

# Avalanche Agencies in the Tyrol

Prevention in highly frequented public Spaces





**tirol**  
Unser Land

# The Province of Tyrol

Location, Population and Organisation



c. 710,000 ( AT: c. 8,400,000)

279 Municipalities and 9 Districts

DE

Tyrol

Salzburg

East Tyrol

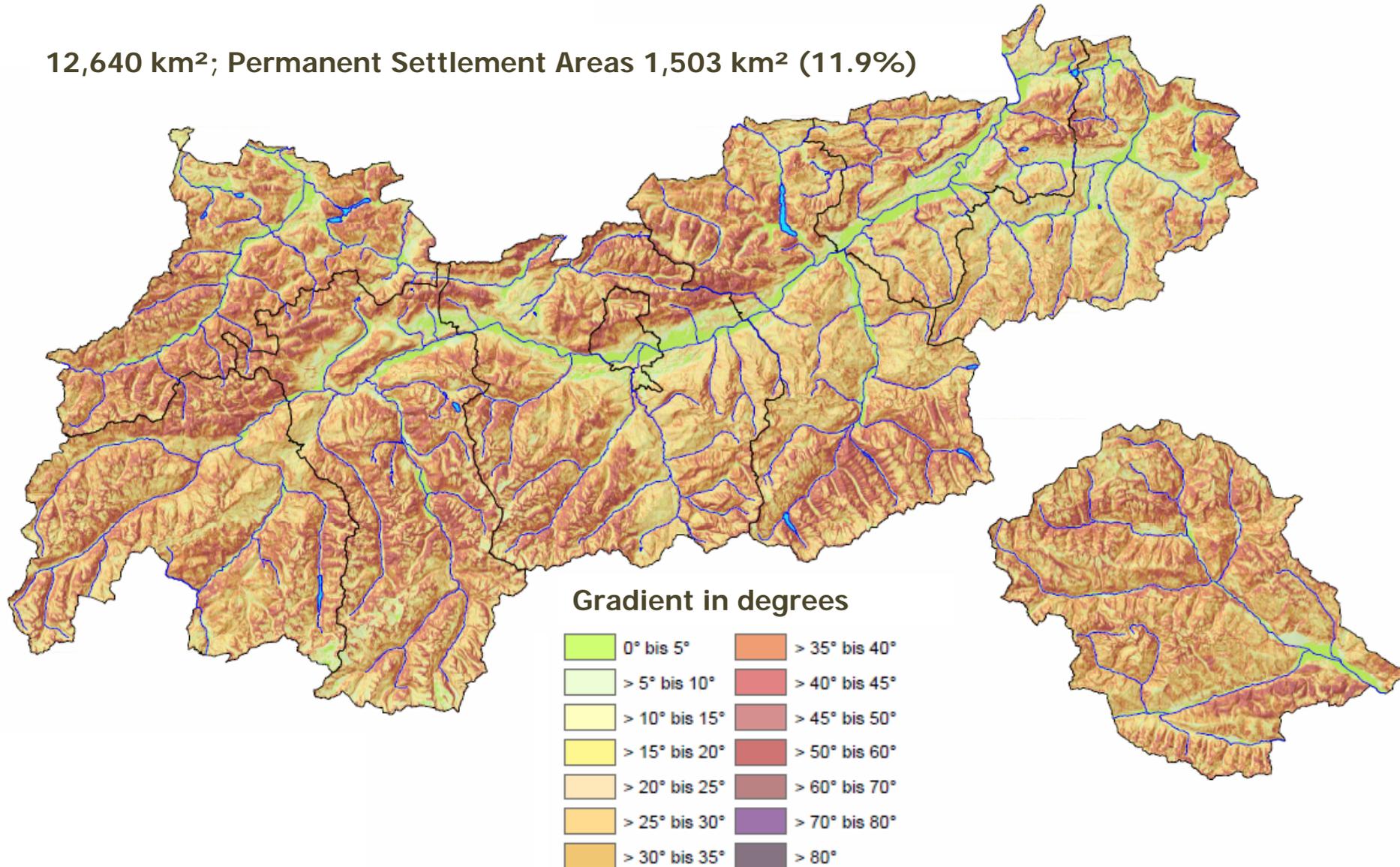
CH

South Tyrol

IT

**tiris**  
[www.tirol.gv.at/tiris](http://www.tirol.gv.at/tiris)

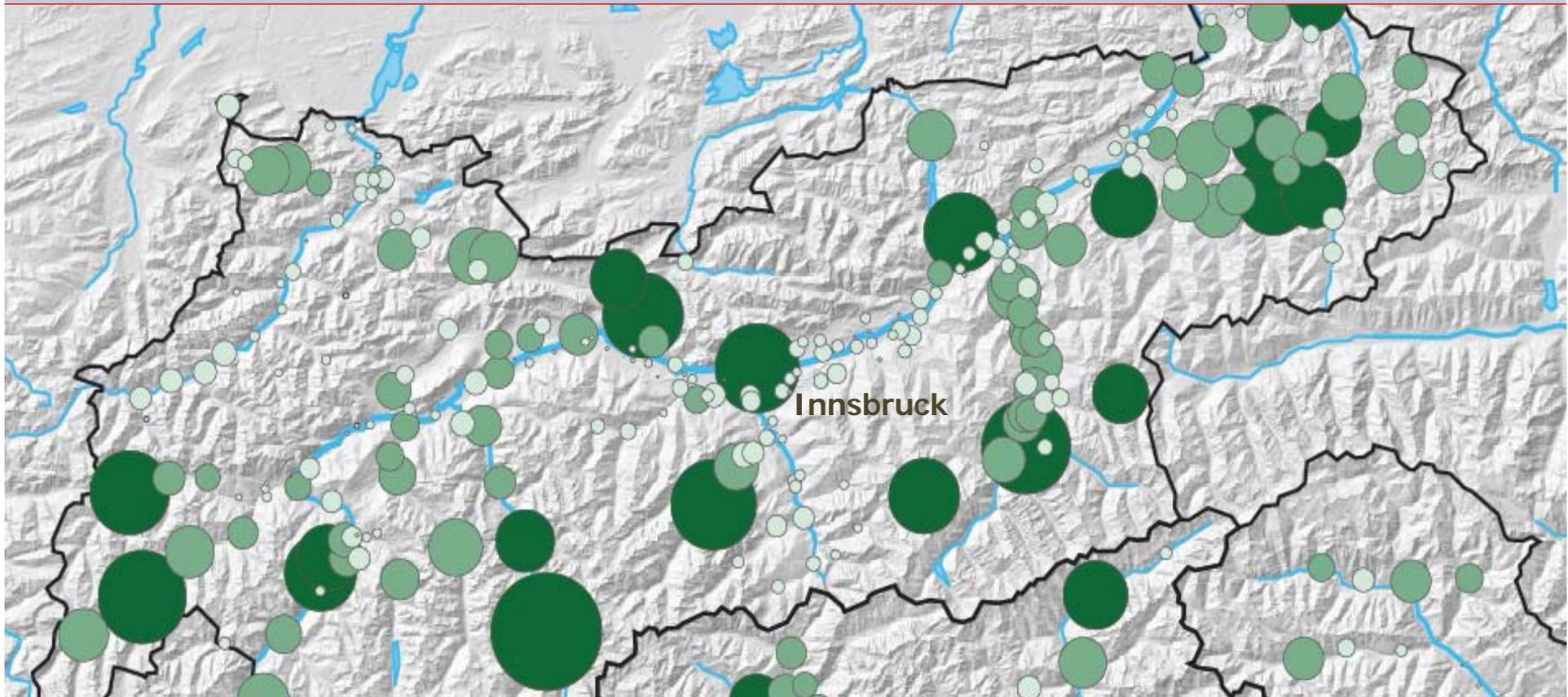
12,640 km<sup>2</sup>; Permanent Settlement Areas 1,503 km<sup>2</sup> (11.9%)





