

Salmonid terminology*

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Proposed lists of definitions and terms designating the different life stages of the Atlantic salmon (*Salmo salar*, L.) and the migratory form of the trout (*Salmo trutta*, L.) are presented in English, with equivalents for the basic terms in the languages of the Atlantic salmon and migratory trout-producing countries in Europe and North America. The basic terminology lists include definitions for alevin, fry, parr, smolt, post-smolt, adult fish, previous spawner and kelt for both species.

Part I. A revised terminology list for Atlantic salmon (*Salmo salar*, L.)

Introduction

At the request of the Anadromous and Catadromous Fish Committee of the International Council for the Exploration of the Sea, Allan (1967a) presented a revised terminology list for Atlantic salmon in which the list of common expressions for salmon (*Salmo salar*, L.) originally prepared by Järvi and Menzies (1936) was brought up-to-date.

Contributions to the 1967 revision were received from the following countries: Canada, Denmark, France, Federal Republic of Germany, Netherlands, Iceland, Republic of Ireland, Poland, Spain, Sweden, United Kingdom, United States of America and U.S.S.R. Where no contributions were received it was assumed that no corrections or additions were required by those countries and, therefore, the terms of the original list by Järvi and Menzies were reproduced.

After the 1967 terminology list was produced, further changes occurred in scientific usage and, in 1974, a paper by Ritter and Harger (1974) was pre-

sent to the Anadromous and Catadromous Fish Committee, in which refinements to the 1967 list were suggested. As a result, the Committee decided that the present authors should collaborate and prepare a definitive paper for publication. The present paper is the result of this collaboration.

The purpose of the paper is two-fold: first, to enable salmon fishery scientists to interpret correctly the terms used in countries other than their own and, secondly, to propose a terminology for use by scientists and fishery managers.

Review of terminology

The preparation of a terminology list for the life stages of a fish is, to some extent, a subjective exercise if only because different countries use different criteria for their own classifications and because such criteria have different connotations as a result of variations in rates of growth and ages at migration. Therefore, in revising the original list of Järvi and Menzies (1936), we have selected those terms for which the basis is objective rather than subjective while indeterminate descriptive terms such as "under-

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Table 1. Revised terminology list for Atlantic salmon (*Salmo salar*, L.)

Stage	Term	Definition
1	ALEVIN	Stage from hatching to end of dependence on yolk sac as primary source of nutrition.
2	FRY	Stage from independence of yolk sac as primary source of nutrition to dispersal from the redd.
3	PARR	Stage from dispersal from redd to migration as a smolt. 0+ parr = parr less than 1 year old (= parr of the year's hatch). 1+ parr = parr 1 year or over but less than 2 years. 2+ parr = parr 2 years or over but less than 3 years. 3+ parr = parr 3 years or over but less than 4 years. Precocious parr = male parr fully ripened or matured in freshwater. Partially silvered parr = parr that are partially silvered and migrating downstream prior to the normal smolt run.
4	SMOLT	Fully-silvered juvenile salmon migrating to the sea.
5	POST-SMOLT	Stage from departure from river until onset of wide annulus formation at the end of the first winter in the sea. ("Pre-grilse" = post-smolt stage returning into freshwater to spawn in year of smolt migration).
6	SALMON	All fish after onset of wide annulus formation at the end of the first winter in the sea.
(a)	1-sea-winter salmon	Salmon which has spent one winter at sea (= "grilse" when maturing to spawn).
(b)	2-sea-winter salmon	Salmon which has spent two winters at sea.
(c)	3-sea-winter salmon	Salmon which has spent three winters at sea.
(d)	4-sea-winter salmon	Salmon which has spent four winters at sea.
(e)	Previous spawner	Salmon which has spawned on previous occasion(s).
7	KELT	Spent or spawned-out salmon up until the time it enters saltwater.

yearling" and "fingerling" have been deleted. If terms other than those in this revised terminology list are used in scientific papers, authors are urged to define them carefully.

In the following pages we propose a set of definitions and terms to designate the different life stages of the Atlantic salmon, as summarised in Table 1. The national terminologies for the stages are set out in Table 2.

