MANUEL A. MARTINEZ (SBN 115075)
NEYSA A. FLIGOR (SBN 215876)
STEIN & LUBIN LLP
600 Montgomery Street, 14th Floor
San Francisco, CA 94111
Telephone: (415) 981-0550
Facsimile: (415) 981-4343

Attorneys for Proposed Intervenors
THE NEW 49'ERS, INC., a California corporation, and
RAYMOND W. KOONS, an individual

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF ALAMEDA

UNLIMITED CIVIL JURISDICTION

KARUK TRIBE OF CALIFORNIA and LEAF HILLMAN,

Plaintiffs,

v.

CALIFORNIA DEPARTMENT OF FISH AND GAME and RYAN BRODDRICK, Director, California Department of Fish and Game,

Defendants.

Case No. RG05 211597

REQUEST FOR JUDICIAL NOTICE IN SUPPORT OF REPLY MEMORANDUM OF THE NEW 49'ERS, INC., AND RAYMOND W. KOONS IN OPPOSITION TO [PROPOSED] STIPULATED JUDGMENT

Res. No.: 556514
Date: January 26, 2006
Time: 9:00 A.M.
Judge: Honorable Bonnie Sabraw
Place: Department 512

Action Filed: May 6, 2005
Trial Date: none set

Proposed intervenors The New 49'ers, Inc., a California corporation, and Raymond W. Koons, an individual, (collectively "the Miners") request that, pursuant to California Evidence Code Sections 452 and 453 and Rule 323 of the California Rules of Court, this Court take judicial notice of the following documents the Miners offer in support of their Reply Memorandum in Opposition to the [Proposed] Stipulated Judgment:

1. C. Groot & L. Margolis, *Pacific Salmon Life Histories* 420 (U.B.C. Press 1991), a treatise, attached hereto as Exhibit A.

Dated: January 24, 2006

STEIN & LUBIN LLP

By: ______________________________

Neysa A. Fligor
Attorneys for THE NEW 49'ERS, INC., a California corporation, and MR. RAYMOND W. KOONS, an individual

Of Counsel:

James L. Buchal
MURPHY & BUCHAL LLP
2000 S.W. First Avenue, Suite 320
Portland, OR 97201
Telephone: 503-227-1011
Facsimile: 503-227-1034

Pacific Salmon Life Histories

EDITED BY C. GROOT AND L. MARGOLIS
Department of Fisheries and Oceans
Biological Sciences Branch
Pacific Biological Station, Nanaimo
British Columbia, Canada

UBCPress
Vancouver

Published in co-operation with the Government of Canada, Department of Fisheries and Oceans

EXHIBIT A

the level of aggression is low. No displacement occurs as subordinate fish are driven back but not out of the group (Hartman 1965). Coho that occupy lakes during the summer migrate out of the lake into inlet streams to overwinter (Gribanov 1948). However, in the Tenmile Lakes, Oregon, coho juveniles moved into the lakes following the fall freshets and reared there until the following spring (A. McGie, Department of Fish and Wildlife, Corvallis, Oregon, pers. comm.). In the spring, there is a strong movement of juvenile coho back to the main stream (Tschaplinski and Hartman 1983).

Growth of Fry and Fingerlings

With moderate water temperatures and an abundant food supply, coho fry will grow from 30 mm at emergence in March to 60-70 mm in September, to 80-95 mm by March of their second year, and to 100-130 mm by May (Rounsefell and Kelez 1940). Mason (1974) described two growth phases for coho of Great Central Lake, British Columbia. From April to mid-June, coho increased in length from 37 mm to 62 mm; in summer the growth slowed; and by October the coho averaged 72 mm in length. By the following April the coho were 90-130 mm in length, which reflects a second spurt of growth in the early spring following the period of no growth in midwinter.

During the winter months, feeding virtually ceases and growth stops. Low winter temperatures are a major cause of growth reduction, but winter floods and turbid water conditions also restrict feeding opportunities. Noggle (1977) observed that coho terminated feeding when sediment concentrations exceeded 300 mg/l (with some variation depending on the type of sediment), but that they did not abandon their territory even when sediment loads approached 4,000 mg/l. Where side channels are fed by groundwater, temperatures may be such that coho continue to feed and grow during the winter (G.F. Hartman, Department of Fisheries and Oceans, Nanaimo, British Columbia, pers. comm.). By March, when temperatures are on the rise, the fish again commence a period of rapid growth. Increasing temperatures and an abundance of insect food stimulate the resumption of feeding. The presmolts complete their final growth phase before starting on their seaward migration (Shapovalov and Taft 1954).

Fry and Fingerling Survival

During their life history stage in freshwater streams, two physical factors play a large role in coho survival: water discharge rate and temperature. Work by Neave (1948, 1949), Smoker (1953), and others has clearly demonstrated a correlation between summer flows and the catch of adult coho salmon two years later. Low summer flows reduce potential rearing areas (less wetted area), cause stranding in isolated pools, and increase vulnerability to predators (Cederholm and Scarlett 1981). High winter flows in typical coastal streams can be particularly hostile to fish 45-70 mm in size (Narver 1978). Coho fry production has been shown to be a function of the stability of winter flows (Lister and Walker 1966). McKernan et al. (1950) stated that winter flooding only had a significant impact when the flow was over 50% greater than the average flood. Extreme floods are almost invariably detrimental. When a flood commences, there is a greater abundance of food available as stream insects are dislodged from the gravel, but this disruption results in a loss of food production in the longer term, as the food sources are destroyed (Mundie 1969).

