

## Big Sand Lake Submergent Vegetation 2009

Surveyors: Don and Ivy Douglas

Date: July 8 thru July 31, 2009 - 37 hours

### Methods and Material:

Northwood 19 foot pontoon, Garmin GPS Map 76, rake and rope collection, point-intercept grid.

### Field observations:

Additional survey samples were obtained in situations where grid point intersection was devoid of vegetation. Rich vegetation beds within 20 yards were sampled and included in a separate vegetation sheet.

There were 995 points mapped for sampling, but only locations 37 feet deep or less had vegetation. Points deeper than 37 feet were not included in the summary below.

The five most common plants were: muskgrass (at 51% of sites), largeleaf pondweed (4% of sites),

Illinois pondweed (4% of sites), bulrush (3% of sites), and narrowleaf pondweed (3% of sites). Fifty-two percent of the sites sampled at 37 feet or less had vegetation present.

Submerged aquatic plants noted that were not on the grid intercept points:

Canadian waterweed

Water stargrass,

Submersed brown-fruited rush

Northern watermilfoil

Leafy pondweed

Fries' pondweed

White water-crowfoot

Common sago pondweed

Vegetation species or type:	Number of locations found	Percent of all locations sampled (777 sites)	Percent of locations with vegetation (404 sites)
Chara, muskgrass	397	51.1	98.3
Largeleaf pondweed	30	3.9	7.4
Illinois Pondweed	27	3.5	6.7
Bulrush	22	2.8	5.4
Narrowleaf Pondweed	21	2.7	5.2
Coontail	13	1.7	3.2
Whitestem Pondweed	9	1.2	2.2
White water buttercup	9	1.2	2.2
northern water milfoil	5	0.6	1.2
Bushy pondweed	4	0.5	1.0
Can.waterweed, Elodea	3	0.4	0.7
Wild Celery	3	0.4	0.7
Leafy Pondweed	2	0.3	0.5
Bladderwort	1	0.1	0.2
Flatstem Pondweed	1	0.1	0.2
Sheathed Pondweed	1	0.1	0.2

SUMMARY:	Number of locations present	Percent of all locations sampled (777 sites)	Percent of locations with vegetation (404 sites)
Number of sites with emergent vegetation	22	2.8	5.4
Number of sites with floating leaf vegetation	0	0.0	0.0
Number of sites with submerged vegetation	403	51.9	99.8
Total number of locations with vegetation	404	52.0	100.0
Number of locations that did NOT have any vegetation	373	48.0	92.3
Number of locations sampled*	777	100.0	192.3
*All sites 37 feet deep or less. No vegetation was found at locations deeper than 37 ft.			

NOTE: Total number of locations sampled (includes locations deeper than 37 ft).	995
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**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling**

- Vegetation type:**
- Submerged
  - ▲ Emergent
- No floating leaf plants sampled.



