



**ORKUSTOFNUN**

**Vatnamælingar**



**Reiknað rennsli til Hvalárvirkjunar  
skv. fyrstu drögum að HBV-líkani**

**Stefanía Guðrún Halldórsdóttir**

**Unnið fyrir Auðlindadeild Orkustofnunar**

**2002**

**OS-2002/005**





**ORKUSTOFNUN**  
VATNAMÆLINGAR

**Skýrsla**  
OS-2002/005  
Verknr. 7-548550

**Stefanía Guðrún Halldórsdóttir**

## **Reiknað rennsli til Hvalárvirkjunar**

skv. fyrstu drögum að HBV-líkani


**Unnið fyrir Auðlindadeild Orkustofnunar**

**OS-2002/005**

**Janúar 2002**

ORKUSTOFNUN: Kennitala 500269-5379 - Sími 569 6000 - Fax 568 8896  
Netfang Vatnamælinga [vm@os.is](mailto:vm@os.is) - Heimasíða <http://www.os.is/vatnam>



Skýrsla nr: OS-2002/005	Dags: jan 2002	Dreifing: <input checked="" type="checkbox"/> Opin <input type="checkbox"/> Lokuð til
Heiti skýrslu / Aðal- og undirtitill: Reiknað rennsli til Hvalárvirkjunar skv. fyrstu drögum að HBV-rennislíkani	Upplag: 35	
	Fjöldi síðna: 12	
Höfundar: Stefanía Guðrún Halldórsdóttir	Verkefnisstjóri: Kristinn Einarsson	
Gerð skýrslu / Verkstig: Líkanreikningar, bráðabirgðaniðurstöður	Verknúmer: 7-548550	
Unnið fyrir: Auðlindadeild Orkustofnunar		
Samvinnuaðilar:		
Útdráttur: Greint er frá aðlögun fyrstu útgáfu HBV-rennislíkans af vatnshæðarmæli 198 í Hvalá, Ófeigsfirði að virkjanlegu vatnasviði Hvalár í Ófeigsfirði, þ.e. að hlutvatnasviðunum Hvalár neðan Vatnalautarvatns og Rjúkanda í 350 m y.s. Reiknaðar rennislíraðir spanna vatns-árin 1956-2001. Vænta má endurskoðunar á þeim þegar samanburðarrennislismælingar á hlutvatnasviðum liggja fyrir.		
Lykilorð: Rennislíkön, HBV-líkan, afrennsli, vatnafar, hlutvatnasvið, Hvalárvirkjun, Hvalá, Vatnalautarvatn, Rjúkandi, Ófeigsfjarðarheiði	ISBN-númer:	
	Undirskrift verkefnisstjóra: 	
	Yfirfarið af: KE	

## Efnisyfirlit

	bls.
Efnisyfirlit.....	3
1 Inngangur.....	4
2 Vatnalautarvatn.....	4
3 Rjúkandi í 350 m.y.s. ....	6
4 Heimildaskrá.....	8
Viðauki .....	9
Stuðlaskrár	

