Australian Hydrological Geospatial Fabric – Surface Hydrology Catchments
Geodatabase Product Schema

Australian Government Bureau of Meteorology AHGF for ESRI ArcGIS Desktop 9.3 – Version 2.0, November 2011.

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Australian Government
Bureau of Meteorology

Coded value domain
AHGFCatchmentType
Description *Surface water drainage area (terrain based).*
Field type *Long integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
21	Catchment

Relationship class
CatchmentIsExtendedByPfafstetter
Type *Simple* | Forward label *is extended by*
Cardinality *One to one* | Backward label *extends*
Notification *None*

Origin feature class: Name *AHGFCatchment*; Primary key *NCB_ID*; Foreign key *NCB_ID*
Destination table: Name *NCBPfafstetter*

No relationship rules defined.

Table
NCBPfafstetter

Attributes that can be used to extend AHGFCatchment to enable usage with the Pfafstetter coding system. Pfafstetter coding is an intelligent coding system which facilitates network tracing outside of a GIS. See separate documentation for more information on this system.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
NCB_ID	Long integer	No			0			Unique National Catchment Boundaries (NCB) identifier.
Basin	Long integer	Yes			0			9 second DEM basin number, links to same field in BASINS9S feature layer.
BasinName	String	Yes					50	Name of 9 second DEM basin (see NCB documentation for further information).
NCB_Code	String	Yes					20	NCB Code in the form <Division>-<Level2>-<PfafstetterCode> (e.g. 11-39-1327213111111).
PfafNo	Double	Yes			0	0		Full Pfafstetter code as a numeric (e.g. 1327213111111).
Level1	Long integer	Yes			0			NCB Level 1 number (= 9 second DEM Drainage Division Number).
Division	String	Yes					50	NCB Level 1 name (= 9 second DEM Drainage Division Name).
Level2	Long integer	Yes			0			NCB Level 2 number (internal 9 second basins aggregated to approximate AWRC Basins).
Level2Name	String	Yes					50	NCB Level 2 name (based on AWRC basin names).
PfafL3	Long integer	Yes			0			NCB Level 3 Pfafstetter code (e.g. 1).
PfafL4	Long integer	Yes			0			NCB Level 4 Pfafstetter code (e.g. 3).
PfafL5	Long integer	Yes			0			NCB Level 5 Pfafstetter code (e.g. 2).
PfafL6	Long integer	Yes			0			NCB Level 6 Pfafstetter code (e.g. 7).
PfafL7	Long integer	Yes			0			NCB Level 7 Pfafstetter code (e.g. 2).
PfafL8	Long integer	Yes			0			NCB Level 8 Pfafstetter code (e.g. 1).
PfafL9	Long integer	Yes			0			NCB Level 9 Pfafstetter code (e.g. 3).
PfafL10	Long integer	Yes			0			NCB Level 10 Pfafstetter code (e.g. 1).
PfafL11	Long integer	Yes			0			NCB Level 11 Pfafstetter code (e.g. 1).
PfafL12	Long integer	Yes			0			NCB Level 12 Pfafstetter code (e.g. 1).
PfafL13	Long integer	Yes			0			NCB Level 13 Pfafstetter code (e.g. 1).
PfafL14	Long integer	Yes			0			NCB Level 14 Pfafstetter code (e.g. 1).
PfafL15	Long integer	Yes			0			NCB Level 15 Pfafstetter code (e.g. 1).
BasinLevel	Long integer	Yes			0			Level at which drainage basin is first separately identified.
LastPfaf	Long integer	Yes			0			Level at which drainage basin is first separately identified.
BasinPfaf	String	Yes					17	Basin-specific Pfafstetter code.
BasinD8	Long integer	Yes			0			Australian Water Resource Council (AWRC) basin number of the AWRC basin occupying the majority of the NCB catchment unit.
AWRCBNum	String	Yes					5	AWRC region number of the AWRC basin occupying the majority of the NCB catchment unit.
AWRCRNum	String	Yes					5	AWRC region number of the AWRC basin occupying the majority of the NCB catchment unit.
AWRCDNum	String	Yes					5	AWRC basin name of the AWRC basin occupying the majority of the NCB catchment unit.
AWRCBName	String	Yes					30	AWRC region name of the AWRC basin occupying the majority of the NCB catchment unit.
AWRCRName	String	Yes					35	AWRC region name of the AWRC basin occupying the majority of the NCB catchment unit.
AWRCDName	String	Yes					25	9 second DEM D8 basin number - basins subdivided at anabranches that drain to different outlets, basis for application of Pfafstetter coding.
AnaBrLevel	Long integer	Yes			0			Level of sub-division at which the anabranch or anabranch downstream of the stream segment is coded separately from the mainstem.
MainStemUp	Long integer	Yes			0			NCB_ID of mainstem stream segment upstream of an anabranch (0 if not an anabranch).
AnaBrDown	Long integer	Yes			0			NCB_ID of anabranch segment immediately downstream (0 if not an anabranch offtake).
SegNoLink	Long integer	Yes			0			Associated stream segment number to which it would drain if it were to overflow, or closest catchment at coast (zero = no sensible segment).