# The Province of Tyrol

Winter Tourism 2010-2011



Overnight Stays : 24.875.664



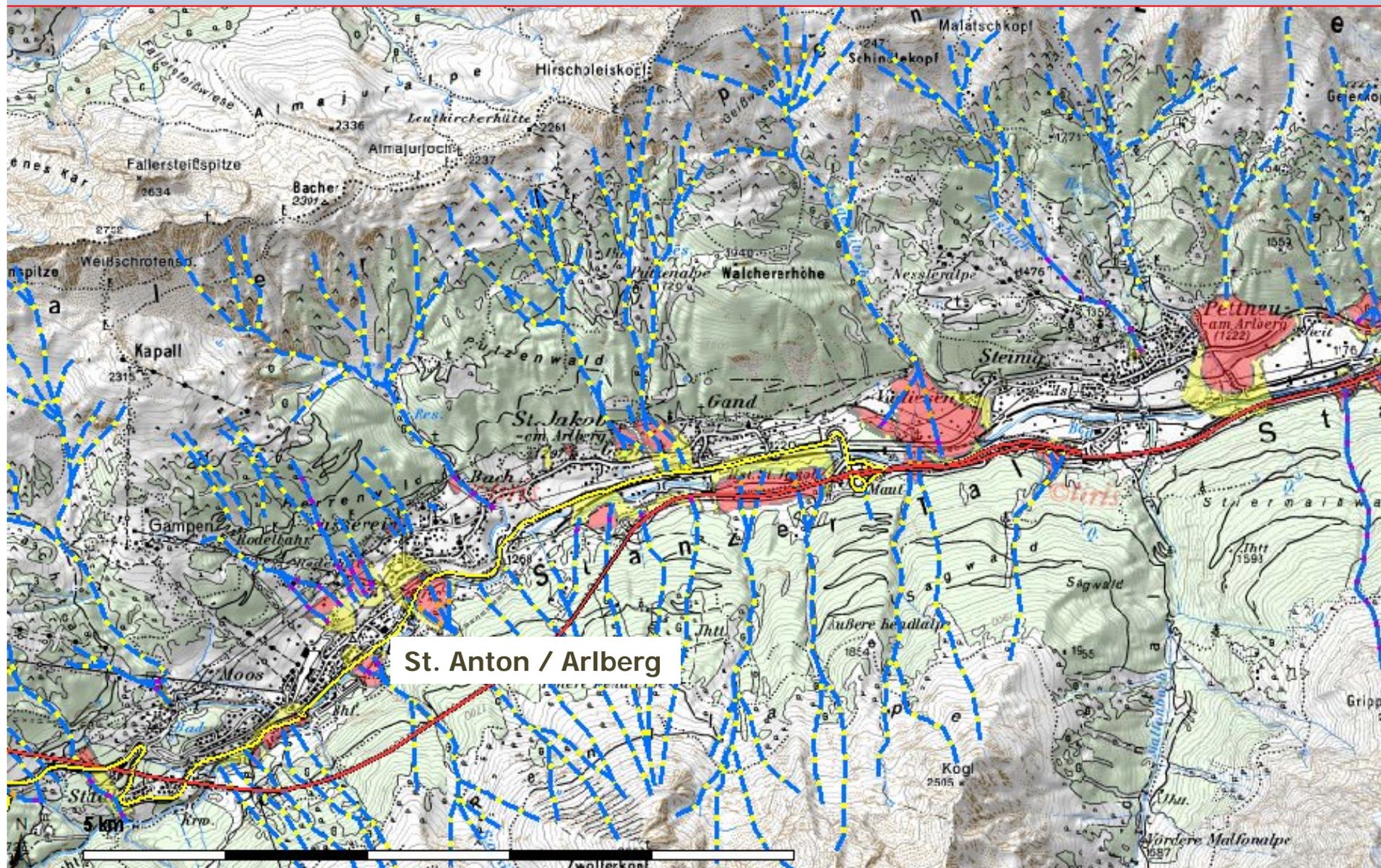
Revenue : € 1,465,670,000



