



**State of Louisiana
Department of Natural Resources
Coastal Restoration Division**

**2006/2007 Annual Inspection
Report**

for

**Bayou Sauvage Refuge Restoration
Phase II
(PO-18)**

State Project Number PO-18
Priority Project List 2

July 19, 2007
Orleans Parish

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I. Introduction

The Bayou Sauvage Refuge Restoration Phase II Project (PO-18) is located in eastern Orleans Parish approximately 10 miles northeast of Chalmette, LA (Appendix A). It is bordered by Interstate 10 to the north, U.S. Highway 90 to the south, the Lake Pontchartrain Hurricane Protection Levee to the east, and the Maxent Canal levee to the west. The project area includes approximately 6,900 acres of fresh marsh.

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Bayou Sauvage Refuge Restoration Phase II Project (PO-18) is to evaluate the constructed project features to identify any deficiencies and prepare a report detailing the condition of project features and recommended corrective actions needed. Should it be determined that corrective actions are needed, LDNR shall provide, in the report, a detailed cost estimate for engineering, design, supervision, inspection, and construction contingencies, and an assessment of the urgency of such repairs (O&M Plan September 2, 2004). The annual inspection report also contains a summary of maintenance projects and an estimated projected budget for the upcoming three (3) years for operation, maintenance and rehabilitation. The three (3) year projected operation and maintenance budget is shown in Appendix C. A summary of past operation and maintenance projects completed since completion of the project are outlined in Section II.

An inspection of the Bayou Sauvage Refuge Restoration Phase II Project (PO-18) was held on March 15, 2007 by representatives of LDNR George Boddie, Barry Richard, Peter Hopkins, and Pon Dixon of USFWS. The tidal gauge at the Bayou Sauvage Refuge boat launch read - 0.1 ft-NAVD. Photographs of that inspection are included in Appendix B of this report.

The Bayou Sauvage Refuge Restoration Phase II project has two 33-inch-diameter pumps which were installed at the same location. To ensure that the project-area water levels can be independently managed, a hydrologic connection between the project and the reference area was closed with an adjustable weir.

III. Project Description and History

The project's purpose is to regulate water levels in the marshes of both units throughout the year by pumping excess water from the management areas. Such management during the fall and winter enhances emergent fresh marsh habitats in the project area for wintering waterfowl. Annually, the water level is intended to be controlled to the range of 0.0 feet to - 0.5 feet below marsh elevation during the spring and summer and to within 0.0 feet to + 0.5 feet above marsh elevation during the fall and winter. The water level control schedule is also intended to preserve black willow habitat in order to maintain wading bird rookeries.

Project Features:

1. A dual pump platform with an access walkway but without a roof.
2. Two 33-inch-diameter Patterson single stage axial flow vertical drainage pumps, with 42-inch-diameter discharges, each pump 34,000 GPM capacity, with engines, right-angle gear drives, drive shafts, drive shaft guards, fuel and lubrication lines, intake sumps, supports and connections.
3. One fuel tank with fuel lines to the two pumps' drive engines.
4. One trash screen spanning the intake drainage stream to the pump.
5. Two 42-inch diameter, smooth steel discharge pipelines, concrete pipe supports, and plunge pools.
6. A variable crest timber weir, located near I-10, to modify flow of water into and out of project area.

IV. Summary of Past Operation and Maintenance Projects

Operations: USFWS has operated the pumps but has not provided any details. This information has been requested from USFWS.

General Maintenance: USFWS has enclosed the pump station to increase security and has repaired storm damage to the pumps but has not provided cost or other details. This information has been requested from USFWS.

V. Inspection Results

Pump #3

USFWS has recently serviced the pump and it is fully operational.

Pump #4

USFWS has recently serviced the pump and it is fully operational.

Highway 11 Culverts

While these culverts are not a project feature, they do affect the flow of water into and out of the project area. It has been noted that these culverts have potentially collapsed, limiting the water exchange south of Hwy 11. This is causing the water in the project area to become stagnant instead of flowing out of, or into, the project area. During pumping operations, the culvert restrictions cause the northern unit to draw down much faster than the southern unit. This means that the northern pump must be shut down to allow water levels to stabilize and then resuming pumping operations until desired result is achieved. USFWS, Pon Dixon, has informed LDNR that they and/or LaDOTD will perform the necessary work to the culverts at no cost to the project. LDNR will continue to monitor.