With low summer flows and high ambient air temperatures, the water temperature can approach or exceed the upper lethal temperature of 25°C for juvenile coho. Brett (1952) found that exposure to temperatures in excess of 25°C or a quick rise in temperature from less than 20°C to 25°C resulted in a high mortality rate. Prolonged exposure to water temperatures close to 0°C was tolerated by coho, but a sharp drop in temperature from 5°C to almost 0°C resulted in mortality. Brett (1952) also observed that juvenile coho preferred a temperature range of 12°-14°C, which is close to optimum for maximum growth efficiency.

Godfrey (1965) summarized the fry-to-smolt survival for two British Columbia streams, one Washington stream, and one California stream. He found that the published values for survival ranged from 0.70% to 9.65% with the average in the range of 1.27%-1.71%. Neave and Wickett (1953) estimated survival from egg to smolt for British Columbia coho to be 1%-2%. Most of the mortality takes place in the first summer. Based on fry outplants, Tripp and McCart (1983) concluded that summer mortality of coho fry was density-independent. In the following spring, the mortality rate was higher than during the winter period, but the mortality was still less than one-third that of the previous summer (Crone and Bond 1976). Survival for the fry-to-smolt stage was estimated by Fraser et al. (1983) at 7.3% for the Big Qualicum River. Drucker (1972) noted that the long period of freshwater residency probably resulted in a higher freshwater mortality but contributed to a lower marine mortality because smolts were larger when they went to sea. Mace (1983) estimated a 2%–4% loss to avian predators after the smolts reached the Big Qualicum River estuary. Because of the relatively low survival rates from fry to smolt, it is obvious that the freshwater environment plays a major role in the fluctuation of coho abundance.

Freshwater Predators

Predation is a major component of the mortality suffered by juvenile coho, but predator species and effect varies with stream system and geographical area. Fry and smolts are subject to predation by a wide variety of predators, especially when coho are aggregated in pools and side channels, or in years when the egg-to-fry survival is high and the fry are very abundant. Larkin (1977) indicated that rainbow trout (*Oncorhynchus mykiss*), cutthroat trout, Dolly Varden charr (*Salvelinus malma*), squawfish (*Ptychocheilus oregonensis*), and Rocky Mountain whitefish (*Prosopium williamsoni*) are all important predators of juvenile coho. Godfrey (1965) suggested that cutthroat trout were the main predators of coho fry in British Columbia, but Chapman (1965), in his studies of Oregon coho populations, found that cutthroat trout were not significant in coho fry mortality because only occasional fry were taken, even when they were abundant. Patten (1977) reported that torrent sculpins (*Cottus rhotheus*) were important predators of coho from the time of emergence at a size of 30 mm until the coho were 45 mm; fry larger than this were rarely taken by sculpins. Logan (1968) found that 31% of the Dolly Varden charr stomachs examined from an Alaskan coastal stream contained coho juveniles. Shapovalov and Taft (1954) observed that predatory fish were responsible for most of the coho loss in California, but that garter snakes (*Thamnophis sirtalis*) were also able to capture coho fry, especially in pools that were drying up.

Dippers (*Cinclus mexicanus*), robins (*Turdus migratorius*), crows (*Corvus brachyrhynchos*), herons (*Ardea herodias*), and fish-eating ducks (e.g., *Mergus merganser*) all consume significant numbers of coho. Wood (1984), in his study of the foraging behaviour and dispersion of common mergansers (*M. merganser*), found that 40-g coho smolts were selected over 2-g coho fry and suggested that the difference in capture frequency could be explained by the difference in conspicuousness due to size. He further observed that, as density of smolts increased, or the amount of cover decreased, the rate of capture by mergansers increased. However, coho smolts, having once been exposed to merganser attacks, were less likely to be captured in subsequent attacks. During the winter months, the avian predation rate is much lower, partly because the migratory species may have departed to southern wintering areas, and also because the coho are hiding. In many streams the presence of an ice cover over the stream makes them less vulnerable (Crone and Bond 1976). Mammals such as mink (*Mustela vison*) and otter (*Lutra canadensis*) prey heavily on over-wintering juveniles and migrating smolts. Predators tend to take a fixed number of prey so that the proportion of prey taken increases as the number of prey decreases. In those situations where salmon fry are reduced to small numbers, the predators can eliminate them entirely (Larkin 1977).

Juvenile Colour

In the alevin stage, young coho have silver- or gold-coloured bodies and large vertically oval blobs of dark brown pigment (parr marks) in a row along the lateral line (Plates 17 and 19). The lateral line bisects most of the parr marks, and the pale area between the parr marks is greater than the width of a parr mark (Scott and Crossman 1973). The back and sides are often cinnamon-yellow and the fins are tinged with orange. Once the fish reach a size of 10–14 cm, the long, narrow, dark brown parr marks along the side (usually 11 per side) are distinctive, the rest of the body is a dull gold colour, and the fins are varying tones of orange (Gribanov 1948) (Plates 17 and 18). The anal fin has a