

GLOSSARY

°C	The symbol for degree Celsius.
<	The symbol for less than.
>	The symbol for greater than.
%	The symbol for percent.
Active I Channel	A watercourse with perennial flow, discernible banks and substrate, and a drainage area less than 1,000 km ² . In winter it might be partially frozen to the bottom because of groundwater input, beaver activity, or large pools and deep water.
Active II Channel	A watercourse with intermittent flow, discernible banks and substrate, and a drainage area less than 1,000 km ² . In winter it is frozen to the bottom or dry below the ice surface.
adult	Fish that are fully developed and have attained sexual maturity.
ageing	The process of determining the age of a fish or population of fish.
ageing structure	Bony structure, such as the scales, fin rays and otoliths, which can be used to determine the age of a fish.
alluvial	Pertaining to, or consisting of, alluvium or material deposited by flowing water.
alluvial channel	A shallow watercourse with a bed of alluvium, usually flowing through a delta.
alluvial fan	A fan-shaped deposit of sediment formed by a stream that exits a valley onto a floodplain.
alluvium	Unconsolidated mineral material, usually clay, silt, sand and gravel deposited by flowing water.
all-weather road	A paved or unpaved, i.e., gravel, road that is open to traffic all year.
ammocoete	A larval stage of lampreys.

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anadromous species	Fish that travel up freshwater streams from the sea to spawn.
anchor field	The three natural-gas fields, Taglu, Parsons Lake and Niglintgak, whose production will provide the initial volume of gas shipped in the Mackenzie Valley Pipeline.
angling	Capturing fish with a hook and line.
anoxic	Lacking oxygen.
aquatic	Growing in, living in, or frequenting water. Also, occurring or situated in or on water.
attenuate	To weaken, reduce in force, or taper gradually.
backpack electrofishing	Use of electricity produced by a backpack-mounted sampler to temporarily stun the fish within the electrical field. It allows biologists to catch, study and release the fish back to the water unharmed.
backshore	The upper shore zone that is beyond the reach of the usual waves and high water stage. It extends from about 3 to 25 m back from the water's edge.
backwater	A localized area on a watercourse, flowing in the reverse direction and with lower velocity than the main current.
bank	The rising slope or face of ground bordering a watercourse. It is located above the streambed and below the level of rooted vegetation.
bankfull width	The width of a watercourse when it completely fills its channel and the elevation of the water surface reaches the upper margins of the bank.
base flow	A portion of the stream discharge that is derived from natural storage, i.e., outflow from groundwater, large lakes or wetlands, or sources other than rainfall that creates surface runoff.
baseline	A surveyed condition that serves as a reference point to which later surveys are coordinated or correlated.

baseline information	The current state of the environment or environmental setting for a particular element. This information will help to determine potential environmental effects of a project by providing an environmental reference point for the element, with which to compare future environmental conditions and potential project effects.
bathymetric reading	The measurement of a waterbody's depth to determine the topography of its floor or bed.
benthic	Dwelling on, or relating to, the bottom of a body of water.
benthos	Organisms that live on the bottom of a waterbody, in or near the substrate.
biophysical environment	The components of the earth including: <ul style="list-style-type: none">• land, water and air, including all layers of the atmosphere• all organic and inorganic matter and living organisms• the interacting natural systems that include components referred to in the previous bullets
boat electrofishing	Use of electricity produced by a boat-mounted generator to temporarily stun and capture fish. This method generally outputs more power than backpack electrofishing.
boulder	A large rock with a diameter exceeding 256 mm.
boulder garden	An aquatic habitat characterized by an abundance of boulders that provide instream cover for fish.
box trap	A passive trap for capturing fish, usually consisting of a box with a funnel-shaped opening and associated directional fences.
brackish species	Species that live in water with a lower concentration of soluble salts than sea water, but higher than fresh water.
brackish water	Saline water with a soluble salt concentration between that of fresh water and sea water, but not as high as sea water.
braided stream	A stream that divides into an interlacing network of several branching and reuniting channels separated from each other by islands or channel bars.

