

**DENDROENERGY OF COASTAL FOREST IN THE SOUTH OF CHILE, SOUTH AMERICA: A CONTRIBUTION OF CARTOGRAPHY TO ENVIROMMENT EDUCATION.**

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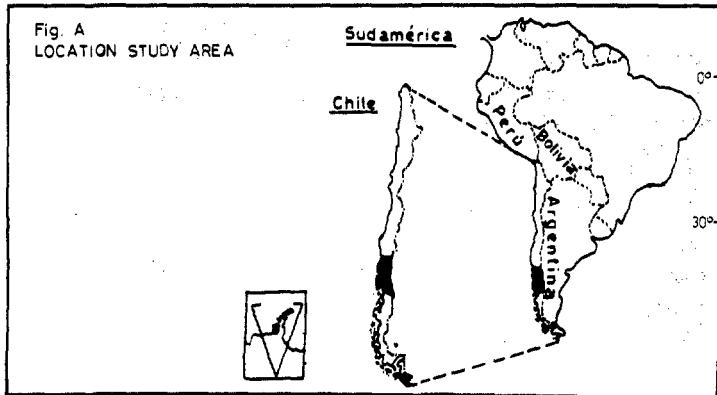
**Summary.**

A classroom learning experience for young people, which sets out a key question on the survival of coastal native forests in the South of Chile, is summarized. A workbook containing activities based upon cartography and data from a research project by the same author, carried out through Fondecyt 42-91 Project, is supplied.

**1.- Introduction.**

Our education privileges knowledge accumulation, setting students in an outside position regarding that knowledge. And example is nature preservation, an important issue concerning Coastal Template Forests in the South of Chile, ranging between latitudes 39° 24' and 43° 20' South.

The experience summarized here is based upon cartographic information taken from the first environment statistics on the productive function of natural forests in the above mentioned area (See Fig. A).



## 2.- Cartography and Environment Education.

The classroom experience for 17-18-year-old people includes the use of a student's and teacher's workbook called:

### IS THE SURVIVAL OF OUR NATURAL FORESTS IN DANGER?

This key question orients students to concepts and attitudes towards the impact caused by the extraction of firewood (dendro-energy) for rural homes on the sustainability inherent to a renewable resource such as forests.

The 19-page Workbook provides group work directions for activities related to cartographic data and figures of the location, geomorphology, forest areas, and firewood consumption distribution in rural homes of the coastal mountain range in 1992. The time needed may vary from 4 to 6 classroom periods.

## 3.- Learning activities.

Below is a selection of activities taken from the original workbook.

### 3.1. Fig. 1. Activities.

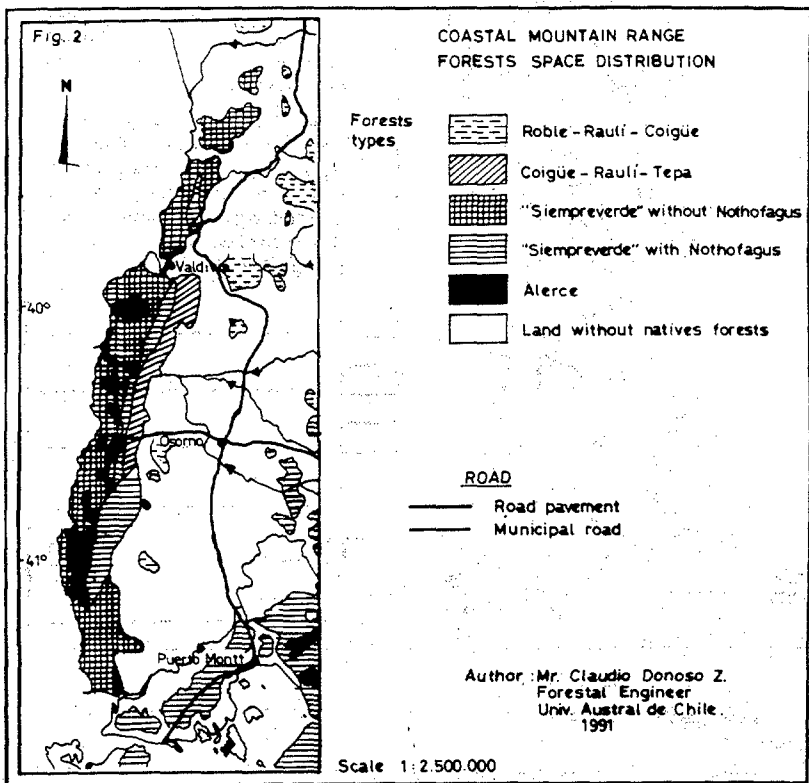
Let's study the relief supporting natural forests.

