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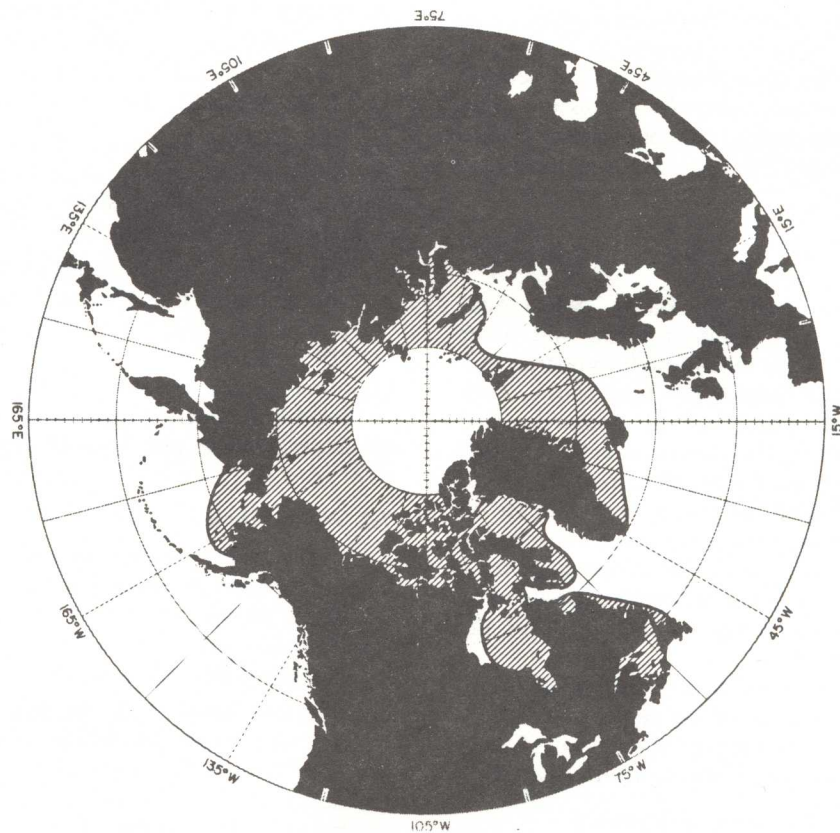


Fig. 1. Approximate limits of winter ice (15 year average).