**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling  
Bladderwort (*Utricularia* species)**

● Present

○ Not present

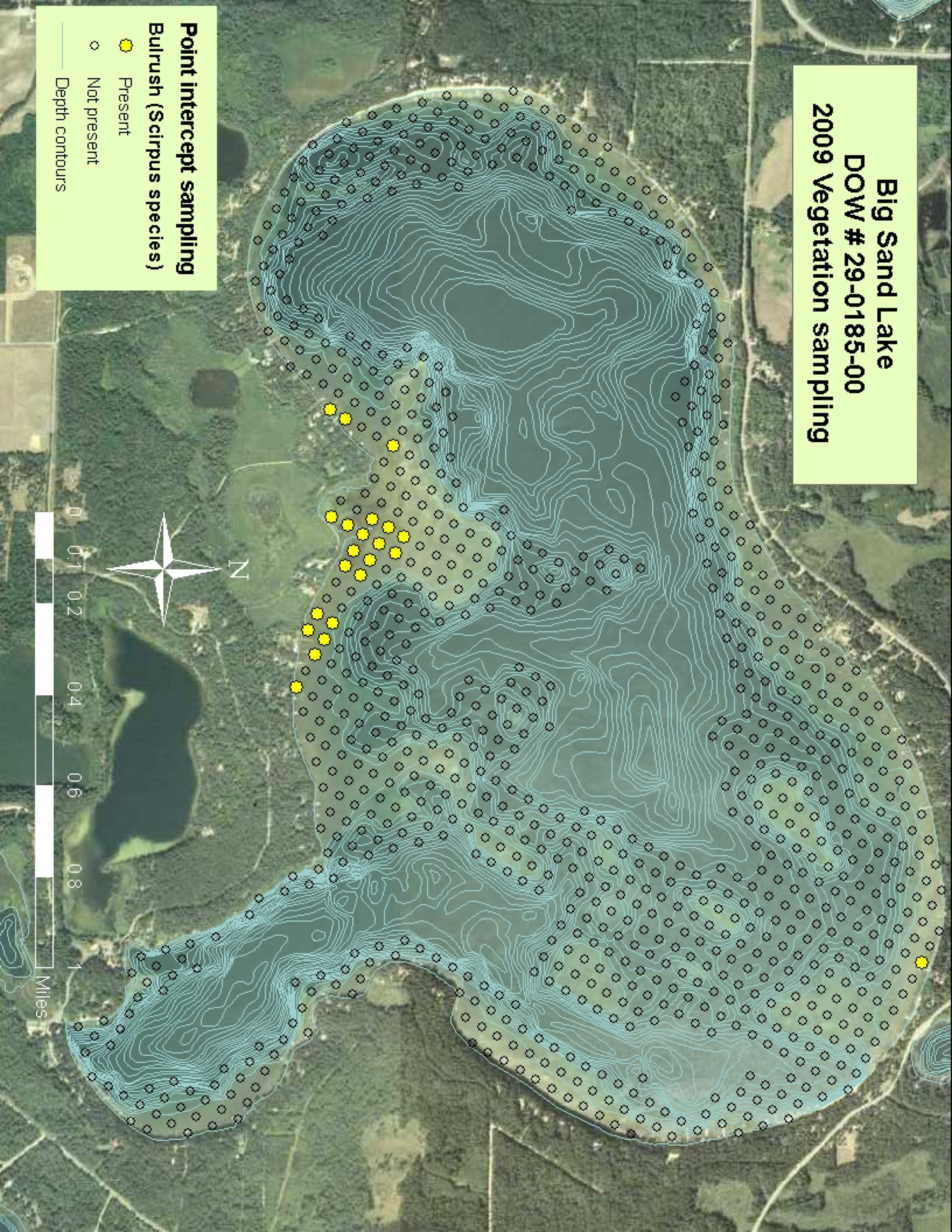
— Depth contours



**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling  
Bulrush (*Scirpus* species)**

- Present
- Not present
- Depth contours



**Big Sand Lake**  
**DOW # 29-0185-00**  
**2009 Vegetation sampling**

**Point intercept sampling**  
**Bushy pondweed (*Najas flexilis*)**

- Present
- Not present
- Depth contours



**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling**

**Largeleaf pondweed (*Potamogeton amplifolius*)**

- Present
- Not present
- Depth contours



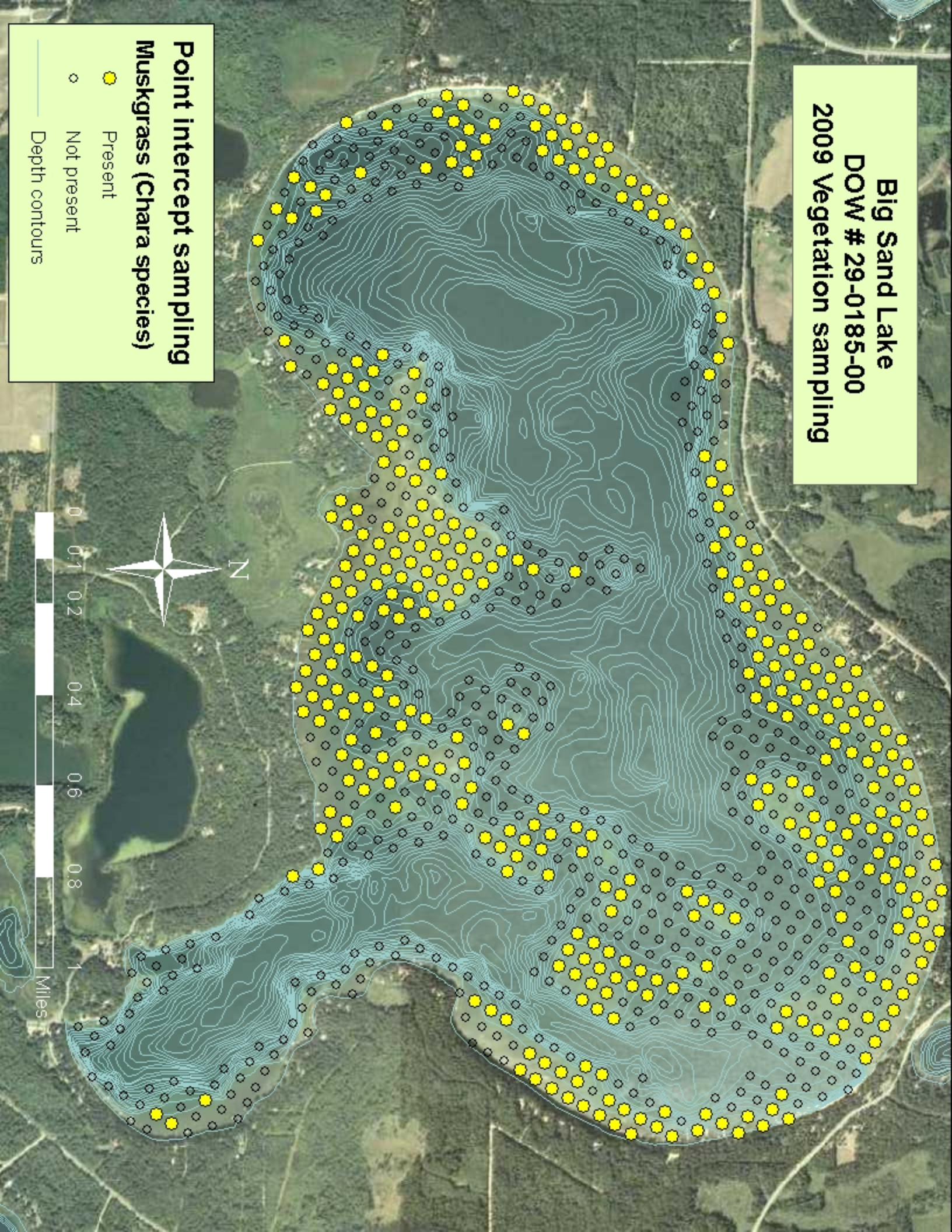
**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling  
Muskgrass (*Chara* species)**

● Present

○ Not present

— Depth contours





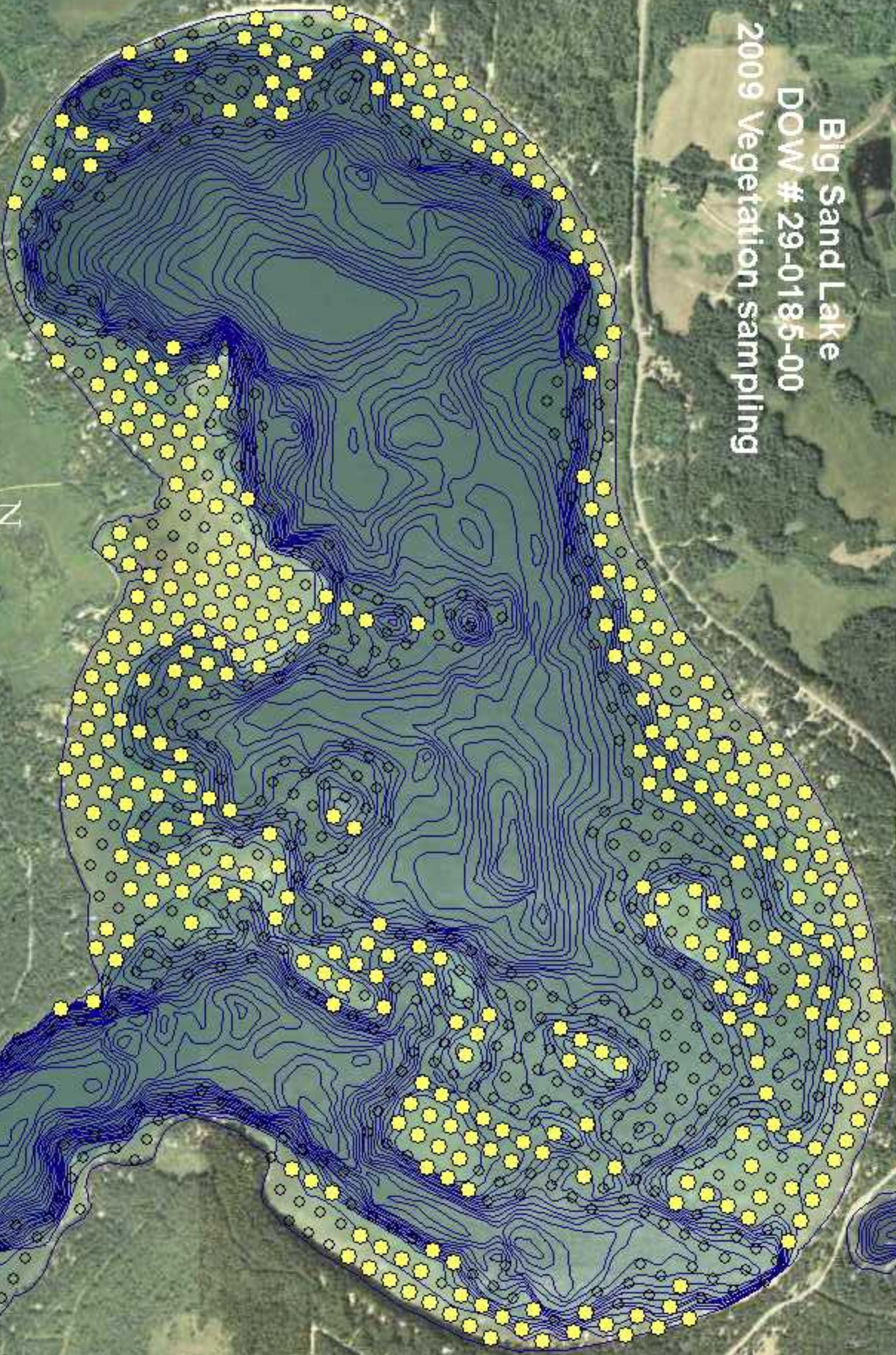
**Big Sand Lake**  
DOW # 29-0185-00  
2009 Vegetation sampling