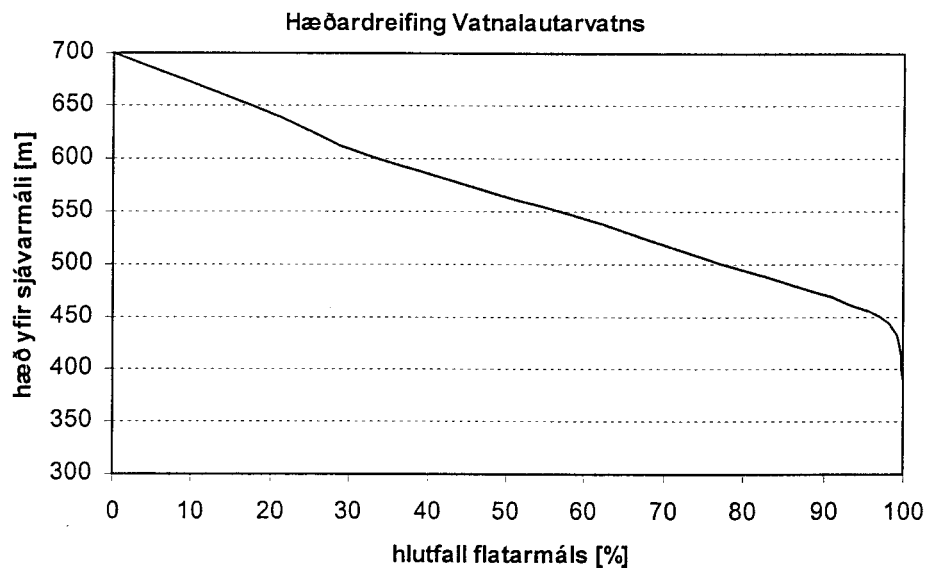
## 1 Inngangur

Hér verður greint frá aðlögun fyrstu útgáfu HBV rennislíkans af vhm 198 í Hvalá, Ófeigsfirði að virkjanlegu vatnasvið Hvalár í Ófeigsfirði, þ.e. að hlutvatnasviði Vatnalautarvatns og Rjúkanda í 350 m y.s. Líkan var gert af rennsli við vhm 198 fyrir Auðlindadeild Orkustofnunar árið 2001 (Stefanía G. Halldórsdóttir, 2001). Þetta líkan var nú notað til að reikna rennisliröð fyrir vatnasvið Vatnalautarvatns og Rjúkanda í 350 m y.s. fyrir tímabilið 1.9.1956 - 31.8.2000 án alls samanburðar við mælt rennsli, þar eð rennislismælingar á hlutvatnasviðum hafa ekki náðst enn sem komið er. Mjög æskilegt er að stilla líkanið af gagnvart mælingum á hlutvatnasviðum. Meðan það hefur ekki verið gert, ber að líta á reiknað rennsli til virkjunar sem bráðabirgðaniðurstöður skv. drögum að rennislíkani.

## 2 Vatnalautarvatn

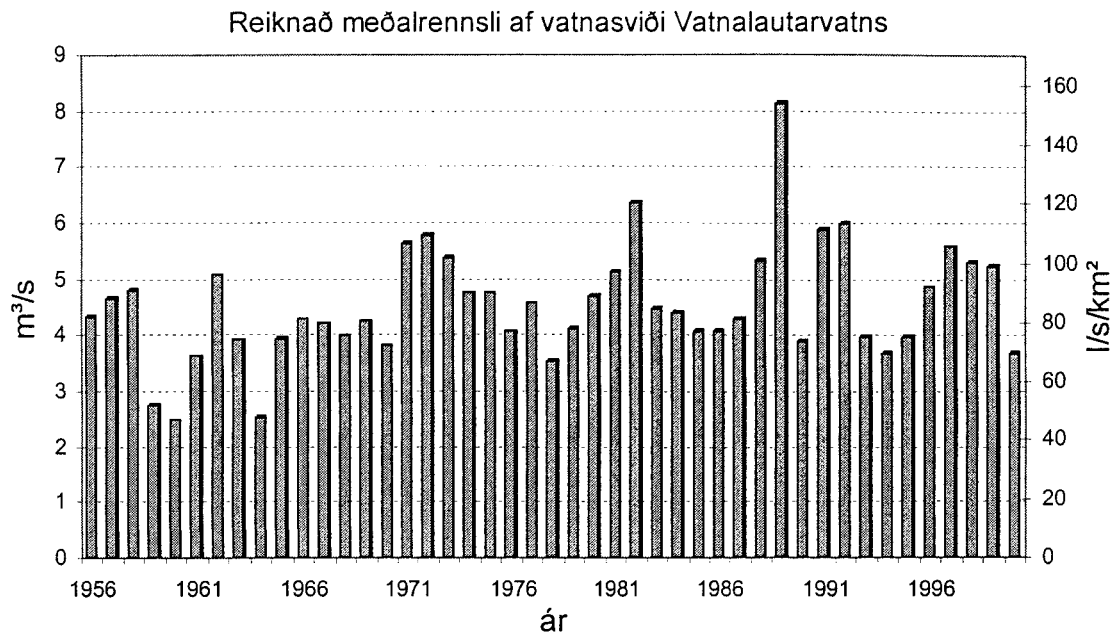
Vatnalautarvatn rennur í Hvalá í 328 m y.s. og er 1,199 km<sup>2</sup> að stærð. Flatarmál vatnasviðs Vatnalautarvatns er 53 km<sup>2</sup>, eða um 30% af vatnasviði Hvalár.

Mynd 1 sýnir hæðardreifingu vatnasviðs Vatnalautarvatns.



Mynd 1 Hæðardreifing vatnasviðs Vatnalautarvatns.

Reiknað ársmeðalrennsli fyrir vatnsárin 1956/57 til 1999/2000 er skv. HBV-líkani af Vatnalautarvatni 4.6 m<sup>3</sup>/sek og afrennslið því 86,4 l/s/km<sup>2</sup>. Þetta er um 31% af meðalrennsli skv. HBV líkani fyrir vhm 198. Mynd 2 sýnir meðalrennsli vatnsáranna.



