Anonymous 1993

Downstream Migrant Trapping Information
Prairie Creek 1993

The winter of 1992/'93 was the end of six years of drought in the West with nearly 125% of normal rainfall in Humboldt County. The effect of a wet spring on top of a normal winter was prolonged high flows in Prairie Cr. through early May. In mid May PCFWWRA installed two downstream migrant traps of a pipe design into Prairie Cr. in order to help assess Chinook egg to smolt survival for the '92/'93 brood year. Both traps were located just below the section of stream surveyed by RNP staff for spawning activity during the winter spawning period. The traps were attended daily until a large winter type storm rendered them ineffective on Memorial Day weekend and were removed. After June 15th the traps were re-installed and operated through August. The traps were removed at the end of August due to the low numbers of Chinook smolts migrating. *Relatively high numbers of juvenile Chinook could still be seen residing in larger pools at this time.*

All fish were classified as to species and measured to within 1 millimeter of fork length. Any mortalities were noted as well as any visually observable irregularities in health condition.

In order to provide a means to extrapolate from observed numbers to an estimate of total numbers of smolts, several attempts were made at calibrating the efficiency of the traps. A mark/recapture methodology utilizing a slight caudal fin clip was used on four separate occasions under varying flow conditions to assess trap efficiency. *This method was selected as the best practicable but may tend to overestimate the total population due to trap avoidance by previously captured fish.*

The efficiency of the two traps combined increased from 25% in mid May, to 45% at the end of June, and 52% and 54% in late July and mid August respectively. The increase in trap efficiency is related to flow volume and increases as flows decrease during summer.

A total of 4,328 migrating Chinook smolts were observed during this time period. Of this number, 262 were in May. The trap efficiency calculated for May was based on one test with low numbers of fish which gave a 25% efficiency and expands the estimate of migrants to 1,048 for this period.

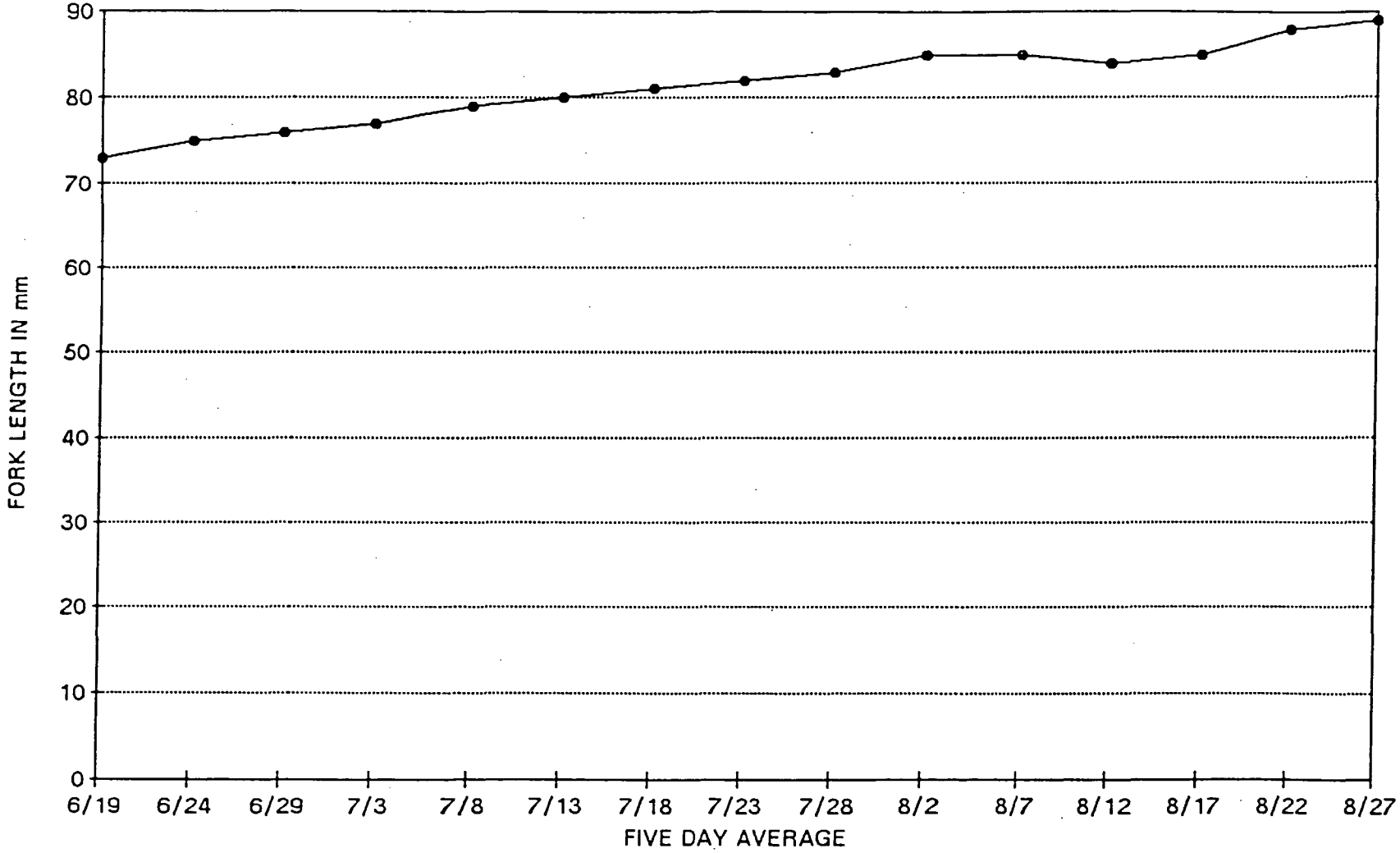
Of the remaining 4,061 observed from June 17th through August, a total of 2,687 or 66.2% were coded wire tagged