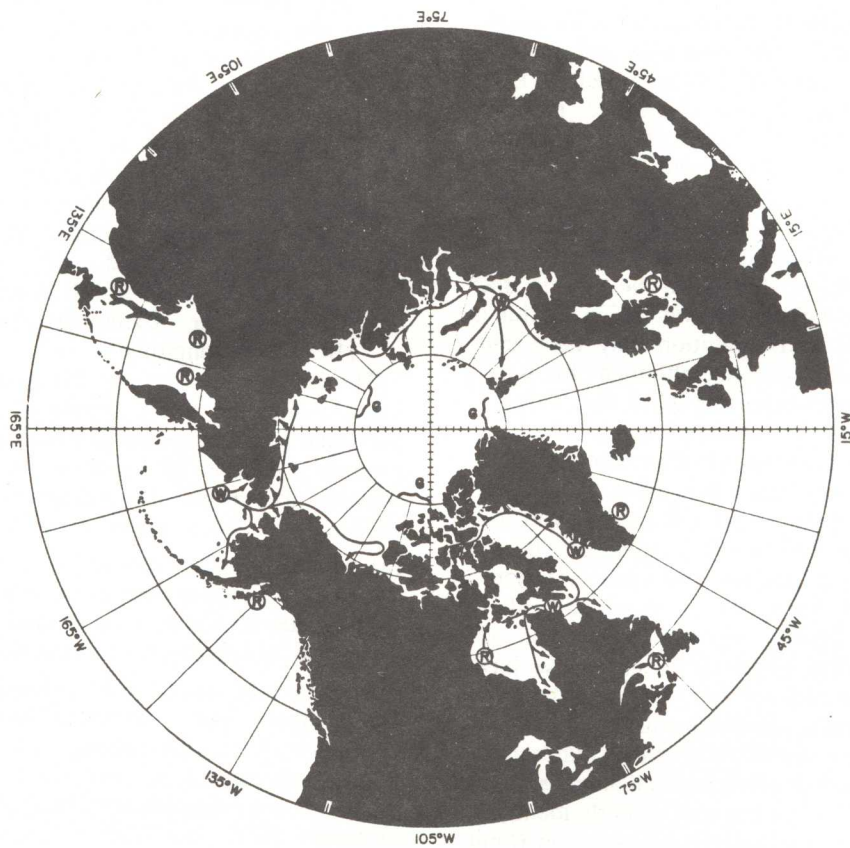


Fig. 2. Conceptual model of distribution and movements of white whales. Arrows indicate spring migrations to main summering grounds.  
W — Major wintering ground.  
R — Year-round population.  
G — Longitudinal gap in distribution.





















































































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FIG. 1. Monthly mean precipitation (mm) for the period 1979–1999. The x-axis represents months from January to December. The y-axis represents precipitation in mm, ranging from 0 to 100. The bars show a clear seasonal cycle, with the highest precipitation occurring in the summer months (June, July, August) and the lowest in the winter months (January, February, March).

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FIG. 1. — Relationship between the number of teeth and the length of the jaw.



FIG. 2. — Relationship between the number of teeth and the length of the jaw.

The following table gives the results of the measurements of the jaws and teeth of the various species of the genus *Canis* and of the genus *Lynx*. The measurements are given in millimeters.

Species	Length of jaw	Number of teeth
<i>Canis lupus</i>	150-180	42-44
<i>Canis familiaris</i>	120-140	38-40
<i>Canis aureus</i>	100-120	34-36
<i>Canis latrans</i>	110-130	36-38
<i>Lynx baileyi</i>	130-150	40-42
<i>Lynx canadensis</i>	120-140	38-40
<i>Lynx tigris</i>	140-160	40-42

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The following text is extremely faint and largely illegible. It appears to be a continuation of a scientific or technical document, possibly discussing the results of the histograms shown in Figure 1 and Figure 2. The text is organized into several paragraphs, with some lines appearing to be headings or sub-sections. The overall structure suggests a formal report or a research paper.

The following text is also extremely faint and largely illegible. It continues the discussion from the previous section, likely providing further analysis or conclusions based on the data presented in the histograms. The text is organized into several paragraphs, with some lines appearing to be headings or sub-sections. The overall structure suggests a formal report or a research paper.





























































































































































































































































The first of these is the fact that the American Medical Association has been successful in securing the passage of the Federal Food and Drug Act, which will place under the control of the Federal Government the manufacture and sale of all food and drugs. This is a most important step, and one which will do much to protect the public from the many dangerous and worthless preparations which are now being sold under the name of medicine.

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# Worldwide Distribution and Migration Patterns of the White Whale (Beluga), *Delphinapterus leucas*

## (LITERATURE REVIEW)

Vladimir S. Gurevich

Marine Consulting, P.O. Box 9343, San Diego, California 92109, USA

### 1. GENERAL BIOLOGY OF THE WHITE WHALE

#### 1.1. Introduction

This report summarizes published information on the worldwide distribution and movements of white whales (or belugas), *Delphinapterus leucas*, Pallas.

The review is divided into two major sections. The first considers, in some detail, aspects of the biology of the species that relate to distribution. The second part describes the zoogeographical distribution, seasonality, and abundance of the several living stocks.

A few reports have been published recently on the distribution of white whales (Vladykov, 1944; Kleinenberg, *et al.*, 1964; Sergeant and Brodie, 1969a,b; 1975; Sergeant and Hoek, 1974), but these deal only with limited areas and do not cover the whole range of distribution.

An innovation in this study was an attempt to

incorporate a review of Russian literature. Thus, this report includes information on the distribution and movements of white whales in the Russian Arctic and far eastern seas.

#### 1.2. Morphology and life history

Distinguishing morphological features, dimensions, and body proportions are well described in the literature (Vladykov, 1944; Kleinenberg *et al.*, 1964; Sergeant and Brodie, 1969b) and clearly shown here in a photograph (Fig. 1).