(1) *Alevin*. The first stage through which the salmon passes after hatching is termed the alevin stage and is usually found within the gravel of the redd. Alevin encompasses the period during which the young fish is dependent upon the yolk sac as the primary source of nutrition.

(2) *Fry*. The term fry has frequently been used to designate the stage lasting from complete absorption of the yolk sac to the end of the first year of post-hatching life. This usage is not appropriate since in those parts of the species range where migration to the sea may take place at the end of the first year of post-hatching life migrants would not have passed through the parr stage between the fry stage and the smolt stage.

We, therefore, suggest that the term fry be used to define that stage beginning with independence from the yolk sac as the primary source of nutrition and terminating with dispersal from the redd. Fry are found over the redd after emergence as alevins from the gravel and are capable of feeding, although vestigial traces of the yolk sac may remain. The duration of this stage is short and normally measured in days.

(3) *Parr*. The parr stage follows next and this starts with dispersal from the redd and continues up to the time the young fish become fully silvered and start their seaward migration as smolts (see below).

The parr stage is often sub-divided according to both age and size. Age-designation is clearly the most precise usage and the terms 0+, 1+, 2+ parr, etc., are commonly used to describe parr of less than 1 year, 1 year or over but less than 2 years, 2 years or over but less than 3 years, etc. respectively.

Size-designation is less precise but may be of more practical value when dealing with large numbers of fish during field surveys for population estimates. Samples collected for such purposes are often divided into 3 categories: 0+ parr, "small" parr and "large" parr. The 0+ parr are fish from the current year's

hatch, the “small” parr are those fish which are not likely to become smolts the following spring and are not of the current year’s hatch, and the “large” parr are considered to be those fish which are likely to become smolts the following spring. This latter category is usually comprised of fish of different years’ hatches but all of which exceed an arbitrary minimum size limit which may vary from river to river.

In some parts of the species range, parr may become partially silvered and migrate downstream earlier than the normal time for the true smolt migration. Such fish should be designed as partially-silvered parr and not smolts.

Also, parr may migrate into and out of various water impoundments at different times; these fish should not be designated as smolts.

Some male parr may ripen or mature during their freshwater residency. These mature parr are known to produce viable sperm and are capable of fertilizing eggs. Such fish are designated as precocious parr.

(4) *Smolt*. The smolt stage is defined as a fully-silvered juvenile salmon during its first seaward migration, normally in the spring, and is capable of surviving transition from fresh water to fully saline water.

(5) *Post-smolt*. The post-smolt stage refers to the juvenile salmon from the time that it departs from the river as a smolt until the onset of wide annulus formation on the scales at the end of the first winter in the sea, when it becomes a 1-sea-winter salmon (see 6, below). However, there are records of return to freshwater in the same year as migration occurred as a smolt. In view of the spawning maturation connotation of the colloquial term “grilse” (see below) the terms “pre-grilse” or pre-1-sea-winter salmon would seem to be appropriate to describe such fish. They are, however, of comparatively rare occurrence in Atlantic salmon.

(6) *Salmon*. The terminologies used for maturing fish returning from the sea to spawn are varied and depend, in some classification systems, on the season of return and in others on the size of the fish, the number of winters spent at sea, or on the age and previous history of the fish as indicated by growth patterns on its scales. Clearly, the latter designation is the most specific, but the more usual designation in common use is that which describes the number of sea-winters. This is more specific than the number of sea-years.

In consideration of the above we suggest that the term salmon should be used to designate all fish

after the post-smolt stage. Age should be defined by the number of winters elapsing since the fish entered the sea as a smolt.

The colloquial term “grilse”, representing a salmon which has first matured, or is about to mature, after one sea-winter is strongly entrenched in common use and in the literature. However, this term is a source of inaccuracy as it is frequently applied to salmon within an arbitrary length or weight range which may include fish of different sea-ages. Therefore, we recommend that if the term “grilse” is used instead of the more precise sea-winter terminology, it be initially defined.

The term “grilse” has a maturation connotation and it should not be used for 1-sea-winter salmon caught during the marine feeding phase. Such fish may not be maturing to spawn but be destined to spend a second winter (or more) at sea before doing so. Salmon of 2 or more sea-winters, as a group, should be referred to as multi-sea-winter salmon.

