



The Genome and
Linkage Map of the
Northern Pike (*Esox
Lucius*)

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Intro. To Genomics 485

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Outline

- **General information**
- **Genome paper**
- **Sequencing strategy**
- **Sequencing methods**
- **Genome assembly**
- **Genome outcome**



Interesting facts

- Pikes can grow to large sizes. The average length of the fish is 40-55 cm, and the maximum recorded length is 150 cm.



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• Interesting facts

- The Northern Pike name can translate to “varacious piscivorous “ meaning that they are carnivorous fish that feed on large amounts of smaller fish.



• Interesting facts

- The fish inhabit freshwater like clear lakes, backwaters of creeks, and small to large rivers



The Genome paper

OPEN ACCESS Freely available online

 PLOS ONE

The Genome and Linkage Map of the Northern Pike (*Esox lucius*): Conserved Synteny Revealed between the Salmonid Sister Group and the Neoteleostei



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—PLOS one



GENOME

Number of
chromosomes

50

Sequencing
method

Illumina

Genome size

1.12 GB

Sequencing
strategy

Whole genome
sequencing



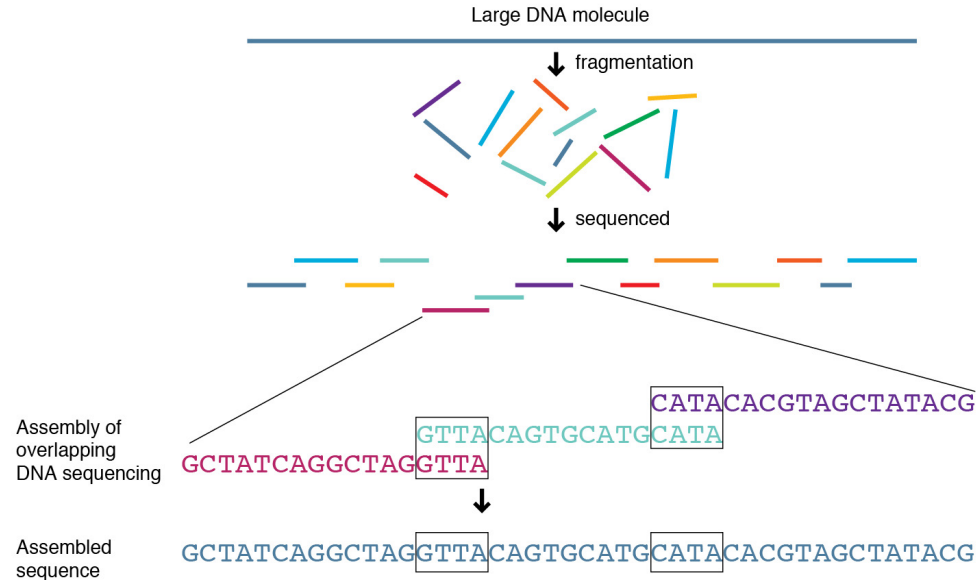
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Genome assembly

The spleen of a single male pike individual was used to extract genomic DNA for whole genome sequencing

Sequencing strategy

- DNA libraries of 180 bp were sequenced using whole genome shotgun sequencing



2

Genome assembly

The libraries were paired-end sequenced using illumina Hiseq-2000

Sequencing method

Illumina sequencing

180 bp DNA fragments are paired-end sequenced



GENOME outcome

**Sequencing
coverage**

50x

Contig N50

16,909 bp

Scaffold N50

700.5 Kb

**Number of
contigs**

94,267

**Number of
scaffolds**

5,688

GENOME outcome

**Transposable
elements**

18.10%

LTR

4.65 Mb

LINE

20.68 Mb

SINE

0.41 Mb

**Number of
SNPs**

176

Questions

- 1- Why are they called voracious piscivorous
- 2- what is the common name of the organism

