Restricted Zone
Don Juan Pond

Location
At the foot of a rock glacier in South Fork, Wright Valley, in a closed basin at 118 m elevation below the Dais, ~7.5 km from Lake Vanda:
77°33.77´S, 161°11.32´E

Purpose
To protect a rare and sensitive hypersaline ecosystem of high scientific value from disturbance and damage.

Description
Don Juan Pond is a small hypersaline lake currently of ~400 x 150 m containing a calcium-chloride-rich brine with a salinity level of ~40%, making it the most saline natural water body known on Earth. Water levels have fluctuated over time, although recently the pond has been ~10 cm in depth. While water levels vary, the Restricted Zone extends to the perimeter of the pond floor salt deposits (Map 18). Microbial life, including numerous heterotrophic bacteria and a yeast, are found in the pond. A mat of mineral material and detritus cemented together by organic matter, referred to as the Don Juan Pond Salt Deposits, is found at the edge of the pond where the calcium chloride concentrations are reduced. Don Juan Pond is also the site where Antarcticite (CaCl₂·6H₂O), a hygroscopic colorless mineral, was first identified forming naturally.

Boundaries
The Restricted Zone boundary is defined by the outer extent of the Don Juan Pond Salt Deposits, which extend to the edge of the basin pond floor, occupying an area of ~720 x 300 m (Map 18).

Impacts
KNOWNS IMPACTS
The Dry Valleys Drilling Project drilled two boreholes at Don Juan Pond: DVDP 5 (3.5 m depth) and DVDP 13 (75 m depth), situated within the salt deposit area ~60 m and ~110 m respectively east of the rock glacier. DVDP 13 remains in evidence as an iron tube (capped) protruding ~ 1 m above the dry pond floor (Map 18). Small quantities of waste (e.g. rusted cans) were observed in soils ~50-100 m south and east of the Restricted Zone in Dec 2009, most likely originating from early camps established near the site.

POTENTIAL IMPACTS
Disturbance to water body, salt deposits and sensitive soils by sampling or trampling.

Access requirements
HELCIOPER ACCESS
Helicopters should avoid landing in the Restricted Zone and avoid overflight below 50 m above ground level. Helicopters should land at the designated site ~250 m east of Don Juan Pond at: 77°33.784´S, 161°12.948´E.

SURFACE ACCESS
Access to and movement within the Restricted Zone should be on foot.

Special site guidance
- Avoid walking through the pond and adjacent salt deposits unless necessary for scientific or management purposes.
- Walk carefully to minimize disturbance to the salt deposits and surrounding soft soils and sensitive slopes.
- Do not move any boulders.
- Camping is not permitted within the Restricted Zone.

Key references

Site Map – Map 18