tirol  
Unser Land

# Safety for Residents + Tourists?

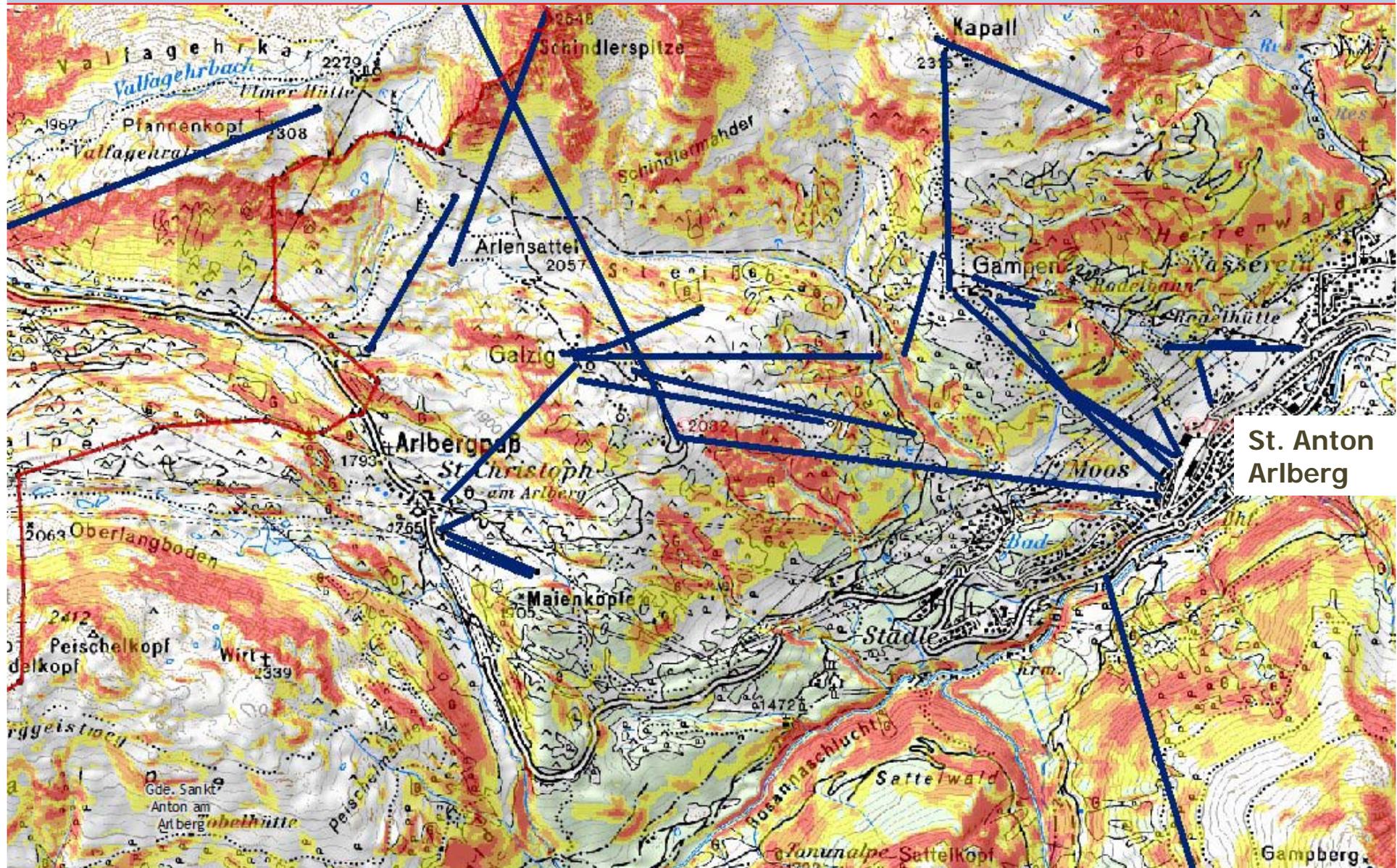
Avalanche Lines in the Stanzertal (St. Anton)