The extent to which the salmon sea-winter age-classes are segregated on entering the rivers as distinct seasonal “runs” in spring, summer and autumn or fall varies widely. All, or only some, of the seasonal runs may be present and one or more runs may predominate. In those United Kingdom rivers classed as “grilse rivers”, for instance, the 1-sea-winter fish predominate and enter the river mainly as a summer run but may continue to arrive as late as the spawning months.

When the year-class composition of a seasonal run is sufficiently well established such seasonal terminology may have some value, in view of the genetic and feeding migration implications for stock management. Where such seasonal terms are used, however, they should always be carefully defined initially because salmon of different sea-winter age-classes can overlap considerably in their run timing.

The descriptions “small” or “large” for salmon are subjective and thus imprecise and should be avoided. If such terms have to be used to indicate loose groupings of individuals – for instance in reporting a sport or commercial catch for which identification of age-classes may not be possible – the ranges of lengths or weights used within the groupings should be specified. Classification of salmon by weight or length is also imprecise in that a considerable overlap for the various sea-winter age-classes can occur.

Salmon of any age-class which are maturing to spawn for the first time are described as “maiden” or “virgin” salmon.

Salmon of any age-class which are maturing to spawn for a second (or subsequent) time are referred to as “previous spawners”. We have chosen the word

“previous” rather than “repeat”, even though the latter is widespread in current usage. The term “previous spawner” applies to fish at any time after initial spawning whereas the term “repeat spawner” is only appropriate when describing fish that have actually spawned the second time (or more).

The terminology of fish with a spawning history should take into consideration: (i) the sea age of the fish at initial spawning, (ii) the temporal pattern of the subsequent spawning migrations, and (iii) the number of previous spawnings.

It is suggested, therefore, that previous spawning fish be categorized according to their designation of first spawning. Thus, a fish which spawned initially as a 1-sea-winter salmon (grilse) remains a 1-sea-winter salmon (grilse) throughout its subsequent history and is, accordingly, designated as a previous spawning 1-sea-winter salmon (previous spawning grilse). Older previous spawning salmon can be designated similarly.

The proportion of Atlantic salmon which spawn a second time is variable; in some stocks they make a significant contribution, in others they are rarities. The proportion which spawn a third or fourth time, however, is very small. It is considered, however, that as considerable interest attaches to these multiple spawners some system of terminology should be applied to them.

The temporal pattern of successive spawnings is frequently consistent for an individual fish in that it spawns every year or every other year. Fish attaining sexual maturity in these two patterns are designated as consecutive or alternate spawners, respectively. Other descriptions in common use are short-absence and long-absence for fish which return to spawn in consecutive or alternate years, respectively.

Until first spawning, the use of sea-winters to designate the age of the fish is unequivocal but because the winter during which spawning takes place may be spent wholly in the river and not in the sea the designation of the fish's age thereafter in terms of sea-winters could be a technical misuse of the term.

In the case of a multiple spawner, for instance, there will have been 1 or more pre-spawning sea-winters followed by either a succession of river winters (successive spawner) or an alternation of river and sea-winters (alternate spawner).

To devise a special nomenclature to take account of these behaviour patterns in expressing the total age of the fish would be cumbersome and, indeed, some salmon which spawn early in the season (e.g. November) return quickly to the sea as kelts and therefore spend most of their spawning winter back in the sea.

It is proposed, therefore, that the designation of

total age in the terms already suggested indicates adequately the history of the fish. For example, a “2-sea-winter previous spawner, 2 consecutive spawnings” would indicate a fish which returned to spawn initially after 2 winters in the sea, and spawned twice more, in each of the years following the initial spawning year, i.e. a five-year old salmon (ignoring the pre-smolt river years); whereas a “2-sea-winter previous spawner, 2 alternate spawnings” would indicate a fish which returned to spawn initially after 2 winters in the sea and spawned twice more in alternate years following the initial spawning year, i.e. a seven-year old salmon.

A fish which changed its return habit would be described as a “2-sea-winter previous spawner, 1 consecutive 1 alternate spawning” or a “2-sea-winter previous spawner, 1 alternate 1 consecutive spawning”, both indicating a six-year old salmon and the order in which the spawning habit had altered.

This terminology would thus tacitly accept that the spawning winter, or a part of it, had been spent in freshwater.