Mynd 2 Reiknað meðalrennsli Vatnalautarvatns vatnsárin 1956/1957 til 2000/2001

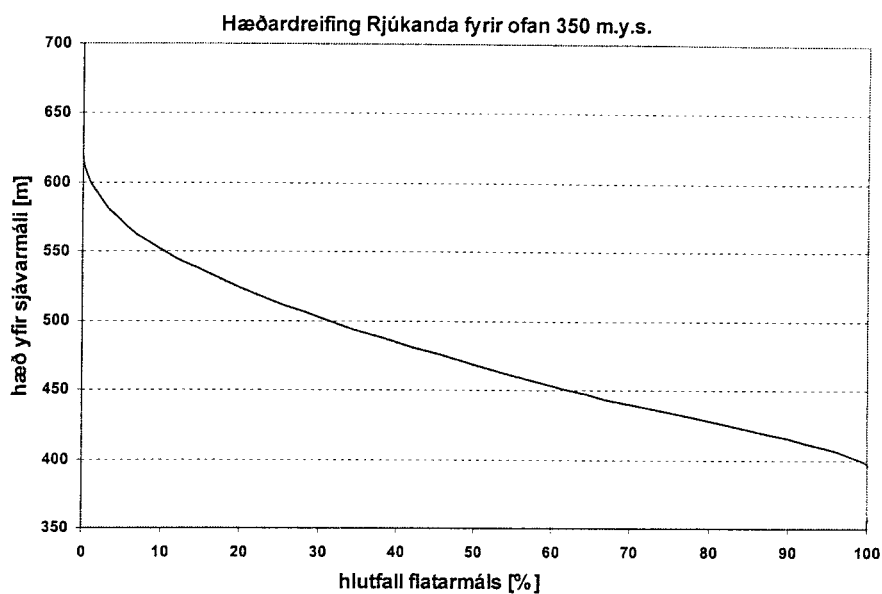
Rennslisröð með daglegu rennsli er vistuð á slóðinni /os/sgh/vmgogn/rennsli/20453.

Í viðauka I er að finna stuðlaskrána sem notast var við í líkaninu, en hana er einnig að finna á slóðinni /bhm/vm/hbv/sgh/ofeigsfj/vatnalauta/param.vatnal

### 3 Rjúkandi í 350 m y.s.

Rjúkandi rennur í Hvalá rétt fyrir ofan vhm 198. Vatnasvið Rjúkanda fyrir ofan 350 m y.s. er 66 km<sup>2</sup>, eða um 37% af vatnasviði Hvalár.

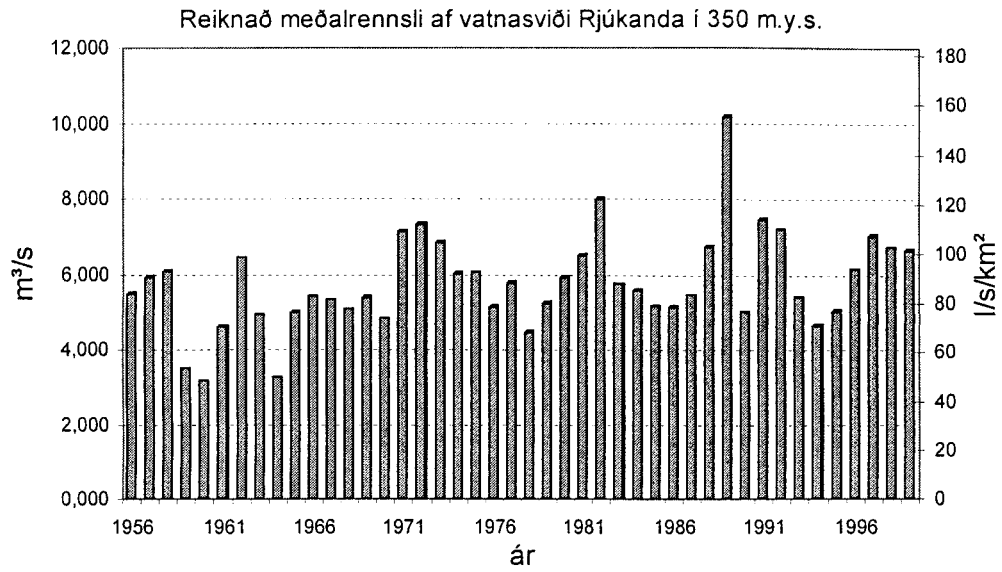
Mynd 3 sýnir hæðardreifingu vatnasviðs Rjúkanda fyrir ofan 350 m y.s.



Mynd 3 Hæðardreifing vatnasviðs Rjúkanda í 350 m y.s.

Reiknað ársmeðalrennsli fyrir vatnsárin 1956/57 til 1999/2000 er skv. HBV-líkani af Rjúkanda í 350 m y.s. 5,8 m<sup>3</sup>/sek og afrennslið því 88 l/s/km<sup>2</sup>. Þetta er um 39% af meðalrennsli skv. HBV líkani fyrir vhm 198. Mynd 4 sýnir meðalrennsli vatnsáranna.





Mynd 4 Reiknað meðalrennsli Rjúkanda í 350 m.y.s. vatnsárin 1956/1957 til 1999/2000.