# Safety for Residents + Tourists?

Gradient and ski lifts - outside of permanent settlement areas





# Avalanche Agencies in the Tyrol

227 Avalanche Agencies, 1345 Members

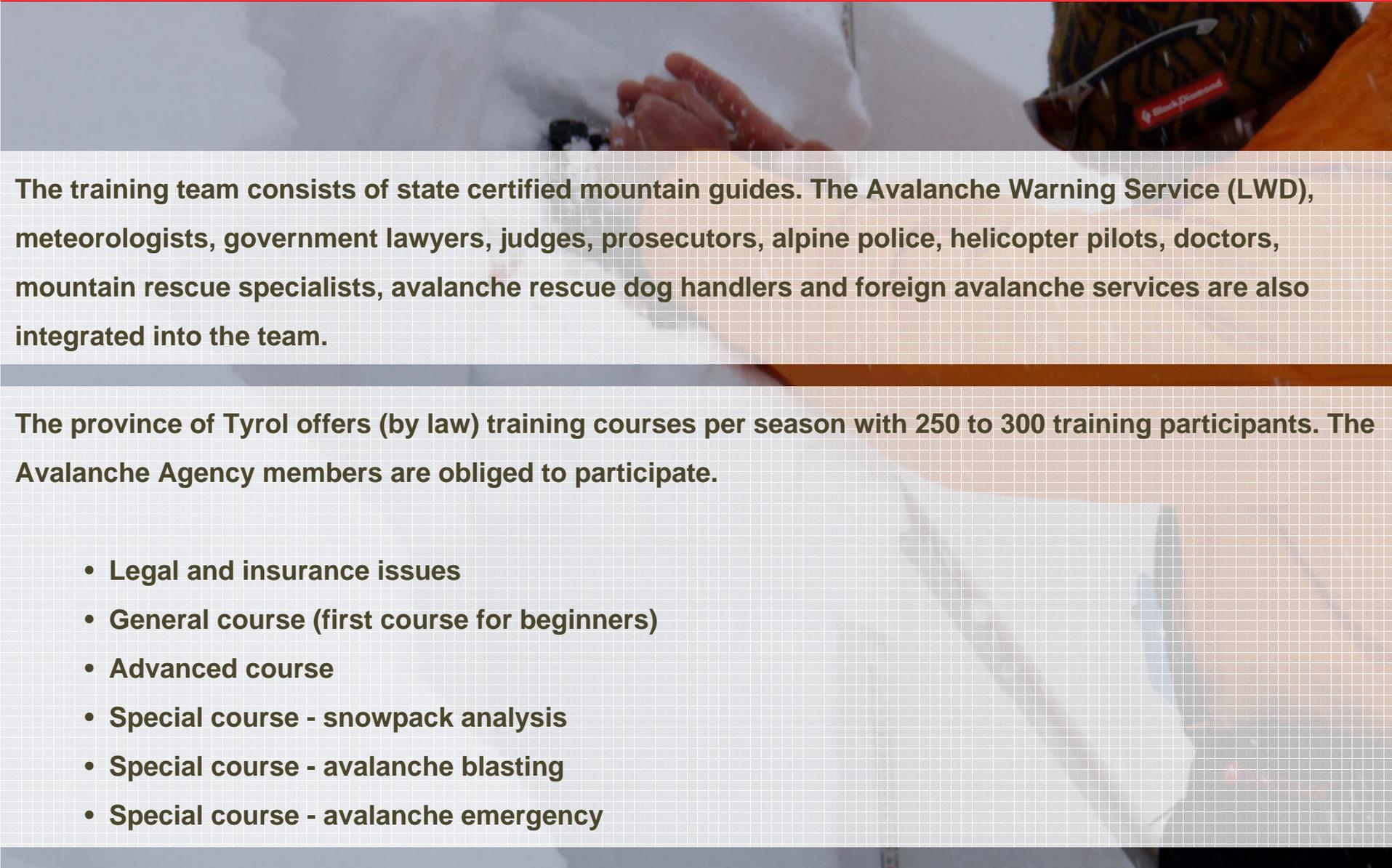
Avalanche Agency activity is regulated by law: LGBl 104/1991 amended by LGBl 111/2001.

Avalanche agencies work officially on behalf of the respective authority.

The mayor of a municipality with avalanche dangers, has a legal obligation to establish an Avalanche Agency. Avalanche Agency members are appointed for 5 years by the authority.

Avalanche Agency members must have specific theoretical as well as practical knowledge and skills to identify, assess and control avalanche dangers and avalanche disasters.