Simple feature class
AHGFCatchment
Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Surface area that, according to a flow direction grid, drains to a single stream segment (AHGFNetworkStream feature).

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
Shape	Geometry	Yes						
HydroID	Long integer	No			0			Feature identifier, unique across all geodatabases within an AHGF release.
AHGFFType	Long integer	No	21	AHGFCatchmentType	0			Feature type within the AHGF Data Model (e.g. 1 : AHGFNetworkStream).
NetNodeID	Long integer	Yes			0			HydroID of the AHGFNetworkNode feature to which the catchment drains.
NCB_ID	Long integer	No			0			Unique NCB identifier. Can be used to join Pfafstetter attribution.
SegmentNo	Long integer	Yes			0			Identifier of related raster stream segment in input data source.
StreamName	String	Yes					60	Name of the associated stream segment in AHGFNetworkStream.
HasSegment	Long integer	Yes			0			Relationship of catchment with vector & raster streams (0=none; 1=raster only; 2=both).
ExtrnlBasn	Long integer	Yes			0			Flags catchments part of externally draining basins (drains: 0=internally; 1=externally).
NextDownID	Long integer	Yes			0			The HydroID for the next downstream AHGFCatchment feature.
SrcFCName	String	No					25	Feature Class Name from the input data source (e.g. Reservoirs).
SrcFType	String	No					32	Feature type from the input data source (e.g. TownRuralStorage).
SrcType	Long integer	Yes			0			Feature sub-type (numeric code) from the input data source (e.g. 2).
SourceID	Long integer	Yes			0			Unique identifier for individual feature in the input data source (e.g. 3023726).
FeatRel	Date	Yes			0	0	8	Reliability date of spatial object. Adjusted during spatial change/verification.
FSource	String	No					25	Name of agency that originally captured the spatial object.
AttrRel	Date	Yes			0	0	8	Reliability date of attribute object. Adjusted during attribute change/verification.
AttrSource	String	No					25	Name of agency that originally captured the attribute object.
PlanAcc	Short integer	Yes			0			Standard deviation of the horizontal positional accuracy in metres (e.g. 100).
Symbol	Short integer	Yes			0			Symbol number for feature used in Geoscience Australia's GEODATA product.
TextNote	String	Yes					50	Text note to accompany the feature.
AlbersArea	Double	Yes			0	0		Area (m^2) calculated from Albers Equal Area Conic projection centred on Australia.
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		

Relationship class
BasinGroupContainsPfafCats
Type *Simple* | Forward label *contains*
Cardinality *One to many* | Backward label *is contained by*
Notification *None*

Destination table: Name *NCBPfafstetter*; Primary key *Level2Num*; Foreign key *Level2*
Origin feature class: Name *NCBLevel2DrainageBasinGroup*

No relationship rules defined.