Rennslisröð með daglegu rennsli er vistuð á slóðinni /os/sgh/vmgogn/rennsli/20454.

Í viðauka I er að finna stuðlaskrána sem notast var við í líkaninu, en hana er einnig að finna á slóðinni /bhm/vm/hbv/sgh/ofeigafj/rjukandi/param.rjukandi

## 4 Heimildaskrá

Orkustofnun Vatnamælingar. Gögn úr gagnasafni Vatnamælinga.

Orkustofnun Vatnamælingar. Upplýsingar úr landupplýsingakerfi.

Stefanía Guðrún Halldórsdóttir, 2001: *Vatnafar á Ófeigsfjarðarheiði og Langadalsströnd, Rennslislíkön og hlutvatnasvið*. Reykjavík, Orkustofnun, OS-2001/092.

# Viðauki

## Stuðlaskrár

### Hlutvatnasvið

---

Vatnalautarvatn	bls 9
Rjúkandi í 350 m.y.s.	bls 11

Stuðlaskrá fyrir Vatnalautarvatn (skrá /os/sgh/vmgogn/hbv/param/param.vatnal):

```

START 2V198
2 0 4 PNO Number of precipitation stations
2 0 Galtarv.250 PID1 Identification for precip station 1
2 0 20. PHOH1 Altitude precip station 1
2 0 .0 PWGT1 Weight precipitation station 1
2 0 Æðey.260 PID2
2 0 05. PHOH2
2 0 .0 PWGT2
2 0 Gjögur.290 PID3
2 0 05. PHOH3
2 0 .85 PWGT3
2 0 Hraun á Sk.352 PID1 Identification for precip station 1
2 0 03. PHOH1 Altitude precip station 1
2 0 .15 PWGT1 Weight precipitation station 1
2 0 3 TNO Number of temperature stations
2 0 Galtarv.250 TID1 Identification for temp station 1
2 0 20. THOH1 Altitude temp station 1
2 0 .0 TWGT1 Weight temp station 1
2 0 Æðey.260 TID2
2 0 05. THOH2
2 0 .0 TWGT2
2 0 Gjögur.290 TID3
2 0 05. THOH3
2 0 1.0 TWGT3
2 0 1 QNO Number of discharge stations
2 0 vhm198 QID Identification for discharge station
2 0 1.0 QWGT Scaling factor for discharge
2 0 76.07 AREAL Catchment area [km2]
2 4 0.000 MAGDEL Regulation reservoirs [1]
2 5 300.000 HYP SO ( 1,1), low point [m]
2 6 350.000 HYP SO ( 2,1)
2 7 400.000 HYP SO ( 3,1)
2 8 450.000 HYP SO ( 4,1)
2 9 500.000 HYP SO ( 5,1)
2 10 550.000 HYP SO ( 6,1)
2 11 600.000 HYP SO ( 7,1)
2 12 650.000 HYP SO ( 8,1)
2 13 700.000 HYP SO ( 9,1)
2 14 720.000 HYP SO (10,1)
2 15 730.000 HYP SO (11,1), high point
2 16 0.000 HYP SO ( 1,2), Part of total area below HYP SO (1,1) = 0
2 17 0.123 HYP SO ( 2,2)
2 18 0.239 HYP SO ( 3,2)
2 19 0.492 HYP SO ( 4,2)
2 20 0.816 HYP SO ( 5,2)
2 21 0.981 HYP SO ( 6,2)
2 22 0.999 HYP SO ( 7,2)
2 23 1.000 HYP SO ( 8,2)
2 24 1.000 HYP SO ( 9,2)
2 25 1.000 HYP SO (10,2)
2 26 1.000 HYP SO (11,2), Part of total area below HYP SO (11,1) = 1
2 27 0.000 BREPRO ( 1), Glacier area, part of total area, below HYP SO( 1,1) (=0.0)
2 28 0.000
2 29 0.000
2 30 0.000
2 31 0.000
2 32 0.000
2 33 0.000
2 34 0.000
2 35 0.000
2 36 0.000
2 37 0.000 BREPRO(11), Glacier area, part of total area, below HYP SO(11,1)
2 39 270.0 NDAG Day no for conversion of glacier snow to ice
2 40 1.10 TX Threshold temperature for snow/precip. [C]
2 41 -0.40 TS Threshold temperature fo no melt [C]
2 42 7.80 CX Melt index [mm/deg/day]
2 43 0.050 CFR Refreeze efficiency [1]
2 44 0.08 LV Max rel. water content in snow [1]
2 45 1.50 PKORR Precipitaion correction for rain [1]
2 46 1.80 SKORR Additional precipitation corection for snow at gauge [1]
2 47 365.0 GRADALT Altitude for change in prec. grad. [m]
2 48 0.06 PGRAD1 Precipitation gradient above GRADALT [1]
2 49 0.02 CALB Ageing factor for albedo [1/day]
2 50 0.00 CRAD Radiation melt component [1]
2 51 1.00 CONV Convection melt component [1]
2 52 0.0 COND Condensation melt component [1]
2 60 1.20 CEVPL lake evapotranspiration adjustment fact [1]
2 61 0.5 ERED evapotranspiration red. during interception [1]
2 62 30.0 ICEDAY Lake temperature time constant [d]
2 63 -0.60 TTGRAD Temperature gradient for days without precip [deg/100 m]
2 64 -0.80 TVGRAD Temperature gradient for days with precip [deg/100 m]
2 65 0.26 PGRAD Precipitation altitude gradient [1/100 m]
2 66 1.50 CBRE Melt increase on glacier ice [1]
2 67 0.70 EP EP( 1), Pot evapotranspiration, Jan [mm/day] or [1]
2 68 0.70 EP EP( 2), Pot evapotranspiration, Feb [mm/day] or [1]
2 69 0.70 EP EP( 3)
2 70 1.00 EP EP( 4)
2 71 1.30 EP EP( 5)
2 72 1.40 EP EP( 6)
2 73 1.30 EP EP( 7)
2 74 1.10 EP EP( 8)
2 75 1.00 EP EP( 9)
2 76 0.90 EP EP(10)

