

Trout Release

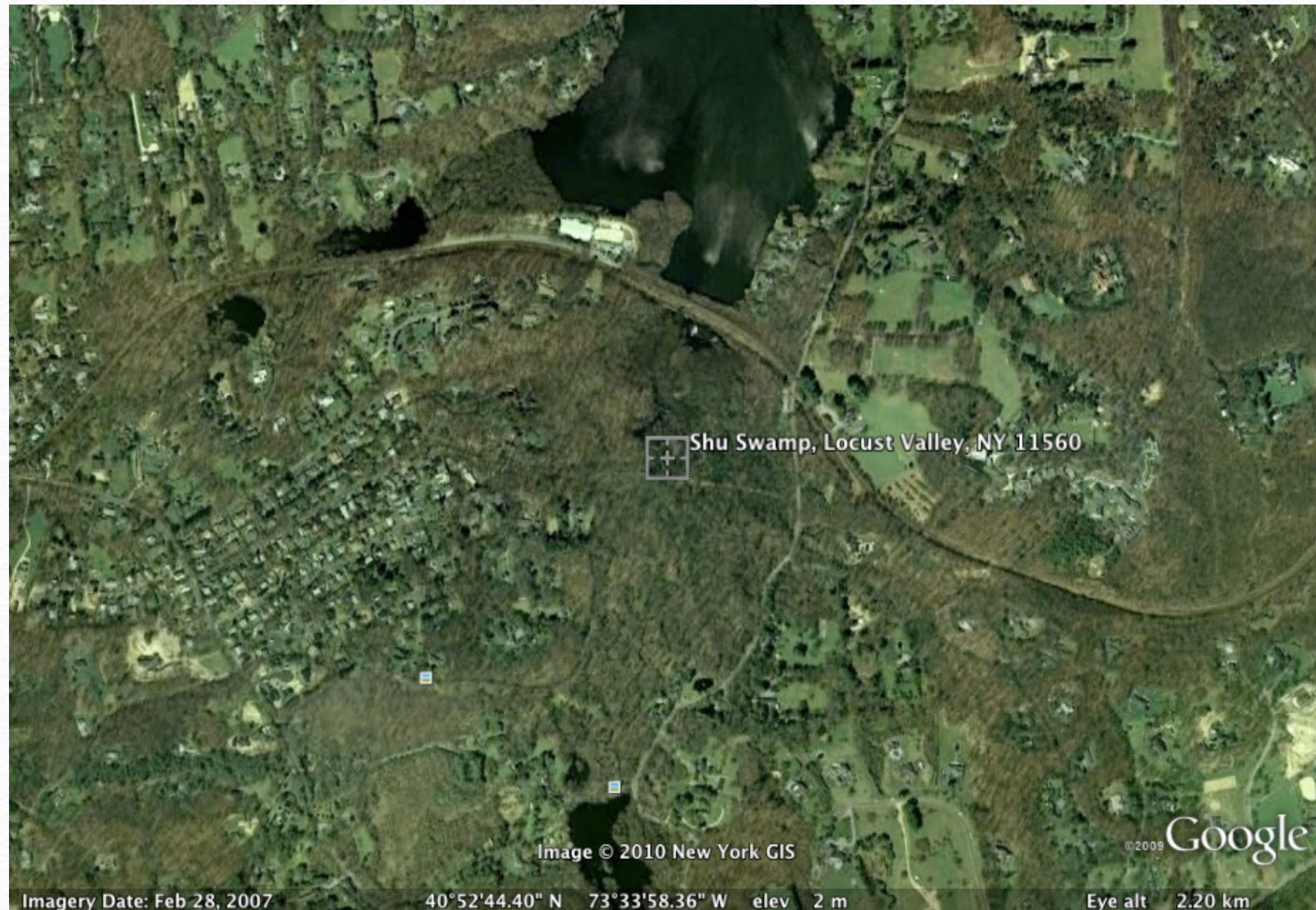
Charles T. Church Nature Preserve
A.K.A.