(7) *Kelt*. Among fishery workers disagreement exists over the definition of the term kelt. All agree that this term refers to a spent or spawned-out salmon but disagree about the termination of the stage. According to some individuals, viewing the salmon as a marketable food item, a spawned-out salmon ceases to be a kelt when it has recovered the condition and weight lost during and following its spawning migration. Other individuals state that a spent salmon ceases to be a kelt when it re-enters salt water. We tend to agree with the latter definition as it is more specific than the former and is more meaningful in light of the physiological changes that take place with re-entry into salt water (i.e. re-acclimation, beginning of feeding and replacement of weight lost and silvering).

Because the two definitions for the term kelt are likely to cause misinterpretation, we urge authors to define the term carefully when it is used initially.

(8) *Fish culture terminology*. The terminology used in fish culture may be different from the above and is likely to be more detailed and chronological in relation to the early developmental stages. However, for the sake of uniformity it is recommended that, so far as is possible, the terminology used by fish-culturists follow that set out in this paper.

Table 2. National terminology for Atlantic salmon (Salmo salar L.).

Stage (see Table 1)	English	Canada	French	Denmark	Finland	France	Federal Republic of Germany	Ireland	Republic of Ireland	Netherlands	Norway	Poland	Portugal	Spain	Sweden	United Kingdom	U.S.A.	USSR
1.....	Adult	Adult	Adult	Blommande Speefisg	Kuoniantu polkovan	Adult	Adult	Adult	Adult	Larve	Larve	Wyląg	Adult	Adult	Adult	Adult	Adult	Adult
2.....	Fry	Fry	Fry	Yngel	Yngel	Yngel	Yngel	Yngel	Yngel	Yngel	Yngel	Yngel	Yngel	Yngel	Yngel	Yngel	Fry	Fry
3.....	Parr	Parr	Parr	Unglake	Lohpolkovan	Taou (= Taou)	Junglake (Junglake)	Parr	Parr	Jonge zalm	Sommergammel, vedling etc.	Młody losos	Caou	Parr	Parr	Parr	Parr	Parr
	Pre-cocious parr (= precocious parr)	Taou gésèque (= precocious parr)	Taou (= Taou)	Unglake	Lohpolkovan	Taou (= Taou)	Junglake (Junglake)	Pre-cocious parr	Pre-cocious parr	Jonge zalm	Sommergammel, vedling etc.	Młody losos	Caou	Parr	Parr	Parr	Parr	Parr
4.....	Smolt	Smolt	Smolt	Uvæncaudunuglak	Välispolkovan	Taou (= Taou) de escaut	Alvæncaudunuglak	Smolt	Smolt	Jonge aftrakkende zalm	Smolt	Smolt	Novatas	Egum y Puro	Smolt	Smolt	Smolt	Smolt
	Post-smolt	Post-smolt	Post-smolt	Smolt	Smolt	Smolt	Smolt	Post-smolt	Post-smolt	Jonge aftrakkende zalm	Smolt	Smolt	Novatas	Egum y Puro	Smolt	Smolt	Smolt	Smolt
5.....	Post-smolt	Post-smolt	Post-smolt	Smolt	Smolt	Smolt	Smolt	Post-smolt	Post-smolt	Jonge aftrakkende zalm	Smolt	Smolt	Novatas	Egum y Puro	Smolt	Smolt	Smolt	Smolt
6.....	Salmon	Salmon	Salmon	Laks	Laks	Salmon	Laks	Salmon	Salmon	Laks	Laks	Grise	Salmon	Salmon	Salmon	Salmon	Salmon	Salmon
(a).....	1-sea-year salmon	Salmon d'un an	Salmon d'un an	Sal sommerlak	Laks	Salmon	Laks	Salmon	Salmon	Laks	Laks	Grise	Salmon	Salmon	Salmon	Salmon	Salmon	Salmon
	1-sea-winter salmon (Grise)	Salmon d'un an	Salmon d'un an	Sal sommerlak	Laks	Salmon	Laks	Salmon	Salmon	Laks	Laks	Grise	Salmon	Salmon	Salmon	Salmon	Salmon	Salmon
(b).....	2-sea-year salmon	Salmon de deux ans	Salmon de deux ans	Meltemor	Laks	Salmon	Laks	Salmon	Salmon	Laks	Laks	Grise	Salmon	Salmon	Salmon	Salmon	Salmon	Salmon
	2-sea-winter salmon	Salmon de deux ans	Salmon de deux ans	Meltemor	Laks	Salmon	Laks	Salmon	Salmon	Laks	Laks	Grise	Salmon	Salmon	Salmon	Salmon	Salmon	Salmon
(c).....	3-sea-year salmon	Salmon de trois ans	Salmon de trois ans	Stu	Laks	Salmon	Laks	Salmon	Salmon	Laks	Laks	Grise	Salmon	Salmon	Salmon	Salmon	Salmon	Salmon
	3-sea-winter salmon	Salmon de trois ans	Salmon de trois ans	Stu	Laks	Salmon	Laks	Salmon	Salmon	Laks	Laks	Grise	Salmon	Salmon	Salmon	Salmon	Salmon	Salmon
(d).....	4-sea-year salmon	Salmon de quatre ans	Salmon de quatre ans	Stu	Laks	Salmon	Laks	Salmon	Salmon	Laks	Laks	Grise	Salmon	Salmon	Salmon	Salmon	Salmon	Salmon
	4-sea-winter salmon	Salmon de quatre ans	Salmon de quatre ans	Stu	Laks	Salmon	Laks	Salmon	Salmon	Laks	Laks	Grise	Salmon	Salmon	Salmon	Salmon	Salmon	Salmon