```

2 77	0.70	EP	EP(11)		
2 78	0.70	EP	EP(12)), Pot evapotranspiration, Dec	[mm/day] or [1]	
2 79	150.00	FC	Maximum soil water content	[mm]	
2 80	0.70	FCDEL	Pot.evapotr when content = FC*FCDEL	[1]	
2 81	1.00	BETA	Non-linearity in soil water zone	[1]	
2 82	2.00	INFMAX	maximum infiltration capacity	[mm/day]	
2 83					
2 84					
2 85	0.20	KUZ2	Quick time constant upper zone	[1/day]	
2 86	30.00	UZ1	Threshold quick runoff	[mm]	
2 87	0.20	KUZ1	Slow time constant upper zone	[1/day]	
2 88	1.70	PERC	Percolation to lower zone	[mm/day]	
2 89	0.01	KLZ	Time constant lower zone	[1/day]	
2 90	0.00	ROUT	(1), Routing constant (lake area, km2)		
2 91	0.00	ROUT	(2), Routing constant (rating curve const)		
2 92	0.00	ROUT	(3), Routing constant (rating curve zero)		
2 93	0.00	ROUT	(4), Routing constant (rating curve exp)		
2 94	0.00	ROUT	(5), Routing constant (drained area ratio)		
2 95	0.00	DECAY	(1), Feedback constant		
2 96	0.00	DECAY	(2), Feedback constant		
2 97	0.00	DECAY	(3), Feedback constant		
2 98	0.30	CE	Evapotranspiration constant	[mm/deg/day]	
2 99	0.0	DRAW	"draw up" constant	[mm/day]	
2 100	66.2	LAT	Latitude	[deg]	
2 101	-0.40	TGRAD(1)	Temperature gradient Jan	[deg/100m]	
2 102	-0.40	TGRAD(2)	Temperature gradient Feb	[deg/100m]	
2 103	-0.50	TGRAD(3)	Temperature gradient Mar	[deg/100m]	
2 104	-0.55	TGRAD(4)	Temperature gradient Apr	[deg/100m]	
2 105	-0.55	TGRAD(5)	Temperature gradient May	[deg/100m]	
2 106	-0.50	TGRAD(6)	Temperature gradient Jun	[deg/100m]	
2 107	-0.50	TGRAD(7)	Temperature gradient Jul	[deg/100m]	
2 108	-0.50	TGRAD(8)	Temperature gradient Aug	[deg/100m]	
2 109	-0.50	TGRAD(9)	Temperature gradient Sep	[deg/100m]	
2 110	-0.50	TGRAD(10)	Temperature gradient Oct	[deg/100m]	
2 111	-0.50	TGRAD(11)	Temperature gradient Nov	[deg/100m]	
2 112	-0.47	TGRAD(12)	Temperature gradient Dec	[deg/100m]	
2 113	40.0	SPDIST	Uniformly distributed snow acc	[mm]	
2 114	120.0	SMINI	Initial soil moisture content	[mm]	
2 115	0.0	UZINI	Initial upper zone content	[mm]	
2 116	30.0	LZINI	Initial lower zone content	[mm]	
2 121	4	VEGT(1,1)	Vegetation type 1, zone 1		
2 122	0	VEGT(2,1)	Vegetation type 2, zone 1		
2 123	0.0	VEGA(1)	Vegetation 2 area, zone 1	[1]	
2 124	0.0	LAKE(1)	Lake area, zone 1	[1]	
2 125	4	VEGT(1,2)	Vegetation type 1, zone 2		
2 126	0	VEGT(2,2)	Vegetation type 2, zone 2		
2 127	0.0	VEGA(2)	Vegetation 2 area, zone 2	[1]	
2 128	0.0	LAKE(2)	Lake area, zone 2	[1]	
2 129	4	VEGT(1,3)	Vegetation type 1, zone 3		
2 130	0	VEGT(2,3)	Vegetation type 2, zone 3		
2 131	0.0	VEGA(3)	Vegetation 2 area, zone 3	[1]	
2 132	0.0	LAKE(3)	Lake area, zone 3	[1]	
2 133	4	VEGT(1,4)	Vegetation type 1, zone 4		
2 134	0	VEGT(2,4)	Vegetation type 2, zone 4		
2 135	0.0	VEGA(4)	Vegetation 2 area, zone 4	[1]	
2 136	0.0	LAKE(4)	Lake area, zone 4	[1]	
2 137	4	VEGT(1,5)	Vegetation type 1, zone 5		
2 138	0	VEGT(2,5)	Vegetation type 2, zone 5		
2 139	0.0	VEGA(5)	Vegetation 2 area, zone 5	[1]	
2 140	0.0	LAKE(5)	Lake area, zone 5	[1]	
2 141	4	VEGT(1,6)	Vegetation type 1, zone 6		
2 142	0	VEGT(2,6)	Vegetation type 2, zone 6		
2 143	0.0	VEGA(6)	Vegetation 2 area, zone 6	[1]	
2 144	0.0	LAKE(6)	Lake area, zone 6	[1]	
2 145	4	VEGT(1,7)	Vegetation type 1, zone 7		
2 146	0	VEGT(2,7)	Vegetation type 2, zone 7		
2 147	0.0	VEGA(7)	Vegetation 2 area, zone 7	[1]	
2 148	0.0	LAKE(7)	Lake area, zone 7	[1]	
2 149	4	VEGT(1,8)	Vegetation type 1, zone 8		
2 150	0	VEGT(2,8)	Vegetation type 2, zone 8		
2 151	0.0	VEGA(8)	Vegetation 2 area, zone 8	[1]	
2 152	0.0	LAKE(8)	Lake area, zone 8	[1]	
2 153	4	VEGT(1,9)	Vegetation type 1, zone 9		
2 154	0	VEGT(2,9)	Vegetation type 2, zone 9		
2 155	0.0	VEGA(9)	Vegetation 2 area, zone 9	[1]	
2 156	0.0	LAKE(9)	Lake area, zone 9	[1]	
2 157	4	VEGT(1,10)	Vegetation type 1, zone 10		
2 158	0	VEGT(2,10)	Vegetation type 2, zone 10		
2 159	0.0	VEGA(10)	Vegetation 2 area, zone 10	[1]	
2 160	0.0	LAKE(10)	Lake area, zone 10	[1]	