Shu Swamp

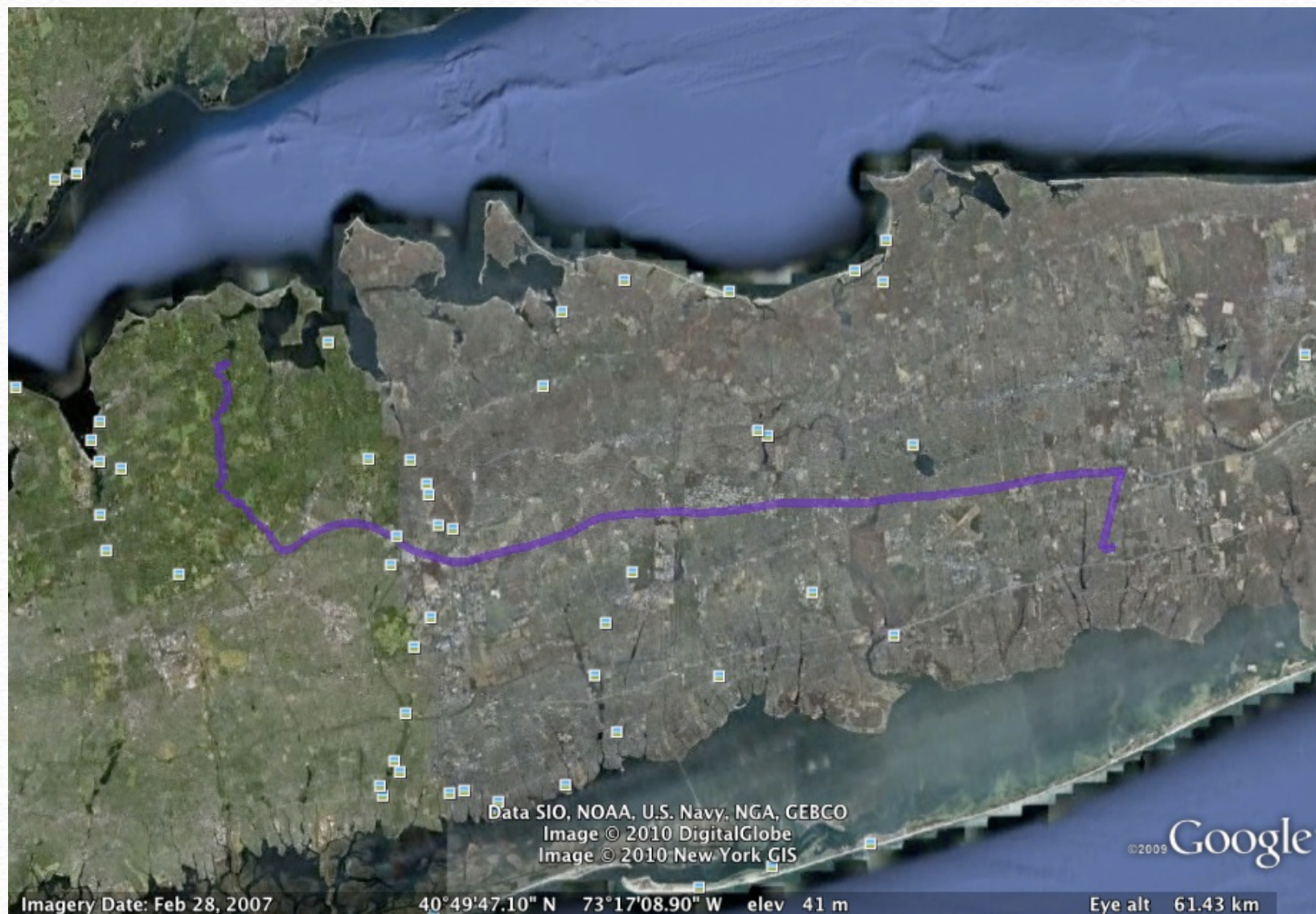
Shu is a Dutch word that means cascading waters.

Area: 60 Acres

The Preserve



Our Route



Distance : 40.3 miles
Estimated Time: 52 minutes

Birds of Shu

- Wood Duck and Black Duck
- Fish Crows
- Canadian Geese and Swans
- Mallard
- Great Horned Owl
- Yellow and Black Crowned Herons
- Canvasback
- Bufflehead
- Goldeneye
- Wigeon
- Gadwall
- Red-Winged Blackbird

Skunk Cabbage

It has a foul odor that attracts pollinators; stoneflies, bees and other scavenger flies.