Notes: 1, 2 and 3 = Salids of Bels; 4 = commercial catches.
 4 = Salids of Bels; 5 = commercial catches.

Notes: Sweden 1. Up to 1/6 December only.
 2. Return to Baltic salmon.

- 3. Return to Baltic salmon.
- 4. Return to Baltic salmon.
- 5. Return to Baltic salmon.
- 6. Return to Baltic salmon.
- 7. Return to Baltic salmon.
- 8. Return to Baltic salmon.
- 9. Return to Baltic salmon.
- 10. Return to Baltic salmon.
- 11. Return to Baltic salmon.

Part II. A terminology list for migratory trout (*Salmo trutta*, L.)

Introduction

In response to the request of the Anadromous and Catadromous Fish Committee of the International Council for the Exploration of the Sea a terminology list for the migratory form of the trout, *Salmo trutta*, L. was prepared by Allan (1967b). The present paper is based on that document but incorporates various improvements largely derived from a paper on Atlantic salmon terminology by Ritter and Harger (1974).

Contributions to the terminology list have been received from the following countries: Belgium, Canada, Denmark, Finland, France, Federal Republic of Germany, Netherlands, Republic of Ireland, Norway, Poland, Sweden, United Kingdom, United States of America and U.S.S.R.

The indigenous European, or brown, trout, *Salmo trutta*, occurs in both migratory and non-migratory forms, and also an intermediate form which inhabits estuaries for feeding purposes. The present paper refers only to the fully anadromous form of the species commonly called migratory trout or sea-trout.

The purposes of this paper, as in the case of Part I on Atlantic salmon, are to enable fishery scientists to interpret correctly the terms used in foreign scientific literature and to propose a terminology list for use by scientists and fishery managers.

Where alternative terminologies are used it is urged that authors define their terms carefully, in order to avoid misinterpretation.

Review of terminology

(1) *Alevin, fry, parr and smolt*. The biology of the early life-stages of the migratory trout has a great deal in common with that of the Atlantic salmon and it is feasible, therefore, to use the same criteria in defining the alevin, fry, parr and smolt stages as are used in Part I of this paper relating to that species. These criteria are set out in the terminology list, in Table 3. In so far as there is no record of the existence precocious male migratory trout parr (such fish, if they exist, would probably be indistinguishable from mature non-migratory members of the species), nor of partially-silvered migratory trout parr, these variants are not included in the terminology.

(2) *Post-smolt*. After the smolt stage the biology of the two species differs both as to the period which

may be spent in the sea before return to freshwater and as to the age at which maturation takes place.

