Convective exchange flows between shallow and deep parts of natural basins are driven by horizontal density gradients, formed and maintained above sloping bottom by external heat/buoyancy flux through the water surface. Water cascading or ascending along a slope, day/night circulation in coastal zone and the thermal bar are considered as types of horizontal convection, arising due to, correspondingly, destabilizing, stabilizing, alternating in time and alternating in space surface buoyancy flux. The mechanism of the formation of horizontal temperature/density gradients is considered. The time required for their formation is rather short (tens of minutes for a thermocline depth of tens of meters), but the flow development takes much longer times (more than one day for the given example). The time dependence of the horizontal water exchange between the shallow and deep areas is analytically treated. The spatial scale of the problem is the main parameter that defines the resulting quasistationary flowrate. Joint analysis of field, laboratory, and numerical data of many authors in the range of depths of 0.01 m < d < 300 m (d ≤ D, where D is the thickness of the upper thermally active layer of a basin) indicates that the relation between the value of the horizontal quasistationary volumetric flow rate and the local depth is Q = 0.0013 d**(1.37) (R**2 = 0.96). Horizontal convective water exchange of any type is shown to be generally two-layered, ageostrophic, with maximum flowrate at the end of a slope. The results agree well with conclusions of other authors.