Status and Trends of Predator Populations in Lookout Point Reservoir

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Objectives

- Provide baseline (pre-drawdown) information on relative abundance, size, and distribution of predators in LOP
  - Standardized sampling with boat electrofishing and gill nets

- Monitor movement, habitat, and spawning activities of Northern Pikeminnow
  - Tags donated from OHRC
The Four Target Species in LOP

Largemouth Bass

Northern Pikeminnow

Walleye

Crappie
Results

Relative Abundance

Four smallmouth bass in 2015 (first occurrence)

<table>
<thead>
<tr>
<th>Year</th>
<th>Northern Pikeminnow</th>
<th>Crappie</th>
<th>Walleye</th>
<th>Largemouth Bass</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>n=211</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>n=658</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>n=699</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results

Relative Abundance

Electrofishing

Species

Crappie | LMB | NPM | WAL

2013 | 2014 | 2015

CPUE

y | a

z

b | b

0.0 | 0.5 | 1.0 | 1.5 | 2.0 | 2.5
Results

Relative Abundance

Sinking gill nets

<table>
<thead>
<tr>
<th>Species</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crappie</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>LMB</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>NPM</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>WAL</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

CPUE

Species
Why so variable?

Variation in CPUE among years possibly due to interplay of:

• Size selectivity of gear type
• Increasing fish size as a year-class grows
• Variation in year-class recruitment of a species
2015 recruitment of LMB 100-180 mm FL - Age 1 (2014 year-class)
Variation in CPUE among years possibly due to:

- Size selectivity of gear type
- Changes in age structure (size) within a species
- Shifts in habitat (RT study)
CPUE by Size Group

### Crappie

- **Age-5 (2010 BY)**

### Walleye

### Mean Fork Length (mm)

<table>
<thead>
<tr>
<th>Year</th>
<th>Crappie</th>
<th>Walleye</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>300.4</td>
<td>236.1</td>
</tr>
<tr>
<td>2014</td>
<td>305.1</td>
<td>240.7</td>
</tr>
<tr>
<td>2015</td>
<td>311.4</td>
<td>247.2</td>
</tr>
</tbody>
</table>
Results
Distribution

Lookout Point Reservoir

Lower

Middle

Upper

Shoreline Reaches in Lower, Middle, and Upper Sections

N

0 0.5 1 2 Miles
Results

Distribution

• In all years Crappie had a lower CPUE in the Lower 1/3 of the reservoir compared to the Middle and Upper zones.

• Northern Pikeminnow CPUE was significantly greater in the Upper zone.

• Largemouth bass and Walleye CPUE was similar among reservoir zones (but larger fish were more often in upper zone)
Results

Distribution

Size by Reservoir Zone

Largemouth Bass

Walleye
Northern Pikeminnow RT Study

12 fish tagged in May (tracked 10)
374-463 mm FL
Tracked through mid-September
Results

Northern Pikeminnow

- Reservoir ‘stayers’ (n=6)
- River ‘spawners’ (n=4)
Reservoir Stayer

Frequency: 151.560
- ▲ Fish Code 39
- ○ Release Location

[Map of Reservoir Stayer with dates and directions indicated]
Reservoir Stayer

Frequency: 150.370

- ▲ Fish Code 29
- ● Release Location

- 8/3
- 6/30
- 7/16
- 9/11
- 5/13
- 6/18
- 5/21
- 6/11
- 6/16
- 6/26
- 5/29

Lookout Point Reservoir
Reservoir Stayer

Frequency: 150.370
- ▲ Fish Code 30
- ○ Release Location

Lookout Point Reservoir

North
0 1 2 Kilometers
Conclusion

• Relative abundance of predator species can be highly variable among years
  • Strong recruitment classes of some species
  • Assessment would need to occur just prior to a drawdown

• Predators tended to be more abundant in the middle and upper reservoir

• NPM stayed in upper reservoir (May-Sep)

• NPM spawn in river above reservoir
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