

CHART OF THE ANTHROPIC IMPACT ON COASTAL TEMPLATE FORESTS
(Latitudes 39° 24' - 41° 24' S) : A CONTRIBUTION TO ENVIRONMENTAL
MANAGEMENT OF NATIVE FOREST IN THE SOUTH OF CHILE, SOUTH AMERICA.

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Summary. The main results of a research project (Fondecyt 42-91) on environment information of the main ways of using native forests and their space distribution on the Coastal Mountain Range in the South of Chile are summarized here.

1.- The problem and its aims. The extractive nature of native forest exploitation in the South of Chile has been crucial for the almost irremediable regression of forest resources in Coastal and Andean mountain areas. A sustainable management of our forests requires the output of environment data which allows to set out a Native Forest Regional Environment Management to benefit heterogeneous and endemic tree species integrating unique communities on our planet.

In order to set up the impact of exploitation activities on the Coastal Template Forest in the South of Chile, it is necessary to locate and quantify the greatest impact exploitation forms such as firewood extraction, sawn wood and "metro ruma" (a 2.4 x 1 x 1 m unit) for the production of export pulpable chips. In addition, surfaces damaged by fire of anthropic origin should be considered. Taking into account that such phenomena do not only appear per areas, there has been an attempt to determine space organization of forest resource extraction activities. That attempt has led to make up a cartography (scale 1:250,000) including the locations which have suffered from man's intervention.

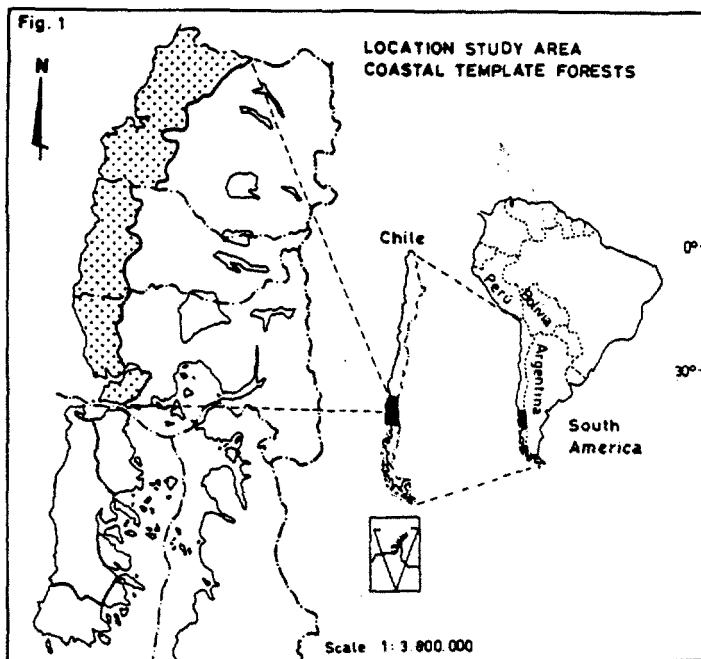
The work was carried out with the support of Fondecyt 42-91 Project by the same author, which allowed to locate wood extraction according to uses and volumes in cubic meters, and the results were shown in an Chart of Anthropic Impact on Native Forests.

2.- Methodology.

A study area opposite the Pacific Ocean between latitudes $39^{\circ} 4'$ and $41^{\circ} 45' S$ was delimited. Forest space distribution was taken into account in "precordillera" and Coastal Mountain Range areas (See Fig. 1).

791 homes, corresponding to 5% of the homes distributed into 63 Coastal Mountain Range districts, were surveyed so as to determine firewood consumption and extraction areas.

Urban firewood consumption was calculated by surveying 2.4% of the homes in 3 main cities of the region: Valdivia, Osorno, and Puerto Montt. In order to quantify firewood for industrial purposes, the main regional agroindustries were surveyed. Mountain sawmills and their wood production were located.