**Legend**

**Point intercept samples**

**Chara**

- ◊ Not present
- Present





**Big Sand Lake**  
**DOW # 29-0185-00**  
**2009 Vegetation sampling**

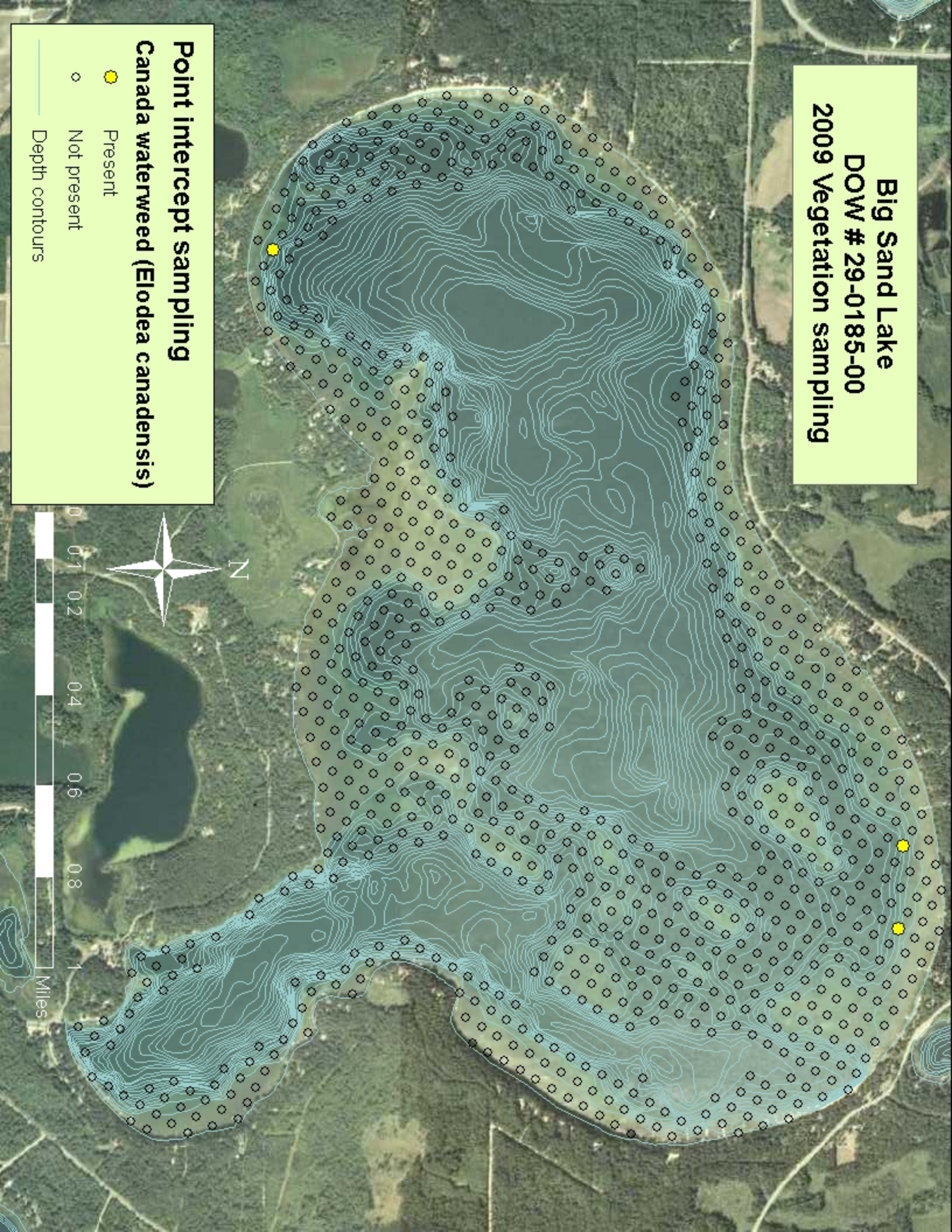
**Point intercept sampling**

**Canada waterweed (*Elodea canadensis*)**

● Present

○ Not present

— Depth contours

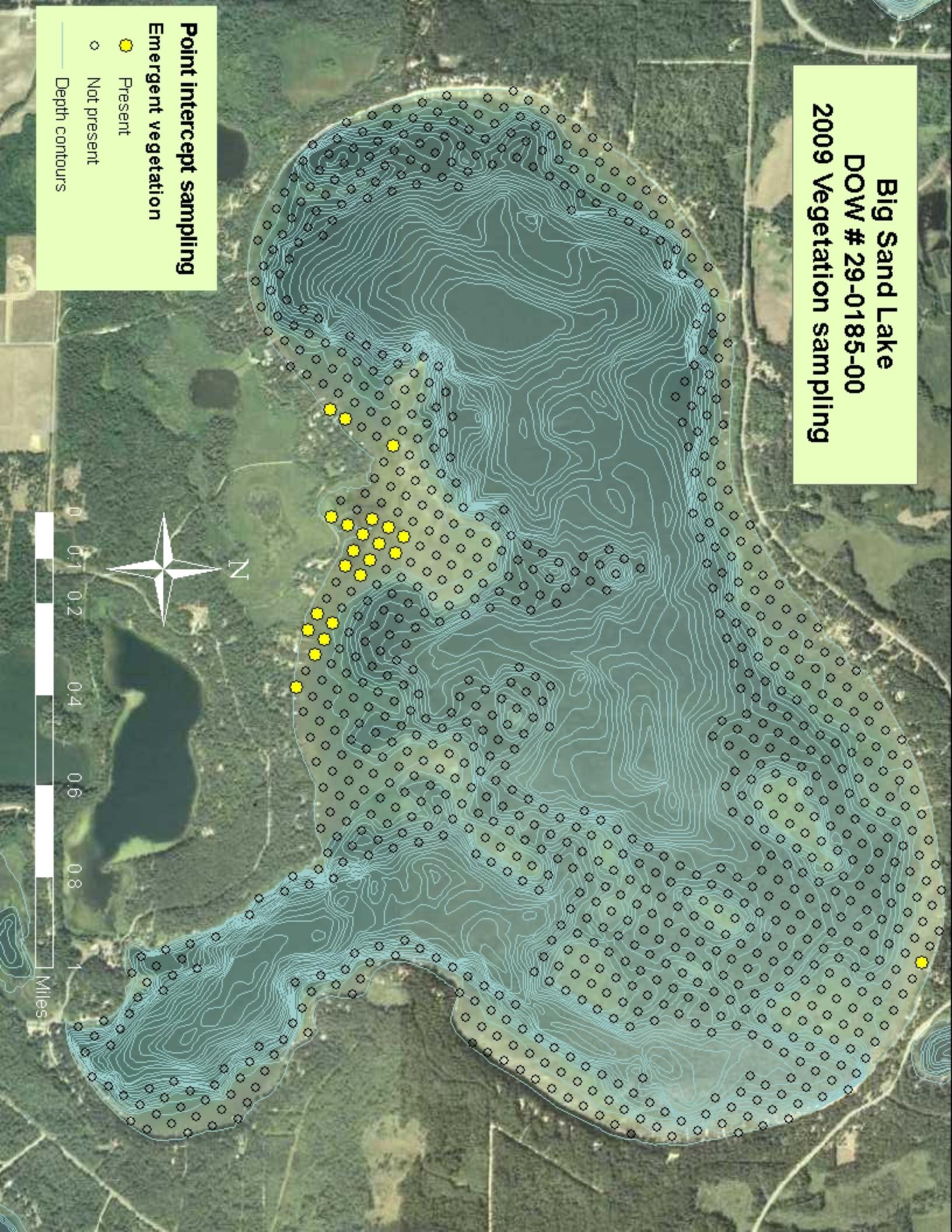


**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling**  
**Emergent vegetation**

- Present
- Not present

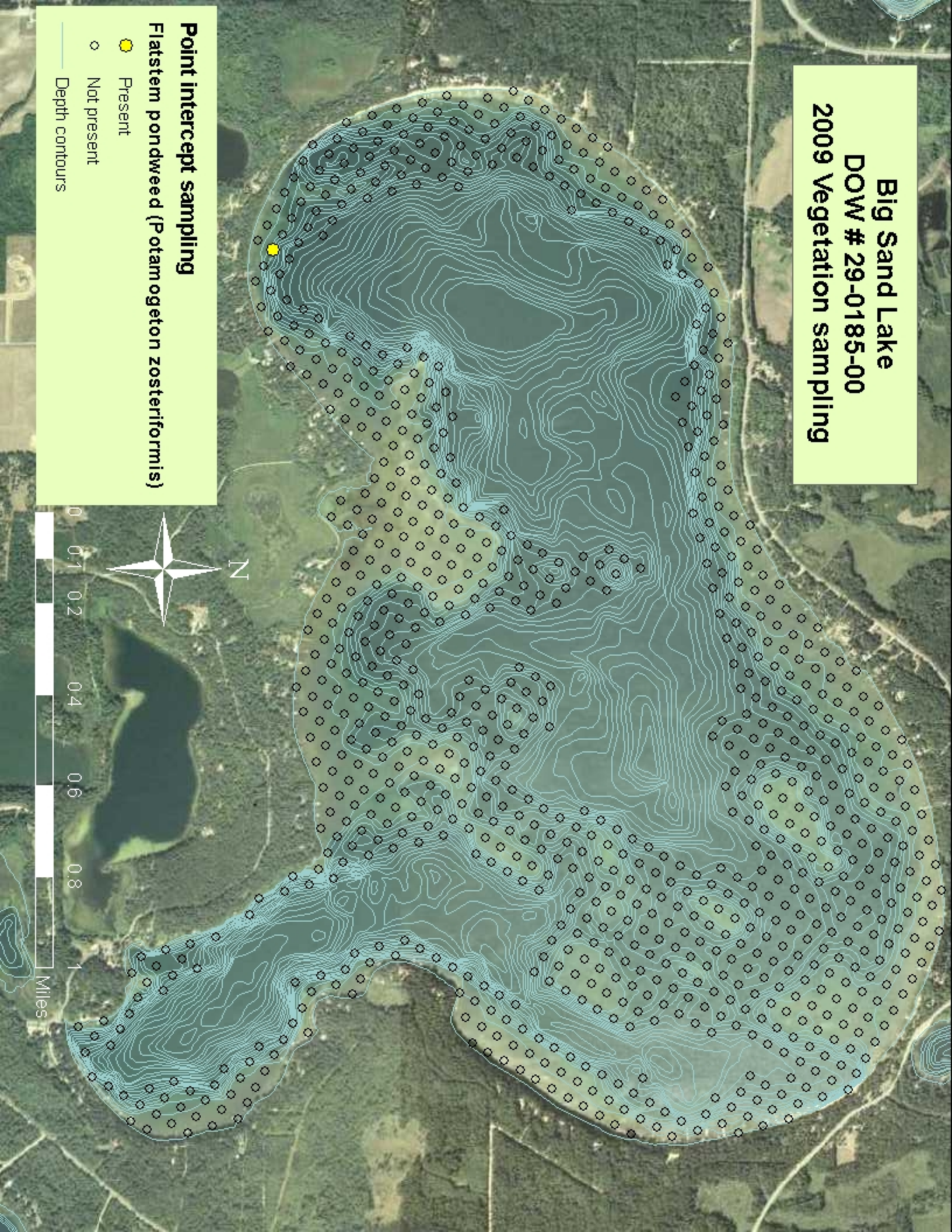
— Depth contours



**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling  
Flatstem pondweed (*Potamogeton zosteriformis*)**

- Present
- Not present
- Depth contours



