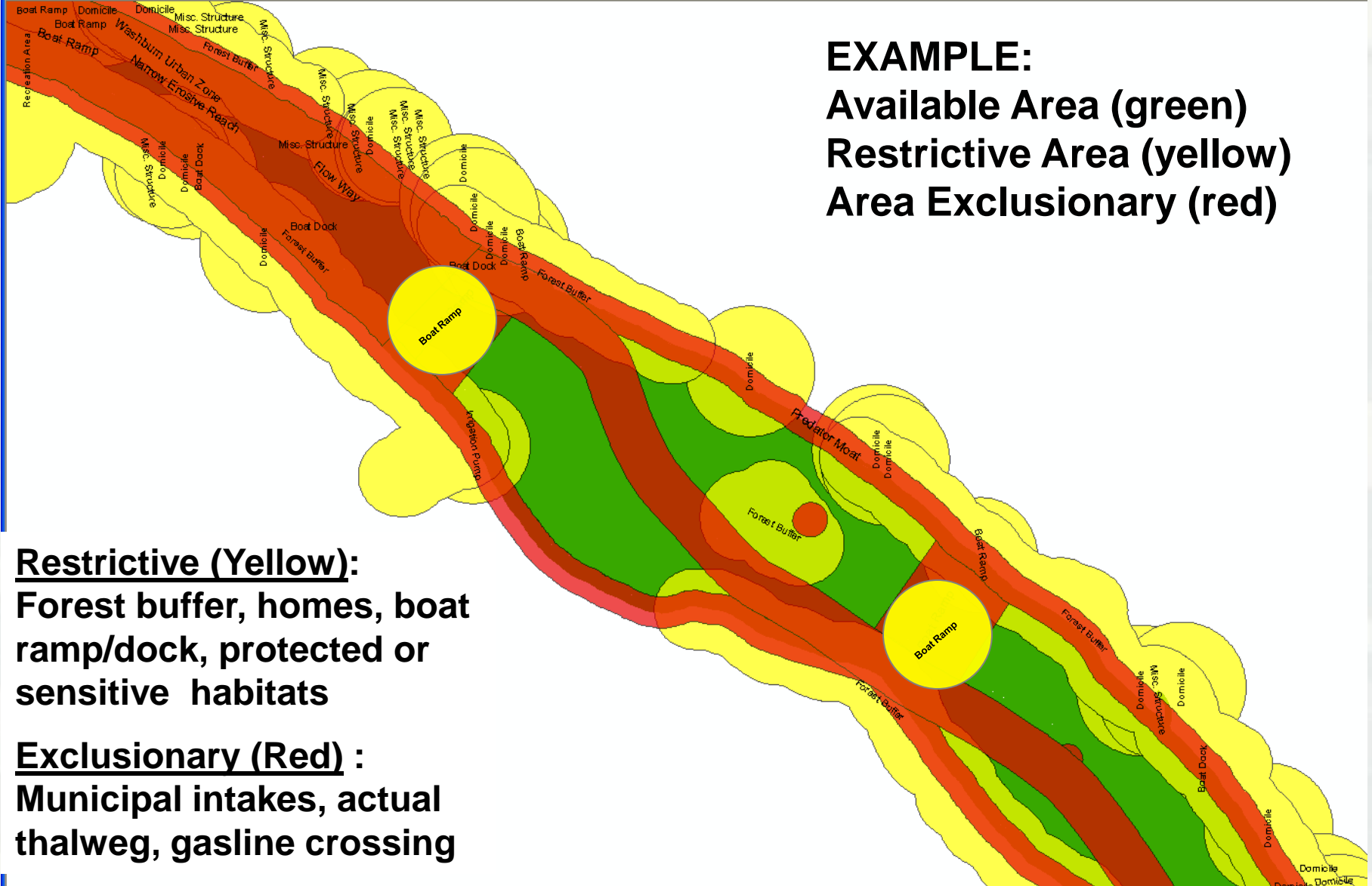


Available Area

- Tribes, Agencies and Municipalities were solicited to identify “sensitive resources” to be avoided and buffer areas
- Buffers contained in GIS
- Strategy is to avoid sensitive resources to the extent possible to minimize significant impacts
- Exclusionary, restrictive and available area