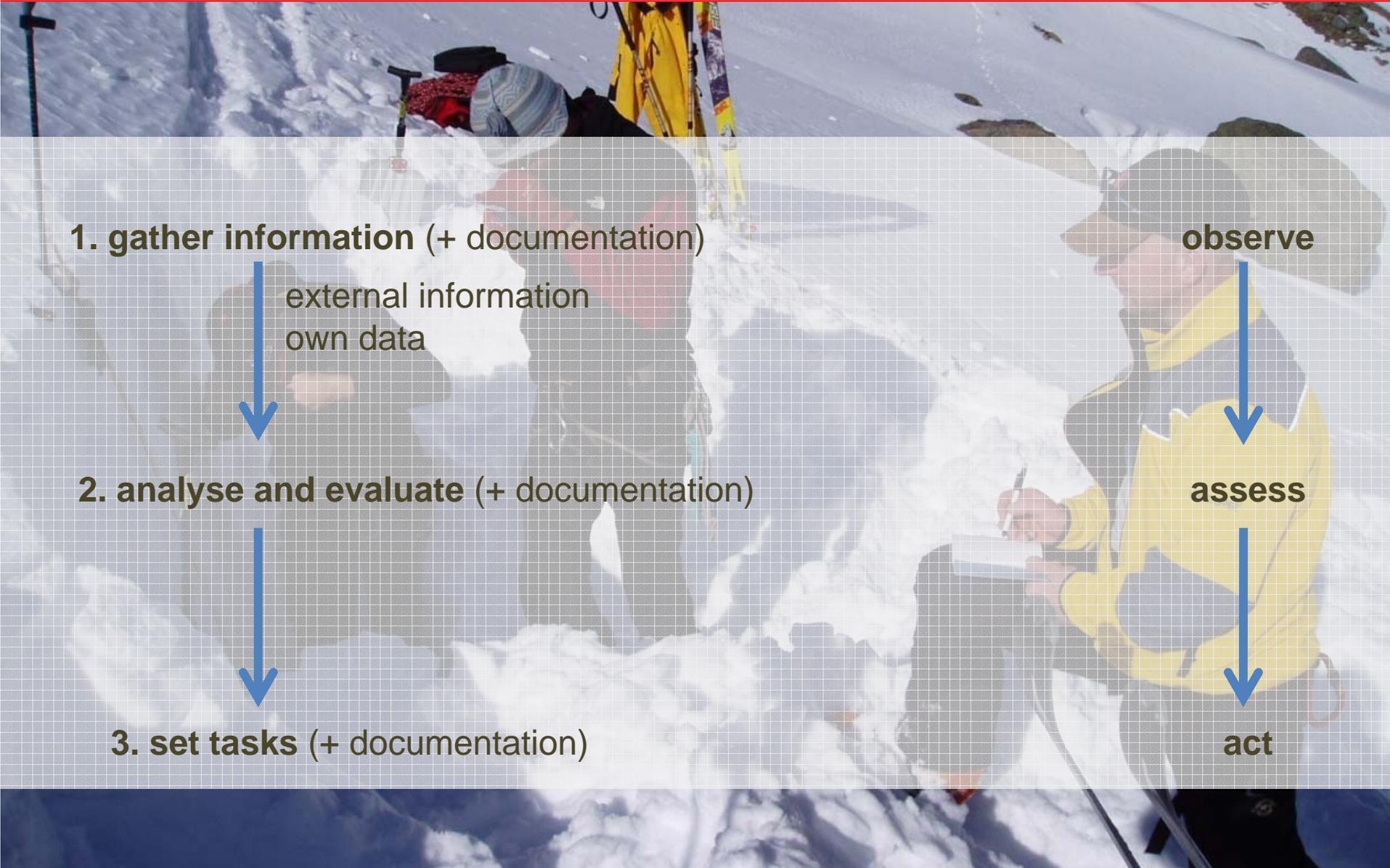
Avalanche Agencies are advisors on avalanche danger for municipal operations and services. For example they advise traffic police, road maintenance and operators of sport facilities (Ski lifts, trails, etc.). The Avalanche Agencies provide a "RECOMMENDATION". Closures, evacuation, blasting, etc. are carried out by the safety services (municipality, district administration, operators, etc.).



The training team consists of state certified mountain guides. The Avalanche Warning Service (LWD), meteorologists, government lawyers, judges, prosecutors, alpine police, helicopter pilots, doctors, mountain rescue specialists, avalanche rescue dog handlers and foreign avalanche services are also integrated into the team.

The province of Tyrol offers (by law) training courses per season with 250 to 300 training participants. The Avalanche Agency members are obliged to participate.

