

ESTADO FINAL RESOLUCION DEL CONSEJO Observaciones: _____ _____	FECHA <div style="border: 1px solid black; width: 30px; height: 30px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div> 1. APROBADO 2. PENDIENTE 3. RECHAZADO 4. A FISCALIA
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EVALUATION REPORT CENTERS FOR ADVANCED RESEARCH

I. PROJECT INFORMATION

CENTER'S NAME

Center for Oceanographic Research in teh eastern Pacific Ocean (COPAS)

DIRECTOR

Dr. Carina Lange

II. EVALUATION PANEL

NAME	ORGANIZATION/ INSTITUTION	E-MAIL	SIGNATURE
REVIEWER 1			

III. PROGRAMS EVALUATION (please fill up as many forms as programs exist within the Center)

PROGRAM'S NAME: RP1

CIRCULATION AND MIXING IN THE EASTERN SOUTH PACIFIC OCEAN

PRINCIPAL INVESTIGATOR: Wolfgang Schneider

ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Internal use
Degree of adoption of suggestions from the last report *				
Accomplishment of objectives and goals of the reported program	x			
Quantity of the results reached regarding the objectives and goals	x			
Quality of reached outcomes related to proposal objectives and goals	x			
Degree of integration with other ongoing programs of the Center	x			
Diffusion of the results	x			

PROGRAM'S NAME: RP2

MICROBIAL COMMUNITIES AND WATER-COLUMN BIOGEOCHEMICAL CYCLING

PRINCIPAL INVESTIGATOR: Osvaldo Ulloa

ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Internal use
Degree of adoption of suggestions from the last report *				
Accomplishment of objectives and goals of the reported program	x			
Quantity of reached outcomes related to proposal objectives and goals	x			
Quality of reached outcomes related to proposal objectives and goals	x			
Degree of integration with other ongoing programs of the Center		x		
Diffusion of the results	x			

* If there had been none, please disregard this question

PROGRAM'S NAME: RP3, PLANKTON DYNAMICS AND ITS ROLE IN CARBON CYCLING IN THE EASTERN SOUTH PACIFIC
PRINCIPAL INVESTIGATOR: Ruben Escribano

ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Internal use
Degree of adoption of suggestions from the last report *				
Accomplishment of objectives and goals of the reported program	x			
Quantity of the results reached regarding the objectives and goals	x			
Quality of reached outcomes related to proposal objectives and goals	x			
Degree of integration with other ongoing programs of the Center		x		
Diffusion of the results	x			

PROGRAM'S NAME: RP4				
PELAGIC-BENTHIC COUPLING IN THE EASTERN SOUTH PACIFIC				
PRINCIPAL INVESTIGATOR: Humberto González				
ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Internal use
Degree of adoption of suggestions from the last report *				
Accomplishment of objectives and goals of the reported program	x			
Quantity of reached outcomes related to proposal objectives and goals	x			
Quality of reached outcomes related to proposal objectives and goals	x			
Degree of integration with other ongoing programs of the Center	x			
Diffusion of the results	x			

* If there had been none, please disregard this question

PROGRAM'S NAME: RP5 COMMUNITY STRUCTURE, METABOLISM AND BIOGEOCHEMISTRY, IN THE BENTHIC REALM OF THE EASTERN SOUTH PACIFIC
PRINCIPAL INVESTIGATOR: Renato A. Quiñones

ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Internal use
Degree of adoption of suggestions from the last report *				
Accomplishment of objectives and goals of the reported program	x			
Quantity of the results reached regarding the objectives and goals	x			
Quality of reached outcomes related to proposal objectives and goals	x			
Degree of integration with other ongoing programs of the Center	x			
Diffusion of the results	x			

PROGRAM'S NAME: RP6 PALEO-STUDIES IN THE EASTERN SOUTH PACIFIC: A JOINT GEOCHEMICAL AND PALEOBIOLOGICAL APPROACH				
PRINCIPAL INVESTIGATOR: Silvio Pantoja				
ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Internal use
Degree of adoption of suggestions from the last report *				
Accomplishment of objectives and goals of the reported program	x			
Quantity of reached outcomes related to proposal objectives and goals	x			
Quality of reached outcomes related to proposal objectives and goals	x			
Degree of integration with other ongoing programs of the Center	x			
Diffusion of the results	x			

* If there had been none, please disregard this question

IV. CENTER EVALUATION

ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Uso Interno
Degree of adoption of suggestions from the last report *	x			
Accomplishment of objectives and goals of the Center	x			
Quantity of reached outcomes related to proposal objectives and goals	x			
Quality of reached outcomes related to proposal objectives and goals	x			
Degree of integration between the programs of the Center	x			
Creation and reinforcement of international networks	x			
Outreach	x			
Diffusion of results	x			
Establishment and tasks of the Advisory Committee		x		

