

Appendix 1.

Images of the San Francisco stream



Figure A1.1 Images of the San Francisco stream along its entire course. In A) and B) are depicted images of the headwaters and the emergence to surface at the locality of Claypole (Buenos Aires). Image C) shows part of the stream reach intervened in the work, and D) and E) shows the San Francisco stream near the confluence with Las Piedras stream (Quilmes District), where it can be seen a broader and more degraded stream, with garbage clusters and the presence of concrete structures.

Images of Mirabal Cultural Center



Figure A1.2 Images of the front view of the Mirabal Cultural Center (left), and inside it (right). This cultural center was the place where we carried out the meetings for the implementation of the work.

Meetings and workshop activities with Mirabal's workers

During the months of March and April of 2015, we initiate informal visits to the Mirabal Cultural Center with the aim of starting to generate mutual trust between the actors and improve our knowledge about the general work of the organization and specifically the current work of the cooperative workers. The author M.G. had already had contact during the period 2013-2014 with some members of the squad, but it hadn't been the case for the rest of the authors. During the months of May and June we programmed different activities that will be carried out to problematize the current state of the San Francisco stream and to know deeper the perception of the members of the squad about the aquatic environment and its riparian habitat. On May 5th, we made a joint visit to the San Francisco stream reach, observing the main channel and the riparian zone and discussing the issues that call our attention. We obtained a list of elements and/or problems (Table A1.1). Then, we met and analyzed those elements trying to decipher their potential harmful to the ecosystem and we began to think about how they could be avoided. In addition, we specify the materials and tools necessary to address those elements linked to the intervention project that were within our reach (i.e., waders, shovels, garden rakes).

Presence of trash at the riverbank and the main channel
Presence of domestic pipes that drain into the stream through centralized channels
Presence of rats
Riparian areas without vegetation
Macrophyte presence and grass on the riverbanks
Low flow velocity
Remains of vegetation pruning without recolection


Table A1.1 Relevant habitat aspects identified during the field visit at the working stream reach before the beginning of the interventions.

The presence of some cover of aquatic plants and grass on the riverbank was one of the main aspects to be addressed for the ecological management of the stream. The debate on this element made it possible to delineate the management of the riparian vegetation that would be carried out during the intervention, integrating the perception of the members of the squad (and of the neighbors of the neighborhood through them) together with the rehabilitation techniques on the community of macrophytes. In this way, it was agreed to keep the short grass in the middle and upper part of the bank, as an aesthetically important element for the neighborhood, and favor the presence of

macrophytes in the lower part by a transplantation process, removing the herbaceous plants that could be found there.

A few weeks later, appealing to the historical memory of the people who are part of the squad, a social-ecological reconstruction of the stream was carried out analyzing the transformation of certain aspects from the 90s (and even previously, when they remembered). The aspects addressed included: the morphology of the stream, fauna and flora present, color and transparency of the water, presence of trash, recreational activities, stream management activities (cleaning and maintenance), and frequency of floods. The proposed methodology consisted of a comparative table with three periods: 1970-1990, 1990-2000, 2000-present (Table A1.2).

1990 Currently



Morphology	it became wider during this period, but the "shape" of the canal was maintained	
Wildlife fauna	fish, eels, frogs, tadpoles, worms, small-size mice	turtles and snakes during 2000's, now only rats
Flora	Pampean grassland, cattail, creepers with thorns	grass, water hyacinth, aquatic plants
Water color and transparency	It became more turbid within the period (brown color), whitish at certain moments	
Garbage	Prior to 1990 there was almost no trash. During the 90s the intensification began	Increasing
Recreative activities	Fishing. Recreational space to play	Nothing recreational, only extractions of worms for fishing in other places
Local Management activities	There was no maintenance, the grass grew tall	Greater control and removal of vegetation, cleaning and maintenance works emerge
Flood events	No flood events in this area	In the last 3 years the floods increased notably

Table A1.2 Social-ecological historical reconstruction of the San Francisco stream at the locality of Claypole (Buenos Aires Province, Argentina).

The social-ecological historical reconstruction of the stream and its transformations from the 90s to the present presented a negative assessment in relation to the intensification of garbage in the margins and the main channel, an increase in the turbidity of the water, changes in the composition of fauna with a loss of diversity, a strong increase in the periodicity and intensity of floods, and practically the elimination of cultural benefits of the stream habitat such as recreational purposes.

Subsequently, on May 27th we performed a workshop addressing some theoretical aspects, such as the role of macrophytes in water bodies and the importance of

increasing the diversity of current species, the disadvantages of an excessive pruning in relation with floods, and it also included aspects related to techniques of cultivation and propagation of macrophytes in the greenhouse, practices that would be carried out together to carry out the management interventions. Continuing with the workshop in a following week, we also discussed and identified, based on local knowledge, audio-visual material, journal notes and legal material, the main actors present in the territory, and the functioning and management practices carried out by the current cleaning cooperatives throughout the Metropolitan Area of Buenos Aires (AMBA).

Analysis of motivations

We performed a workshop session based on a questionnaire of forced-choice options suggested by the academic actor from the previous meetings and expressed in a non-scientific language (Table A1.3). As part of the activity, it was discussed how options could be generalized to values associated with the human being and nature as well as their interrelation, reclassifying them in one of the following categories: aesthetic, sanitary (health), social, ecological, and biocentric (centered in nature, as opposed to anthropocentric aspects).

Option	Valoration category
It is not good for our health to live with a stream that is in poor condition	SANITARY
Allow us to improve the neighborhood environment working all together	ECO-COMMUNITY
It is good to leave the kids a better environment	ECO-COMMUNITY
There were before other living beings (i.e frogs, fishes, turtles) that deserve to live again in the stream	BIOCENTRIC
It is not right that nature has been damaged	BIOCENTRIC
It provides job opportunities in the neighborhood	SOCIO-COMMUNITY
It is not nice to live with a stream that looks ugly	AESTHETIC

Table A1.3 List of forced-choice options for the motivation assessment activity and assigned category (sentences translated from Spanish language)

Images of Macrophyte cultivation



Figure A1.3 Images of the macrophytes cultivation process. In A) and B) are depicted the plastics trays and pots used to delimit experimental units of cultivated macrophytes. Each plastic tray or pot was considered a unique experimental unit. C) and D) shows the growth of experimental units in pools filled with water from the drinking network. E) shows the packaging of each experimental unit for deliver to the working area at the San Francisco stream.