from a release of 13,380 on June 14th & 15th. A total of 1,374, or 33.8% were the product of wild spawning fish.

The observed numbers were expanded by the trap efficiency curve to 5,420 cwt smolts, and 2,835 wild produced smolts. These numbers should not be used as an estimate of total Chinook smolt production for the year due to the probability of significant migration prior to trap installation and during the early June high flows when the trap was inoperable. The opportunity to estimate the smolt production during periods when the trap was inoperable may exist by comparing Prairie Creek to a rotary trap in Little River which was able to operate in higher flows.

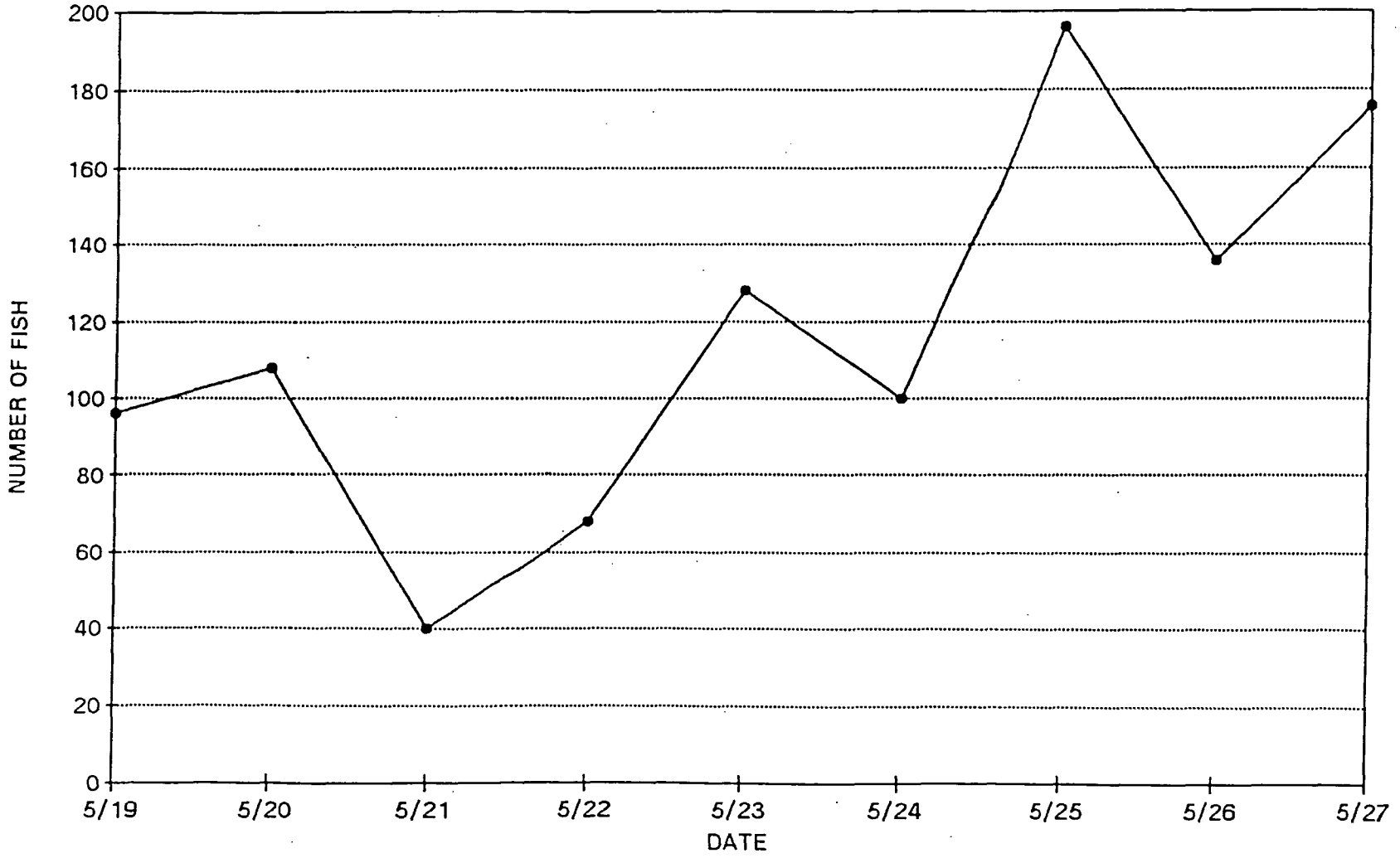
FORK LENGTH OF AD CLIP CHINOOK