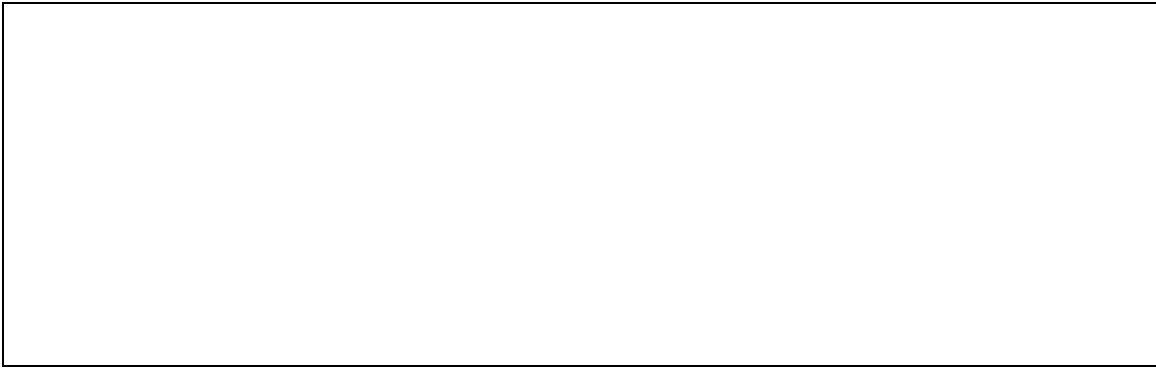
RECOMMENDATIONS (see following concepts)

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APPROVE	APPROVAL WITH SUGGESTIONS	ADDITIONAL INFO.	PENDING	REJECT	FONDECYT USE

June	30	2010
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Evaluation Date

Signature reviewer



EVALUATION CONCEPTS ANNUAL REPORT

1. **Approve:** The reviewer recommends to accept the report in its present form since he/she considers objectives and goals fully accomplished and all relevant issues covered by the report.
2. **Approval with suggestions or minor observations**
 - 2.1 **Minor observations:** The reviewer recommends the approval of the report despite the justified incompleteness of some aspects that does not constitute an obstacle for the continuity of the Center activities.
 - 2.2 **Suggestions:** The reviewer recommends minor changes in order to improve the future performance of the Center.
3. **Additional information:** The reviewer requires additional documentation or specific explanations to fully evaluate the report.
4. **Pending:** The reviewer makes significant observations to the report and conditions its approval to the accomplishment of specific demands.
5. **Reject:** The reviewer has strong objections to the contents of the report.

EVALUATION COMMENTS:

The impact of the recent earthquake has been quite tragic for the country, and COPAS did not escape. While COPAS participants appear to have largely escaped harm, the loss to the program's infrastructural and research accomplishments have been great. This evaluation cannot properly address these losses, which occurred after the period under review, but clearly future actions, evaluations and planning will be enormously affected by this event. It is also not the function of this review to focus on these future considerations.

COPAS had a successful year in the research arena. The ESP received important documentation and publicity in the Deep-Sea Research volume. The time-series kept on schedule, and continues to produce discoveries. One example is the finding of fungal responsibility for certain metabolic regimes in the oxygen minimum zone. The development of glider technology in monitoring the ESP is very encouraging, as it may enable the long-term continuance of some of the shelf data sets begun under FONDAP with a more cost-effective approach. Also continuing are important syntheses that are allowing better assessment of the ESP's role in Chile's coastal zone. Early results are appearing from the recently started work in Patagonia, and it's clear that the established research capability of COPAS facilitated that rapid publication of research results. The human interaction with the ESP is getting welcome attention via papers on fisheries interactions. In general, publications are up this year, with broad participation across the research programs.

As the FONDAP program approaches the end of its ten-year cycle, it is important that other sources of funding be developed. The number of research grants increased over this past year, largely from FONDECYT grants, indicating that COPAS is making good effort to build alternative sources of funding for its various programs. These smaller grants build on the larger, and longer-term, program grants received prior to this review period such as Basal funding and private foundation awards. The further development of international collaborations that will bring in outside funding – this year in the form of the interaction with Banyuls in France – is a very welcome way to leverage internal resources.

As this FONDAP program matures, there appears to be a slow increase in publications indicating interaction among the research groups, which are so important in continuing the kind of work begun here. There is opportunity for much more, and some of the synthesis work that addresses cycling in the vertical direction needs to have a horizontal component brought in. The existing and new modelers should help in this regard; an example is the time series analysis by Tapia et al. (submitted).