FINIS

Stuðlaskrá fyrir Rjúkanda í 350 m.y.s (skrá /os/sg/h/vmgogn/hbv/param/param.rjukandi\_vhm198):

```

START 2V198
2 0 4 PNO Number of precipitation stations
2 0 Galtarv.250 PID1 Identification for precip station 1
2 0 20. PHOH1 Altitude precip station 1
2 0 .0 PWGT1 Weight precipitation station 1
2 0 Æðey.260 PID2
2 0 05. PHOH2
2 0 .0 PWGT2
2 0 Gjögur.290 PID3
2 0 05. PHOH3
2 0 .85 PWGT3
2 0 Hraun á Sk.352 PID1 Identification for precip station 1
2 0 03. PHOH1 Altitude precip station 1
2 0 .15 PWGT1 Weight precipitation station 1
2 0 3 TNO Number of temperature stations
2 0 Galtarv.250 TID1 Identification for temp station 1
2 0 20. THOH1 Altitude temp station 1
2 0 .0 TWGT1 Weight temp station 1
2 0 Æðey.260 TID2
2 0 05. THOH2
2 0 .0 TWGT2
2 0 Gjögur.290 TID3
2 0 05. THOH3
2 0 1.0 TWGT3
2 0 1 QNO Number of discharge stations
2 0 vhm198 QID Identification for discharge station
2 0 1.0 QWGT Scaling factor for discharge
2 0 65.97 AREAL Catchment area [km2]
2 4 0.000 MAGDEL Regulation reservoirs [1]
2 5 300.000 HYPISO ( 1,1), low point [m]
2 6 350.000 HYPISO ( 2,1)
2 7 400.000 HYPISO ( 3,1)
2 8 450.000 HYPISO ( 4,1)
2 9 500.000 HYPISO ( 5,1)
2 10 550.000 HYPISO ( 6,1)
2 11 600.000 HYPISO ( 7,1)
2 12 650.000 HYPISO ( 8,1)
2 13 700.000 HYPISO ( 9,1)
2 14 710.000 HYPISO (10,1)
2 15 720.000 HYPISO (11,1), high point
2 16 0.000 HYPISO ( 1,2), Part of total area below HYPISO (1,1) = 0
2 17 0.009 HYPISO ( 2,2)
2 18 0.102 HYPISO ( 3,2)
2 19 0.314 HYPISO ( 4,2)
2 20 0.620 HYPISO ( 5,2)
2 21 0.991 HYPISO ( 6,2)
2 22 1.000 HYPISO ( 7,2)
2 23 1.000 HYPISO ( 8,2)
2 24 1.000 HYPISO ( 9,2)
2 25 1.000 HYPISO (10,2)
2 26 1.000 HYPISO (11,2), Part of total area below HYPISO (11,1) = 1
2 27 0.000 BREPRO( 1), Glacier area, part of total area, below HYPISO( 1,1) (=0.0)
2 28 0.000
2 29 0.000
2 30 0.000
2 31 0.000
2 32 0.000
2 33 0.000
2 34 0.000
2 35 0.000
2 36 0.000
2 37 0.000 BREPRO(11), Glacier area, part of total area, below HYPISO(11,1)
2 39 270.0 NDAG Day no for conversion of glacier snow to ice
2 40 1.10 TX Threshold temperature for snow/precip. [C]
2 41 -0.40 TS Threshold temperature fo no melt [C]
2 42 7.80 CX Melt index [mm/deg/day]
2 43 0.050 CFR Refreeze efficiency [1]
2 44 0.08 LV Max rel. water content in snow [1]
2 45 1.50 PKORR Precipitaion correction for rain [1]
2 46 1.80 SKORR Additional precipitation corection for snow at gauge [1]
2 47 365.0 GRADALT Altitude for change in prec. grad. [m]
2 48 0.06 PGRAD1 Precipitation gradient above GRADALT [1]
2 49 0.02 CALB Ageing factor for albedo [1/day]
2 50 0.00 CRAD Radiation melt component [1]
2 51 1.00 CONV Convection melt component [1]
2 52 0.0 COND Condensation melt component [1]
2 60 1.20 CEVPL lake evapotranspiration adjustment fact [1]
2 61 0.5 ERED evapotranspiration red. during interception [1]
2 62 30.0 ICEDAY Lake temperature time constant [d]
2 63 -0.60 TTGRAD Temperature gradient for days without precip [deg/100 m]
2 64 -0.80 TVGRAD Temperature gradient for days with precip [deg/100 m]
2 65 0.26 PGRAD Precipitation altitude gradient [1/100 m]
2 66 1.50 CBRE Melt increase on glacier ice [1]
2 67 0.70 EP EP( 1), Pot evapotranspiration, Jan [mm/day] or [1]
2 68 0.70 EP EP( 2), Pot evapotranspiration, Feb [mm/day] or [1]
2 69 0.70 EP EP( 3)
2 70 1.00 EP EP( 4)
2 71 1.30 EP EP( 5)
2 72 1.40 EP EP( 6)
2 73 1.30 EP EP( 7)
2 74 1.10 EP EP( 8)
2 75 1.00 EP EP( 9)
2 76 0.90 EP EP(10)