**Big Sand Lake**  
**DOW # 29-0185-00**  
**2009 Vegetation sampling**

**Point intercept sampling**  
**Illinois pondweed (*Potamogeton Illinoisensis*)**

- Present
- Not present
- Depth contours



**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling  
Leafy pondweed (*Potamogeton foliosus*)**

● Present

○ Absent

— Depth contours

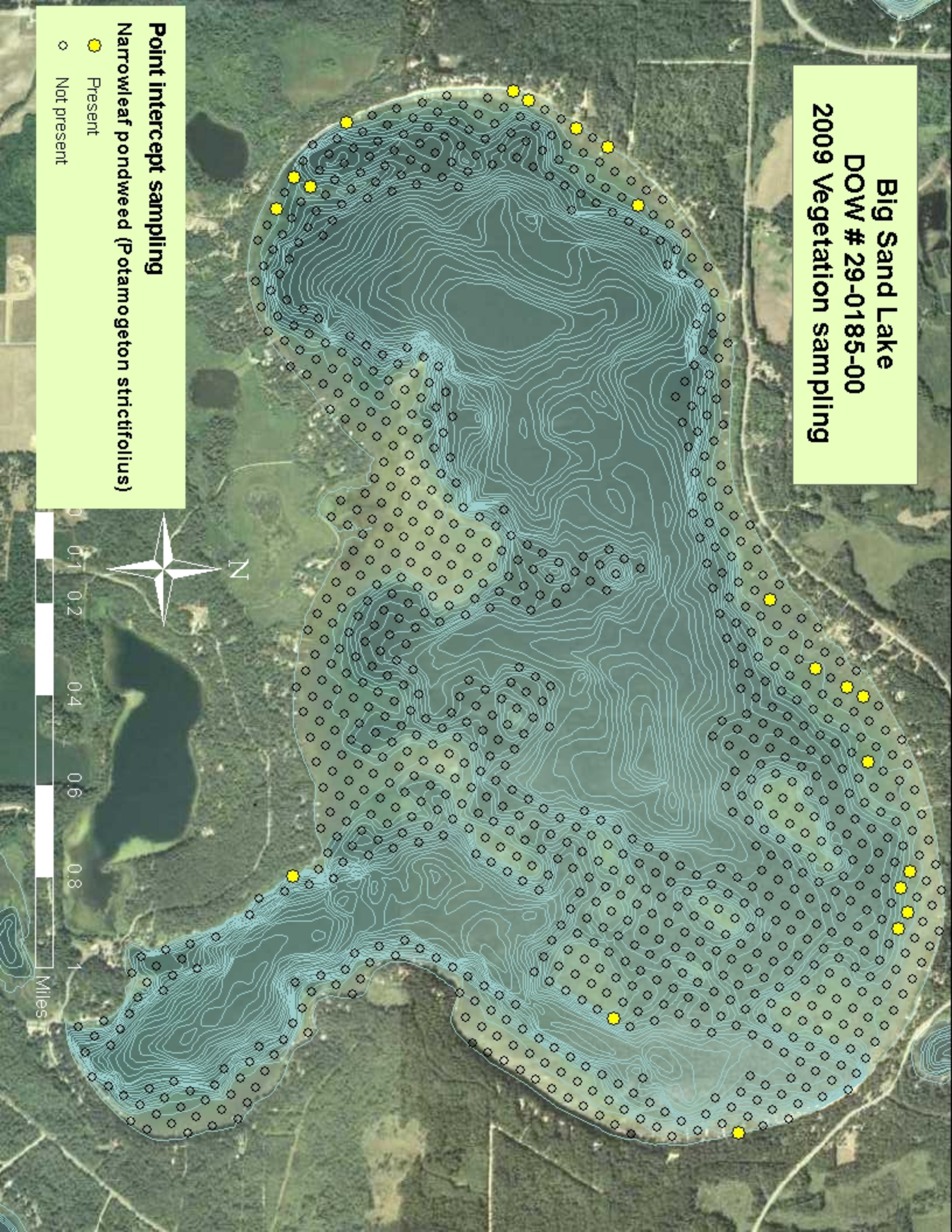


**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling**

**Narrowleaf pondweed (*Potamogeton strictifolius*)**

- Present
- Not present



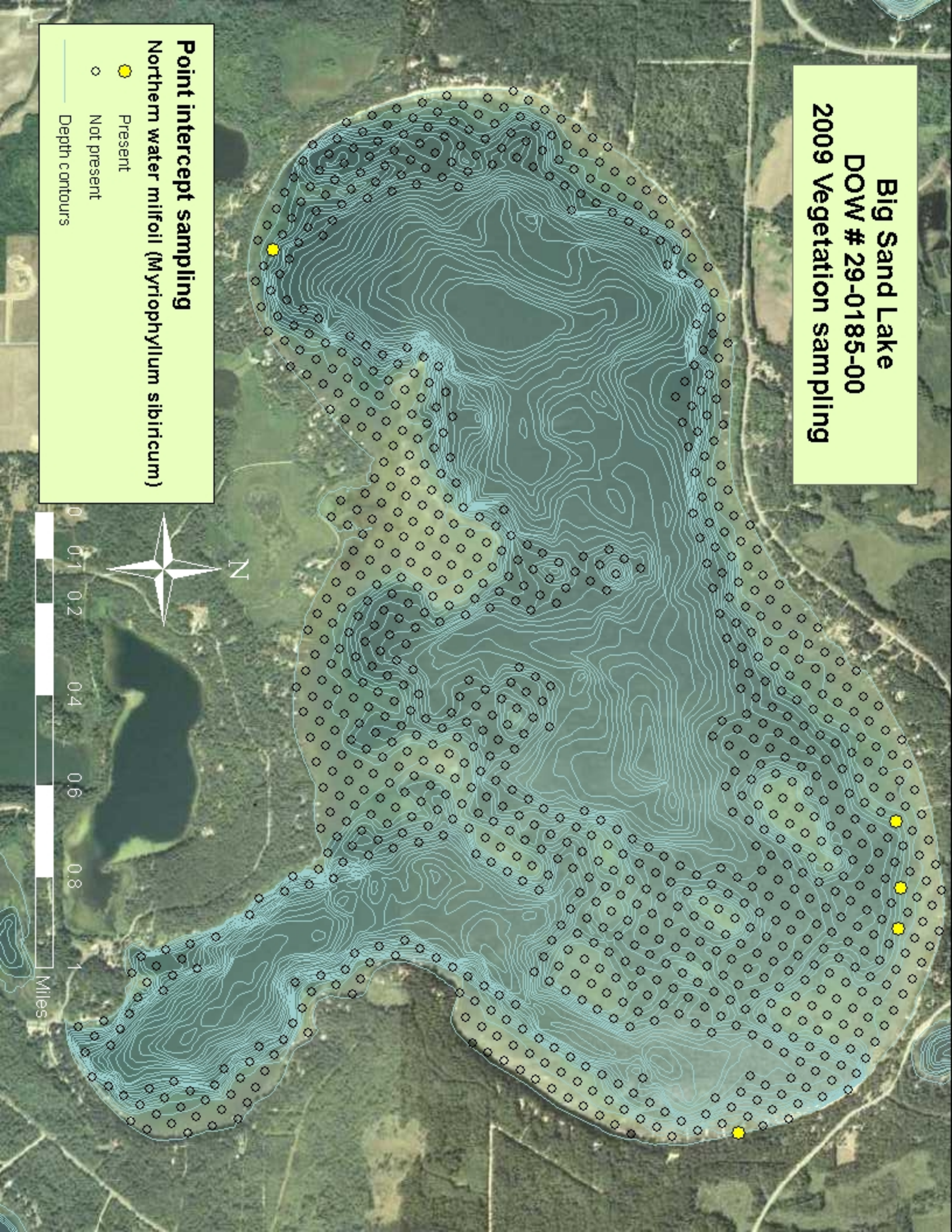


**Big Sand Lake**  
**DOW # 29-0185-00**  
**2009 Vegetation sampling**

**Point intercept sampling**

Northern water milfoil (*Myriophyllum sibiricum*)