EXAMPLE:
Available Area (green)
Restrictive Area (yellow)
Area Exclusionary (red)



Restrictive (Yellow):
Forest buffer, homes, boat ramp/dock, protected or sensitive habitats

Exclusionary (Red) :
Municipal intakes, actual thalweg, gasline crossing



Sensitive Resources

Impacted by ESH

- Thalweg/river width
- Cultural/historical/archaeological
- Fish & wildlife e.g. Bald eagles, pallid sturgeon, sickle fin, mussel beds, listed spp
- Wetland habitat
- Intakes/infrastructure
- Power lines
- Boat ramps/docks
- Recreation areas

Impacts ESH

- Thalweg/river width
- Boat ramps/human conflicts
- Distance to forest (predation)



Available Area

Acres ESH Per Alternative

SEGMENT	# Acres in Available, Restrictive & Exclusion Areas By Segment	# Acres ESH By Alternative, By Segment						
		Exist	Alt 5	Alt 4	Alt 3.5	Alt 3	Alt 2	Alt 1
Ft Peck	Exclusion > 19,753	--	30	247	565	883	--	883
	Restrictive 3,825 - 19,753							
	Available 0 - 3,825							
Garrison	Exclusion > 9,678	--	500	588	1,327	2,066	2,148	4,295
	Restrictive 4,361 - 9,678							
	Available 0 - 4,361							
Ft Randall	Exclusion > 8,065	--	135	128	212	295	350	700
	Restrictive 2,784 - 8,064							
	Available 0 - 2,784							
L&C Lake	Exclusion > 13,969	25/yr	80	142	354	566	680	1,360
	Restrictive 4,711 - 13,969							
	Available 0 - 4,711							
Gavins Pt	Exclusion > 9,880	125/yr	570	880	1,912	2,944	2,324	4,648
	Restrictive 3,881 - 9,880							
	Available 0 - 3,881							
	Acre Goal	150/yr	1,315	1,985	4,370	6,754	5,502	11,886

Available Area

Acres of Impact Per Alternative

For each acre of ESH constructed, an estimated 2.75 acres are impacted

SEGMENT	# Acres in Available, Restrictive & Exclusion Areas By Segment	# Acres Required, Including Borrow Area, By Alternative, By Segment						
		Exist	Alt 5	Alt 4	Alt 3.5	Alt 3	Alt 2	Alt 1
Ft Peck	Exclusion > 19,753	--	89	737	1,681	2,623	--	2,623
	Restrictive 3,825 - 19,753							
	Available 0 - 3,825							
Garrison	Exclusion > 9,678	--	1,485	1,746	3,941	6,136	6,380	12,756
	Restrictive 4,361 – 9,678							
	Available 0 – 4,361							
Ft Randall	Exclusion > 8,065	--	401	380	630	876	1,040	2,079
	Restrictive 2,784 – 8,064							
	Available 0 – 2,784							
L&C Lake	Exclusion > 13,969	95	153	271	675	1,080	1,297	2,594
	Restrictive 4,711 – 13,969							
	Available 0 – 4,711							
Gavins Pt	Exclusion > 9,880	2,474	1,693	2,614	5,679	8,744	6,902	13,805
	Restrictive 3,881 – 9,880							
	Available 0 - 3,881							