COPAS continues its varied and successful educational activities. Graduate student education remains strong. This past year's Austral Institute was an impressive offering.

Excellent progress is reported for the new Marine Sciences building at the University of Concepcion, and it is quite fortunate that it was not among the facilities heavily damaged by the earthquake. If completed by summer of 2010 as planned, all parties are to be congratulated on making this new facility happen. The loss of so much at the Dichato lab is terrible for many reasons but, again, cannot be addressed properly in this review.

Unfortunately, the external Advisory Committee was again unable to meet this past year, and one hopes that the scheduled October, 2010 meeting takes place. Given the inevitable changes in operations due to the earthquake, this might be an especially important time for Advisory Committee review of where COPAS has been and where it should go. For example, in rebuilding the COPAS infrastructure, should the damaged capabilities all be replaced as

they were, or should there be movement toward the next step(s) in oceanographic studies of the ESP (e.g., gliders)? COPAS itself is obviously in the best position to assess its opportunities and constraints, but some outside advice is important. While it is useful that COPAS has kept their advisory committee informed via one-on-one communications, there is also a role for discussion in a committee format. If the next meeting cannot be held for some reason, then perhaps COPAS could arrange an assignment that requires committee members to confer among themselves.

In summary, COPAS is keeping up an impressive rate of activity and accomplishment, on all fronts. I am confident that the many strengths that they have built over the past few years will bring them through this trying time.

|

RECOMMENDATIONS TO THE CENTER DIRECTOR:

(only if report is approved))

Last year I discussed co-advising of graduate students, and the response was that about half of the 49 students were co-advised by 2 research programs. Yet only 10-15% of publications involve 2 research programs. Is this discrepancy due to lack of publication by graduate students, or?

<p style="text-align: center;">ESTADO FINAL RESOLUCION DEL CONSEJO</p> <p>Observaciones: _____</p> <p>_____</p>	<p>FECHA</p> <table border="1" style="margin: auto;"> <tr> <td style="width: 30px; height: 30px;"></td> <td style="width: 30px; height: 30px;"></td> <td style="width: 30px; height: 30px;"></td> </tr> </table>				<table border="1" style="margin: auto;"> <tr> <td style="width: 50px; height: 30px;"></td> </tr> </table> <p>1. APROBADO 2. PENDIENTE 3. RECHAZADO 4. A FISCALIA</p>	

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EVALUATION REPORT CENTERS FOR ADVANCED RESEARCH

I. PROJECT INFORMATION

CENTER'S NAME

Center for Oceanographic Research in the eastern South Pacific (COPAS)

DIRECTOR

Carina B. LANGE

II. EVALUATION PANEL

NAME	ORGANIZATION/ INSTITUTION	E-MAIL	SIGNATURE
REVIEWER 2			

III. PROGRAMS EVALUATION (please fill up as many forms as programs exist within the Center)

PROGRAM'S NAME

RP 1. Circulation and Mixing in the Eastern South Pacific Ocean

PRINCIPAL INVESTIGATOR

Wolfgang Schneider

ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Internal use
Degree of adoption of suggestions from the last report *				
Accomplishment of objectives and goals of the reported program	X			
Quantity of the results reached regarding the objectives and goals	X			
Quality of reached outcomes related to proposal objectives and goals	X			
Degree of integration with other ongoing programs of the Center		X		
Diffusion of the results		X		

PROGRAM'S NAME

RP 2. Microbial Communities and Water-Column Biogeochemical Cycling

PRINCIPAL INVESTIGATOR

Osvaldo Ulloa

ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Internal use
Degree of adoption of suggestions from the last report *				
Accomplishment of objectives and goals of the reported program	X			
Quantity of reached outcomes related to proposal objectives and goals	X			
Quality of reached outcomes related to proposal objectives and goals	X			
Degree of integration with other ongoing programs of the Center		X		
Diffusion of the results	X			

* If there had been none, please disregard this question

III. PROGRAMS EVALUATION (please fill up as many forms as programs exist within the Center)

PROGRAM'S NAME

RP 3. Plankton Dynamics and its Role in Carbon Cycling in the Eastern South Pacific

PRINCIPAL INVESTIGATOR

Ruben Escribano

ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Internal use
Degree of adoption of suggestions from the last report *				
Accomplishment of objectives and goals of the reported program	X			
Quantity of the results reached regarding the objectives and goals	X			
Quality of reached outcomes related to proposal objectives and goals		X		
Degree of integration with other ongoing programs of the Center		X		
Diffusion of the results	X			