- a. Color the relief and symbols. Describe the relief and locate it on your map.
- b. Tell the mountain range from the coastal mountain range. Take mountain heights into account.
- c. According to the sketch scale, work out the north-south extension of the represented area.
- d. How would you label this cartographic sketch? Write the name on the upper line.

### 3.2. Fig. 2. Activities.

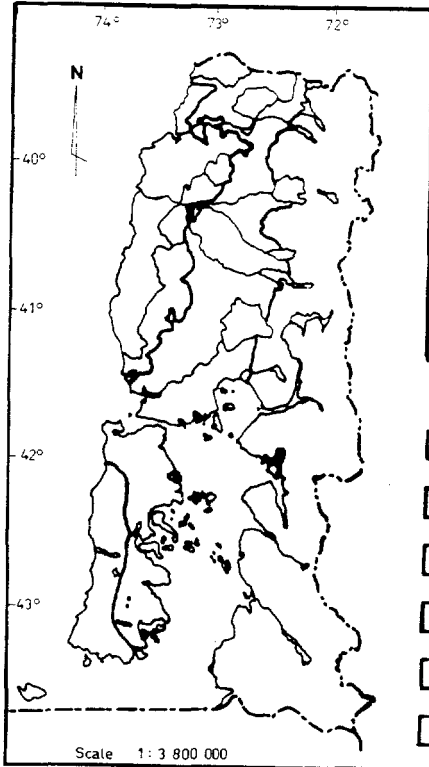
Let's identify the coastal rainforests in our region.

- a. Find out about forest types and regional forest volume and surface data.
- b. Which tree species is the forest composed of? Identify them in illustrations.



- b. Comment on the data provided by your teacher and explain the consumption variations from north to south.
- c. Find out about the yield of a forest hectare in firewood cubic meters. How much of the forest surface is felled for the rural community supply?
- Comment on your results.

Fig 1



- c. Find out about protected national parks and wild areas in the region.
- d. Which natural environment factors allow the existence of these unique forests on our planet?
- e. Do you really want to know the forest? With your classmates make a scouting guide including observation, description, and interpretation.

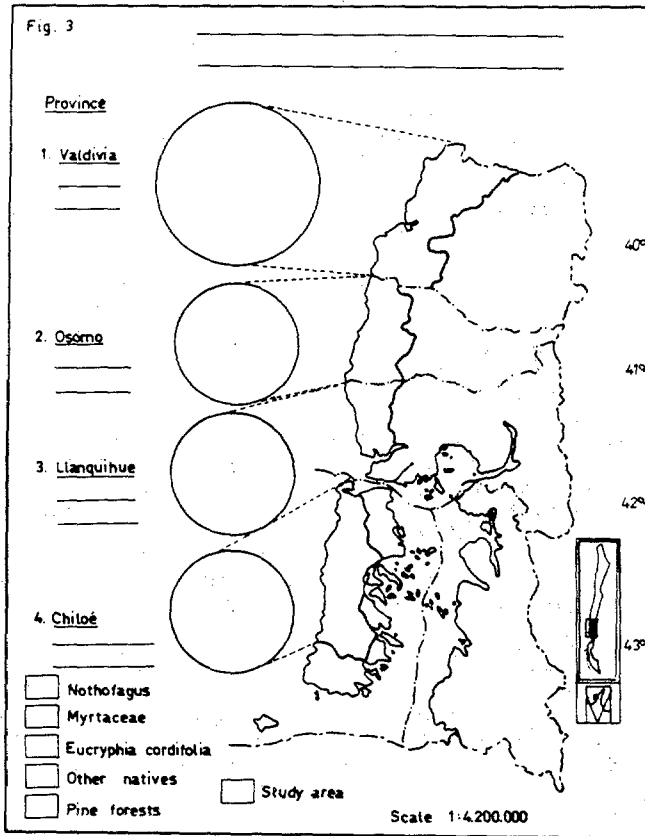
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3.3. Fig. 3. Activities.

How much firewood is consumed and which trees is it taken from?

Using the 1992 firewood consumption data, draw the four circular charts arranged in the sketch. Their diameters are proportional to the volume consumed and are located opposite the mountain range territories of each province.

- a. Color the coastal area and the corresponding symbols.



- Work out percentages per tree species for each province: Delimit the circular areas and color them.
- Find out about data that allows you to compare rural and urban firewood consumption.
- Propose and write a headline for the figure.
- Could you answer the key question set forth on the workbook cover? Support your answer.

#### Bibliography.

Sáez Villalobos, Nicolás. 1994. *Phytogeography Applied to the Xa. Region : Space Differentiation of the Coastal Native Forest Degradation. Chart of the Anthropic Impact.*