Tentative Selected Plan

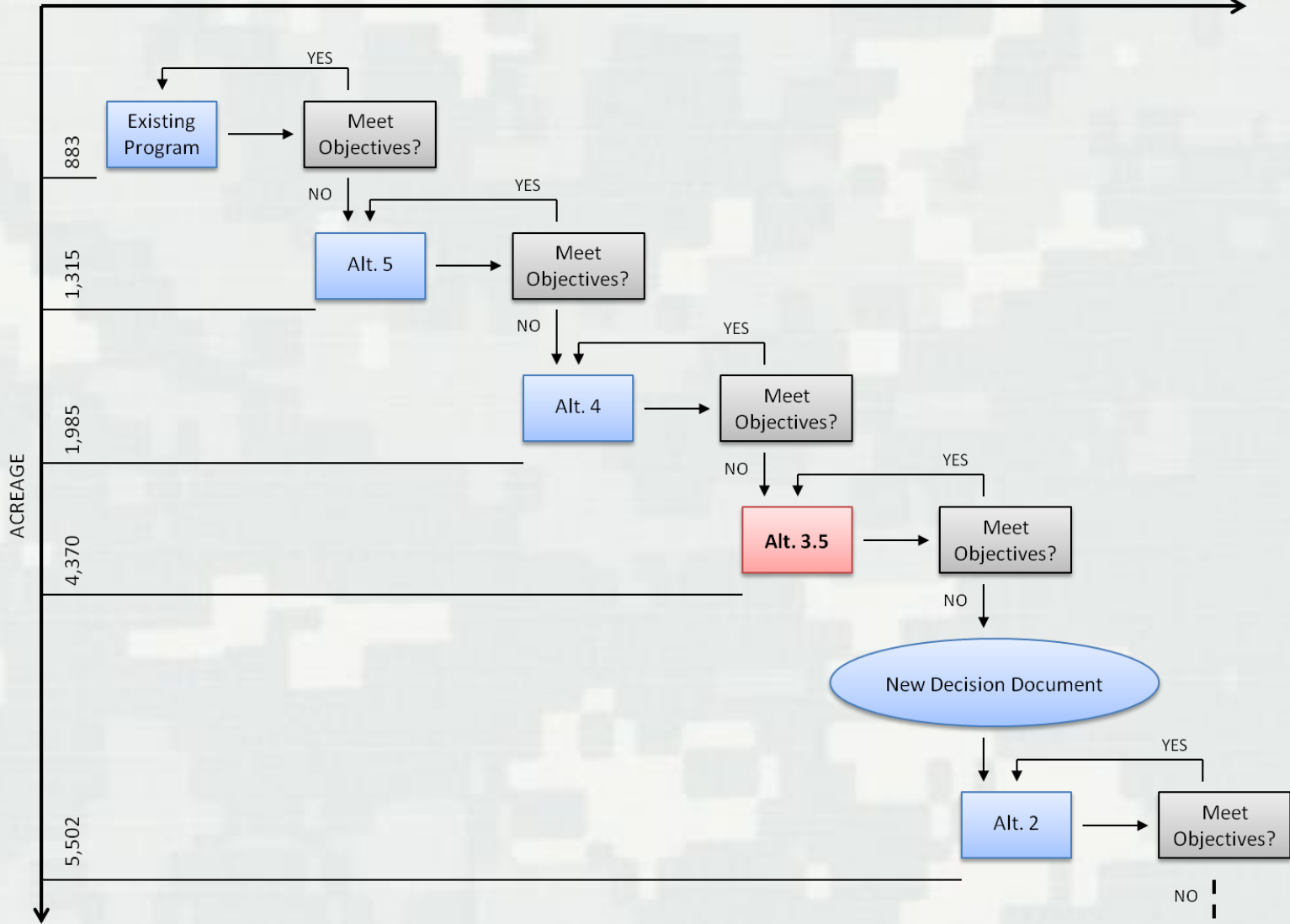
Adaptive Management Implementation Process

- ▶ Phased implementation rather than specific acreage
- ▶ Implementation of progressively larger acreage amounts until desired biological response attained and sustained
- ▶ Attain lesser acreage alternatives first; checkpoints
 - Construction ceiling of Alt 3.5 - 4,370 acres – Moderate to high impacts with bigger alternatives
 - Represents a mid-point during an extremely productive period (1998-2005)



AMIP Progressive Implementation

TIME →



AMIP

- Rationale
 - ▶ Uncertainty - number of acres needed
 - ▶ Objectives of supporting the species (populations and productivity)
 - ▶ Objectives to reduce impacts and uncertainty
 - ▶ Annual cycle ensures data used in decision-making

- Benefits
 - ▶ Allows for less acres to be constructed if desired biological response is attained
 - ▶ Offers increased flexibility in implementation
 - Distribution of acreage amongst target segments
 - Construction methods



AMIP

With Ceiling of Alt 3.5 Acres

- Rationale
 - ▶ Moderate to high impacts with bigger alternatives
 - ▶ Represents a mid-point during an extremely productive period (1998-2005)
- Challenges
 - ▶ Gavins Point - Borrow/activities in restrictive area
 - ▶ Garrison – Sediment availability (mod-high 3.5+)
 - Monitor and use checkpoints
 - Flexibility - segment-specific acreage goals