PROGRAM'S NAME

RP 4. Pelagic-Benthic Coupling in the Eastern South Pacific

PRINCIPAL INVESTIGATOR

Humberto González

ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Internal use
Degree of adoption of suggestions from the last report *				
Accomplishment of objectives and goals of the reported program	X			
Quantity of reached outcomes related to proposal objectives and goals	X			
Quality of reached outcomes related to proposal objectives and goals	X			
Degree of integration with other ongoing programs of the Center	X			
Diffusion of the results	X			

* If there had been none, please disregard this question

III. PROGRAMS EVALUATION (please fill up as many forms as programs exist within the Center)

PROGRAM'S NAME

RP 5. Community Structure, Metabolism and Biogeochemistry, in the Benthic Realm of the Eastern South Pacific

PRINCIPAL INVESTIGATOR

Renato A. Quiñones

ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Internal use
Degree of adoption of suggestions from the last report *				
Accomplishment of objectives and goals of the reported program	X			
Quantity of the results reached regarding the objectives and goals	X			
Quality of reached outcomes related to proposal objectives and goals	X			
Degree of integration with other ongoing programs of the Center		X		
Diffusion of the results	X			

PROGRAM'S NAME

RP 6. Paleo-Studies in the Eastern South Pacific: A Joint Geochemical and Paleobiological Approach

PRINCIPAL INVESTIGATOR

Silvio Pantoja







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Degree of integration with other ongoing programs of the Center	X			
Diffusion of the results	X			

* If there had been none, please disregard this question

IV. CENTER EVALUATION

ITEM	Total/ Good	Partial/ Regular	Insufficient/ Deficient	Uso Interno
Degree of adoption of suggestions from the last report *	X	X		
Accomplishment of objectives and goals of the Center	X			
Quantity of reached outcomes related to proposal objectives and goals	X			
Quality of reached outcomes related to proposal objectives and goals	X	X		
Degree of integration between the programs of the Center	X			
Creation and reinforcement of international networks	X			
Outreach	X			
Diffusion of results	X			
Establishment and tasks of the Advisory Committee		X		

RECOMMENDATIONS (see following concepts)

					
APPROVE	APPROVAL WITH SUGGESTIONS	ADDITIONAL INFO.	PENDING	REJECT	FONDECYT USE

RECOMMENDATION: **APPROVE**

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Evaluation	Date	Signature	reviewer

EVALUATION CONCEPTS

ANNUAL REPORT

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EVALUATION COMMENTS:

Research Programs

The following remarks are explanations of Partial/Regular ratings given to some RPs in the above evaluation tables.

RP1. Integration with other RPs: good in term of fieldwork, but low in term of co-publications (2) with other RPs. Diffusion: number of publications could be higher given the relatively high number of PhD students.

RP 2. Integration with other RPs: only 2 of the 9 publications were co-published with other RPs (here, Central).

RP 3. Quality of outcomes: very interesting and novel results on various aspects of plankton, but overall lack of within-RP synthesis. Integration with other RPs: good in terms of fieldwork, the concurrent project involving other RPs and the editing of COPAS Newsletter, but no co-publication with other RPs.

RP 5. Integration with other RPs: good in term of fieldwork, but only 2 co-publications with other RPs.

Center

OVERALL RECOMMENDATION: **APPROVE**

Suggestions from the last report. The Center responded to the suggestions from the previous evaluation on pages 19-21 of the report. I agree with most of these responses, except those pertaining to “integration” and “special issues”. I will discuss these points in paragraphs “Quality of outcomes”, “Integration between programs” and “Diffusion of results” below.

Objectives and goals. COPAS meets and even exceeds its objectives and goals. Concerning the scientific goals, the six Research Programs (RPs) carry out scientific activities related to the three Themes, the Center continues long-term integrated fieldwork, and its researchers participate actively in international research cruises. I was impressed to see that the ISI publications of COPAS have been cited on the average about 10 times, year after year, which is well above the international average. In addition, COPAS and its researchers successfully bring students to completion of their PhD, MSc and undergraduate theses, and continuously recruit new graduate students. Another successful educational activity of COPAS is the organization of the Austral Summer Institute. Finally, as discussed below, COPAS meets and even exceeds its networking and outreach objectives. It is amazing that such a (relatively) small group has made so much progress in just a few years in understanding the structure and functioning of very different environments in such a big stretch of ocean and coastline, with such limited access to large oceanographic ships.

Quantity of outcomes. The quantity of individual outcomes is high in all RPs. However, the quantity of integrative outcomes is low, as discussed in the next paragraph.