channel	A natural or artificial waterway that periodically or continuously contains moving water, has a definite bed, and has banks that confine the water at low to moderate streamflow.
cobble	A rock fragment larger than a pebble and smaller than a boulder, with a diameter of 64 to 256 mm.
compressor station	A facility containing equipment that is used to increase pressure to compress natural gas for transportation.
conductivity	A measure of the ability of a solution to carry an electrical current.
confluence	The location where two streams flow together to form one.
Construction Phase	The phase of a project preceding the Operations Phase, during which project facilities and infrastructure are assembled and installed on their foundations, and connected and tested to ensure that they operate as designed.
COSEWIC	The abbreviation for the Committee on the Status of Endangered Wildlife in Canada.
creek	A small lotic system that serves as the natural drainage course for a small drainage basin.
critical habitat	The habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species' critical habitat in the recovery strategy or in an action plan for the species, according to the <i>Species at Risk Act</i> .
delta	An area of alluvial deposits, usually triangular in shape, at the mouth of a river or stream.
delta channel	A watercourse flowing through a delta.
deltaic	Of, or relating to, a delta.
demersal	Sinking to or lying on the bottom, or living on or near the bottom and feeding on benthic organisms.
depth sounder	An instrument for measuring the depth of water.
DFO	The abbreviation for Department of Fisheries and Oceans.

diadromous species	Fish that migrate between salt and fresh waters.
discharge	The flow rate of water in a watercourse expressed as volume per unit of time.
DO	The abbreviation for dissolved oxygen.
downstream	In the direction of flow of a watercourse.
echo sounder	An instrument used to determine the depth of water by means of an acoustic echo.
EIS	The abbreviation for Environmental Impact Statement.
Ekman dredge	A device for sampling macroinvertebrates found in bottoms of waterbodies with soft substrates.
electrofishing	A method of fishing in which a field of electricity is passed through water to temporarily stun fish and facilitate their capture.
emergent vegetation	Aquatic vegetation that grows with its roots under water and with leaves and stems that emerge above the surface of the water.
environmental effect	<p>For a project, any change that the project might cause in the environment, including any change it might cause to a listed wildlife species, its critical habitat or the residences of individuals of that species, as defined in the <i>Species at Risk Act</i>. Also, any effect of any project-induced change on:</p> <ul style="list-style-type: none">• health and socio-economic conditions• physical and cultural heritage• the current use of lands and resources for traditional purposes by aboriginal people• any structure, site or thing that is of historical, archaeological, paleontological or architectural significance <p>Also, any change to the project that might be caused by the environment.</p>
ephemeral drainage	Drainage that only occurs for a short time, usually after precipitation or snowmelt, and that discontinues during dry seasons.

ephemeral stream	A stream that carries water only during and after periods of precipitation or snowmelt.
estuary	A semi-enclosed coastal body of water that has a free connection with the open sea and within which sea water is diluted with fresh water.
F	The abbreviation for flat habitat. There are three flat habitat types: <ul style="list-style-type: none">• deep flat (F1), with a maximum depth exceeding 1.5 m and an average depth equal to or greater than 1.0 m• moderate-depth flat (F2), with a maximum depth equal to or exceeding 1.0 m and an average depth greater than 0.75 m• shallow flat (F3), with a maximum depth of 0.75 m and an average depth less than 0.5 m
facilities	Structures of the gathering and gas pipeline systems, including compressor and pump stations, block valves, pigging facilities, heater stations and meter stations.
feeding habitat	Aquatic habitats that provide the necessary requirements for feeding of adult life stages of fish.
fines	Particulate material, less than 2 mm in diameter, including sand, silt, clay and fine organic material.
flat habitat	Stream habitat characterized by low-velocity and nearly laminar flow, differentiated from pool habitat by high channel uniformity and depositional substrate.
floodplain	Low-lying areas adjacent to rivers or lakes that can be inundated during seasonally high water levels, such as floods.
flow rate	Volume of water flowing past a stationary point for a specified period of time, usually expressed as m ³ /s.
fluvial	Pertaining to or produced by the action of a stream or river. Also, pertaining to anything existing, growing, or living in or near a river or stream.
forage fish	Fish species used as food source by other fish.