```

2 77	0.70	EP	EP(11)		
2 78	0.70	EP	EP(12), Pot evapotranspiration, Dec	{mm/day} or [1]	
2 79	150.00	FC	Maximum soil water content	[mm]	
2 80	0.70	FCDEL	Pot.evapotr when content = FC*FCDEL	[1]	
2 81	1.00	BETA	Non-linearity in soil water zone	[1]	
2 82	2.00	INFMAX	maximum infiltration capacity	[mm/day]	
2 83					
2 84					
2 85	0.20	KUZZ	Quick time constant upper zone	[1/day]	
2 86	30.00	UZI	Threshold quick runoff	[mm]	
2 87	0.20	KUZ1	Slow time constant upper zone	[1/day]	
2 88	1.70	PERC	Percolation to lower zone	[mm/day]	
2 89	0.01	KLZ	Time constant lower zone	[1/day]	
2 90	0.00	ROUT	(1), Routing constant (lake area, km2)		
2 91	0.00	ROUT	(2), Routing constant (rating curve const)		
2 92	0.00	ROUT	(3), Routing constant (rating curve zero)		
2 93	0.00	ROUT	(4), Routing constant (rating curve exp)		
2 94	0.00	ROUT	(5), Routing constant (drained area ratio)		
2 95	0.00	DECAY	(1), Feedback constant		
2 96	0.00	DECAY	(2), Feedback constant		
2 97	0.00	DECAY	(3), Feedback constant		
2 98	0.30	CE	Evapotranspiration constant	[mm/deg/day]	
2 99	0.0	DRAW	"draw up" constant	[mm/day]	
2 100	66.2	LAT	Latitude	[deg]	
2 101	-0.40	TGRAD(1)	Temperature gradient Jan	[deg/100m]	
2 102	-0.40	TGRAD(2)	Temperature gradient Feb	[deg/100m]	
2 103	-0.50	TGRAD(3)	Temperature gradient Mar	[deg/100m]	
2 104	-0.55	TGRAD(4)	Temperature gradient Apr	[deg/100m]	
2 105	-0.55	TGRAD(5)	Temperature gradient May	[deg/100m]	
2 106	-0.50	TGRAD(6)	Temperature gradient Jun	[deg/100m]	
2 107	-0.50	TGRAD(7)	Temperature gradient Jul	[deg/100m]	
2 108	-0.50	TGRAD(8)	Temperature gradient Aug	[deg/100m]	
2 109	-0.50	TGRAD(9)	Temperature gradient Sep	[deg/100m]	
2 110	-0.50	TGRAD(10)	Temperature gradient Oct	[deg/100m]	
2 111	-0.50	TGRAD(11)	Temperature gradient Nov	[deg/100m]	
2 112	-0.47	TGRAD(12)	Temperature gradient Dec	[deg/100m]	
2 113	40.0	SPDIST	Uniformly distributed snow acc	[mm]	
2 114	120.0	SMINI	Initial soil moisture content	[mm]	