Quality of outcomes. The quality of most results obtained by COPAS researchers and RPs is high, leading to high-quality outcomes. It is obvious that the COPAS center played a key

role in providing its researchers and RPs with the tools, programs and support that allowed such high-quality work.

However, the two reviewers of last year stressed the lack of integration among COPAS RPs.

Indeed, although researchers from the different RPs often work on the same environments (e.g. OMZ), there often seem to be little connections within COPAS between the discoveries and advances made by the different RPs. The three COPAS Themes successfully focus the research activities within the center on Tropical/subtropical large-scale variability and local processes, OMZs and Southern Chile and fjords, respectively, but once the field work is conducted, most of the research up to the publication is conducted within the RPs or individually, i.e. there do seem to be little interactions or syntheses within the context of the Themes. This could indicate that there are no incentives to work together at the level of the Themes beyond the field components.

The Report provided by the oceanographer/modeler Dr. Fabian Tapia* is encouraging concerning possible syntheses at the level of Themes or even above. For example, he cites the analysis and synthesis of the 7-year series of monthly observations conducted at station 18, the plans for a “COPAS synthesis book” (initiated with Dr. Carlos Moffat, who is not even a member of COPAS), and the work on fjord carrying capacity. However, several COPAS researchers, not only Dr. Tapia, should initiate Theme-level syntheses. The role of COPAS modelers in that synthesis work could be to translate into equations the conceptual models developed by field researchers. I wrote “modelers” and not “modeler” purposely, because a single modeling person is not enough in such a group as COPAS. The next hiring target for COPAS could be a biogeochemical modeler.

*NOTE concerning Dr. Fabian Tapia. I was impressed by the high level of activity, proactovity and productivity described by Dr. Tapia in his annual report.

Integration between programs. COPAS has developed a number of integrative activities, such as the time series stations, to which all RPs contribute. The same is true of some cruises on large ships, in which several RPs participate. Several RPs also contribute to teaching and outreach. All these activities are excellent, and they build strong bases for the future of COPAS. However, the integrative activities have not conducive, as yet, to enough inter-program publications, i.e. 6 according to the report and 8 in the summary Excel table, out of a total of 45 ISI and non-ISI publications. The objective, of course, should not be *per se* to increase the number of synthesis publications, but to reinforce instead joint work on data and results (see above), which would automatically increase the number of joint publications.

International networking. The international networking of COPAS is excellent, and goes far beyond the individual networks of its researchers and Research Programs. The international visibility of COPAS is excellent, and a remarkable aspect of COPAS international networking is that most of it is built on operational research objectives, and not (primarily) political considerations. The latest example of the LIA with Banyuls-dur-Mer, France, is consistent with COPAS operational objectives.

Outreach. The COPAS outreach activities are diversified and of high quality and they target, with appropriate approaches, different segments of the public. The Centre must be congratulated for its outreach efforts, and is encouraged to continue that excellent work.

Diffusion of results. The number of papers (ISI and non-ISI), books/chapters, and presentations is very good. The journals in which the ISI papers were published range from good to very good.

The remark from Reviewer #1 of last year that “special issues are often perceived as ‘special cases’ of peer review and not necessarily as rigorous as the regular journal issues” seems to have been misinterpreted by COPAS given its response that, in the case of the special issues under the responsibility of COPAS researchers “the peer-review process has been most rigorous”. The point made by the Reviewer was that, despite the obvious benefits of special issues for COPAS, these publications are indeed seen by most of the research community as “special cases”. Hence, I also think that COPAS, like most international research centers, would be well advised to keep within limits its contributions to special issues.

Advisory Committee. The members of the Advisory Committee (AC) are well-know researchers or research managers, and the fact that they accepted to become members of the COPAS AC is a testimony to the good reputation of the Center. However, for a number of reasons explained in the report, the AC did not meet during the reported period. The Director of COPAS should give high priority to holding a meeting of the AC as soon as possible (a meeting is presently planned for 19-21 October 2010), even if one or two members of the committee could not attend.

RECOMMENDATIONS TO THE CENTER DIRECTOR:

(only if report is approved))

I think that the most pressing issue to be resolved for COPAS in order to reach the next level of excellence is the resolution of the synthesis issue (discussed above in this evaluation report). The Director of COPAS must find and implement ways to bring researchers to work among RPs at developing Theme-level syntheses. Researchers must be attracted to that task, not coerced into it.

The hiring of a second modeler, to complete Dr. Tapia's expertise, would be a necessary (although not sufficient) step in the resolution of the synthesis issue.