- Legal and insurance issues
- General course (first course for beginners)
- Advanced course
- Special course - snowpack analysis
- Special course - avalanche blasting
- Special course - avalanche emergency



**1. gather information (+ documentation)**

external information  
own data

**2. analyse and evaluate (+ documentation)**

**3. set tasks (+ documentation)**

**observe**

**assess**

**act**



# Avalanche Agency Activity

ad 1. gather information: External Information

Orthophotos (TIRIS)

Avalanche Cadastral Maps + Hazard Zone Plans (TIRIS)

Gradient and Exposure Information (TIRIS)

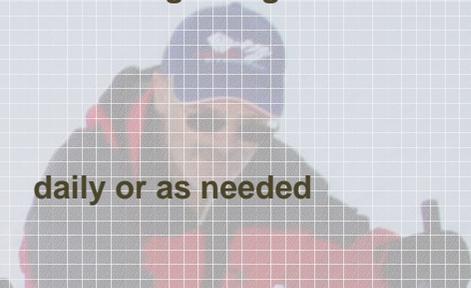
Avalanche Report + Special Report (LWD)

Measuring Station Data and Maps (LWD)

Weather forecast (ZAMG)

at the beginning of the season

daily or as needed





# Avalanche Agency Activity

ad 1. gather information (+ documentation) : Own data - daily log of LWDKIP

Lawinenwarndienst - Windows Internet Explorer

https://portal.tirol.gv.at/LWDWeb/beobachtungValidate.do?cmd=buttonClicked&cid=1&cid=1&tid=e963f5700a0a808d592a592a3662ecd8

Arbeitsbereich 1  
Abmelden

Einstellungen

w.wuertl | Walter Würtl

LWDKIP

**Tägliche Beobachtungen - Eingabe Daily Observation**

Zurück

Kommission **LK Test**  
 Beobachtungsdatum **2011-10-09**  
 Beobachtungszeit von **08:00** bis **10:00** Uhr [HH:mm]  
 Beobachtungsstandort **ABC**  
 Seehöhe **1000** (m)  
 Region **Arlberg-Außerfern**

Alle Bereiche aufklappen    Alle Bereiche zuklappen

**Wetter**

Niederschlag     Niederschlagsintensität

Bewölkung

Hauptwindrichtung  N    NO    O    SO  
 S    SW    W    NW

Windgeschwindigkeit

Schneefahnen im Kambereich  JA    NEIN

Lufttemperatur  (°C auf 0.1 °C genau)    Lufttemperaturentwicklung

Luftfeuchtigkeit  (%)    steigend    fallend    gleichbleibend

Strahlung

Bemerkungen zum Wetter

**Schneedecke**

1.7.8    DVT

Start    Oesterreichischer Alpen...    Portal Tirol - Windows In...    Lawinenwarndienst - ...    Internet    100%    17:55

## Wetter

Precipitation Niederschlag  **Precipitation intensity** Niederschlagsintensität

Cloudiness Bewölkung

Wind direction Hauptwindrichtung  N  NO  O  SO  
 S  SW  W  NW

Wind speed Windgeschwindigkeit

Schneefahnen im Kammbereich  JA  NEIN **Snow drift on the crest** **Temperature development**

Air temperature Lufttemperatur  (°C auf 0.1 °C genau) Lufttemperaturentwicklung

Air humidity Luftfeuchtigkeit  (%)  steigend  fallend  gleichbleibend

Radiation Strahlung

Remarks

Bemerkungen zum Wetter



## ↓ Schneedecke

Gesamtschneehöhe  (cm) **snow height**

Neuschneehöhe  (cm) **snow height - new**  
(24h)

kumuliert

Schneefeuchte  **snow moisture**

- |  |   |
|--|---|
| <input type="checkbox"/> Rissbildung an der Schneedecke    | <input type="checkbox"/> Schneeverfrachtung |
| <input type="checkbox"/> Setzungsgeräusche (Wummgeräusche) | <input type="checkbox"/> Windgangeln        |
| <input type="checkbox"/> Oberflächenreif                   | <input type="checkbox"/> Winddünen          |
| <input type="checkbox"/> Harschdeckel                      | <input type="checkbox"/> Wechtenbildung     |

Bemerkungen zur Schneedecke (spannungsarme Schneedecke, dicker Harschdeckel, Schwachschicht innerhalb der Schneedecke, Angaben zu Schneeprofil, etc.)