VI. Conclusions and Recommendations

The pumps and discharge pipelines are being maintained in working order by USFWS.

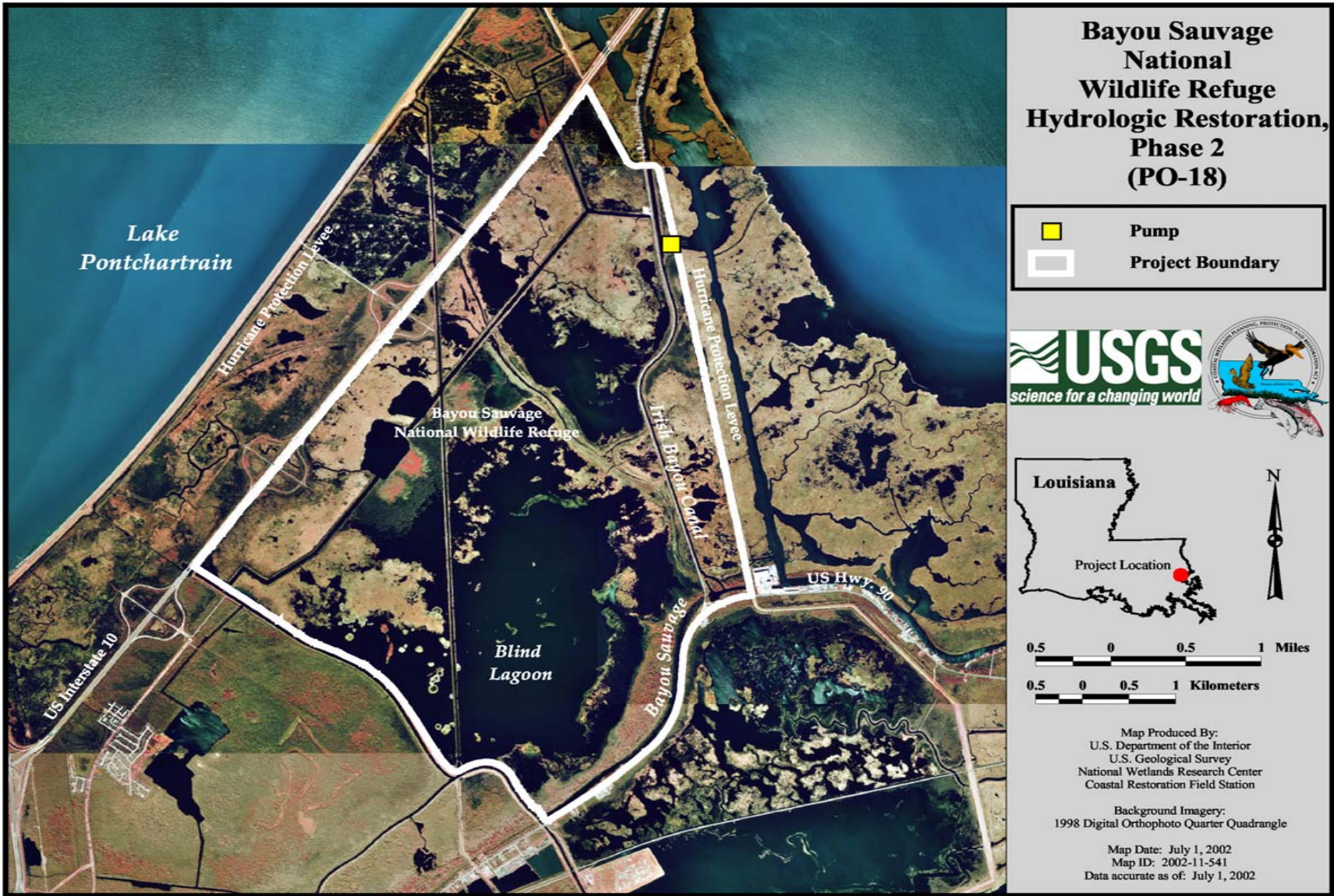
Immediate Repairs

- None at this time.