Adaptive Management Metrics

- ▶ Biological and physical metrics to track progress against objectives
- ▶ Metrics
 - Acres of ESH
 - Fledge Ratios
 - Adult Population Size
 - Population Growth Rate
 - Cubic Yards Placed Annually
 - Coefficient of Variation – reduce uncertainty/improve accuracy in predictive metrics
- ▶ Interim metrics & ultimate success criteria
- ▶ Adjust actions over time



Estimated Costs/Alternative

Summary of Costs for All Segments

	No Pgm	Exist Pgm	Alt. 5	Alt. 4	Alt. 3.5	Alt. 3	Alt. 2	Alt. 1
Goal (Acres)	0	883	1,315	1,985	4,370	6,754	5,502	11,886
Annl Work (Ac)	0	150	164	347	1,182	2,140	1,786	4,802
Est. Total Annl. Cost** (\$M)	\$0.0	\$6.1	\$6.7	\$14.3	\$48.6	\$87.8	\$173.3	\$197.1

** Total Annual Cost includes construction cost, engineering and design, field supervision and admin, program management, planning, NEPA compliance and 10% contingency



Agency/Community Concerns

COMMENT CATEGORY	RESPONSE
Scale of proposed project(s)	Reduced acreage alternatives
Erosion/Landowner Impacts	Construction limitations, new monitoring program
Aggradation/Delta/Flooding	Construction limitations
Use of Flows as Option	Generally low and high flow options conflict with other authorized purposes/outside of Master Manual limits
Recreation	Site selection important to minimize conflicts; signage of islands necessary
Water Quality	Ambient monitoring, ellutriate testing if required, specific monitoring if concerns raised
Aquatic Habitat/Other Spp	Limited monitoring of other spp; site specific concerns worked with PDT/agency coord; site specific EAs
Historic Bird Usage	It is documented from early/mid 1800s to present day
Clarify Purpose and Need	Draw distinction between ESH Program and PEIS actions

Agency/Community Concerns (cont)

COMMENT CATEGORY	RESPONSE
Site Selection	Landowners can be involved through EA process; PDT and agency coordination; additional info regarding decision points and sensitive resources
Cultural/Historic Sites	These are ID'd as sensitive resources
Monitoring	Additional details on monitoring program provided; new erosion monitoring in Gavins reach
"Bringing in sand"	No additional material brought in; borrow source is surrounding alluvial deposits
Review of Individual Actions	Through site-specific Eas
Permitting	Corps must apply for same permits as others including clean water and new pesticide permit
Costs	MRRP funded (perspective of \$1.6B in 2010 benefits from authorized purposes); AMIP and potential alternate methods allow flexibility and potential to lower costs

Agency/Community Concerns (cont)

COMMENT CATEGORY	RESPONSE
Implementation Timeline	Corps is working with the USFWS on short- and long-term timeframes. Adaptive management requires annual, 3-year and 5-year checkpoints.
Budget	Work within appropriations. Continue to pursue methods to improve efficiencies and cost effectiveness.
Use of Alternative Methods	Limited knowledge on geotubes. More details on impacts of vegetation modification and FOM will be provided; where information is unknown, more detail will be provided with site-specific Eas
Define When Could Construct in Restrictive Areas	Discussion is in the site selection Appendix. Will add more description, and add text in main document.
Clarify Tiering from MM to PEIS to Individual EAs	Text will be added.
Clarify Importance of Sediment Analysis	Sediment analysis did reveal that as alternatives move up in acreage, could have sediment issues. Moderate to high impacts potentially from Alt 3.5 up, which is why construction ceiling is currently 3.5.

Next Steps

- Final PEIS published
- Record of Decision (ROD)
- Future EAs for site-specific actions will tier off of this document
- How findings can help guide/refine MRRP efforts
 - Help refine approach meeting bird metrics in the BiOp
 - Part of complete AM response
 - Part of the big picture of whole upper MR



Emergent Sandbar Habitat (ESH) Final Programmatic Environmental Impact Statement (PEIS)



Emergent Sandbar Habitat
Cooperating Agencies