## ⬇ Natürliche Lawinenauslösung

Schneebrettlawine(n) **Slab avalanche**

Anzahl  Seehöhenbereich (Anrissgebiet) von  (m) bis  (m)

Exposition  N  NO  O  SO  
 S  SW  W  NW

Lawinenfeuchte  Lawinengröße

geschätztes Alter  Tag(e)

geschätztes Alter  Stunde(n)

Lockerschneelawine(n) **Loose snow avalanche**

Anzahl  Seehöhenbereich (Anrissgebiet) von  (m) bis  (m)

Exposition  N  NO  O  SO  
 S  SW  W  NW

Lawinenfeuchte  Lawinengröße

geschätztes Alter  Tag(e)

geschätztes Alter  Stunde(n)

Gleitschneelawine(n)

**Full-depth snow slide**

Bemerkungen zu Lawinen

**Remarks**

Eislawine(n) **Ice avalanche**

## ☑ Künstliche Lawinenauslösung

Anzahl Sprengungen  Sprengerfolg

- Sprengungsart
- |   |  |
|---|--|
| <input type="checkbox"/> Handsprengung  | <input type="checkbox"/> Lawinenorgel                  |
| <input type="checkbox"/> Helikopter     | <input type="checkbox"/> Lawinenpfeife                 |
| <input type="checkbox"/> Sprengseilbahn | <input type="checkbox"/> Avalancheur                   |
| <input type="checkbox"/> Sprengmast     | <input type="checkbox"/> Pistenfahrzeug                |
| <input type="checkbox"/> GazEx          | <input type="checkbox"/> Person                        |
| <input type="checkbox"/> Lawin_LOCKER   | <input type="checkbox"/> Sonstige <input type="text"/> |

Sprengung aufgrund von  Neuschnee  Triebsschnee  Durchfeuchtung

Brenndauer Zündschnur  (s) Kontrolle durch

Bemerkungen zu Sprengungen



# Avalanche Agency Activity

ad 2. Analysis and Assessment (+ documentation)



Personal analysis of the collected data and assessing the situation

## ⬇ Gefahrenbeurteilung **risk assessment**

Gefahrenstufe für das Beurteilungsgebiet zutreffend  ja  nein, zu hoch  nein, zu niedrig

Tendenz der Lawinengefahr  steigend  fallend  gleichbleibend

## Empfehlungen - Massnahmen

- keine Massnahmen/Empfehlungen erforderlich **No Actions / Recommendations**
- Sprengung(en) **Blasting**
- Sperre(n) **Blocking**
- Evakuierung/Räumung **Evacuation**
- Beobachtungsflug **Observation flight**
- Beobachtungsfahrten **Observation drive**

**Observer**

Beobachtungsperson(en)

- keine Sicht zum Beurteilungsgebiet **No view**

**Remarks**

Sonstiges/Bemerkungen



Begründung der Gefahrenbeurteilung und der getroffenen Massnahmen/Empfehlungen

Beschluss

- Beschlussfassung weiter an
- Bürgermeister
  - Betriebsleiter/Betreiber
  - Polizei
  - Sicherheitsbehörde (BH/Landratsamt)
  - Sonstiges

Name	Mitteilung	Beschreibung
<input type="checkbox"/> Wolfgang Holzhammer	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Fabio Gheser	<input type="text"/>	<input type="text"/>

Abprache mit weiteren Personen/Institutionen sowie Angaben zu weiteren Beurteilungshilfen (NXD-Modelle, etc.)

Nächste Sitzung am  um  Uhr [HH:mm]



The province of Tyrol is one of the most intensively used winter sports destinations in the Alps. The permanent settlement areas, traffic areas and winter sports facilities (ski areas and trails) are threatened by avalanches.

The Avalanche Agencies are a "Task Force" that ensures the best possible assessment and prevention of avalanche hazards and accidents in intensively used public areas. This is because the local experts, with local knowledge and expertise, are optimally integrated into the process of identification, assessment and prevention of avalanche danger and disasters.

Avalanche events affecting people and property in inhabited areas are a rarity due to 3 factors: the mandatory establishment of avalanche agencies by law, the integration of the avalanche agencies in the municipal operation units and the predefined decision-making process,.

**– No one can guarantee 100% safety!**





**Thank you for your attention!**