forb	Any herbaceous plant other than a grass, i.e., a weed or broadleaved non-woody plant.
foreshore	The zone that lies between the high and low watermarks of a waterbody or watercourse, and extends to about 3 m back from the water's edge.
fork length (fish)	The distance from the tip of a fish's snout to the midline of the caudal fin.
frazil	Ice crystals that form in supercooled water that is too turbulent to permit coagulation of the crystals into sheet ice.
freezeup	Freezing up of a watercourse or waterbody in the fall or winter.
freshet	Rapid temporary rise in stream discharge and water level caused by heavy rains or rapid melting of snow and ice.
fry	A young fish at the post-larval stage. May include all fish stages from newly hatched to fingerling.
gas pipeline	The pipeline that transports compressed natural gas from the Inuvik area facility to the southern terminus near the Northwest Territories–Alberta boundary.
gathering pipelines	Four pipelines, also known as laterals, that transport natural gas and NGLs from the anchor fields to the Inuvik area facility. These include the Niglintgak lateral, Taglu lateral, Parsons Lake lateral and Storm Hills lateral.
gathering system	A system of pipelines, compressor stations and other related facilities that gather natural gas and associated NGLs from the anchor fields and transport it to the gas pipeline system located at the Inuvik area facility.
gill net	A net that captures fish by entangling the head, gills or fins.
gravel	A substrate particle between 2 and 64 mm in diameter.
groundwater	Subsurface water that is recharged by infiltration and enters streams through seepage and springs.
ha	The abbreviation for hectare.

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habitat	The place or environment where a plant or animal naturally or normally lives and grows.
HADD	The abbreviation for harmful alteration, disruption or destruction.
holding habitat	A place with low water velocity where fish can rest and conserve energy.
hydrogeology	The science dealing with groundwater, including its properties and role in modifying the earth, primarily by erosion and deposition.
hydrology	The science dealing with the waters of the earth, including their properties, circulation, distribution and reaction with the environment.
hydrophyte	A plant that grows in water or saturated soils.
ice road	A secondary road made of compact snow or ice, often ploughed over a frozen lake or ground, and which is impassable in the summer. Also known as a winter road.
ice-out	The process by which a waterbody becomes free of ice.
icing	A mass or sheet of ice formed on the ground surface during the winter by successive freezing of sheets of water that seep either from the ground, a river or a spring.
impoundment	The formation of a pond within a stream, caused by an interruption of the normal flow by an obstruction such as a beaver dam.
impounded habitat	The three impoundment habitat types are: <ul style="list-style-type: none">• deep impoundment (IP1), with a maximum depth exceeding 1.5 m and an average depth equal to or greater than 1.0 m• moderate-depth impoundment (IP2), with a maximum depth equal to or exceeding 1.0 m and an average depth greater than 0.75 m• shallow impoundment (IP3), with a maximum depth of 0.75 m and an average depth less than 0.5 m

infrastructure	Basic facilities, such as transportation, communications, power supplies and buildings, which enable an organization, project or community to function.
instream	Within the wetted perimeter of the stream channel.
instream cover	Areas with structure, e.g., boulders, rock and logs, in a stream channel that provide aquatic organisms with shelter or protection from predators or competitors.
inundation	Flooding, or to be covered with standing or flowing water.
invertebrate	Large group of lower animals that lack a spinal column.
IP	The abbreviation for impoundment habitat.
IPL	The abbreviation for Interprovincial Pipeline Limited.
juvenile	Young fish, similar in form to an adult, but not yet sexually mature.
kick-net	A fine-mesh net used to capture organisms living in or on the bottom of a watercourse, by disturbing the substrate and allowing the current to sweep them into the net.
km	The metric symbol for kilometre.
km²	The metric symbol for square kilometre.
Large River Channel	A watercourse with perennial flow, a wetted width greater than 25 m, and a drainage area greater than 1,000 km ² .
lateral	A pipe that branches away from the central and primary part of the system.
left bank	The bank of a watercourse on the left side of an observer who is facing the direction of flow, i.e., downstream.
lentic	Pertaining to standing or slow moving water, such as a lake, pond, reservoir or swamp.
limiting factor	Anything that has a measurable controlling effect on a species' growth or expansion, or on a biophysical element's continued capability to support its ecosystem.