Programmed Maintenance

- Periodically check pump stations for any maintenance needs.

Appendix A
Project Features Map



Appendix B

Photographs

Annual Inspection Report
Bayou Sauvage Refuge Restoration Phase II
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Photo #1 – Pump #3.



Photo #2 – Pump #4.



Photo #3 – Outflow. Discharge pipes from pump station to levee.



Photo #4 – Outflow. Discharge pipes crossing levee to Lake Pontchartrain



Photo #5 -Valves These valves control drainage from the project area to Lake Pontchartrain. Not a project feature.



Photo #6 -
Hwy. 11 Culverts These culverts under Hwy. 11 are collapsing and restricting flow between areas of the project. This causes imbalance of water levels and restricts the ability to use the pumps. Not a project feature.

Appendix C

Three Year Budget Projection

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 Bayou Sauvage Refuge Restoration Phase II
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Bayou Sauvage refuge Restoration Phase II / PO-18 / PPL 2
Three-Year Operations & Maintenance Budgets 07/01/2007 - 06/30/2010

=							
Project Manager	O & M Manager	Federal Sponsor	Prepared By				
Barry Richard	Barry Richard	FWS	Peter Hopkins				
	2007/2008	2008/2009	2009/2010				
Maintenance Inspection	\$3,428.00	\$3,517.00	\$3,609.00				
General Maintenance	\$0.00	\$0.00	\$0.00				
Structure Operation	\$11,998.00	\$12,310.00	\$12,631.00				
Administration	\$0.00	\$0.00	\$0.00				
Maintenance/Rehabilitation							

07/08 Description:

E&D	\$0.00
Construction	\$0.00
Construction Oversight	\$0.00
Sub Total - Maint. And Rehab.	\$ -

08/09 Description:

E&D	\$0.00
Construction	\$0.00
Construction Oversight	\$0.00
Sub Total - Maint. And Rehab.	\$ -

09/10 Description:

E&D	\$0.00
Construction	\$0.00
Construction Oversight	\$0.00
Sub Total - Maint. And Rehab.	\$ -

	2007/2008	2008/2009	2009/2010
Total O&M Budgets	\$ 15,426.00	\$ 15,827.00	\$ 16,240.00

O & M Budget (3 yr Total)	\$ 47,493.00
Unexpended O & M Budget	\$ 150,113.95
Remaining O & M Budget (Projected)	\$ 102,620.95

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OPERATION AND MAINTENANCE BUDGET WORKSHEET 2007/2008
 Bayou Sauvage refuge Restoration Phase II / PO-18 / PPL 2

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$3,428.00	\$3,428.00
General Structure Maintenance	LUMP	1	\$0.00	\$0.00
Engineering and Design	LUMP	1	\$0.00	\$0.00
Operations	LUMP	1	\$11,998.00	\$11,998.00
Construction Oversight	LUMP	1	\$0.00	\$0.00
ADMINISTRATION				
LDNR / CRD Admin.	LUMP	0	\$0.00	\$0.00
FEDERAL SPONSER Admin.	LUMP	0	\$0.00	\$0.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00
TOTAL ADMINISTRATION COSTS:				\$0.00

MAINTENANCE / CONSTRUCTION

SURVEY

SURVEY DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Secondary Monument	EACH	0	\$0.00	\$0.00
	Staff Gauge / Recorders	EACH	0	\$0.00	\$0.00
	Marsh Elevation / Topography	LUMP	0	\$0.00	\$0.00
	TBM Installation	EACH	0	\$0.00	\$0.00
	OTHER				\$0.00
TOTAL SURVEY COSTS:					\$0.00

GEOTECHNICAL

GEOTECH DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Borings	EACH	0	\$0.00	\$0.00
	OTHER				\$0.00
TOTAL GEOTECHNICAL COSTS:					\$0.00