- Present
- Not present
- Depth contours



**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling**  
Sheathed pondweed (*Stuckenia vaginata*)

- Present
- Not present

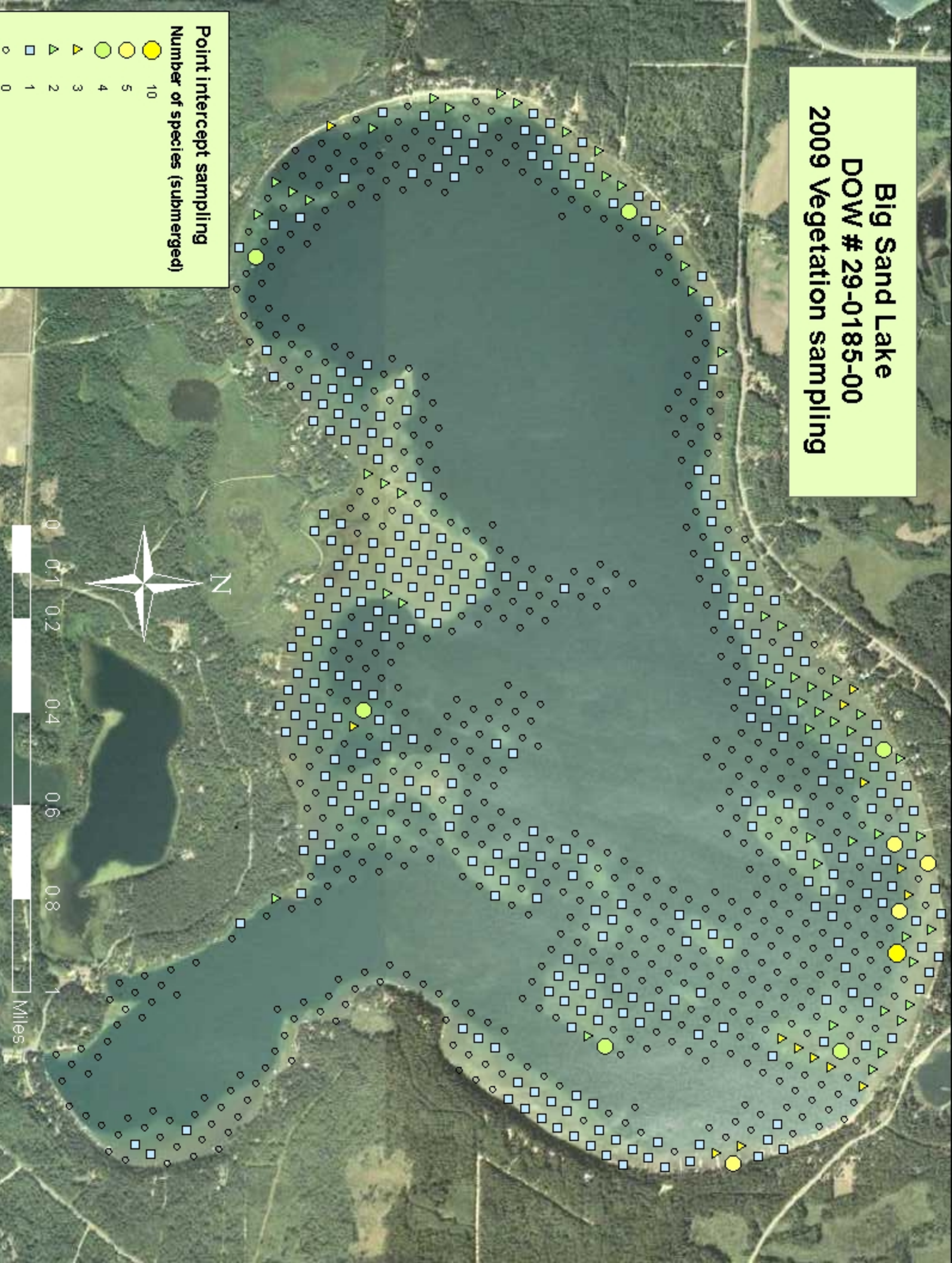
— Depth contours



**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling  
Number of species (submerged)**

- 10
- 5
- 4
- ▲ 3
- ▲ 2
- 1
- 0



**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling**  
White water buttercup (*Ranunculus species*)

- Present
- Not present

— Depth contours

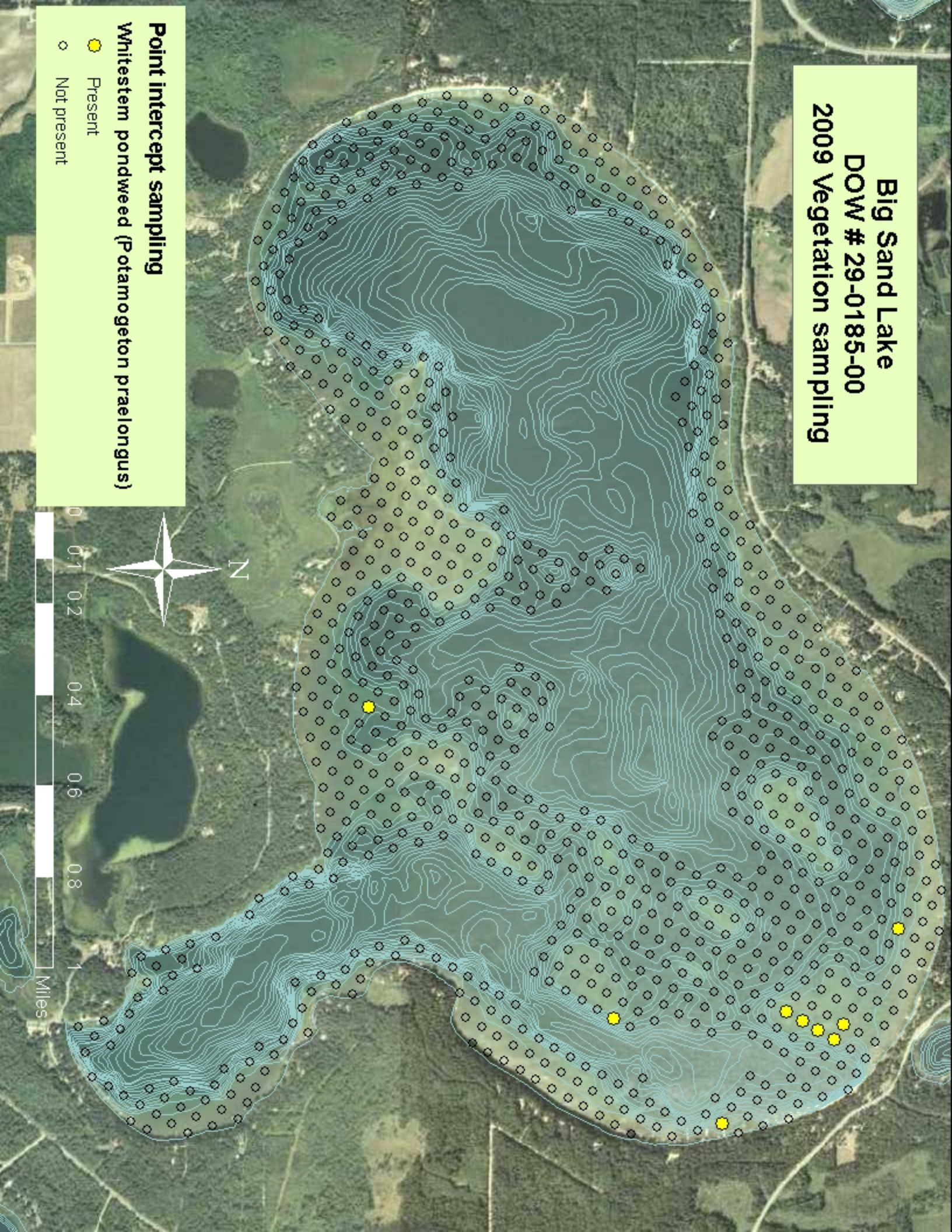


**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling**

**Whitestem pondweed (*Potamogeton praelongus*)**

- Present
- Not present