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littoral zone	Shallow shore area of a waterbody where light can usually penetrate to the bottom and that is often occupied by rooted aquatic plants. The extent of the plants might mark the boundaries of the zone.
lotic	Pertaining to running water, such as a stream or river.
m	The metric symbol for metre.
m²	The metric symbol for square metre.
m³	The metric symbol for cubic metre.
macro-	A prefix meaning large, comprehensive, or visible to the naked eye.
macroinvertebrate	An invertebrate animal large enough to be seen without magnification and retained by a 0.595-mm screen.
macrophyte	A plant visible to the naked eye, especially one in an aquatic habitat.
mainstem	Principal, largest or dominating stream or channel in any given area or drainage system.
mg/L	The metric symbol for milligrams per litre.
minnow	The common name for any freshwater fish of the family Cyprinidae. Also used for any small or young fish.
minnow trap	A passive trap for capturing small fish, such as minnows, usually comprising a baited container with funnel-shaped openings.
mitigation	The elimination, reduction, or control of a project's adverse environmental effects, including restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or other means.
monitoring	Resolving specific outstanding environmental issues, observing the potential environmental effects of a project, assessing the effectiveness of mitigation measures undertaken, identifying unexpected environmental issues and determining the action required based on the result of these activities.

morphological	Pertaining to physical attributes of a waterbody and the methods for measuring those attributes.
nephelometry	A technique in which the intensity of light scattered by a suspension is measured to determine the concentration of suspended particles, i.e., used to measure cloudiness or turbidity.
NGTL	The abbreviation for NOVA Gas Transmission Ltd.
NGTL interconnect facility	The southernmost point of the gas pipeline where it connects either directly with the natural gas pipeline system in northwestern Alberta or to a third-party extension that subsequently connects to the existing system.
Niglintgak	The anchor field to be developed by Shell. The field includes three well pads, one gas conditioning facility, flow lines and supporting infrastructure. The gas conditioning facility might be barge based or land based.
Niglintgak lateral	The gathering pipeline connecting the Niglintgak gas conditioning facility to a connection point on the Taglu lateral at the outlet of the Taglu gas conditioning facility.
NTS	The abbreviation for National Topographic Series.
NTS maps	Topographic maps that conform to the National Topographic System of Canada, depicting ground relief, drainage, forest cover, administrative areas, populated areas, transportation routes and facilities, and cultural features.
NTU	Abbreviation for nephelometric turbidity unit, which is a measure of turbidity.
NWML	The abbreviation for Northwest Mainline.
NWT	The abbreviation for Northwest Territories.
open water	A portion of lake or stream that remains unfrozen or is not covered by ice during winter.
Operations Phase	The phase of a project during which the pipeline and associated facilities are operated.

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otolith	Calcareous concretions in the ear capsules of bony fish. These bones frequently show daily, seasonal or annual checks, rings or layers that can be used to determine fish age.
overwinter	To live or keep alive through the winter.
overwintering habitat	Habitat used by aquatic organisms during winter. Generally, they are low-velocity holding areas with adequate concentrations of dissolved oxygen.
oxbow	A bend or meander in a stream that becomes detached from the stream either from natural processes or an anthropogenic disturbance.
oxbow lake	A lake occupying a former meander of a river that was isolated by a shift in the stream channel.
P	The abbreviation for pool habitat. There are three pool habitat types: <ul style="list-style-type: none">• deep pool (P1), with a maximum depth exceeding 1.5 m and an average depth equal to or greater than 1.0 m• moderately deep pool (P2), with a maximum depth equal to or exceeding 1.0 m and an average depth greater than 0.75 m• shallow pool (P3), with a maximum depth of 0.75 m and an average depth less than 0.5 m
Parsons Lake	The anchor field to be developed by ConocoPhillips and ExxonMobil. Initially, the field will consist of a north pad for the well sites and gas conditioning facility. A second well pad will be developed five to 10 years after the north pad.
Parsons Lake lateral	The gathering pipeline connecting the Parsons Lake gas conditioning facility to a connection point at the Storm Hills pigging facility.
permafrost	Perennially frozen ground, occurring wherever the ground temperature remains below 0°C for two or more consecutive years.
pH	A measure of the relative acidity or alkalinity of a liquid. The pH scale ranges from 1 to 14, with 7 being neutral, 1 being the most acidic and 14 being the most alkaline.