CONSTRUCTION

CONSTRUCTION DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Rip Rap	LIN FT	0	\$0.00	\$0.00
		TON / FT	0.0	\$0.00	\$0.00
		TONS	0	\$0.00	\$0.00
			0	\$0.00	\$0.00
	Filter Cloth / Geogrid Fabric	SQ YD	0	\$0.00	\$0.00
	Navigation Aid	EACH	0	\$0.00	\$0.00
	Signage	EACH	0	\$0.00	\$0.00
	General Excavation / Fill	CU YD	0	\$0.00	\$0.00
	Dredging	CU YD	0	\$0.00	\$0.00
	Sheet Piles (Lin Ft or Sq Yds)		0	\$0.00	\$0.00
	Timber Piles (each or lump sum)		0	\$0.00	\$0.00
	Timber Members (each or lump sum)		0	\$0.00	\$0.00
	Hardware	LUMP	1	\$0.00	\$0.00
	Materials	LUMP	1	\$0.00	\$0.00
	Mob / Demob	LUMP	1	\$0.00	\$0.00
	Contingency	LUMP	1	\$0.00	\$0.00
	General Structure Maintenance	LUMP	1	\$0.00	\$0.00
	OTHER			\$0.00	\$0.00
	OTHER			\$0.00	\$0.00
	OTHER			\$0.00	\$0.00
TOTAL CONSTRUCTION COSTS:					\$0.00

TOTAL OPERATIONS AND MAINTENANCE BUDGET: \$15,426.00

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OPERATION AND MAINTENANCE BUDGET WORKSHEET 2008/2009
 Bayou Sauvage refuge Restoration Phase II / PO-18 / PPL 2

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$3,517.00	\$3,517.00
General Structure Maintenance	LUMP	1	\$0.00	\$0.00
Engineering and Design	LUMP	1	\$0.00	\$0.00
Operations	LUMP	1	\$12,310.00	\$12,310.00
Construction Oversight	LUMP	1	\$0.00	\$0.00
ADMINISTRATION				
LDNR / CRD Admin.	LUMP	0	\$0.00	\$0.00
FEDERAL SPONSER Admin.	LUMP	0	\$0.00	\$0.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00
TOTAL ADMINISTRATION COSTS:				\$0.00

MAINTENANCE / CONSTRUCTION

SURVEY

SURVEY DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Secondary Monument	EACH	0	\$0.00	\$0.00
	Staff Gauge / Recorders	EACH	0	\$0.00	\$0.00
	Marsh Elevation / Topography	LUMP	0	\$0.00	\$0.00
	TBM Installation	EACH	0	\$0.00	\$0.00
	OTHER				\$0.00
TOTAL SURVEY COSTS:					\$0.00

GEOTECHNICAL

GEOTECH DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Borings	EACH	0	\$0.00	\$0.00
	OTHER				\$0.00
TOTAL GEOTECHNICAL COSTS:					\$0.00

CONSTRUCTION

CONSTRUCTION DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Rip Rap	LIN FT	0	\$0.00	\$0.00
		TON / FT	0	\$0.00	\$0.00
		TONS	0	\$0.00	\$0.00
			0	\$0.00	\$0.00
	Filter Cloth / Geogrid Fabric	SQ YD	0	\$0.00	\$0.00
	Navigation Aid	EACH	0	\$0.00	\$0.00
	Signage	EACH	0	\$0.00	\$0.00
	General Excavation / Fill	CU YD	0	\$0.00	\$0.00
	Dredging	CU YD	0	\$0.00	\$0.00
	Sheet Piles (Lin Ft or Sq Yds)		0	\$0.00	\$0.00
	Timber Piles (each or lump sum)		0	\$0.00	\$0.00
	Timber Members (each or lump sum)		0	\$0.00	\$0.00
	Hardware	LUMP	1	\$0.00	\$0.00
	Materials	LUMP	1	\$0.00	\$0.00
	Mob / Demob	LUMP	1	\$0.00	\$0.00
	Contingency	LUMP	1	\$0.00	\$0.00
	General Structure Maintenance	LUMP	1	\$0.00	\$0.00
	OTHER			\$0.00	\$0.00
	OTHER			\$0.00	\$0.00
	OTHER			\$0.00	\$0.00
TOTAL CONSTRUCTION COSTS:					\$0.00