In addition, trucks carrying "metro ruma" for export chips were also surveyed: Finally, the cartography was designed by locating forest extraction areas taking into account the different uses of wood and the corresponding volumes exploited.

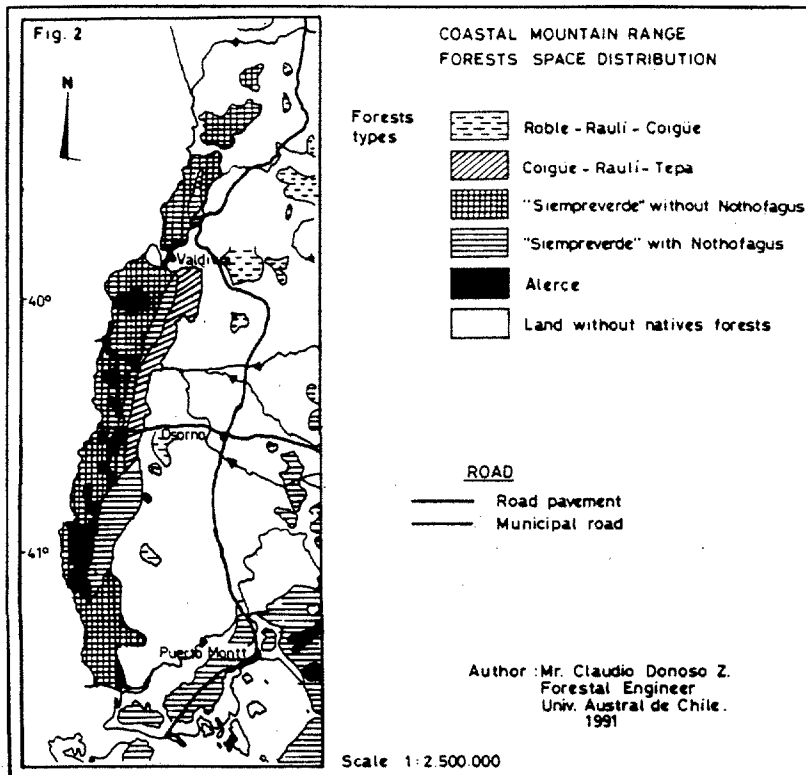
3.- Results.

Fig. 2 shows forest space distribution and forest types in the area. Fig. 3. summarizes the main features of the extraction activities of the resources, which is complemented by the following comments. The use of firewood (dendroenergy) represents one of the most important effects. Rural consumption corresponds to *Nothofagus* species, 20.1% to Myrtaceae, and 14% to *Eucryphia cordifolia* Cav (Ulmo).

Urban homes used 984,152 m³ of firewood from the coastal area in 1993. The most affected species is *Eucryphia cordifolia* Cav in Valdivia and Osorno, and the Myrtaceae species in Puerto Montt.

77% of the firewood energy required by regional agroindustries (112,196 m³) came from the Coastal Precordillera; whereas sawmills produced 23,848 m³ of wood in 1990. 48% of that production corresponds to species such as *Nothofagus* and *Eucryphia cordifolia* Cav.

Valdivia and La Unión are chip supplying districts with a volume of 793 m³ of various species. Purránque, Río Negro, Los Muermos, and Maullín provided 19,072 m³ of wood for the chip industry in Puerto Montt, the city having shipping facilities for the product (1993). *Nothofagus dombeyi* (Mirb) Oerst and some other mixed species are the most commonly exploited vegetation in the coastal mountain forests.



Forest areas damaged by fire of anthropic origin reached 30,451 hectares between 1979 and 1993. That surface is equivalent to 22,838,259 m³ of firewood and to 12 years of forest resource supplies for the coastal area, urban centers, and chip exports.

The total consumption of forest resources reached 1,828,811 m³, and 92,2% was used as fuel. Thus, 2,198.8 hectares of natural resources are destroyed in one year.

Bibliography.

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Fondecyt 42-91 Project.