2 115	0.0	UZINI	Initial upper zone content	[mm]	
2 116	30.0	LZINI	Initial lower zone content	[mm]	
2 121	4	VEGT(1,1)	Vegetation type 1, zone 1		
2 122	0	VEGT(2,1)	Vegetation type 2, zone 1		
2 123	0.0	VEGA(1)	Vegetation 2 area, zone 1	[1]	
2 124	0.0	LAKE(1)	Lake area, zone 1	[1]	
2 125	4	VEGT(1,2)	Vegetation type 1, zone 2		
2 126	0	VEGT(2,2)	Vegetation type 2, zone 2		
2 127	0.0	VEGA(2)	Vegetation 2 area, zone 2	[1]	
2 128	0.0	LAKE(2)	Lake area, zone 2	[1]	
2 129	4	VEGT(1,3)	Vegetation type 1, zone 3		
2 130	0	VEGT(2,3)	Vegetation type 2, zone 3		
2 131	0.0	VEGA(3)	Vegetation 2 area, zone 3	[1]	
2 132	0.0	LAKE(3)	Lake area, zone 3	[1]	
2 133	4	VEGT(1,4)	Vegetation type 1, zone 4		
2 134	0	VEGT(2,4)	Vegetation type 2, zone 4		
2 135	0.0	VEGA(4)	Vegetation 2 area, zone 4	[1]	
2 136	0.0	LAKE(4)	Lake area, zone 4	[1]	
2 137	4	VEGT(1,5)	Vegetation type 1, zone 5		
2 138	0	VEGT(2,5)	Vegetation type 2, zone 5		
2 139	0.0	VEGA(5)	Vegetation 2 area, zone 5	[1]	
2 140	0.0	LAKE(5)	Lake area, zone 5	[1]	
2 141	4	VEGT(1,6)	Vegetation type 1, zone 6		
2 142	0	VEGT(2,6)	Vegetation type 2, zone 6		
2 143	0.0	VEGA(6)	Vegetation 2 area, zone 6	[1]	
2 144	0.0	LAKE(6)	Lake area, zone 6	[1]	
2 145	4	VEGT(1,7)	Vegetation type 1, zone 7		
2 146	0	VEGT(2,7)	Vegetation type 2, zone 7		
2 147	0.0	VEGA(7)	Vegetation 2 area, zone 7	[1]	
2 148	0.0	LAKE(7)	Lake area, zone 7	[1]	
2 149	4	VEGT(1,8)	Vegetation type 1, zone 8		
2 150	0	VEGT(2,8)	Vegetation type 2, zone 8		
2 151	0.0	VEGA(8)	Vegetation 2 area, zone 8	[1]	
2 152	0.0	LAKE(8)	Lake area, zone 8	[1]	
2 153	4	VEGT(1,9)	Vegetation type 1, zone 9		
2 154	0	VEGT(2,9)	Vegetation type 2, zone 9		
2 155	0.0	VEGA(9)	Vegetation 2 area, zone 9	[1]	
2 156	0.0	LAKE(9)	Lake area, zone 9	[1]	
2 157	4	VEGT(1,10)	Vegetation type 1, zone 10		
2 158	0	VEGT(2,10)	Vegetation type 2, zone 10		
2 159	0.0	VEGA(10)	Vegetation 2 area, zone 10	[1]	
2 160	0.0	LAKE(10)	Lake area, zone 10	[1]	

FINIS