pingo	An ice-cored hill, forced up by frost-heaving hydrostatic pressure in an area underlain by permafrost. It usually forms in drained or partially drained lake basins.
pipeline	A line used for transmitting oil, gas or any other commodity and that connects a province with any other province or provinces or extends beyond the limits of a province or the offshore area as defined in section 123 of the <i>National Energy Board Act</i> .
pipeline corridor	The 1-km-wide area that generally centres on the combined right-of-way for the NGL and gas pipelines, from the Inuvik area facility to the southern terminus.
Ponar grab	A heavy jawed sampling device used to analyze the composition and benthos at the bottom of a waterbody.
pool	A discrete portion of a watercourse channel, featuring increased depth and reduced velocity relative to adjacent riffle and run habitats. It is produced by channel scour.
production area	The area that encompasses all project components located north of the Inuvik area facility, including Niglintgak, Taglu and Parsons Lake, the gathering pipelines, facilities, infrastructure, and the 1-km-wide area surrounding each of these project components.
project, the	The abbreviation for the Mackenzie Gas Project.
R	The abbreviation for run habitat. There are three quality classes: <ul style="list-style-type: none">• deep run (R1), with a maximum depth exceeding 1.5 m and an average depth equal to or greater than 1.0 m• moderately deep run (R2), with a maximum depth equal to or exceeding 1.0 m and an average depth greater than 0.75 m• shallow run (R3), with a maximum depth of 0.75 m and an average depth less than 0.5 m
rapids	A channel type with high velocity, turbulent flow, and very coarse substrate. It is deeper than a riffle.
rear	To feed and provide nursery habitat for larval and juvenile fish.

RF	The abbreviation for riffle.
riffle	A channel type featuring high velocity relative to run habitat, but lower than rapids. The surface is broken by submerged or exposed bed material and the channel is shallow relative to other habitat types.
right bank	The bank of a watercourse on the right side of an observer who is facing the direction of flow, i.e., downstream.
right-of-way	The strip of land a company has acquired, for which it has obtained the rights to construct and operate a pipeline.
riparian	Situated or dwelling on the margin of a river or other waterbody.
riprap	Hard materials, such as logs, rocks and boulders, used to protect a bank or other important feature of a stream, river, lake or reservoir.
river	A large, natural or human-modified freshwater stream that flows in a defined course or channel. It has considerable flow volume compared to its smaller tributaries.
RSA	The abbreviation for regional study area.
run	A channel type featuring moderate to high current velocity relative to pool and flat habitats. Its water surface is largely unbroken. It is generally deeper than riffle and rapid habitats.
runoff	The water from rain and snow that flows over land to streams, ponds or other surface waterbodies. Also, the water from precipitation that does not infiltrate into the ground or evaporate.
sand	Substrate particles between 0.062 and 2 mm in diameter.
scour	Localized erosion of substrate from the streambed by flowing water, when water velocities are high.
Secchi transparency	A measurement of the transparency or clarity of water made by lowering a Secchi disc, i.e., a 20-cm diameter disc marked in two black and two white opposing quadrants, from the water surface. The average depth at which the disc disappears from sight and the depth at which it reappears when lowered and raised in the water column is the Secchi transparency.

sediment	Fragmented material from weathered rocks and organic material that is suspended in, transported by and eventually deposited by water or air.
seep	A small groundwater discharge that slowly oozes to the surface of the ground or into a stream.
seepage	The gradual movement of water through small openings and spaces in the surface of unsaturated soil.
seine net	An elongated, rectangular, fine-mesh net with floats at the top and weights along the bottom edge. It is used to capture fish in shallow habitats by encircling them.
shoreline development	A ratio indicating the degree of irregularity of a lake shoreline, given as the length of the shoreline to the circumference of a circle whose area is equal to that of the lake.
side channel	An elongated extension off a main channel that can become separated from the main channel under low flow conditions, and dry up.
silt	Fine soil particles between 0.004 and 0.062 mm in diameter.
slope	The percentage of vertical rise relative to the horizontal distance, e.g., a level site of 0° has a 0% slope, and 45° is equivalent to a 100% slope.
slough	A low-lying or swamp-like area characterized by surrounding marsh vegetation. It features shallow water depth with extensive submerged and emergent vegetation.
snye	A specific portion of a side channel off a larger river. At low flows, only the upstream end provides aquatic habitat, and the middle and lower portions are not connected to the main channel, i.e., no flow-through.
spawning	Fish reproduction process characterized by females and males depositing eggs and sperm into the water simultaneously or in succession so as to fertilize the eggs.
spawning habitat	Habitat selected by fish for spawning.
species at risk	An extirpated, endangered or threatened species or a species of special concern, as defined in the <i>Species at Risk Act</i> .