**Big Sand Lake  
DOW # 29-0185-00  
2009 Vegetation sampling**

**Point intercept sampling**  
Wild celery (*Vallisneria americana*)

- Present
- Not present

— Depth contours

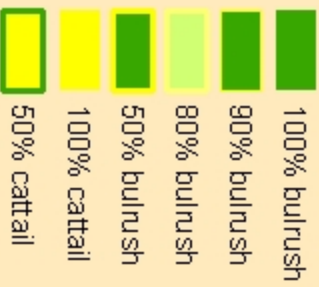


Big Sand Lake 29-0185-00  
Major emergent vegetation as percent of stand  
July 2009

Surveyors: Donald and Ivadell Douglas



**Emergent vegetation**  
**Major species**



Big Sand Lake 29-0185-00  
Emergent vegetation  
July 2009  
Stands as numbered by surveyors  
Donald and Ivadell Douglas





Big Sand Lake 29-0185-00  
Emergent vegetation and overall density of stands  
July 2009

Surveyors: Donald and Ivadell Douglas



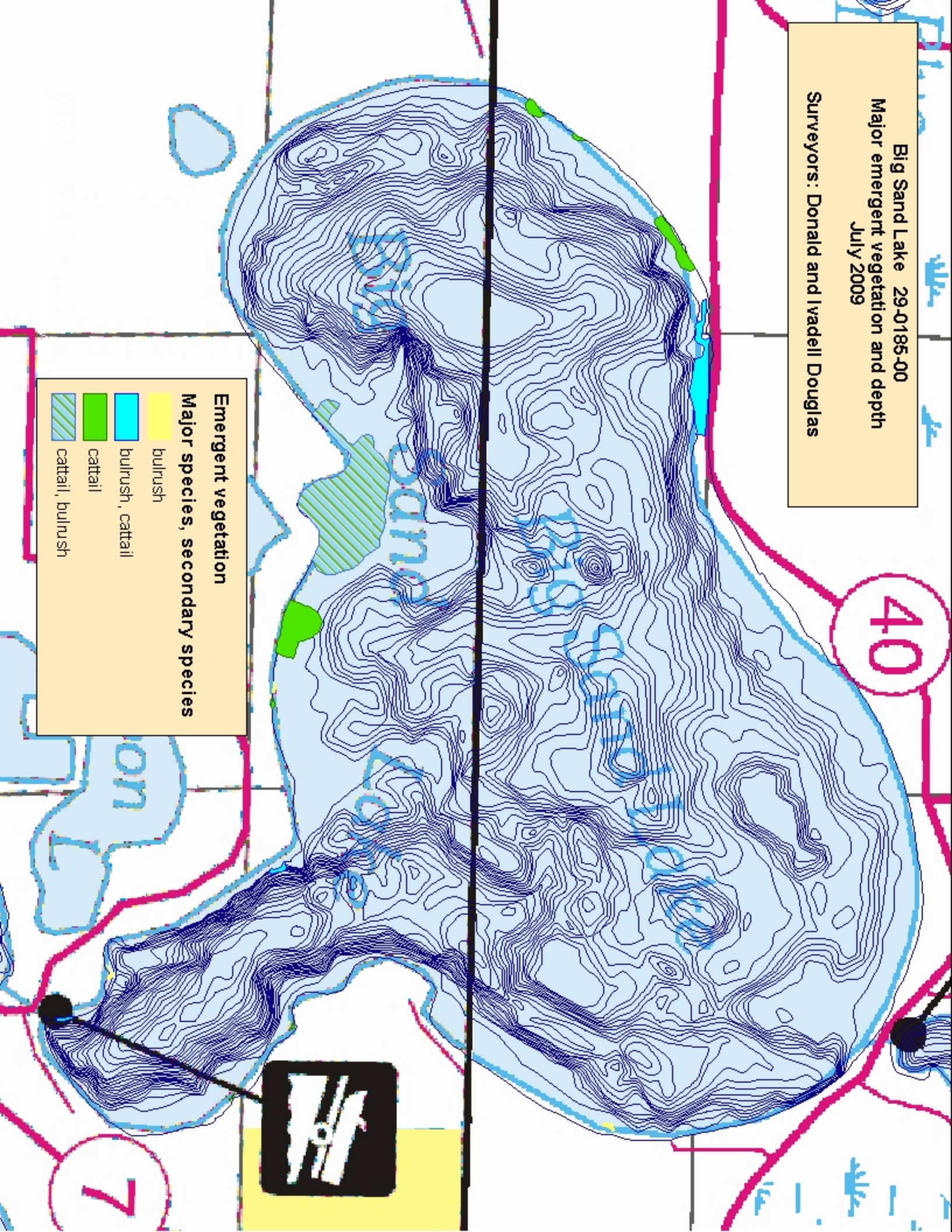
**Emergent vegetation  
Density of stand**