The duration of the trout post-smolt stage is very variable. In some cases the fish spend the first winter in the sea after migrating as smolts (as is the case with Atlantic salmon), and return to spawn in the year following their smolt migration. In other cases (and these may constitute the majority) they return to freshwater in the same year as they migrate as smolts and may, or may not, then spawn. Some of these early-returning fish, for which special terms are used in some countries, return to the sea soon after their arrival in freshwater and others over-winter in freshwater and return to the sea in the following year.

This variation in maturation and return-pattern creates considerable terminological difficulties: to cover all the possible variations would necessitate a complex list of terms the utility of which would seem to be doubtful. It is suggested, therefore, that, whilst acknowledging that a "post-smolt" stage occurs after departure from the river as a smolt, it is not feasible to define a single specific end-point to this life-stage as is possible with Atlantic salmon. Because migratory trout in the post-smolt feeding stage form the basis of some localised coastal, commercial fisheries, however, the term must be retained in the nomenclature list and it is defined, therefore, as the period embraced by departure from the river as a smolt until:

- (a) return to freshwater in the year of smolt migration, or
- (b) the end of the first sea-winter, if there is no return in the smolt migration year, as indicated by the onset of wide annulus formation on the scales.

As in the case of the Atlantic salmon, the onset of wide-annulus formation on the scales, indicating the resumption of rapid growth, is a convenient biological marker for the end of the first sea-winter.

(3) *Migratory trout (sea-trout)*. It is suggested that the terms migratory trout (or sea trout) be used to designate all fish after the post-smolt stage as defined above, and that their age-classes should be defined as the number of sea-winters elapsing since the fish migrated as a smolt.

An early-returning post-smolt, on re-entering freshwater in its smolt migration year would thus be designated as an 0-sea-winter migratory trout, a post-smolt which had over-wintered at sea after smolt migration would become a 1-sea-winter migratory trout.

(4) *Spawning terms.* Migratory trout of any age class which are maturing to spawn for a second (or subsequent) time are referred to as previous spawners.

The terminology for fish with a spawning history should relate to the age at initial spawning and the number of previous spawnings. Once a migratory trout has spawned it is usual for it to spawn in each consecutive year thereafter.

A migratory trout returning to spawn again after having originally spawned as an 0-sea-winter fish would, therefore, be designated as an 0-sea-winter previous spawner, and the number of spawning occasions added; for example: 0-sea-winter previous spawner, 3rd spawning.

However, if that fish had not spawned on its first return to freshwater as an 0-sea-winter fish but had returned to the sea, to re-enter freshwater to spawn the following year and then in subsequent years it would be designated as a 1-sea-winter previous spawner. Thus the designation indicates the original spawning-pattern, not the original return-pattern, as it is suggested that this definition is the more important biologically. The number of the subsequent

spawning is then added, e.g. 1-sea-winter previous spawner, 3rd spawning.

(5) *Kelt.* The term kelt refers to a migratory trout of both sexes and of any age-class which has recently spawned and has not yet recovered condition. As migratory trout kelts may spend a prolonged period in the river after spawning and usually resume active feeding in freshwater, thereby regaining their condition, it is proposed that the termination of this life stage should be taken as either:

- (a) when the fish re-enters salt water or
- (b) when scale re-growth has become initiated.

This term will apply to those 0-sea-winter fish which spawn as well as to the older sea-winter classes.

(6) *Artificial propagation.* The terminology used in defining the life stages of cultivated migratory trout should, where possible, follow those used in designating the wild fish in order to avoid misapprehension in interpreting reported results from re-stocking, and

Table 3. Terminology list for migratory trout (Sea-trout) (*Salmo trutta*, L.)