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spring breakup	The time of year when the temperature rises sufficiently to thaw ice, causing it to break up in rivers and lakes.
Storm Hills lateral	The gathering pipeline connecting the Storm Hills pigging facility to a connection point at the inlet of the Inuvik area facility.
stream	A small, natural watercourse containing flowing water for at least part of the year.
stream gradient	The number of metres a watercourse drops per kilometre of its length, measured in the direction of flow. Also known as <i>stream slope</i> .
stream slope	The number of metres a watercourse drops per kilometre of its length, measured in the direction of flow. Also known as <i>stream gradient</i> .
study area	The area within the spatial boundaries of the scope of the environmental and socio-economic effects assessment.
submergent vegetation	Aquatic vegetation that grows with its roots under water and with leaves and stems that do not emerge above the surface of the water.
substrate	Mineral and organic material forming the bottom of a watercourse or waterbody.
sweep-net	A funnel-shaped sampling net, attached to a long-handled frame, which is swept back and forth over aquatic vegetation, shallow pond bottoms, or near shore.
Taglu	The anchor field to be developed by Imperial Oil Resources Limited. It consists of one site, which will include the drill sites, gas conditioning facility, flow lines and supporting infrastructure.
Taglu lateral	The gathering pipeline connecting the Taglu gas conditioning facility to a connection point at the Storm Hills pigging facility.
thalweg	The path of a stream or river that follows the deepest part of the channel.
thermal stratification	The separation of a lake or body of water into layers of different temperature.

total length (fish)	The distance from the tip of a fish's snout to the end of the caudal fin, i.e. with pinched tail.
transect	A line or strip across the earth's surface, or through any object, along which a survey or observations are made.
tributary	A stream that feeds or flows into a larger watercourse or waterbody.
tundra	A treeless zone, between the ice cap and the tree line of North America and Eurasia, characterized by a short growing season and permanently frozen subsoil. Tundra refers both to the region and the vegetation growing within it.
turbidity	The relative clarity of a waterbody. A measure of the extent to which light penetration in water is reduced by presence of suspended particles, such as silt, clay, organic matter or plankton.
upstream	Direction from which a river or stream flows.
UTM	The abbreviation for Universal Transverse Mercator, a grid system for establishing fixed point locations using exact measurements. The UTM divides the world into 60 grid zones of six degrees longitude and 8 degrees latitude. Each grid zone is further subdivided into a finer grid of 100,000 square metres.
Vegetated Channel	A watercourse with ephemeral flow, no discernible banks or sediment transport, and a drainage area less than 15 km ² . It is primarily a shallow flow through shrubs and trees during spring runoff or rainfall. It is dry most of the year.
water column	A portion of water in a waterbody extending vertically from a given point on the surface to any depth. It is generally used to locate, describe or characterize the chemical and physical constituents at a given depth or depth range.
water crossing	A location where a pipeline or access road crosses a stream, river or lake.
waterbody	A body of water up to the high-water mark, including canals, reservoirs, oceans and wetlands, but not including sewage or waste treatment lagoons.

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watercourse	A natural or artificial channel with perennial or intermittent water and definable bed and banks.
watershed	A region or area draining into a particular stream or river.
weir	Barrier constructed across a stream to guide fish into a trap.
wetlands	A broad group of wet habitats where the water table is usually at or near the surface, or the land is covered by shallow water.
wetted width	The width of the wetted part of the stream channel, measured perpendicular to the direction of flow.
winterkill	The death of fish in enclosed waterbodies from oxygen depletion during prolonged periods of ice and snow cover. Snow and ice cover prevent oxygen exchange through the water surface and restrict photosynthesis, and the breakdown of organic matter on the bed of the pond and in the water column results in continuing depletion of oxygen supply.
yearling	A one-year-old fish that has entered the second year of its life.