Uses cellular respiration to melt frozen ground.
Thermogenesis



- *Symplocarpus foetidus*

Respiration

144-145 of Fusion

Cellular respiration

BigPicture

We need energy to live, but how do we get it? We eat food and, via the process of respiration, we transfer the energy within this food to energy our bodies can use. Respiration is the chemical process of releasing energy from organic compounds. It is a series of enzyme-controlled reactions in which energy is transferred to produce adenosine triphosphate (ATP) from adenosine diphosphate (ADP) and inorganic phosphate (P_i).

GLYCOLYSIS

Occurs in cytoplasm



ANAEROBIC RESPIRATION

Occurs in cytoplasm

Respiration that uses final electron acceptors other than oxygen

Net ATP yield:
2 ATP (from glycolysis)



ELECTRON TRANSPORT CHAIN

Using electron transport to power the transport of protons (H⁺), leading to the production of ATP

Net ATP yield:
The amount of ATP made per molecule of glucose varies according to conditions. In theory, each can yield a maximum of 38 ATP, but around 30 is more likely.



GLOSSARY

Acetyl CoA: An intermediate formed in the link reaction. It is made from pyruvate and coenzyme A. It enters the Krebs cycle.

ADP (adenosine diphosphate): A molecule formed in all living cells that is used as the immediate source of energy. It is converted to ATP when energy is needed for a process.

Aerobic: Using oxygen.

Anaerobic: Without oxygen.

ATP (adenosine triphosphate): A molecule found in all living cells that is used as the immediate source of energy. It is converted to ADP when energy is needed for a process.

ATP synthase: An enzyme that catalyses the conversion of ADP to ATP in mitochondria.

Cytochrome c: A small protein molecule that is involved in the electron transport chain.

Cytochrome oxidase: An enzyme that is involved in the electron transport chain.

Decarboxylation: A chemical reaction that releases carbon dioxide (CO₂).

Electron carrier: A molecule that can accept one or more electrons and transfer them to another in an electron transport chain. They include NAD, FAD and the cytochromes.

FAD (flavin adenine dinucleotide): A molecule that acts as a hydrogen acceptor in respiration. NAD is reduced to reduced NAD in the Krebs cycle and becomes oxidized in the electron transport chain. It transfers electrons from the hydrogen carrier to the electron transport chain.

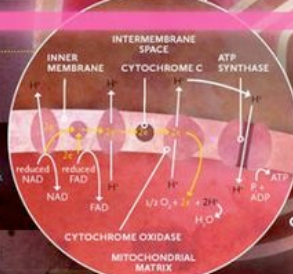
GDP (guanosine diphosphate): A molecule converted to GTP during the Krebs cycle.

Oxidation: The loss of electrons or the gain of oxygen. It is the first stage of both aerobic and anaerobic respiration.

Redox reaction: A reaction in which one substance is oxidized and another is reduced.

Respiration: The gain of oxygen or the loss of hydrogen. It is the loss of electrons or the gain of oxygen by a molecule, atom or ion.

Saturated fatty acid phosphorylation: A process that makes ATP through the movement of a phosphate group from an intermediate directly to ADP, for example during glycolysis.



MITOCHONDRION

KEY TO SYMBOLS
Carbon atom: ●
Phosphate group: P
Coenzyme A: ~

AEROBIC RESPIRATION

Occurs in mitochondrial matrix

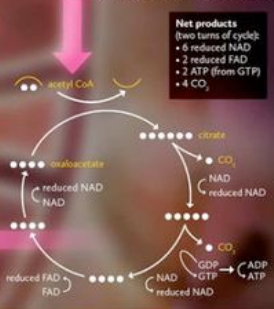
LINK REACTION
Removal of hydrogen and carbon dioxide from pyruvate (decarboxylation)