Stage	Term	Definition
1	ALEVIN	Stage from hatching to end of dependence on yolk sac as primary source of nutrition.
2	FRY	Stage from independence of yolk sac as primary source of nutrition to dispersal from the redd.
3	PARR	Stage from dispersal from redd to migration as a smolt. 0+ parr = parr less than 1 year old (= parr of the year's hatch). 1+ parr = parr 1 year or over but less than 2 years. 2+ parr = parr 2 years or over but less than 3 years. 3+ parr = parr 3 years or over but less than 4 years.
4	SMOLT	Fully silvered juvenile migratory trout.
5	POST-SMOLT	Stage from departure from river as a smolt until (a) entry into freshwater in the smolt-migration year, or (b) the end of the first sea-winter, if there is no return to freshwater in the smolt migration year, as indicated by wide annulus formation.
6	MIGRATORY TROUT (= SEA-TROUT)	All fish after the post-smolt stage.
(a)	0-sea-winter migratory trout	Fish which has returned to freshwater in year of its smolt-migration.
(b)	1-sea-winter migratory trout	Fish which has returned to freshwater after 1 winter at sea.
(c)	2-, 3-, (etc) sea-winter migratory trout	Fish which has returned to freshwater after 2, 3, (etc) winters at sea.
(d)	Previous spawner	Fish which has spawned on previous occasion(s) either as an 0-sea-winter migratory trout or after 1 or more sea-winters.
7	KELT	Spent or spawned-out migratory trout (a) until re-entry into salt water or (b) which shows re-growth on scales.

Table 4. National terminology for migratory trout (*Salmo trutta*, L.)

Stage (see Table 3)	Belgium	English	Canada	French	Denmark	Finland	France	Federal Republic of Germany	Republic of Poland	Netherlands	Norway	Poland	Sweden	United Kingdom	U.S.A.	U.S.S.R.
1.....		Alevin, (fry)	Alevin, vesiculé	Alevin vesiculé	Boummergel Speefingel	Kantamatti polkanen	Alevin vesiculé	Dorersabrut	Alevin		Plommesekk yngel, Larve	Wyteg	Gulsås-yngel	Alevin	Alevin	Predlichinka
2.....		Fry (advanced fry) ¹	Alevin	Alevin	Yngel	Yaksarjyngel polkanen	Alevin	Fressbige Brut Vogelstucke Brut	Fry		Yngel (Småyngel)	Narybak	Yngel	Fry	Fry	Lichinka
3.....		Parr Under-yearling ² Yearling, fingerling ³	(Parr)	(Parr)	Ungarned 1,2 års orned = 0+ parr	Polkanen	(Parr)	Selung	Parr		Yngel, unger (Emsung yngel = 0+ parr)	Pulzak, perlek, ego- rozoy = 0+ parr	Slurr	Parr 0+, 1+, 2+ etc	Parr Under-yearling = 0+ parr	Segoleuk (= fingerling)
4.....		Smolt, trout parr, brown trout smolt		(Smolt)	Uvønderende ungarned, smolt	Vealispolkanen	(Smolt)	Auswanderndes Selding	Smolt	Junge zeline Junge stotzahn	Smolt	Smolt	Smolt	Smolt	Smolt	Poklanik
5.....														Post-smolt		
6.....	Traite de mer Zeevoel	Sea-trout ⁴ , sea-trout brown trout	Traite de mer	Traite de mer	Havørred	Merikainen	Traite de mer	Merfelle, (Lachsforelle)	White trout	Zeevoel Schotzahn	Sjøaure	Troć	Havöring	Migratory trout, sea-trout	Sea-trout	
(6).....					Gronlander			Füllbacher			Bleke, Bleike, Blik	Trocka, biatka		Whiting, Peal, Finnock, Sewin		Kumaha Kaspysky losos Kuminsky losos Chernomosky losos Morskaya forel
(6).....														1 sea-winter migratory trout		
(6).....														2+, 3- (etc) sea-winters migratory trout		
(6).....		Previous spawner						Madrifullbacher			Ålen gangs (etc) gyser	Wielokrotny Tartak 2-(etc) krotny		Previous spawner		Povorno nerestuyushaya
7.....		Sea-trout left, brown trout left			Nedfildserred			Parr, Alpische Merforelle			Uggrt sjøaure, Uggrt bleke, Vinnersjøing, Evelsjøing	Troć po tarce	Ullekt öring	Migratory trout left Sea-trout left, whiting (etc) left		Válchajak

Notes: Canada 1. Stage for a period of 2 weeks following complete absorption of yolk sac.
 2. Stage from 1 to 2 years old from date of hatch.
 3. Stage from advanced fry to 1 year from date of hatch.
 4. This term also used for migratory *Salvelinus fontinalis* and *Salvelinus gairdneri*.

other experiments. More elaborate subdivision of the early life stages may, however, be necessary for hatchery purposes.

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