TOTAL OPERATIONS AND MAINTENANCE BUDGET: \$15,827.00

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OPERATION AND MAINTENANCE BUDGET WORKSHEET 2009/2010
 Bayou Sauvage refuge Restoration Phase II / PO-18 / PPL 2

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$3,609.00	\$3,609.00
General Structure Maintenance	LUMP	1	\$0.00	\$0.00
Engineering and Design	LUMP	1	\$0.00	\$0.00
Operations	LUMP	1	\$12,631.00	\$12,631.00
Construction Oversight	LUMP	1	\$0.00	\$0.00
ADMINISTRATION				
LDNR / CRD Admin.	LUMP	0	\$0.00	\$0.00
FEDERAL SPONSER Admin.	LUMP	0	\$0.00	\$0.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00
TOTAL ADMINISTRATION COSTS:				\$0.00

MAINTENANCE / CONSTRUCTION

SURVEY				
SURVEY DESCRIPTION:				
Secondary Monument	EACH	0	\$0.00	\$0.00
Staff Gauge / Recorders	EACH	0	\$0.00	\$0.00
Marsh Elevation / Topography	LUMP	0	\$0.00	\$0.00
TBM Installation	EACH	0	\$0.00	\$0.00
OTHER				\$0.00
TOTAL SURVEY COSTS:				\$0.00

GEOTECHNICAL				
GEOTECH DESCRIPTION:				
Borings	EACH	0	\$0.00	\$0.00
OTHER				\$0.00
TOTAL GEOTECHNICAL COSTS:				\$0.00

CONSTRUCTION					
CONSTRUCTION DESCRIPTION:					
Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE	
	0	0.0	0	\$0.00	\$0.00
	0	0.0	0	\$0.00	\$0.00
	0	0.0	0	\$0.00	\$0.00
Filter Cloth / Geogrid Fabric	SQ YD	0		\$0.00	\$0.00
Navigation Aid	EACH	0		\$0.00	\$0.00
Signage	EACH	0		\$0.00	\$0.00
General Excavation / Fill	CU YD	0		\$0.00	\$0.00
Dredging	CU YD	0		\$0.00	\$0.00
Sheet Piles (Lin Ft or Sq Yds)		0		\$0.00	\$0.00
Timber Piles (each or lump sum)		0		\$0.00	\$0.00
Timber Members (each or lump sum)		0		\$0.00	\$0.00
Hardware	LUMP	1		\$0.00	\$0.00
Materials	LUMP	1		\$0.00	\$0.00
Mob / Demob	LUMP	1		\$0.00	\$0.00
Contingency	LUMP	1		\$0.00	\$0.00
General Structure Maintenance	LUMP	1		\$0.00	\$0.00
OTHER				\$0.00	\$0.00
OTHER				\$0.00	\$0.00
OTHER				\$0.00	\$0.00
TOTAL CONSTRUCTION COSTS:					\$0.00

TOTAL OPERATIONS AND MAINTENANCE BUDGET: \$16,240.00

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Field Inspection Form

Annual Inspection Report
 Bayou Sauvage Refuge Restoration Phase II
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FIELD INSPECTION CHECK SHEET

Project No. / Name: Bayou Sauvage Refuge (Phase 2) PO-18

Date of Inspection: 15-Mar-07 Time: 9:30 AM

Structure No. _____

Inspector(s): LDNR: Richard, Boddie, Hopkins

Structure Description: Dual-Pump Station Platform

Water Level: Normal Outside: Normal

Type of Inspection: Annual

Weather Conditions: Partly cloudy, mild

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Platform	Good	None	Moderate		
Trash Rack	Good	None	Not closely inspected		
Fuel tank	Good	None	Minor		New fencing still too close to drain on tank.
Pump Drive Engines	Satisfactory	None	Moderate	1	
Pump gear boxes	Satisfactory	None	Moderate		
Piping	Good	None	Spot corrosion		Minor spot coating needed