- Dense
- Moderate
- Sparse







Big Sand Lake 29-0185-00  
Major emergent vegetation and depth  
July 2009  
Surveyors: Donald and Ivadell Douglas

40



**Emergent vegetation**

**Major species, secondary species**

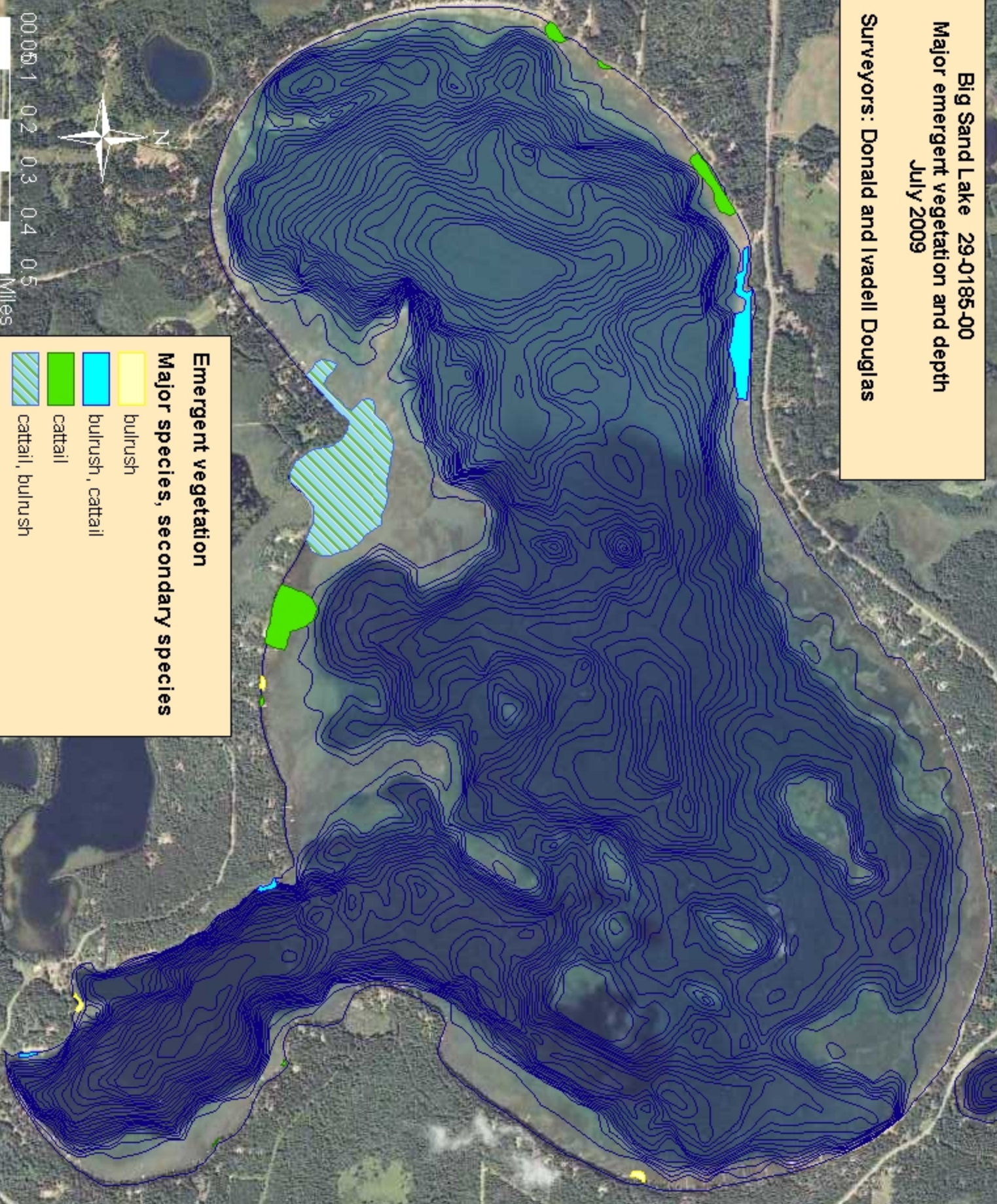
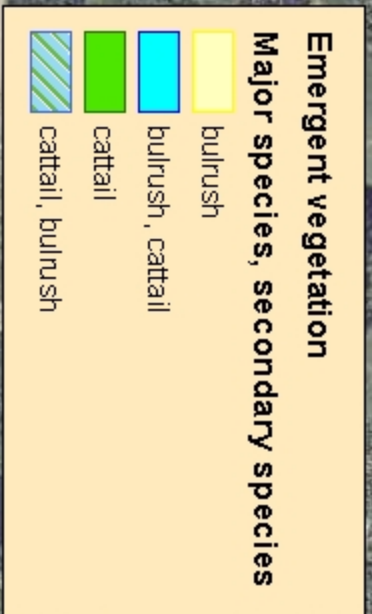
	bulrush
	bulrush, cattail
	cattail
	cattail, bulrush