DOWNSTREAM MIGRANT TRAP 1993



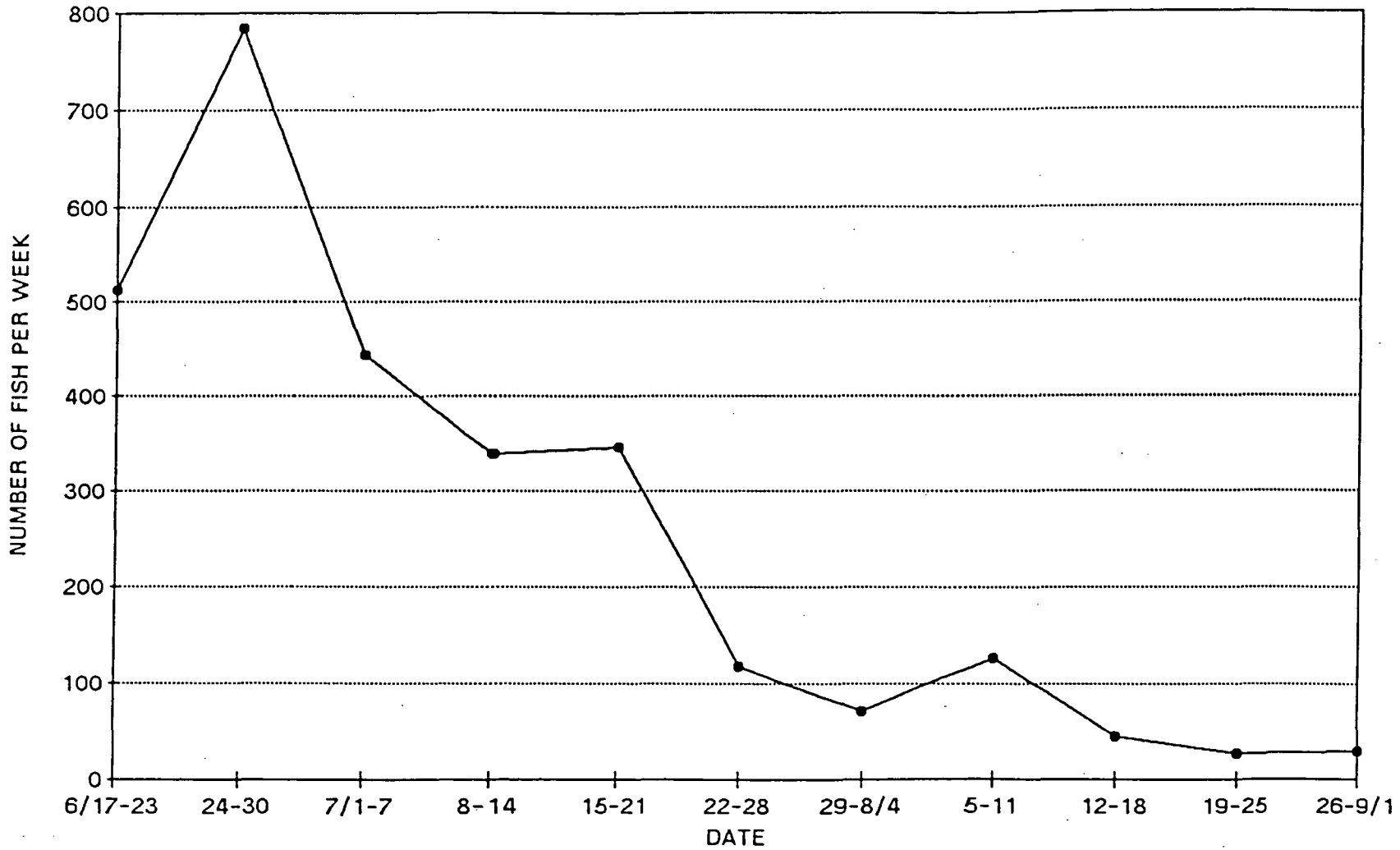
EXPANDED NUMBER WILD CHINOOK MIGRANTS

DOWNSTREAM MIGRANT TRAP 1993



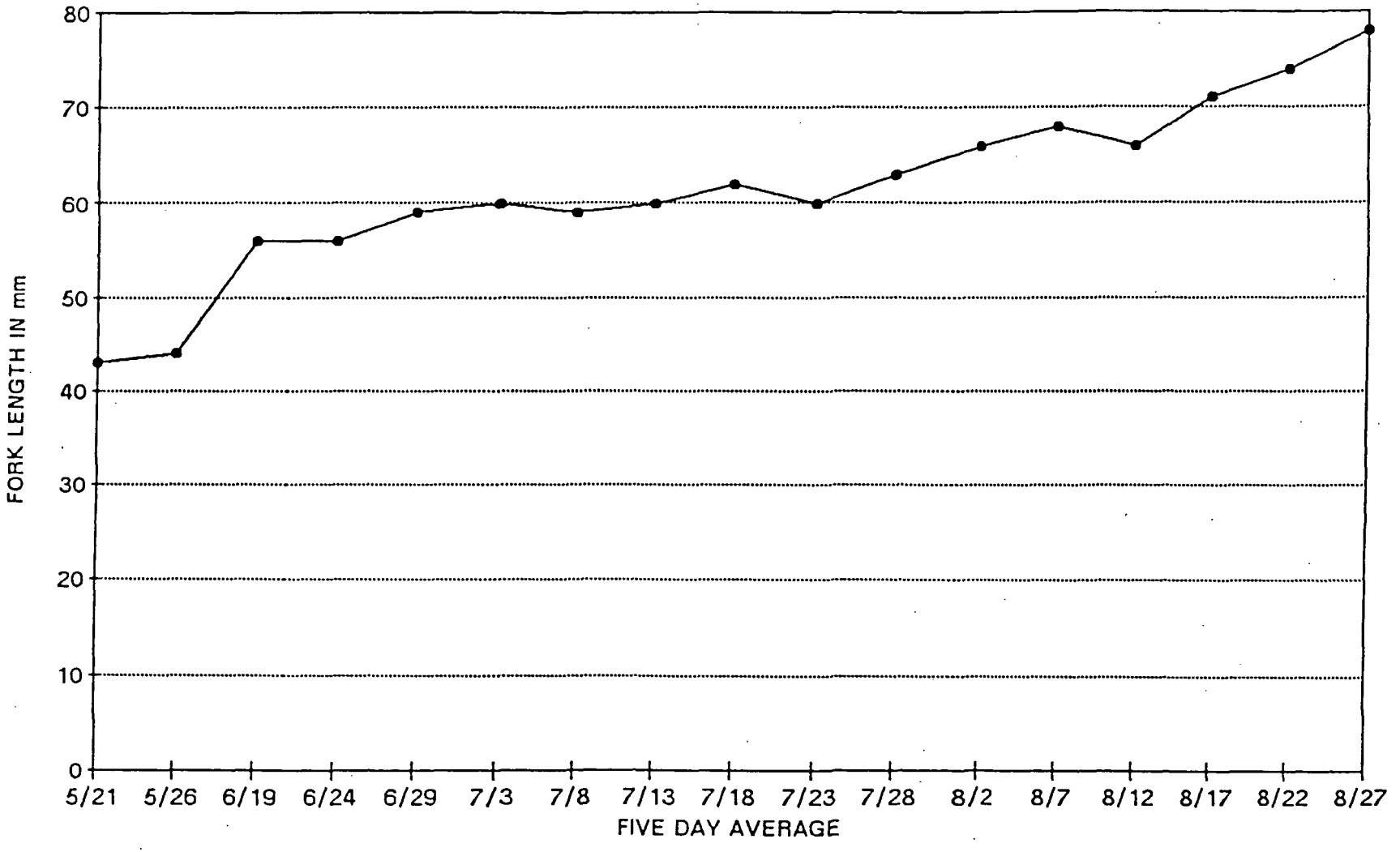
EXPANDED NUMBER WILD CHINOOK MIGRANTS

DOWNSTREAM MIGRANT TRAP 1993



FORK LENGTH OF WILD CHINOOK

DOWNSTREAM MIGRANT TRAP 1993



EXPANDED AD CLIP CHINOOK MIGRANTS

DOWNSTREAM MIGRANT TRAP 1993