Occurs in mitochondrial matrix

KREBS CYCLE

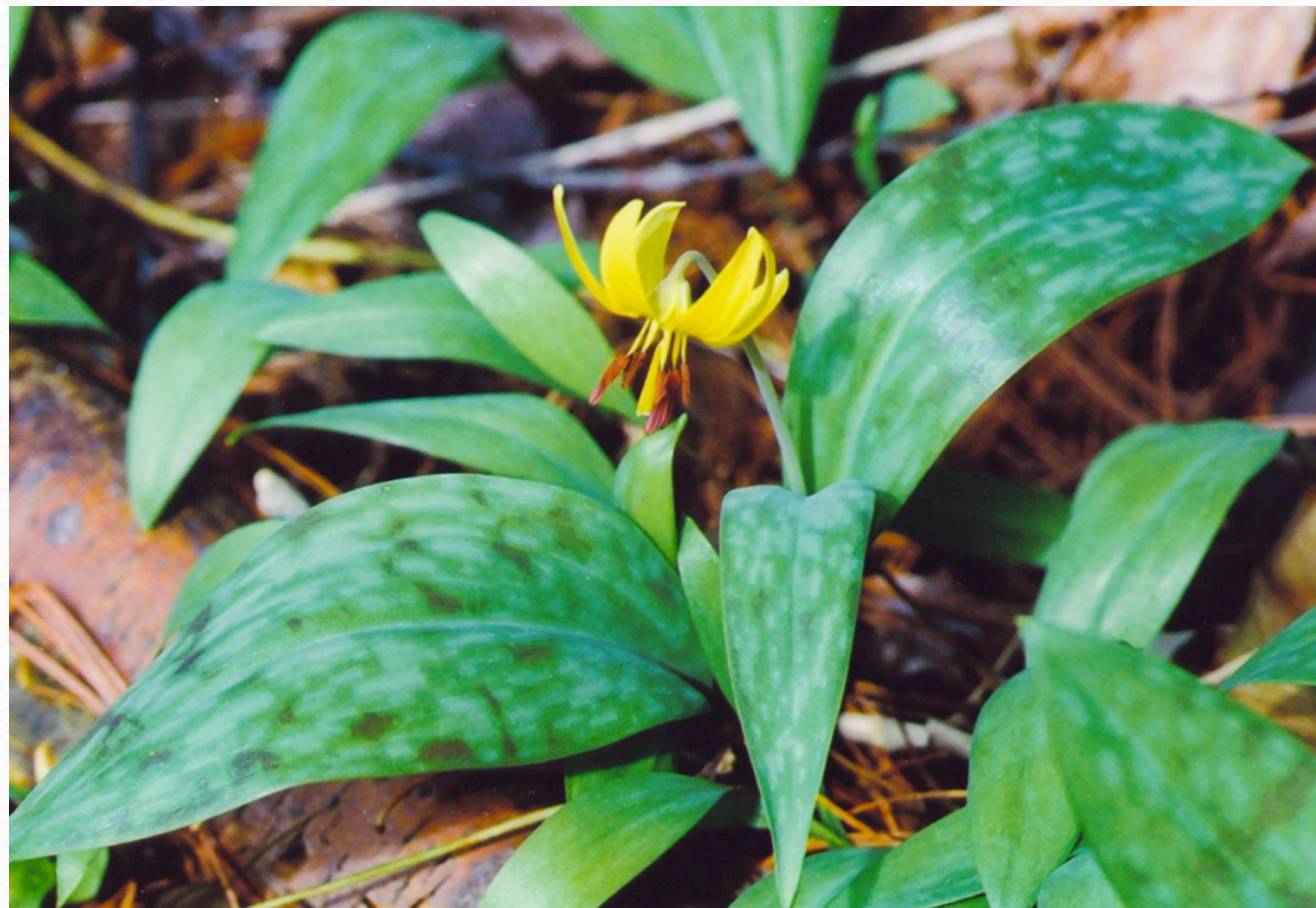
Complete oxidation of acetyl CoA



MATRIX
CRISTA
INNER MEMBRANE
OUTER MEMBRANE
INTERMEMBRANE SPACE

Trout Lily

The name comes from the fact that the leaves have similar markings to brown and brook trout.



- *Erythronium*

There are between twenty and thirty species of this plant.

Locate the Trout



The Value of Observation



Raccoon and Heron Footprints



Snapping Turtle



Painted Turtle Hatchling