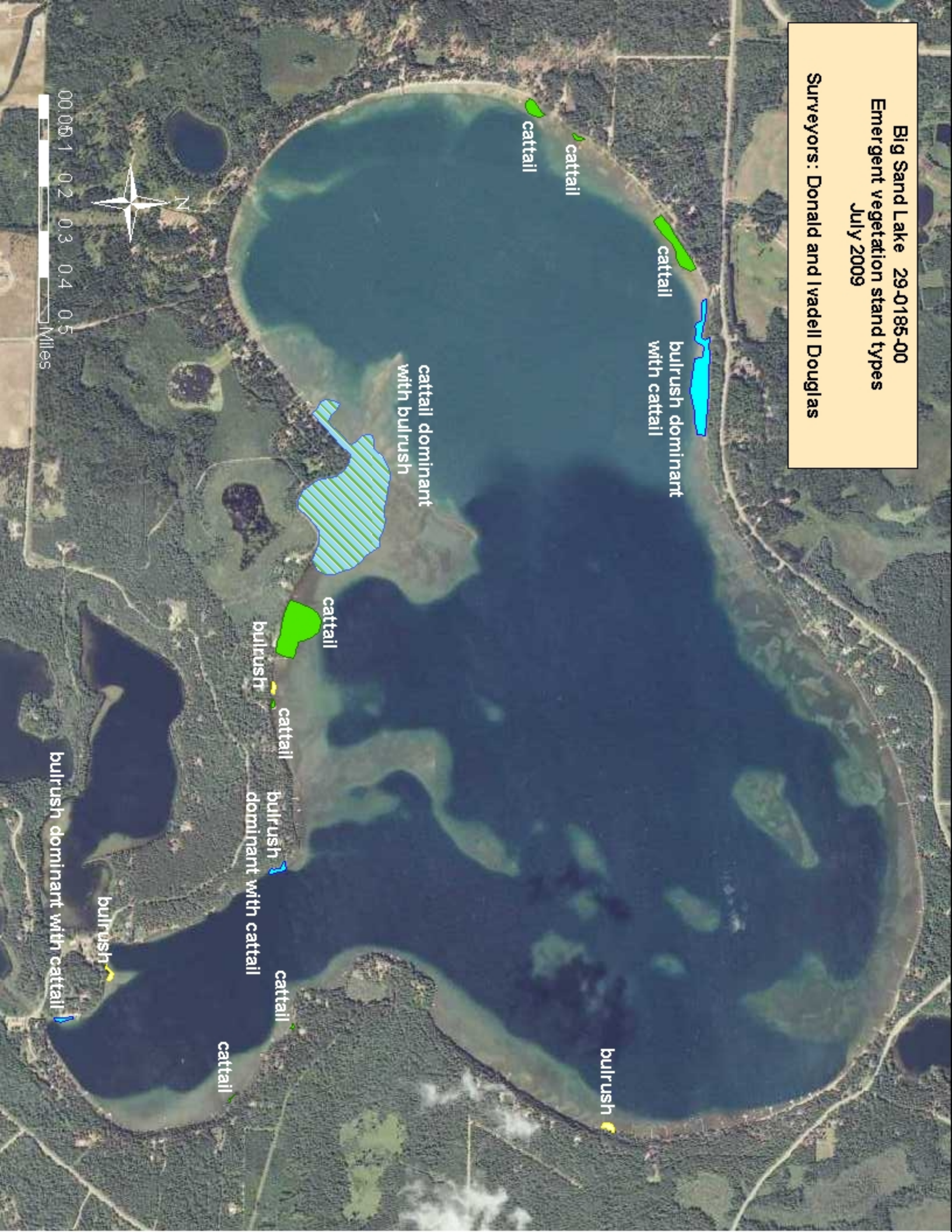
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Big Sand Lake 29-0185-00  
Major emergent vegetation and depth  
July 2009  
Surveyors: Donald and Ivadell Douglas

0.0 0.1 0.2 0.3 0.4 0.5  
Miles







Big Sand Lake 29-0185-00  
Emergent vegetation stand types  
July 2009  
Surveyors: Donald and Ivadell Douglas

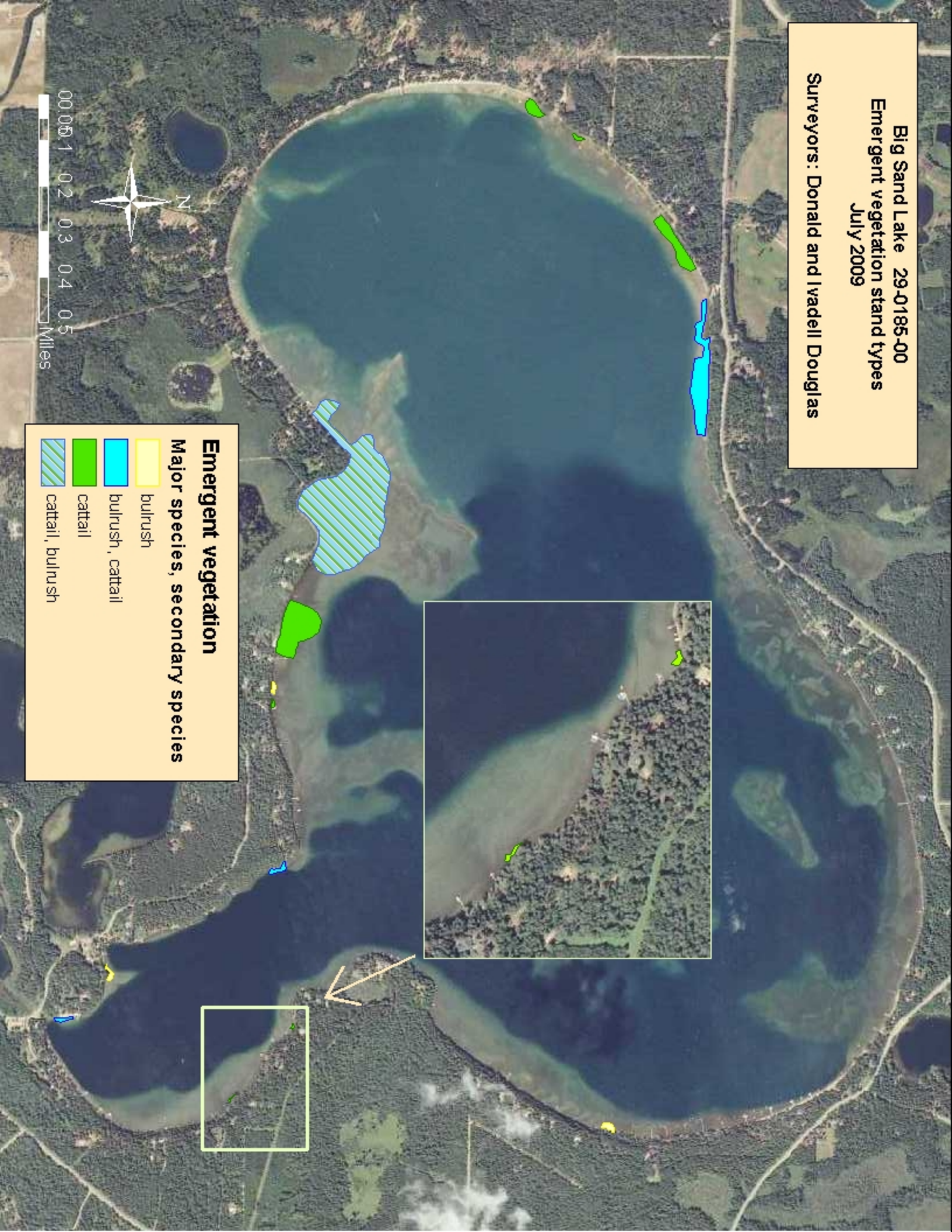


Big Sand Lake 29-0185-00  
Emergent vegetation stand types  
July 2009  
Surveyors: Donald and Ivadell Douglas



**Emergent vegetation**  
**Major species, secondary species**

	bulrush
	bulrush, cattail
	cattail
	cattail, bulrush



Big Sand Lake 29-0185-00  
Major emergent vegetation and depth  
July 2009

Surveyors: Donald and Ivadell Douglas

0.0 0.1 0.2 0.3 0.4 0.5  
Miles



● Survey waypoints

**Emergent vegetation**

**Major species, secondary species**

- bulrush
- bulrush, cattail
- cattail
- cattail, bulrush