Simple feature class
NCBLevel2DrainageBasinGroup
Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Topographically defined drainage basin group (aggregations of drainage basins based on a multiflow extension of the GEODATA 9 second Flow Direction Grid).

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
Shape	Geometry	Yes						
HydroID	Long integer	No			0			Feature identifier, unique across all geodatabases within an AHGF release.
DivNumber	Long integer	Yes			0			9 second Drainage Division Number (e.g. 1).
Level2Num	Long integer	Yes			0			9 second Drainage Basin Group (Level 2) Number (e.g. 118).
Level2Name	String	Yes					50	9 second Drainage Basin Group (Level 2) Name (e.g. Ward River).
SrcFCName	String	No					25	Feature Class Name from the input data source (e.g. Reservoirs).
SrcFType	String	No					32	Feature type from the input data source (e.g. TownRuralStorage).
SrcType	Long integer	Yes			0			Feature sub-type (numeric code) from the input data source (e.g. 2).
SourceID	Long integer	Yes			0			Unique identifier for individual feature in the input data source (e.g. 3023726).
FeatRel	Date	Yes			0	0	8	Reliability date of spatial object. Adjusted during spatial change/verification.
FSource	String	No					25	Name of agency that originally captured the spatial object.
AttrRel	Date	Yes			0	0	8	Reliability date of attribute object. Adjusted during attribute change/verification.
AttrSource	String	No					25	Name of agency that originally captured the attribute object.
PlanAcc	Short integer	Yes			0			Standard deviation of the horizontal positional accuracy in metres (e.g. 100).
Symbol	Short integer	Yes			0			Symbol number for feature used in Geoscience Australia's GEODATA product.
TextNote	String	Yes					50	Text note to accompany the feature.
AlbersArea	Double	Yes			0	0		Area (m^2) calculated from Albers Equal Area Conic projection centred on Australia.
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		

Relationship class
DrainDivContainsPfafCats
Type *Simple* | Forward label *contains*
Cardinality *One to many* | Backward label *is contained by*
Notification *None*

Destination table: Name *NCBPfafstetter*; Primary key *DivNumber*; Foreign key *Level1*
Origin feature class: Name *NCBLevel1DrainageDivision*

No relationship rules defined.

Simple feature class
NCBLevel1DrainageDivision
Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Topographically defined drainage division (based on a multiflow extension of the GEODATA 9 second Flow Direction Grid).

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
Shape	Geometry	Yes						
HydroID	Long integer	No			0			Feature identifier, unique across all geodatabases within an AHGF release.
DivNumber	Long integer	Yes			0			9 second Drainage Division Number (e.g. 1).
Division	String	Yes					50	9 second Drainage Division Name (e.g. Gulf of Carpentaria).
SrcFCName	String	No					25	Feature Class Name from the input data source (e.g. Reservoirs).
SrcFType	String	No					32	Feature type from the input data source (e.g. TownRuralStorage).
SrcType	Long integer	Yes			0			Feature sub-type (numeric code) from the input data source (e.g. 2).
SourceID	Long integer	Yes			0			Unique identifier for individual feature in the input data source (e.g. 3023726).
FeatRel	Date	Yes			0	0	8	Reliability date of spatial object. Adjusted during spatial change/verification.
FSource	String	No					25	Name of agency that originally captured the spatial object.
AttrRel	Date	Yes			0	0	8	Reliability date of attribute object. Adjusted during attribute change/verification.
AttrSource	String	No					25	Name of agency that originally captured the attribute object.
PlanAcc	Short integer	Yes			0			Standard deviation of the horizontal positional accuracy in metres (e.g. 100).
Symbol	Short integer	Yes			0			Symbol number for feature used in Geoscience Australia's GEODATA product.
TextNote	String	Yes					50	Text note to accompany the feature.
AlbersArea	Double	Yes			0	0		Area (m^2) calculated from Albers Equal Area Conic projection centred on Australia.
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		

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