White whales are easily distinguished from other cetaceans by their white coloration as adults and absence of the dorsal fin. Newborn calves are very dark grey, but within one to three years have become a much lighter grey. At birth they are between 4 and 4.5 feet (122–137 cm) long and weigh approximately 75–100 pounds (34–45 kg). They gradually become paler, and they are nearly

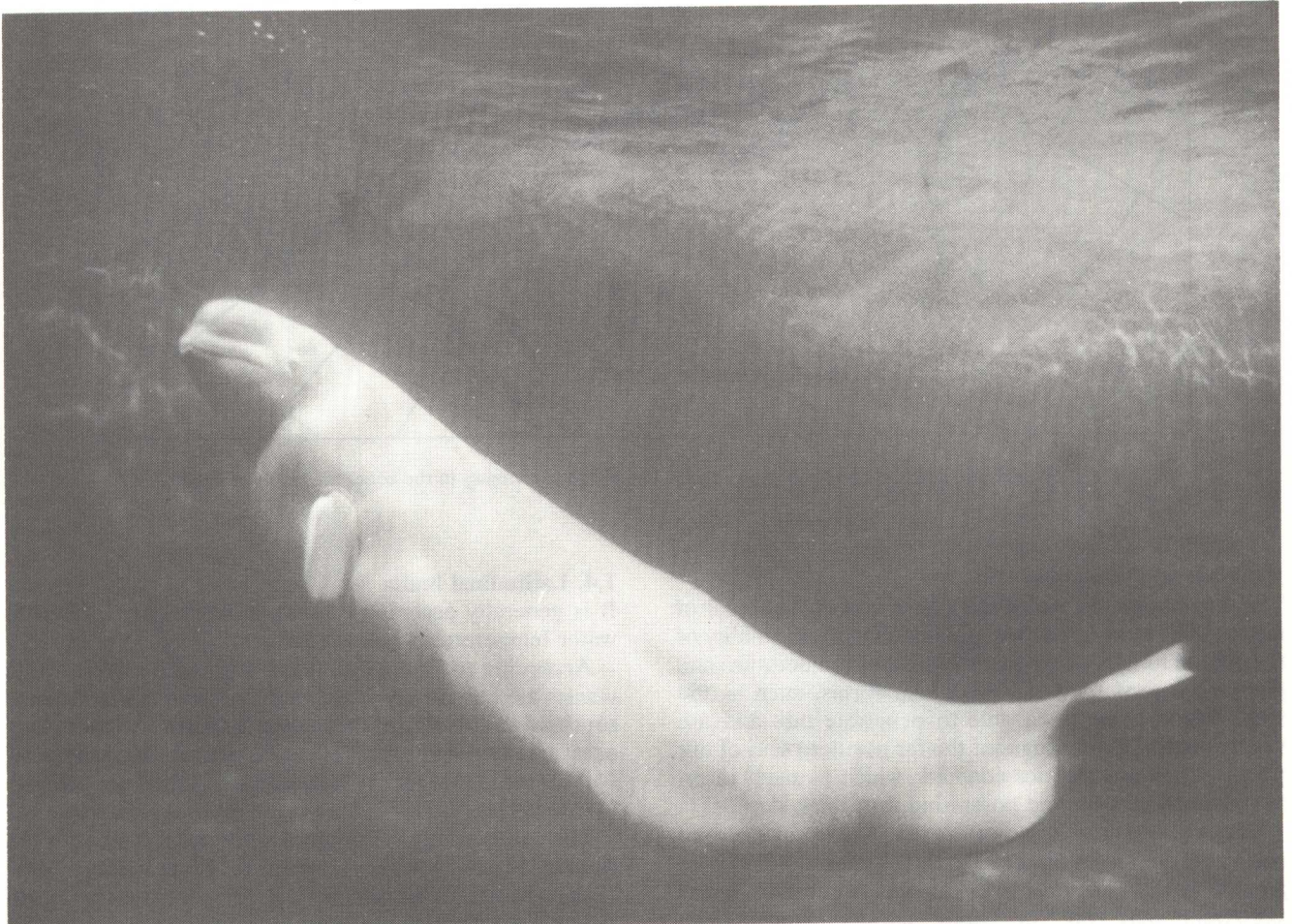


Fig. 1. External features of the white whale, *Delphinapterus leucas*.



















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